

A

# 20:20 VISION

OF FUTURE TV



**APB**

News You Can Use

**SPECIAL TV 360 REPORT 2019**

# SONY

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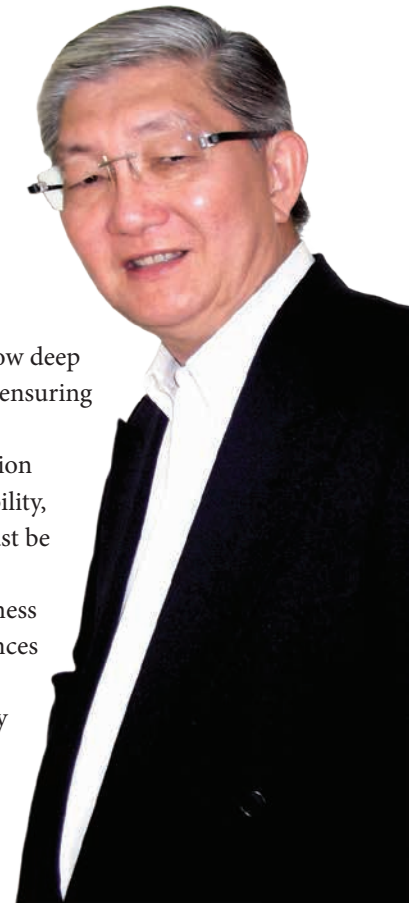
HDC-P50 4K/HD compact POV system camera

# 4K

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Beyond Definition

# Crafting a 20:20 Vision of TV 360



**W**ith 2020 just a few months away, some Asian broadcasters are still undecided which way to go and what ‘future-proof’ equipment to buy. How will maturing technologies like IP and Blockchain affect their transition plans? Will looking back and thinking forward bring about a 20:20 vision of what TV 360 will be in the next decade?

The rise of FAANG — namely the technology giants Facebook, Apple, Amazon, Netflix and Google — who record high growth and have deep pockets, are investing heavily into original video content to attract and retain viewers to their respective platforms. And Amazon and Facebook have even won the streaming rights to some of the world’s biggest sports events, a content niche that traditionally was dominated by the pay-TV industry. Sports, as we know, is a monetisation treasure trove.

Indeed, broadcasters today are scrambling to find new ways to retain eyeballs as their audiences become fragmented and pulled away by VoD and Live Sports streaming by the tech giants.

What new forms of engagement can broadcasters put in place to stay connected to their consumers with different viewing habits?

But before we delve into leveraging emerging technologies, let’s take a step back and look at how broadcasters, especially pay-TV operators, can make TV better for their existing audiences by improving their EPG. As Fintan Mc Kiernan of Ideal Systems puts it: “Show me the things that I can watch, not a bunch of blank screens.”

In today’s chaotic and fragmented media world, how can we make it easier for people to find content they like to watch? Since 1981, TiVo has been in the forefront in the business of content discovery. It’s not too late to discover how TiVo can help you to enrich your customer experience.

And yes, no matter how deep Sony’s commitment is to ensuring its cameras can offer you limitless imaging expression and unprecedented flexibility, the content produced must be made easily accessible.

While looking to harness latest technological advances to go HD, HD+HDR or 4K/UHD, we must simply not forget what our viewers want and what they can afford.

The 5G roll-out in Asia has started and it will lead to the road less travelled. Thus, in crafting this 20:20 vision of TV 360 report, APB spoke to numerous professionals in the industry for their insights and views.

We enjoyed curating this report as it comprises different viewpoints, some thought-provoking while others confirming that Asia is springing to implement 5G and other broadcast standards that requires industry collaboration.

The race is on. Asia is on the move. □

**Andrew Yeo**  
Publisher, APB



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61 Tai Seng Avenue  
#05-01 Print Media Hub @  
Paya Lebar iPark, Singapore  
534167

Tel: +65 6282 8456  
Website: www.apb-news.com

**EDITORIAL**  
**Josephine Tan**  
News Editor

**Lara Tan**  
Reporter

**Shirish Nadkarni**  
Correspondent

**PRODUCTION**  
**Zuraini Ridzwan**  
Production Editor

**ADMIN**  
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**MARKETING**  
**Kylie Chua**  
Chief Marketing Officer

**Jessie Tan**  
Director - Sales & Marketing

**PUBLISHING**  
**Andrew Yeo**  
Publisher / Editorial Director

**MEDIA REPRESENTATIVES**

■ China: Yang Ou  
Beijing Bunch Exhibition Services Ltd  
E-mail: yangou@bbes.com.cn

■ Japan: Mikio Tsuchiya  
World Media Services Inc  
E-mail: mikio.tsuchiya@worldmedia.jp

■ USA: Gary L Rhodes  
Sedor Media Inc, USA  
E-mail: sedorusa@optonline.net

# The entitlement of choice and shape of TV to come

BY JOSEPHINE TAN,  
NEWS EDITOR, APB

While some may label the past as an important tool in determining what will happen in the future, who would have ever predicted that we are now living in a modern world with so much freedom of choice?

We have choices — and that have now been expanded and personalised through the use of innovative technologies, from choosing between flagging down a taxi off the street to simply booking a drive via an app, or from deciding between heading down to a physical store or to stay home comfortably and get all the shopping done online and have the goods delivered right to our doorstep.

Pertaining to the broadcast, media and entertainment industry, gone were the days where we would literally rush home to catch a scheduled programme on TV in the living room. Today, accessing content, including live events, is just a few clicks on our remote TV control or on mobile devices. The tougher choice is perhaps to figure out that one programme among the vast content library for us to sit back and be immersed for the next couple of hours.

Over the past decades, traditional broadcasters have solidified the foundation in content creation and transmission, bringing audiences memorable TV moments. And as we step into the endless possibilities of the Internet age, this form of entertainment can be brought to much wider audiences across the globe, regardless of time zones and geographical borders.

As Fintan Mc Kiernan, CEO of Ideal Systems South-east Asia, suggested, the term “broadcaster” should now include over-the-top (OTT) platforms such as Netflix and Amazon as well as social media giants like Facebook and YouTube.

Unlike national broadcasters which have huge physical infrastructures to maintain yet transmitting either



PHOTO CREDIT: ISTOCK BY GETTY IMAGES

“As we step into the endless possibilities of the Internet age, entertainment [today] can be brought to much wider audiences across the globe, regardless of time zones and geographical borders.”

locally or regionally, these Internet-age companies are leveraging online networks to deliver their content on a global scale.

And in the 5G universe where content is poised to go even more mobile, Peter MacAvock, head of distribution, platforms and services, EBU and chair of the DVB Project, pointed out that Asia-Pacific is in a “more matured” position compared to other regions around the world. He cited a report from Parks Associates which stated that more than 310 million connected households around the world will have at least one OTT service by 2024, and it foresees a huge increase in OTT consumption in countries like China.

Peter Bruce, director of IABM, Asia-Pacific, affirmed that 5G will take off in China soon by highlighting that the technology is aligned within the country’s 13th Five-Year Plan, where 5G is very much in focus and announced as a “strategic emerging industry”.

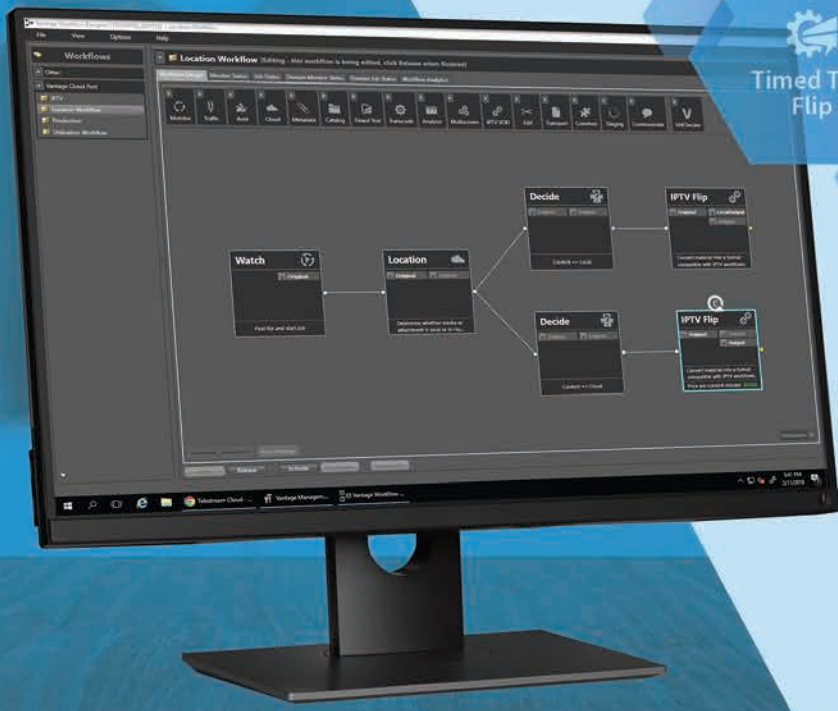
He explained: “5G is coming to Asia. Although there are many headline

announcements on testing in several countries, the practicality of covering the thousands of receive sites across a vast continent, combined with the suppliers’ time to market for new 5G solutions, means that the roll out of 5G will take time.

“The 5G technology will result in innovations and applications that we have not even thought of yet, and it will be a real game changer.”

With so much changes going on, APB decided to put together this *TV360 Special Report* to serve as an indication of what’s to come for broadcast and media companies that are facing a myriad of questions and uncertainties as they enter the digital domain.

In covering technologies such as 4K/Ultra HD, high dynamic range (HDR) capture to cloud and journeying through the various aspects of content management and discovery as well as OTT consumption and 5G, we hope you will gain some useful insights from the articles written by industry professionals on the shape of TV in 2020 and beyond. □



# Centralize your workflows with Vantage

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Power of Vantage



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Hybrid Deployment

# Amazing future ahead if you listen closely to what your audience want

BY FINTAN MC KIERNAN,  
CEO, IDEAL SYSTEMS  
SOUTH-EAST ASIA

It's always a tough call to accurately forecast what's going to happen in the future, and in technology it's more difficult as the future is often based on new inventions.


It would have been hard to forecast Uber or Grab before 2007, when we saw the first iPhone — and that was a defining moment as the touch-screen interface on the iPhone, combined with the innovation catalyst of the App Store plugged into faster and faster networks, really did change the world.

Today, my Samsung smartphone is my backup navigation device when I take my boat out into international waters in Malaysia, Singapore and Indonesia. It's my low-res



“Today’s smartphone is part of the future of broadcast media. The smartphone is how young people consume most of their TV content today, and the majority of the content is for free. So talking about the future of broadcast means redefining how we define broadcasters.”



4K Payout from  IDEAL

With more 4K/UHD TVs being shipped in South-east Asia, broadcasters are now offered the opportunity to create high-quality content and make TV great again, according to Fintan Mc Kiernan.

streaming proxy feed from my Mavic Pro Drone, when it's shooting 4K/Ultra HD (UHD) video 400m above little Indonesian islands.

By virtue of a very clever wine app, it lets me know how good a bottle of wine is before I purchase it; by simply photographing the label, I get a crowd-sourced review and some indicative pricing of what I should be paying.

That's all very great, but what has it to do with the future of broadcast media?

Well, today's smartphone is part of the future of broadcast media. The smartphone is how young people consume most of their TV content today, and the majority of the content is for free. So talking about the future of broadcast means redefining how we define broadcasters. They are no longer a building full of studios with a big antenna on the roof or out back with some satellite uplinks.

The broadcasters who are growing in your country might not even have an office in your country!

We are all very quick to point at iFlix and its American big brother Netflix when we want to discuss the threat to broadcast, but over-the-top (OTT) is the new broadcast, and it's not just iFlix, Netflix and Amazon — more and more will be YouTube and Facebook, people whom we are not accustomed to calling broadcasters, but we should do so.

I was talking about my Samsung phone earlier on, and what a Swiss army knife it is! I forgot to mention I take more photos with it than I do with my camera, but I also listen to more music with it than I do on my radio.

That music follows me around. At home, I use my phone to stream pretty much whatever music I want, in high-quality audio to my home Sonos speakers. Yes, I have Sonos, no need to have home Hi-Fi any more.

When I get into my car, my music comes with me, and my Spotify streams to the stereo in the car. And when I arrive at the marina, by the time I have started my boat engines, my favourite music comes to sea with me.

I used to buy lots of tapes, records and CDs but now that I have a Spotify subscription, I will most likely never have to buy another tape, record or CD again. My phone, its touch screen, an app, and better bandwidth enabled the change.

Music distribution has changed irreversibly — and broadcast TV will change dramatically too!

It doesn't mean I will throw away my TV in the same way I threw away my tape recorder, Hi-Fi systems and record player. Because I, like many others, still like to watch TV on a big screen — but in the same manner that my music follows me everywhere.

It seems logical that my streaming TV service will also



**While 5G is touted for its ability to create new jobs and support the growth of smart cities, the next-generation technology also poses significant impact and opportunities to the broadcast industry.**

follow me too, so when I'm at home I will cast my streaming TV to the actual LED TV on the wall, but similarly I will cast it to the TV in the headrest in an airplane, or the TV in my hotel room. This is kind of possible already, but is still clunky for mass adoption.

For instance, I booked an Airbnb accommodation in Australia for Christmas. When we arrived, we sat down on the first evening, with the TV Netflix-enabled. So I logged in with my username and password and we continued to watch the series from where we had left off at home in Singapore, seamlessly.

However, for me at least, OTT is not the end of

broadcast. I have my Netflix subscription, and it's good, I like it; but it's not great. Guess what, I'm limited to Netflix content.

In the beginning, that was amazing and I may have binged out on a few series, but after a while, I started to notice a lot of the Netflix content is formulaic, perhaps more quantity than quality. The last few movies I watched were all a bit low budget, five actors, three sets kind of things, and I find myself watching more regular TV, the old linear-style channels, to take a break from the on-demand world.

Then I started to really notice where the gaps are. At home, I have an IPTV subscription to Singtel. *(Please note that my thoughts after this point are entirely personal thoughts from my personal home TV experience, as Singtel is also a very important customer of Ideal Systems; I also watch my Netflix through Singtel.)*

Netflix presents itself to me as a channel on my EPG, so when I launch it and I'm presented with the Netflix

EPG. On my IPTV EPG, if I want to stroll through my channels to see what's on, the channels that I have the rights to see are all over the place with big black gaps in between. This is a terrible experience for me.

As I surf up and down, I am confronted with intermittent blank channels and an EPG graphic telling me the name of the channel, what's on it — but it's black! So surfing through channels to see what's on is a disaster. This is a pity, because in linear TV, channel surfing is one of the nice things to do, especially if you have decent tune times (switch times) ... so I'm afraid that is a big miss for my pay-TV service.

The bigger miss, as far as I'm concerned, is the fact that I'm a subscriber to Singtel; they have fibre coming into my house, they know who I am and where I am, and should know what I like to watch, because I tune it on their set-top box.

Given that they know all that, one would expect they might be able to give me some recommendations of what to

**“Over-the-top (OTT) is the new broadcast, and it's not just iFlix, Netflix and Amazon — more and more will be YouTube and Facebook, people whom we are not accustomed to calling them broadcasters, but we should do so.”**

watch, and help me use their service seeing as channel surfing is a non-runner. No, nothing doing I'm afraid, they leave that to Netflix.

Netflix sends me e-mails, which I suspect are generated from an artificial intelligence (AI) system that has processed my viewing habits and allows Netflix to e-mail me with some degree of certainty their recommendations for what I should watch are in fact programmes I like. More often than not, they are on the button.

For example, I get an e-mail at work on a Wednesday afternoon and it says: Hi Fintan, there's a great new show you should watch. The e-mail gives me some details of the show, and I can even watch a preview. When I return home, tired after a long day at work, I'll watch some news, then wonder what I will watch next. I channel surf over a dozen black channels, give up and launch Netflix, and there it is, that new show, in the middle of the EPG, an EPG that shows me only the things that I can watch, not a bunch of black screens that I can't.

So for pay-TV operators,

**“And hey, ‘Mr Local TV Broadcaster’, the new technologies have made outside broadcasting and live production so much cheaper than ever before. Why not hit me with more local content, get your news presenters outside, make your news and current affairs interesting, make your content relate to the people who actually watch your channel, make those people actually want to watch your channel!”**

continuing to do what you always did is not enough; Netflix and its kind are after your subscribers, the same way as Google and Facebook are after your advertising revenue.

Pay-TV operators need to listen to their subscribers, listen to what pay-TV subscribers want. Unfortunately, Singtel does not ask me what I want; there is no survey and moreover, the telco doesn't offer me any recommendations of what I might want to watch.

Every month, they post me a paper envelope with a bill, nothing more; for the recommendations, they leave that to Netflix.

Subscriber management systems have got much smarter; viewer analytics help retain viewers. I really don't believe viewers want to cut cords and only have OTT. It's not a great experience, and in the next couple of years, we will have the OTT wars, Disney versus Netflix versus Hulu and so on, and the shows I want to watch could be spread across all of them, plus Amazon for *The Grand Tour* ...

I really don't want four or five different OTT subscriptions for my entertainment TV and perhaps more for sports.

The answer is to make TV better. Pay-TV operators need to look at their EPGs,

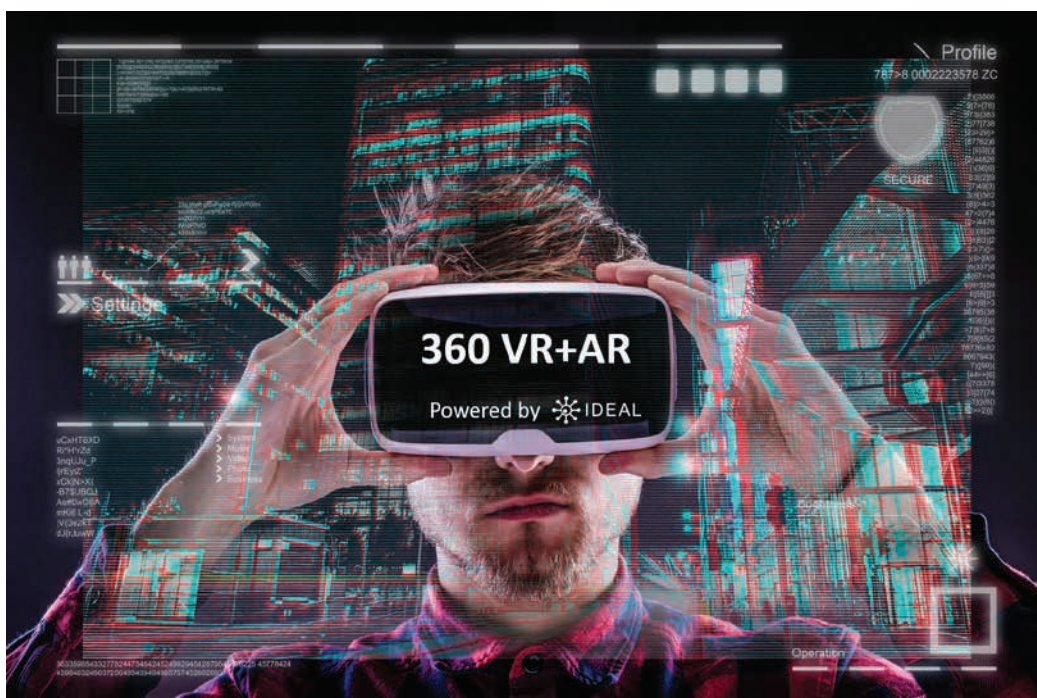
and think more about what their subscribers want, talk to their subscribers, and most importantly, listen to their subscribers, perhaps even make some original or local content too?

For free-to-air, they need to think about their viewers too. Today, it is nearly impossible to buy an HDTV set in a shop in South-east Asia. All the new TV sets are now 4K/UHD, and in my opinion even better, they are all high dynamic range (HDR). Give it to us, show us some 4K/UHD, show us some HDR — make TV great again!

And hey, ‘Mr Local TV Broadcaster’, the new technologies have made outside broadcasting and live production so much cheaper than ever before. Why not hit me with more local content, get your news presenters outside, make your news and current affairs interesting, make your content relate to the people who actually watch your channel, make those people actually want to watch your channel!

So what's in store for the broadcast and media industry in 2020 and beyond?

Well, for those who embrace AI and cloud technologies, 4K/UHD and HDR, 5G, and explore new content types like eSports and virtual reality (VR) as well as producing more live, local and relevant content, the future for them could well be amazing. □



eSports and VR are some new content types waiting for broadcasters to explore and exploit.





# HDR | Image Analyzer

## Waveform, Histogram and Vectorscope Monitoring for HDR

HDR Image Analyzer delivers a comprehensive array of tools for the effective analysis of the latest HDR standards – including HLG, PQ and Rec.2020 – on 4K/UltraHD/2K/HD content input from 4x 3G-SDI streams in a convenient 1RU device.

Developed in partnership with Colorfront®, AJA HDR Image Analyzer supports a wealth of inputs from camera Log formats to SDR (REC 709), PQ (ST 2084) and HLG and offers color gamut support for BT.2020 alongside traditional BT.709.

Specifically designed to be used wherever needed, the 1RU form factor fits into a range of workflows, providing the confidence you need for consistent and predictable HDR production and mastering.

## HDR

### Broad Input

LOG, HDR formats and SDR

High Dynamic Range (HDR) and Wide Color Gamut (WGC) arrive in a range of forms, look to AJA's HDR Image Analyzer to cover them all:

#### Camera Log Support:

- ARRI®
- Canon®
- Panasonic®
- RED®
- Sony®

#### Dynamic Range Inputs:

- SDR (REC 709)
- PQ (ST 2084)
- HLG

#### Color Gamuts:

- BT.2020
- BT.709

#### 3G-SDI Support:

- 4x 3G-SDI up to 4K/UltraHD 60p
- SDI Auto Signal Detection

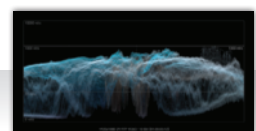


### Flexible Monitoring and Analysis

1RU Device for Rackmounting Anywhere

AJA's HDR Image Analyzer has been specifically developed to serve a range of environments with a convenient, durable and reliable form factor with 4x 3G-SDI for up to 4K/UltraHD 60p input and pass-through:

- Live Production
- DIT Pipelines
- Broadcast Monitoring
- Postproduction
- QC Needs in a Range of Environments
- Final HDR Mastering



### Key Features

Monitor, Analyze, Log the Results

The AJA HDR Image Analyzer features a high quality, ultra precise UltraHD user interface for native resolution picture display, critical for close analysis of your video materials, making the most of the tools you need:

- Waveform
- Histogram
- Vectorscope
- Color Gamut
- Nit Light Level
- File Based Error Logging with Timecode
- Data Analyzer with Advanced Pixel Picker
- Advanced, Out of Gamut and Out of Brightness Detection with Error Tolerance

# Setting a new benchmark in creative flexibility with Sony

Televisions are getting bigger and better. The advent of visual and audio technologies that facilitate a more immersive viewing experience are transforming the way in which we consume sports and entertainment content.

As technologies such as 4K/Ultra HD (UHD) and high dynamic range (HDR) increasingly become commonplace in domestic set-ups, the evolution for broadcast camera technologies is moving at a rapid speed to meet the demands for better quality content than ever before.

Since 2018, there has been an upward adoption of 4K/UHD on the production side of the broadcast business with the staging of more major sporting events. Today's TV sports fans demand better-looking pictures, revealing every instant of explosive on-pitch action

The HDC-P50 features a 2/3-inch 4K CMOS sensor with global shutter technology that eliminates the 'jello effect' and banding noise.

with astonishing clarity, colour and contrast. A high-performance solution that helps camera crews deliver bigger creative returns is key. Therefore, increased investment is expected with the surge in premium content by media operators.

Nonetheless, one of the biggest technical and creative

“With the launch of our new family of live system cameras, Sony equips our customers with a rich selection of options that sets a new benchmark in creative flexibility, and at the same time, further sustains mainstream HD and 4K/UHD live production.”

— Takuma Wada,  
Head of Content Creation Solutions Marketing,  
Professional Solutions Company (PSAP),  
Sony Corporation of Hong Kong Limited

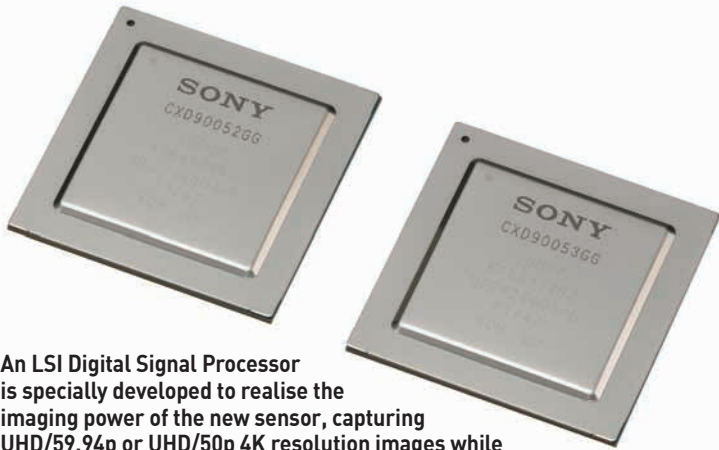


Sony's HDC-3500 portable system camera brings new levels of image quality, portability and creative flexibility to live production environments.

challenges directors and production teams continue to face today is the pressure to create high-quality content while keeping production costs to a minimum. As such, traditional broadcasters who are happy with their existing HD production prowess may not have embarked on the transition to 4K/UHD workflow, due to the enormous investments involved.

Anticipating tomorrow's

production needs while maintaining full compatibility with today's workflows and system hardware, Sony recently introduced the HDC-3000 series. The latest addition comprises point-of-view (POV) system camera HDC-P50, portable system camera HDC-3500, as well as the affordable fibre and triax system cameras HDC-3100 and HDC-3170. Backward-compatible, the new HDC-3000 series seamlessly integrates with existing live production infrastructures, including cameras and camera control units. There



An LSI Digital Signal Processor is specially developed to realise the imaging power of the new sensor, capturing UHD/59.94p or UHD/50p 4K resolution images while achieving high-speed signal processing.

“We are constantly working to come up with offering that broadcasters have come to expect from Sony. The new HDC-3000 series brings capabilities such as IP transmission technology, SMPTE ST 2110, 4K/UHD and HDR, their toolsets for content creation and more efficient infrastructure.”

— Takuma Wada

is no need for investments in additional accessories, keeping costs and inventory low.

“With the launch of our new family of live system cameras, Sony equips our customers with a rich selection of options that sets a new benchmark in creative flexibility, and at the same time, further sustains mainstream HD and 4K/UHD live production,” explained Takuma Wada, head of content creation solutions marketing, professional solutions company (PSAP), Sony Corporation of Hong Kong Limited. “Based on customer feedback, we have strengthened our HDC range for HD, 4K/UHD and HDR production at multiple production price points, and with choices of infrastructure.”

Unleashing imaging power, the HDC-3500 captures premium picture with the world’s first 2/3-inch 4K CMOS sensor with global shutter technology that eliminates the ‘jello effect’ and banding noise.

This ensures that pristine 4K/UHD images are captured with exceptionally low noise (-62dB), impressive sensitivity (F10 at 1080/59.94p or F11 at 1080/50p) and HDR, while achieving the ITU-R

BT.2020 broadcast standard wide colour space.

A specially developed LSI Digital Signal Processor full realises the extraordinary imaging power of the new sensor, capturing UHD/59.94p or UHD/50p 4K resolution images and achieving high-speed signal processing — the capabilities that are needed most for compact operation.

Equally integral to evolving workflows, and possibly more so in some aspects of content creation is HDR. The capability is very much in demand as it brings great improvement to images and enhances the average home watching experience.

With the support for Sony’s SR Live for HDR workflows, HDC-3500 allows simultaneous 4K/UHD HDR and HD SDR production by a single team. This reduces hardware and personnel costs for multi-format productions.

To supplement the offering, Sony’s HDC-3100 and HDC-3170 system cameras expand on the capabilities of the current HDC and HSC series with the addition of a new 2/3-inch HD global shutter 3-CMOS sensor system.

Ideal for productions working primarily in HD, with occasional need for 4K/UHD, the cameras are capable of HDR and SMPTE ST 2110. The HDC-3100 offers an optical fibre transmission capability as standard, while the HDC-3170 offers a digital triax transmission capability. Both camera systems deliver high sensitivity of F12 (at 1080/59.94i) or F13 (at 1080/50i), providing options according to the signal wiring set-up.

Wada reiterated Sony’s

commitment in limitless imaging expression with unprecedented flexibility. “We are constantly working to come up with offering that broadcasters have come to expect from Sony. The new HDC-3000 series brings capabilities such as IP transmission technology, SMPTE ST 2110, 4K/UHD and HDR, their toolsets for content creation and more efficient infrastructure.”

Sony has established a powerful line-up for HD studio operations with its flagship HDC system cameras. Accepted as a worldwide standard, the HDC family deploys Sony’s cutting-edge technologies to realise excellent picture quality. Their field-proven high reliability has positioned them as the ideal choice for a broad range of HD production applications.

Sony will return to the NAB Show this year, showcasing its latest portfolio of products, services and solutions that are designed to empower and future-proof the success of broadcast and media customers in today’s competitive landscape.

To continue this conversation, visit us at **booth C11001** between April 8 and 11 at the Las Vegas Convention Centre, USA. □



The SR Live for HDR workflow enables efficient, simultaneous production of 4K/UHD HDR and HD SDR.

# The future outlook for 5G, OTT and broadcast standards in APAC

BY PETER MACAVOCK,  
HEAD OF DISTRIBUTION, PLATFORM  
AND SERVICES, EBU  
AND CHAIR, THE DVB PROJECT

The Asia-Pacific region is a very diverse market, with countries at different stages of transition, from traditional broadcast to IP delivery. With one or two notable exceptions, it is a region that has embraced DVB specifications right across the broadcast chain. DVB's tried and trusted standards and solutions are helping to streamline the delivery of video across all screens. Let's take a look at several technologies and trends that are expected to make an impact on the digital TV market in the Asia-Pacific region.

## Is 5G for real?

Asia-Pacific is set to become the world's largest 5G region by 2025, according to a recent *GSMA Mobile Economy* report\*. While there is plenty of buzz happening right now in the industry around 5G, there are many questions to be answered about the next-generation cellular mobile system.

One of the questions on everyone's mind is whether 5G can rise to the challenge of supporting the mass delivery of video content. The industry needs a scalable and efficient solution for large-scale delivery of media services, and 5G could be the answer. However, there is a need to figure out how to successfully integrate an existing broadcast infrastructure with 5G. Moreover, we need to determine whether it makes sense of 5G technology to use existing broadcast spectrum.

DVB is examining the role it should play in a 5G world. A key focus area for us is whether and how 5G can integrate with DVB-T2 and DVB-S2 standards used around the world. DVB is currently reviewing how to effectively combine DVB services and networks with a 5G network to ensure the same seamless user experience that is achieved with DVB technologies.



“5G is imminent, OTT video delivery will continue to grow, and standards will continue to play an important role in the delivery of digital TV.”

Industry collaboration will be key to making 5G beneficial in the broadcast environment, and DVB is keeping an open dialogue with 3GPP, the body responsible for developing the 5G specifications, to aid in this effort.

## Can OTT be standardised?

While it may be a few years before 5G networks are deployed, once they are, there is no doubt that they will be used for over-the-top (OTT) delivery. More than 310 million connected households around the world will have at least one OTT service by 2024, according to Parks Associates\*\*. As 5G connectivity is more mature in Asia-Pacific than some other regions around the globe, you can expect an increase in OTT video consumption in countries like China.

While OTT video consumption is growing, there isn't a standardised end-to-end technology ecosystem for video streaming that assures quality of service, robust delivery, and interoperability. That's why DVB has created the DVB-I initiative, to deliver a new suite of specifications that will make OTT delivery just as user-friendly and robust as classical delivery solutions (for example, DVB-S/C/T and IPTV).

Leveraging the Internet, DVB-I will bring some of the best features of broadband TV into the world of broadband delivery, including integrated channel lists, interactive content guides, and simple lean-back channel selection. As a standardised solution, DVB-I will provide significant advantages related to scalability and cost savings.

## What's the future outlook for standards?

Just like the OTT environment, the standards landscape has become fragmented. There is a lack of end-to-end systems, and we are seeing a rise in open source software, which may have an impact on future of standards development.

This raises an important question: Can OTT co-exist with a standards-based approach? In today's rapidly changing environment, disruption seems to be a success factor for new players. It is important for the industry to discuss how standards fit into this equation, and what the ideal standard looks like for the future. DVB has been in existence for 25 years, and we have successfully navigated changes like digital TV and now OTT, building a reputation on providing broadcasters with solutions that enable broadcast delivery over many different networks.

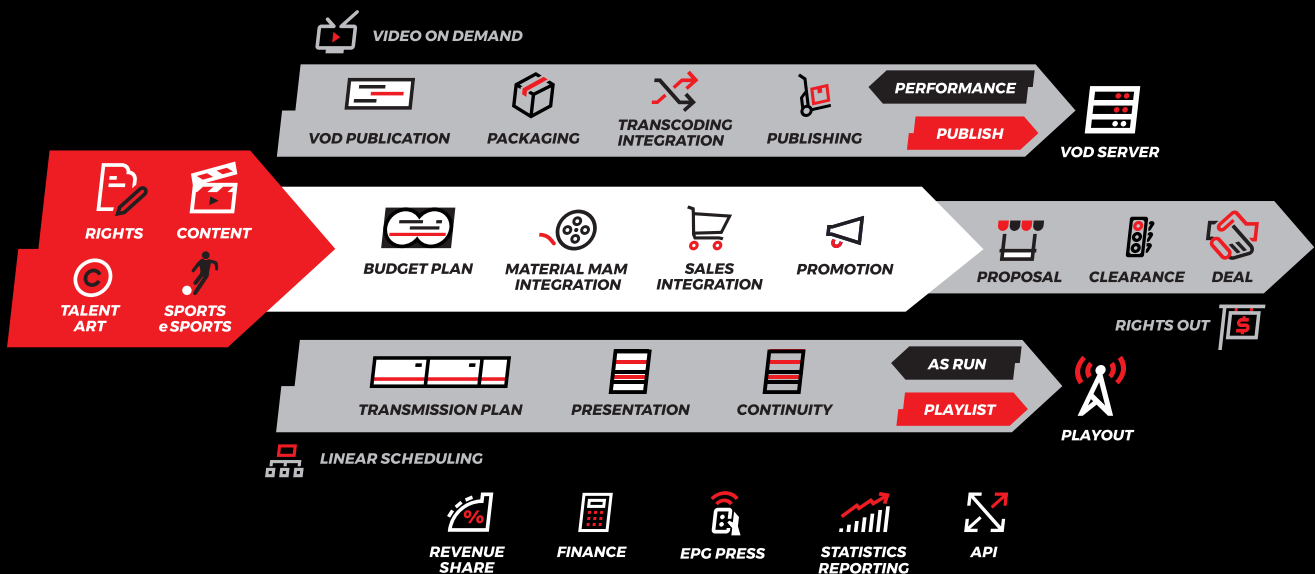
At a recent DVB World conference in Dublin, we were able to discuss these issues and more with various players across the broadcast ecosystem. Things everyone agreed about: 5G is imminent, OTT video delivery will continue to grow, and standards will continue to play an important role in the delivery of digital TV. □

\*Source: <https://www.gsma.com/newsroom/press-release/gsma-asia-set-to-become-worlds-largest-5g-region-by-2025/>

\*\*Source: <https://www.mediaplaynews.com/research-310-million-global-connected-households-to-have-at-least-one-ott-service-by-2024/>

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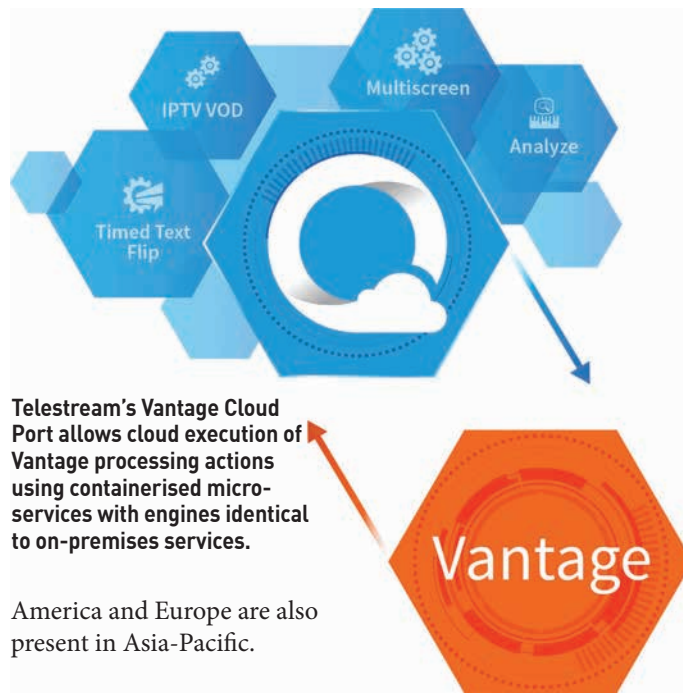
# Telestream: Technology innovator with Vantage Cloud Port and OptiQ

BY KEVIN KHOO  
SALES DIRECTOR,  
ASIA-PACIFIC, TELESTREAM

2019 is set to be a landmark year for Telestream — NAB will see two major strategic innovations through the introduction of Vantage Cloud Port and OptiQ. These new products have global significance, and they are highly relevant to the Asian markets where Telestream has been active for over 15 years. We have always viewed Asia-Pacific as a strategic growth market, and we believe these new system solutions will gain traction quickly amongst existing and new customers.

At Telestream, we regard Asian markets as being absolutely critical in the future growth of consumers and thus demand for video consumption. When we look at our global business, in many ways Asia-Pacific markets have the most advanced mobile markets in Japan and South Korea. However, even the emerging markets are profound in that they are not transitioning through earlier generation technologies, but in many ways are leapfrogging them, and we could see technologies such as 5G flourish faster in these markets.

We see Asia-Pacific to be equally attractive to North America and Western Europe in terms of demand profile for both Cloud Port and OptiQ. Many of the factors that make these solutions so attractive in



Telestream's Vantage Cloud Port allows cloud execution of Vantage processing actions using containerised micro-services with engines identical to on-premises services.

America and Europe are also present in Asia-Pacific.

## 2019 NAB Show — strategic milestone for Telestream

Under the guidance of our CEO, Scott Puopolo, Telestream is introducing new and radically different thinking as to how we harness the power of cloud-based media production and distribution. Contrary to some other vendors, Telestream believes that cloud is not the answer to all of today's media processing and distribution challenges. It can be transformative in certain scenarios, but it presents significant business risks in others.

What has been fuelling the revolution that will emerge at the NAB Show is the answer to a straightforward question. How can broadcast and media business harness the power and cost-efficiency of cloud-based operations while

future-proof their long-term investment in production workflows as they transition to the cloud in a staged strategic fashion.

Vantage Cloud Port enables users to select encoding actions within their Vantage workflows that would normally consume on-premise resources, and to export those actions to the cloud in ways that Vantage continues to control and orchestrate those actions while consuming public cloud resources via Telestream Cloud. Customers pay for these actions on a per-content-minute basis.

Vantage Cloud Port enables users to employ cloud-based resources, and it gives them the ability to use Vantage actions and features that they might not have licences for within their on-premise Vantage installation. It is a hybrid model that enables a customer-managed on-premise installation to be augmented from an infrastructure perspective and a licensing perspective by Telestream.

Vantage Cloud Port provides a very cost-effective entry point into Vantage, enabling enterprises that could not previously afford Vantage to make use of its rich media processing feature set. The system is differentiated from other vendors' systems in the access to all the workflow automation capabilities that are intrinsic to Vantage.

Vantage Cloud Port is a fully featured media processing platform with most of the characteristic Vantage transcoding functionality,

protecting their mission-critical assets and on-premise operations?

Customer research highlights that many existing Vantage users have certain workflows within their enterprise operations that are cloud-centric — these might focus on distribution workflows, either direct to consumer or to other third parties.

In this situation, the user is totally aware of the advantages of cloud, and is ready to start the transition of their business. But other parts of their business are at a more exploratory stage, so it's important that they are not rail-roaded into a total switchover.

Making its worldwide debut at 2019 NAB Show, Vantage Cloud Port enables existing Vantage users to

including Telestream’s specialty formats and packaging.

Vantage Cloud Port will help increase business agility within enterprises of all sizes and scales since their throughput of content is no longer bound to their physical on-premise infrastructure. They can significantly increase output capacity at peak times by exporting jobs to Telestream Cloud which is built on the back of the largest public cloud providers worldwide. We have a very large resource pool to pull on so that we can minimise queue times — essentially to zero.

More information is available at <http://www.telestream.net/vantage/vantage-cloud-port.htm>.

**OptiQ set to revolutionise new channel creation challenge**

Telestream’s second major new product introduction at 2019 NAB Show addresses the challenge many broadcasters, content owners and service providers face in providing extra viewing channels in periods of peak viewing, such as during major global sporting events.

OptiQ is a merging of the entire Telestream skillset around live streaming, workflow, cloud, integrated monitoring, containers and much more. It is an ambitious project, and the intention is that the initial release will be a software-as-a-service (SaaS) offering so we can rapidly evolve the solution in the early pilots and fine-tune it.

OptiQ transforms the new channel creation task from a process that took weeks or even months to one that takes just minutes to complete. Once created, these new video channels exhibit considerable sophistication: as standard, they feature integrated

monitoring throughout and the ability to switch between multiple sources (live or file-based). A ‘pay as you go’ business model offers the flexibility to accommodate unforeseen fluctuations in demand while aligning such costs to revenues. As a result, users do not need to forward invest to ensure they meet such demand.

OptiQ targets a number of applications. It facilitates new revenue streams for content providers looking to accelerate time to market for new channels, and for broadcasters and service providers by enabling short-time (premium or non-premium) channels/events, or additional content such as highlight reels, player bios and event histories alongside premium content. Telestream believes that currently service providers and content aggregators are turning business away due to not being able to create channels quickly for short-term events.

Telestream customer research highlights the important of ‘dynamic innovation’ where organisations can rapidly start up new projects, quickly scale up if needed and shut down if they lack demand. Also, when they find themselves at capacity on-premise because of multiple major events, content providers

have to leave valuable additional content on the shelf due to lack of streaming infrastructure.

**Virtualised channel creation introduces heightened business agility**

OptiQ uses containers and multiple orchestration systems, which are prioritised based on industry dynamics and customer feedback. The containers are modular Linux-based “elements” — such as encoders, packagers, origin servers, and monitoring probes — that can be instantiated in a cloud environment by an orchestration system, then stitched together and configured automatically to make a real-time-monitored live streaming channel.

A new Telestream Channel Orchestrator will enable channel design, manage the orchestration process, connect and configure the elements, and handle redundancy and self-healing capabilities.

OptiQ provides a migration path to hybrid cloud/on-premise capabilities for content providers that do not have the skillset to embrace the cloud. Another scenario sees content providers who want to have the choice of which cloud provider to use: many do

not want to be tied to a single provider or want to migrate away from or de-risk their current provider, but simply do not have the choice. The intention is that OptiQ will support major cloud providers, in addition to on-premise data centres at a later stage.

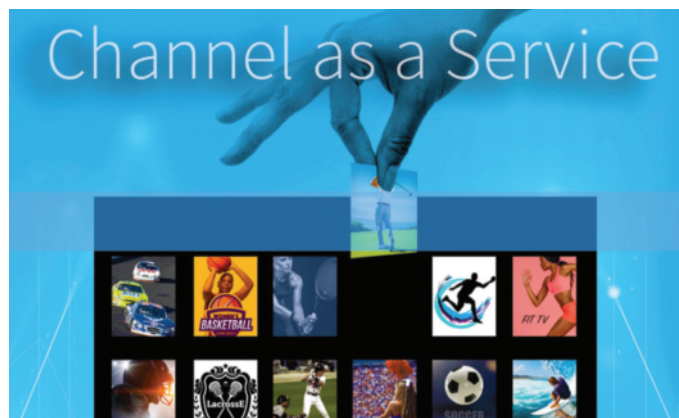
OptiQ enables the integration of the latest encoding and packaging capabilities versus legacy on-premise architectures. Video streaming is constantly evolving, and by leveraging the cloud for streaming, content providers will be able to access the latest capabilities available.

OptiQ also enables a hybrid migration strategy for most cost-effective use of resources: 4K/Ultra HD (UHD) HDR needs a lot of CPU/GPU/ASIC resources, and OptiQ will allow content providers to offload SD/HD capabilities to the cloud while leveraging valuable accelerated hardware on premise for CPU-intensive video streaming.

Maintenance offload, and additional capacity during peak loads are also an advantage, in addition to empowering trials of new channels and allowing people to build confidence in cloud migration.

In moving to a dynamic software architecture where capabilities can be instantiated on demand, Telestream can enable significant new possibilities for self-healing/self-optimising/self-scaling (“Self-X”) capabilities. A critical piece of this is a real-time feedback loop, where Telestream IQ solutions form a key differentiator. By combining dynamic orchestration with real-time diagnostics, we start paving way for the true Self-X around video streaming.

Creating your next channel has never been easier — find out more on OptiQ at [www.telestream.net/optiq](http://www.telestream.net/optiq). □



**OptiQ is a one-click channel creation solution developed by Telestream that can be deployed in cloud environments.**

# Building the future of TV entertainment together

BY TONY ZAMECZKOWSKI,  
VICE-PRESIDENT OF BUSINESS  
DEVELOPMENT – ASIA, NETFLIX

TV entertainment has certainly evolved tremendously with the advent of the Internet.

Previously, viewers would rush home to catch their favourite shows at particular times, on non-portable screens, with complicated remote controls. Today, thanks to Internet entertainment services like Netflix, viewers can now watch their favourite movies, TV series, documentaries and more on their own terms: whenever they want, wherever they want, as much as they want ... all at the touch of a button; at an affordable non-commitment fee; and without being interrupted by commercials.

This is the new world of TV entertainment: personalised, on-demand, immersive and interactive.

## Redefining the viewing experience for Internet entertainment

It wasn't too long ago that video content streamed over the Internet of low quality — grainy resolution, constant buffering, and poor sound. That has now changed. Thanks to cutting-edge data compression technology, viewers can stream two seasons of their favourite Netflix series using as little as 2GB of data. Not only that, but they can also do so in stunning 4K/Ultra HD (UHD) and high dynamic range (HDR) resolution, as well as with Dolby Atmos sound delivered over home and mobile data through global content delivery networks, to ensure seamless, fast-loading, buffer-free viewing.

Viewers today have access to high-quality content from around the world right from where they are. Since 2013, we have been creating original series, films and documentaries across a wide variety of genres. Shows and films such as *Stranger Things*, *Narcos*, *Kingdom* and *ROMA* have captured the imagination of our 135 million subscribers in over

“In a world where TV entertainment is no longer prime time, but ‘my time’ — it’s really about giving viewers more control, choice, freedom and flexibility.”



190 countries. Great content can come from everywhere, and we are also finding them here in Asia: In 2019, we will have 17 new Asian original productions from Japan, Taiwan, Thailand, India and South Korea. These projects join 100 new and returning originals across eight countries in Asia through 2019 as we increase our investment in Asian storytellers.

How do we help viewers navigate all these great titles? Our personalisation algorithms help create curated, individualised experiences for every single member profile. Consumers are presented with their own programmed entertainment, tailored to the content they will most enjoy based on their unique tastes and preferences — all while surfacing a diverse assortment of stories they otherwise wouldn't have discovered.

Viewers can do all of this on more than 1,700 different Internet-connected devices — whether smart TVs, set-top boxes (STBs), laptops, gaming consoles and mobile devices — and watch on-the-go, mid-commute, in the comfort of one's home, or even offline.

## Building the future together

We have been able to do all of this thanks to our many partners around the world, and especially here in Asia. We are committed to partnerships because we believe they bring growth, foster dynamism, and also provide a great consumer experience.

For example, before we even launched in this region, we already

started partnering with key manufacturers here in Asia. Today, we have 60 TV operator partnerships around the world, with 20 here in the Asia-Pacific region. We are also working with multi-channel video programming distributors (MVPDs) who have Internet-capable TV set-top devices to offer integrated viewing experiences and, in many cases, integrated billing. We are also working with them to provide easier access of the Netflix service through their remote controls.

One such partnership has been with LG U+, one of South Korea's leading telecommunications carriers, to provide seamless access to the Netflix service on U+tv, LG U+'s IPTV STB. The world's largest international TV and broadband company, Liberty Global, has already integrated the Netflix app into the cable firm's devices in over 30 countries. We also partner with manufacturers for a list of Netflix Recommended TVs: Smart TVs that deliver a next-generation experience for entertainment needs.

At the end of the day, we want to work with our partners to build the future of TV entertainment together. For us, this means making Netflix available for more people by ensuring easier access through devices and services. In a world where TV entertainment is no longer prime time, but “my time” — it's really about giving viewers more control, choice, freedom and flexibility.

Our partners will be integral to this journey. □





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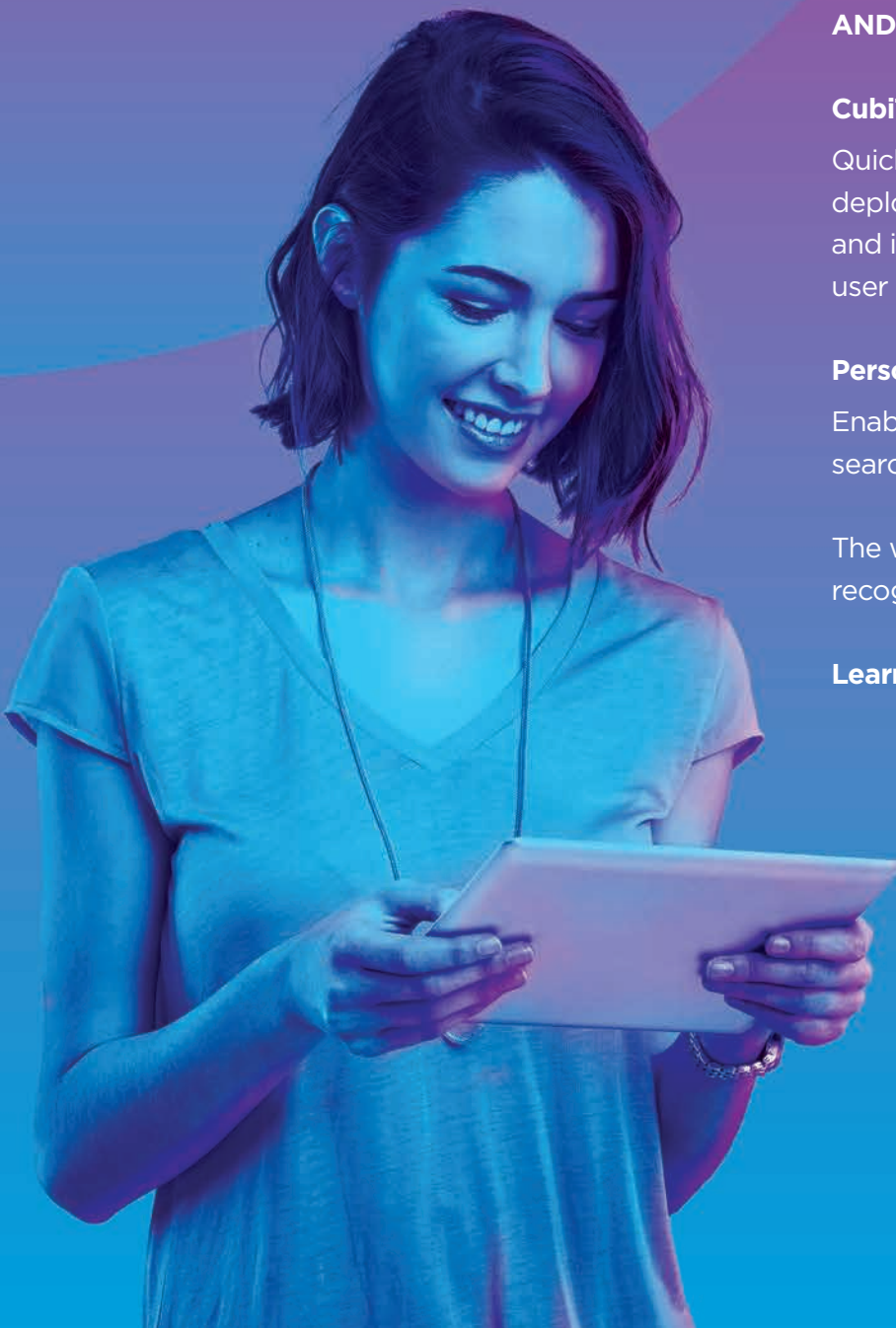
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# Asia poised to roll out 5G

BY PETER BRUCE  
DIRECTOR, IABM, ASIA-PACIFIC

At the tail end of 2018, there were many announcements from telcos and governments regarding the roll-out of 5G in the Asia-Pacific region. What can we expect in the coming one to two years?

First, it is true to say that 5G will shake things up for many industries, and these include broadcast and media. Already at international media conferences, we are hearing the words *game changer* and *paradigm shift* when referring to 5G. In this case, the opinions voiced are not overstated.

## What's the technology about?

It is important to understand why 5G is such a big thing. 5G will transmit over three frequency bands. The “low-band 5G” has the cells running at 700MHz (in some cases up to 2.6GHz) as in use today. The “high frequency band” is between 3-5GHz, and “very high 5G band” (often referred to as millimetre wave [MMW]) uses frequencies from 24-30GHz, with some countries also allowing from 37-45GHz.

As anyone working with waves will know, the higher the frequency, the more bandwidth available, the greater the data rate, but higher frequencies also have a shorter range and reduced ability to penetrate barriers such as building walls.

This means many more sites are required compared to the much lower frequency (with longer range) 3/4G networks that we know, but with physically smaller receive antennas (and the ability to have miniature Tx devices).

In some countries, these sites will run into hundreds of thousands of receive and redistribution sites.

The major suppliers — DT Mobile,

**5G will result in innovations and applications that we have not even thought of yet, and it will be a real Game Changer.**



“The timing of the 5G roll-out in Asia-Pacific will depend on the individual strategic, political and economic situation in each individual country.”

Ericsson, Huawei, Nokia, Samsung, and ZTE — are battling it out on the world stage.

Recently, we have seen moves to prevent Huawei infrastructure technology being used in a number of countries at the behest of national governments and major telcos citing security concerns.

As the 5G network will be core to the movement of data including the Internet of Things (IoT), autonomous cars, communication data and so on, it is becoming a highly political subject. This is not only a battle to control long-term technology and communications devices, but also a fight for very well-paid jobs in those countries developing and supplying the technologies.

The timing of the 5G roll-out in Asia-Pacific will depend on the individual strategic, political and economic situation in each individual country.

China, South Korea and Japan have all started 5G testing. Within China's 13th Five-Year Plan, 5G was very much in focus and announced as a “strategic emerging industry”.

The three main Chinese telcos are all state-run, and are in full planning to roll out 5G across all major cities of China. This will help China achieve its Five-Year Plan to increase Internet speeds across the vast country.

Japan's main telcos, NTT Docomo, KDDI Corp, and Softbank, have announced the roll-out of 5G one year earlier than expected, and they are rolling out sites in main cities in 2019.

Japan's move may be impressive, but South Korea will not be left behind with the switch-on of 5G sites for commercial use already happened in December 2018, and consumer mobile services expected to start before July 2019. The initiatives are being led by KT, LG UPlus, and SK Telecom.

For the other countries in Asia, the roll-out will depend on several factors. Thailand set up the first test bed in South-east Asia with the help of Huawei. Meanwhile in the Philippines, President Duterte has been frustrated with having one of the slowest Internet speeds and infrastructure across ASEAN; this has pushed the two incumbent telecom operators, PLDT and Globe, to announce 5G services launching in mid-2019.

Singapore was the first to switch off analogue TV signals in ASEAN, in December 2018, allowing it to re-allocate the spectrum for low-frequency 5G use, with announcements from Singtel on a 5G switch-on plan in 2020.

Almost all other countries in South-east Asia are now starting to test and have plans in place for the roll-out of 5G within the next two years.

There are several risks that may delay the roll-out of 5G in many countries in Asia. Many of the telcos are wary, having over-paid for the previous 3/4G licences that were auctioned, causing huge debts and either closure or mergers of the companies.

However, 5G fits very well with India's programme of smart cities, IoT and Digitising India. Additionally, India and many Asian countries are in an “election year”, delaying any decisions on licences.

## Conclusion

5G is coming to Asia. Although there are many headline announcements on testing in several countries, the practicality of covering the thousands of receive sites across a country, combined with the suppliers' time to market for new 5G solutions, means that the roll out of 5G will take time. The technology will result in innovations and applications that we have not even thought of yet, and it will be a real *Game Changer*. □


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wireless intercom



**THAT...**  
loads a full  
configuration in  
less than 3 seconds

# AJA maps the future of 8K, HDR in Asia and beyond

**B**ryce Button, director of product marketing for AJA Video Systems, elaborates on the latest trends he sees taking place in the broadcast and media industry.

## What major trends are driving innovation in broadcast?

**Bryce Button:** As consumers continue to cut the cord, broadcasters are rapidly innovating to deliver more dynamic content and extend their service offerings beyond traditional TV broadcasts to reach viewers however they choose to receive their media. Across the market, and especially in Asia, we're seeing more broadcasters experiment with higher resolutions like 4K/Ultra HD (UHD) and 8K, and frame rates as well as high dynamic range (HDR).

To support the development and delivery of this content, broadcasters are looking to evolving 12G-SDI, IP and fibre technology for efficiencies in terms of simpler cabling, more extensive routing and flexibility. On the broader scale, cloud services,

over-the-top (OTT) and concepts like Single Root Input/Output Virtualisation (SR-IOV) and the early stages of virtualisation of services for both video professionals and consumers in general, are further driving innovation.

## Where is the demand for 8K content the greatest, and how will it drive future implementations?

**Button:** 8K is quickly becoming a highly

sought-after delivery format in Asia, with NHK and other players largely driving the demand. That, coupled with a strong desire to give the 2020 Summer Olympics the 8K treatment, has technology providers such as AJA and SGO Mistika teaming to deliver new solutions that support 8K workflows now and into the future. SGO recently released a real-time finishing solution for 8K full UltraHD broadcasts at 50p

“During the course of this year and next, we expect to see more consensus around 8K picture structures to support more uniform 8K signal delivery. And while Asia is currently leading the 8K charge, regions around the world will likely catch up in the next two years.”

with AJA KONA 5 cards powering audio and video I/O.

During the course of this year and next, we expect to see more consensus around 8K picture structures to support more uniform 8K signal delivery. And while Asia is currently leading the 8K charge, regions around the world will likely catch up in the next two years.

Until then, we'll continue to see a growing number of 4K/UHD implementations. AJA develops a number of products to support 4K/UHD production and post. Of course, HD with all its benefits, including HDR, remains a big focus as its raster size to bandwidth ratio continues to offer great balance, and the larger bandwidth on offer today simply means more channels can be carried simultaneously.

## How is 12G-SDI supporting the creation and delivery of higher resolution content?

**Button:** 12G-SDI provides the bandwidth required to transmit higher resolution, full raster content at higher frame rates with the additional benefit of less cabling. In simpler terms, it makes it easier to broadcast 4K/UHD content with a smaller footprint in studios and outside broadcast (OB) trucks due to single cable simplicity.

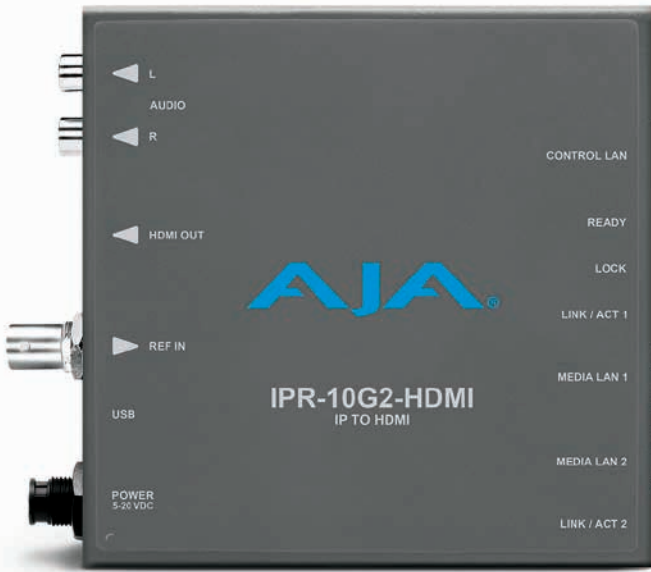
Because SDI signals are transported in latency-free and uncompressed digital signals over coaxial cable, 12G-SDI also ensures a clearer picture for audiences. It's also backward-compatible,



FS-HDR is designed to bridge the conversions needed from wide camera colour spaces and luminance ranges to HDR standards, and from SDR to HDR to integrate non-HDR materials into HDR programming, all in real time.



Developed in partnerships with Colorfront, AJA HDR Image Analyser delivers an array of tools for the analysis of the latest HDR standards — including HLG, PQ and Rec.2020 — from 4K/UHD and HD content in a 1RU device.



**IPR-10G2-HDMI provides monitoring of HD SMPTE ST 2110 signals across 10GbE to an HDMI output.**

which allows broadcasters to work with their existing 3G and 6G-SDI technology, if needed. Following this trend, AJA has released a host of mini-converters, frame syncs/converters, routers and I/O devices with 12G-SDI connectivity.

**What’s driving the transition to IP, and what progress has been made?**

**Button:** IP is attractive to the market for several reasons. It makes it easier to produce programming with talent spread across a number of geographic locations, and offers massively expanded routing capabilities. Broadcasters can easily route 1,000 destination source points or more without the heavy complexity and physical nature of standard SDI.

It also promises greater metadata capabilities in the future while simplifying audio and video embedding and disembedding in network today.

Looking at where we are today, the transition to IP is certainly well under way, with a number of hybrid IP/SDI infrastructures already in place. With hybrid infrastructures becoming

more popular, there is a need to bridge current HDMI and SDI sources to JPEG 2000 and SMPTE ST 2110; AJA offers a range of products for these sources, from the IPT-1G Mini-Converters and their accompanying receivers for JPEG 2000 workflows, and the IPR-10G2 Mini-Converters for SMPTE ST 2110 support.

We’ve also seen a demand from the industry for IP-compatible audio and video I/O devices in creative workflows from editing to colour correction. Responding to this demand, we’ve released the KONA IP card and the Io IP Thunderbolt device.

**What’s driving consumer interest in HDR, and how are broadcasters addressing the demand?**

**Button:** There’s a constant desire among content creators

“IP is attractive to the market for several reasons. It makes it easier to produce programming with talent spread across a number of geographic locations, and offers massively expanded routing capabilities. Broadcasters can easily route 1,000 destination source points or more without the heavy complexity and physical nature of standard SDI.”

and providers to improve the viewing experience. One way to do that is to deliver a range of luminosity and deep colour that more closely replicates what the human eye is capable of viewing, which HDR supports.

In recent years, HDR has become even more desirable than increased raster sizes. This is evident as OTT platforms such as Netflix, Amazon Prime Video and Hulu have already found success in making HDR content readily available to their audiences. Broadcasters are rapidly adopting new HDR technology and techniques to keep pace.

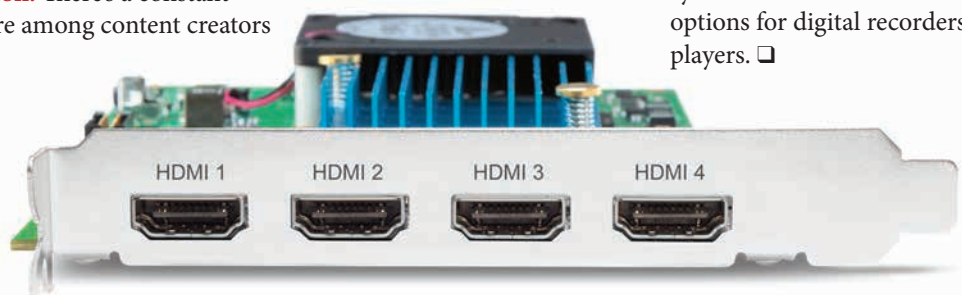
AJA develops several tools to support HDR workflows, including the HDR Image Analyser and the FS-HDR HDR/WCG converter/frame synchroniser. On the desktop side, we have KONA and Io solutions that support HDR10 metadata and Hybrid Log

Gamma (HLG), including the KONA HDMI for HDR capture. The Hi5-4K-Plus and Hi5-12G Mini-Converters are designed for HDR monitoring. The Ki Pro Ultra Plus offers HDR playback and more.

**Why is fibre a continued focus for the industry?**

**Button:** Fibre gives broadcasters more flexibility in terms of cabling, supporting longer distance cable runs with less cable density and size challenges; it also offers physical flexibility when using multi-mode, which is great for infrastructure integration.

For sports and other live event productions, fibre facilitates longer cable between the venue and OB truck or studio. To help studios take advantage of fibre, AJA offers fibre-equipped mini-converters, openGear rack cards, frame syncs and converters and SFP options for digital recorders/players. □



**KONA HDMI supports live streaming and switching with up to four channels of 1080p HDMI video capture, all within one card.**

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# With a strong backbone, broadcasters can reach the most elusive viewers

BY JOHAN VANMARCKE,  
MANAGING DIRECTOR,  
ASIA-PACIFIC,  
MEDIAGENIX

*Faced with accelerated change and growing complexities across over-the-top (OTT), direct-to-consumer (DTC), on-demand and linear services, media companies go for flexibility and efficiency in their content ecosystem relying on a future-proof backbone.*

*Strengthening that operational backbone allows them to reach for new business models. This is what MEDIAGENIX take away from years of intensive co-creation with a world-spanning customer community.*

A total of 45 media companies recently gathered in Brussels for two days to debate on where the industry is going and how they should get there. Keynote speaker at this MEDIAGENIX User Advisory Board was Alan Wolk, the co-founder and lead analyst of TVREV and one of the industry's influential thought leaders.

Wolk touched on the whole range of hot topics, from the battle of the Flixes and the rush for big data to the advent of game-changing technologies, such as ACR, ATSC3.0 and 5G and the 'spotifyfied' viewer experience.

The gist of the debate that followed was that we find ourselves in the new reality of the content-centric era. Digital technology has broken down the barriers that

“Digital technology has broken down the barriers that stood between the content and the viewer. This is changing long-standing business models and relationships, and has also opened the door to new players.”

stood between the content and the viewer. This is changing long-standing business models and relationships, and has also opened the door to new players.

In the meantime, the industry is moving on at white-knuckle speed. Media companies are repositioning themselves, exploring new models such as integrating video, audio and print, DTC, starting up consortiums to kill the 'Flixes' or gearing up to join them.

Business software and the IT industry itself are undergoing major changes. Cloud services, browser-based applications, a continued need for new (micro) services and support for global organisations are but a few of the ingredients that spice up the life of software solution suppliers such as MEDIAGENIX.

## Managing complexity

The crux of the matter is that viewers increasingly turn to the Internet where social media and OTT services are prolific in offering a wide range of content. This prompts media companies to take a closer look at the content they can offer. What rights do they have on

the content? What distribution platforms are available and through which technique can they best serve their business goals with each title? Maybe it is on a premium pay service, or on Facebook or YouTube, maybe on a linear channel.

Any media companies that publish their content on diverse platforms have seen the complexity of their content distribution grow exponentially. Blockbusters, vintage series and movies, game shows and soaps, old content or new ... all require a different approach, which always need to ensure the highest operational efficiency, immediate insight into availabilities, and instant information to make strategic decisions.

## Underlying rights

To be able to repurpose content, slice and dice and recompose it, put it on an on-demand platform, or stream it, media companies need to know whether there is some restriction on some part of the content, a royalty contract attached to some other part, or an issue on some music track. And they need to be sure that such parts of



the content are not reused.

WHAT'S ON by MEDIAGENIX provides the much-needed overviews and flags possible issues, taking real-time accuracy to frame-level. Once entered, information can be reused all along the product lifecycle and everybody in every department is working on the same, real-time data.

At Swiss public broadcaster RTS, WHAT'S ON users segment the content to prepare its distribution, or define the various rights on these segments. The system informs them about clearance problems or the additional costs involved. Other companies use the solution for monitoring royalty statuses.

## Royalties and participations

It is common knowledge that calculations for royalties and participations have grown highly complex. Millions of consumption records a month need to be digested for intricate revenue share calculations if distributors, platforms and talent are to get what is theirs by right. This involves countless beneficiaries and revenue split models.

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Meeting the specific challenges of broadcasting live events.



Supporting the whole process of licensing exhibition rights to third parties.

At RTL Netherlands, WHATS'ON automatically applies calculations to a series of preset rules, which results in a month-by-month view on the amounts the different parties are supposed to get. There is a distributor view per title; another is the platform view. Reports are easily made.

## Rights out

In the meantime, the presence of FAANGs is pushing media companies to produce more exclusive content than ever. This comes with a cost that has to be balanced with new revenues. Licensing the rights for other countries, markets or platforms to third parties is one of the viable options.

The solution MEDIAGENIX has developed for this makes it easy to identify sales opportunities and clear the rights. It covers the whole rights-out process including sales planification, orchestration and task follow-up, deal support and revenue distribution management.

## Sports

One of the most debated phenomena in the media market is the dramatic surge in the budgets spent on sports rights. According to GlobalWebIndex, 3.4 billion people saw at least part of the 2018 World Cup. This is half the world population: a monetisation treasure trove. Unsurprisingly, the social

media giants have jumped on the bandwagon.

Sports and live broadcasting is very different from non-live broadcasting, however. The differences in workflows and required functionality span across all departments. Live events have their very specific challenges, what with the inherent unpredictability (cancellation, delays, uncertain durations) and last-minute changes. You have to deal with concurrent events and overlaps, diverse sources and feeds, graphics, several commentary languages, the very complex rights, obligations and exceptions, and not to forget the ever-growing importance of metadata.

To optimise revenue and achieve operational excellence in the face of these complexities, MEDIAGENIX has developed a solution for sports and eSports as well as live events in general. It automatically conforms all scheduling to the applicable rights, obligations and exceptions, and facilitates last-minute changes. It also sees to it that feed, commentary and resource requirements are met for live coverage, recorded highlights and studio shows. The solution centrally manages metadata from specialised online databases.

## Globalisation

Undeniably, the need for

maximised efficiencies has contributed to accelerate consolidation in the media market, along with the scuffle for more leverage in negotiations over exhibition rights, and the struggle to secure content production or distribution channels.

Another reason why media operations are seeking scale is to take maximum advantage of technological developments. Apart from the shift from hardware to software, we see that even media asset management (MAM), playout and airtime sales systems are moving to the cloud.

A similar trend emerges to centralise all content ever produced or bought in a global content management system in the cloud, ready to be shared by channels and platforms across the globe. As the media assets in WHATS'ON each contain all video, audio and subtitle files for one item of content, the content can be shared by all channels in whichever regions, and each channel automatically receives the content in the right (language) version.

## Localisation

With globalisation comes the need for efficiency in localisation. During a recent implementation, A+E's History Channel took the opportunity to overhaul their localisation workflow

and, where possible, automate the supply chain with their localisation vendors, with a view to reducing errors and duplication, increasing efficiency, and creating space for increased monitoring. It led to better quality and an improved experience for the language houses concerned as well as for their internal workforce. The bulk of their language material is ordered automatically, the rest is management by exception.

## Open architecture

As this content-centric era is one of perpetual permutation, MEDIAGENIX helps media companies reinvent their business and content ecosystem around a future-proof backbone with its open architecture and Open or Business APIs offering all the flexibility this age requires.

Broadcast management platform WHATS'ON provides a single tool to manage the content supply chain, from planning to distribution. The solution can either support the companies' entire workflow, or operate as a central system driving content, rights, media, electronic programme guide (EPG), or finance workflows complemented with niche applications.

The result is that, amid rapid changes and growing complexity, media companies can efficiently run and adjust their business mix to reach the most elusive viewers. □

# Converse with TiVo to help viewers discover their favourite content

BY CHARLES DAWES,  
SENIOR DIRECTOR,  
INTERNATIONAL  
MARKETING, TIVO;  
AND ALAN DISHINGTON,  
VICE-PRESIDENT SALES,  
ASIA-PACIFIC, TIVO

## Creating the ultimate entertainment experience

At TiVo, it's all about innovation, to create the ultimate entertainment experience. TiVo touches the lives of binge-watching, music-loving, entertainment fanatics every day by delivering beautiful user experiences and enabling the world's leading media and entertainment providers to nurture meaningful relationships with their audiences.

TiVo's technology continues to revolutionise how people find content in a chaotic, fragmented media landscape. It is this 'content chaos' and insatiable demand for media and entertainment that keeps the company inspired, to create products and licensable technology that ultimately enables people to find and enjoy television, movies and the music they love.

## Rich heritage that guides the future

TiVo has been at the forefront of content discovery since the launch of the first on-screen TV guide in 1981. Since then, it has continued to innovate, from launching its most famous product — the first commercially viable digital video recorder



TiVo's Personalised Content Discovery Platform is revolutionising the way video service providers deliver content to viewers, and ultimately the way consumers find something they want to watch across their devices.

(DVR) — in 1999, to putting listings on the second screen when the iPad launched in 2010, to launching the Network Personal Video Recorder (nPVR) with multiple operators globally and being at the forefront of the new voice led discovery revolution. Today, TiVo is a content discovery leader rather than just being a provider of DVRs.

## Delivering the ultimate entertainment experience

Outside the US, TiVo brings over 20 years' experience of delivering pay-TV solutions across different broadcast ecosystems including DVB-C, DVB-T/T2, DVB-S/S2, IPTV and hybrid platforms like

Android TV. As elsewhere in the world, the consumer in the Asia-Pacific region isn't homogeneous and a one-size-fits-all approach for a pay-TV operator no longer fulfils the needs of their customers. TiVo can provide a suite of interoperable solutions that allow an operator to deploy to a range of consumers.

From simple one-way

solutions that don't scrimp on functionality, the TiVo experience can deliver Push VoD and advertising banners to simple boxes that would have been limited to delivering only zapper functionality in the past.

For more advanced consumers, the access to two-way networks, a fuller on-demand service can be

**A one-size-fits-all approach for a pay-TV operator no longer fulfils the needs of their customers. TiVo can provide a suite of interoperable solutions that allow an operator to deploy to a range of consumers.**

integrated into the TiVo experience. In fact, the company's vast experience of integrating multiple content sources brings a clear advantage when working with TiVo.

TiVo's experience implementing across multiple hybrid systems is second to none. For example, its recent deployments with Tigo in Latin America blend a consistent user experience across a range of set-top boxes (STBs) that allow for differentiated packaging that suits the consumer's needs.

The core services that deliver the TiVo experience are also available as components to power operators' own solutions. From a rich, dynamic multilingual content metadata to TiVo's personalised content discovery solution with spot-on predictions and media analytics, it can help you differentiate your own services like never before.

### Award-winning solutions

Over the years, TiVo has picked up many awards for its class-leading solutions. These include seven Emmy awards and most recently the Best User Experience (UX) Awards for its TiVo Conversation Services



TiVo's award-winning Conversation Services allow users to search content using free-flowing conversational dialogue, thus personalising the experience further while making content discovery more engaging with naturally spoken responses.

product at the prestigious Content Innovation Awards in Cannes, France.

TiVo Conversation Services provide a voice-led content discovery paradigm that can move the consumer beyond saying basic keywords, such as a title or actor, and allows them to ask detailed, multifaceted questions to find and enjoy their favourite content.

### TiVo and Android TV

Working with TiVo opens up

a wide set of pre-integrated partners who provide other key components of the digital television ecosystem, such as conditional access and STB manufacturers.

TiVo has most recently launched CubiTV for Android, a modular, cost-effective, easy-to-deploy, pre-integrated solution that enables operators to seamlessly begin their journey with Android TV Operator Tier and leverage the ecosystem benefits.

CubiTV for Android TV offers operators a number of key benefits. It delivers a modern, immersive UX with an intuitive operator-branded interface that taps into the power of Google Assistant search and browse functionality. Operators can leverage the Android TV ecosystem to enrich customer experience with the vast availability of over-the-top (OTT) content, apps and games, and further innovations such as Google Assistant on TV and Internet of Things (IoT) integrations.

Additionally, CubiTV for

Android TV gives operators the ability to control costs with an STB-agnostic architecture, and with modular approach that allows them to add features as they grow, including upgrading to TiVo's Personalised Content Discovery Platform. And, they can implement CubiTV for Android quickly and easily with versatile deployment options that leverage the CubiTV DVB stack and pre-existing conditional access and STB integrations.

TiVo's hybrid entertainment discovery solutions unify content, listings and recommendations from linear TV, video-on-demand (VoD) and OTT sources — and on mobile, its multi-screen entertainment discovery solutions enable access to content across multiple platforms, and are compatible with nearly all Android and iOS smartphones and tablets.

TiVo is the global partner you can trust to help deliver local solutions that are right for the market. □



Available in four modules — Search, Recommendations, Conversation and Insight — the Personalised Content Discovery Platform supports a variety of discovery experiences spanning linear TV, VoD, DVR and OTT.

# Riedel's real-time solutions empower AMP Vision TV to meet current & future demands of OB audio-video production

**A**MP Visual TV, one of Europe's largest providers of outside broadcast (OB) vehicles for remote video productions, has adopted Riedel's MediorNet real-time signal network and Artist digital matrix intercom for its Millennium Signature 12 (MS12) and new Millennium 6 OB vans. MediorNet and Artist combine to provide a comprehensive signal transport and communications backbone for these groundbreaking vehicles, both of which greatly expand AMP Visual TV's 4K/Ultra HD (UHD) and high dynamic range (HDR) production capabilities.

The MediorNet network delivers several core benefits to MS12 and Millennium 6 including integrated components that work together seamlessly, flexible and modular system design, and an innovative approach to signal distribution and routing. At a base level, this offers greater efficiency through simpler configurations, an enormous reduction in cabling, and the ability to create flexible interiors in the vans.

Even more, with similar Riedel systems installed in both MS12 and Millennium 6, as well as in their fly packs and IXI digital satellite newsgathering (DSNG) vans, the production team can easily shift from one van to the other and interconnect those fly packs and DSNG vans as production requirements

demand. Familiarity with the Riedel gear allows them to hit the ground running rather than spend time coming up to speed with new equipment and workflows.

## The customer

As a specialist in live television coverage, AMP Visual TV provides services that cover all aspects of the production process for live programmes and those produced under live conditions. The company operates one of the Europe's most extensive fleets of OB vans for on-location events, and has nearly 40 studios at its disposal in and around Paris, France.

With more than 500 employees and 30 years' experience in television production, AMP Visual TV has always undertaken to guide its clients through the technological developments that drive and shape

broadcasting. Today, the AMP Visual TV crew offers expertise in every aspect of production and a commitment to results that exceed client expectations.

The core of AMP Visual TV's mobile OB fleet is its Millennium family of extendible semi-trailers, anchored by the state-of-the-art MS12 HD/4K-capable OB van. With the ability to support productions of up to 40 cameras, MS12 features a modular design and a mobile partitioning system. This enables it to be transformed into a two-in-one OB truck capable of conducting joint operations with two independent production areas, two audio mixers, two vision rooms, and up to 42 modular workspaces.

MS12 was launched in 2016, just in time for coverage of the 24 Hours of Le Mans. Other recent projects include

Euro 2016 football in 4K/UHD, Europe League matches and final, the 2016 US presidential elections, and the 2018 Winter Games in South Korea.

## The challenge

For its new Millennium 6 OB van, AMP Visual TV envisioned a 100% flexible and reliable networked signal infrastructure that could remain future-proof, especially as broadcasters continue to explore fully IP-based operations. Millennium 6 would be an all-new 4K/UHD HDR OB van boasting an unprecedented combination of technology, aesthetics, and ergonomic features designed to give production teams maximum power in minimum space. Designed to handle most major productions, Millennium 6 also would feature a modular design and a mobile partitioning system adapted from MS12 to enable flexible workspaces.

## The solution

To meet these requirements, AMP Visual TV partnered with Riedel Communications once again to design and deploy a communications and signal transport backbone based on Riedel's MediorNet real-time media network and Artist digital matrix intercoms. MediorNet meets AMP Visual TV's requirements by delivering the performance customers demand and the flexibility they need to address the challenges of broadcasting in 4K/UHD, both now and in the future.



The Millennium 12 OB van was launched in 2016, and was deployed for the coverage of the 24 Hours of Le Mans automobile racing tournament

Millenium 6 features a robust and decentralised MediorNet signal network that can support up to 26 wired and wireless cameras, a multiviewer monitor wall, and Riedel's Artist (wired) and Bolero (wireless) intercom systems when fully implemented with a fly pack. Millenium 6 is equipped with four MetroN core routers, 24 MicroN high-density signal interfaces, and two MediorNet Compact Pro stage boxes.

In addition, a Riedel Artist intercom matrix rides on the MediorNet network, together with assorted control panels, commentary panels, and Performer digital partyline belpacks.

MediorNet's decentralised router concept is unique and represents a complete departure from the traditional monolithic routers found on many of today's OB vans. Typically, a van is designed around its router because the router takes up a significant amount of space and places large demands to power and cooling. Every signal in the van must pass through the router so cables run from the router to every I/O device on the van. This can amount to a lot of cable.

The MediorNet approach puts the four MetroN core routers at the "centre" of the van with MicroN devices placed wherever signals are required, connected to the MetroN with single-mode optical fibres. This approach significantly reduces cabling, simplifies the overall configuration, distributes risk by eliminating the router as a single point of failure, and opens up the interior of the van for the creation of flexible workspaces.

With no large router, cooling requirements are reduced and less cable means more room in cable trays and, theoretically, less overall weight.

Each MediorNet Compact and MicroN feature on-board signal-processing capabilities, including frame synchronisation, embedding/



**Millenium 6 is equipped with the Riedel MediorNet real-time media networking supporting as many as 26 wired and wireless cameras, a multiviewer monitor wall, and Artist (wired) and Bolero (wireless) intercom systems.**

de-embedding as well as delays. The MediorNet Compact units provide a complete array of audio, video, data and I/O while the MicroNs include 12 SD/HD/3G-SDI I/O, two MADI optical digital audio ports, a Gigabit Ethernet port, two sync reference I/Os, and eight 10Gb MediorNet high-speed links.

The MediorNet MicroNs are software-enabled hardware that can perform different duties through the use of apps. Currently, five different apps for MicroN are available including standard, point-to-point, multiviewer, IP gateway, and a new processing app for colour correction and UDX conversion.

Licence switching allows clients to change apps easily. If clients want to take the step towards networked workflows, the purchase of an IP app licence is their entry into the

world of IP. With the IP app, MicroN can create a hybrid signal transport environment or a fully networked system with numerous IP gateways and baseband inputs and outputs.

### The result

Working seamlessly with the MediorNet MicroN core router, which provides the heart of the decentralised network architecture, the MicroN devices give AMP Visual TV a high degree of flexibility in addressing the current and future demands of video production. MediorNet Compact Pro frames serve as stage boxes, and provide AMP Visual TV with additional signal interfaces for the field.

In addition, the MicroN devices support the Millenium modular approach with the ability to be strategically placed close to signal sources

and destinations, making it easy for AMP Visual TV to tailor or signal routing to the demands of individual productions, whether large or small, while reducing cabling and system complexity.

Fewer cables mean less weight, more space in cable trays, and reduced air-conditioning requirements. Without the need to build around a large centralised router, AMP Visual TV is enjoying much greater workspace flexibility.

Another efficiency created by decentralising the router and placing I/Os where they are needed is full redundancy of all video and audio signals for commentary, intercom, and signal distribution, critical elements of any live production.

Finally, the modularity of the MetroN interfaces, which allow Millenium 6 to link easily to the MS12 HD/4K van or to a shared fly pack for producing shows of all sizes, has been a huge convenience. Rather than over-investing in gear, AMP Visual TV is able to tailor the infrastructure to production requirements. MediorNet resources can be allocated to several productions at once or assembled together to support a single large event. □

**MediorNet's decentralised router concept is unique and represents a complete departure from the traditional monolithic routers found on many of today's OB vans.**

# IPTV drives Asia's pay-TV growth

BY SIMON MURRAY  
PRINCIPAL ANALYST,  
DIGITAL TV RESEARCH

The Asia-Pacific pay-TV sector is vibrant, with both subscribers (up by 68 million) and revenues (up by US\$2.35 billion) forecast to rise over the next five years. However, these forecasts are lower than our previous *Asia-Pacific Pay-TV Forecast* report, mainly due to many cable subscribers in China converting to over-the-top (OTT).

China and India together will account for 80% of the region's 681 million pay-TV subscribers by 2024. About 68 million pay-TV subscribers will be added between 2018 and 2024, with China and India collectively supplying two-thirds of the extra subscribers — so they will grow at a slower rate than the rest of the region.

China will add 16 million subscribers to take its total to 356 million. India will increase its total by nearly twice as much — by 29 million — to 187 million. However, four of the 22 countries covered will lose subscribers between 2018 and 2024.

IPTV is the biggest pay-TV winner — adding 83 million subscribers between 2018 and 2024 to take its total to 272 million. Much of this growth will happen in China (up to 40 million) as cable subscribers convert to OTT or IPTV, and in India (up by 28 million).

Reliance is poised to shake up India's staid fixed broadband sector with its Jio GigaFiber operation as it has done with Jio in the mobile sector. Indonesia, the region's third most populous country, will also enjoy substantial IPTV growth.

“Cable operators are increasingly following the example set by the telcos, with a greater emphasis on broadband speeds than on TV services.”



“IPTV is the biggest pay-TV winner — adding 83 million subscribers between 2018 and 2024 to take its total to 272 million. Much of this growth will happen in China (up by 40 million) as cable subscribers convert to OTT or IPTV.”

This means that cable will suffer. Digital cable subscriptions will be flat overall. China will lose 25 million cable subscribers between 2018 and 2024, although India will add 13 million. Analogue cable subscriptions will fall by 33 million.

The satellite pay-TV sector is mature, with only six million subscribers to be added between 2018 and 2024 to take the total to 89 million. Due mainly to consolidation, India will lose nearly three million subscribers.

Pay-TV subscriptions will increase by 11.1% between 2018 and 2024, but pay-TV revenues will only climb by 7.2%. Competition will force down ARPUs, and more homes will convert to bundles (thus spending less on TV).

Asia-Pacific pay-TV revenues will increase by \$2.34 billion between 2018 and 2024 to \$34.88 billion. Cord-cutting from cable is a problem in China, although overall subscriber numbers and revenues will continue to grow.

Pay-TV revenues will fall in seven countries between 2018 and 2024, including Japan (down by \$339 million), South Korea (\$139 million), and Hong Kong (down by \$79 million).

On the plus side, India will contribute \$1 billion to the additional revenues, with Pakistan bringing in \$361 million more, and Indonesia an extra \$786 million.

Cable TV will remain the highest pay-TV earner, with revenues at \$15 billion by 2024. However, this is down on 2018's \$16.38 billion. Digital cable TV revenues will not grow by much between

2018 and 2024, with analogue cable TV falling from \$1.52 billion to nearly zero. Chinese cable revenues will fall by \$1.42 billion over this period, with the number of subscribers dropping by 25 million.

Cable operators are increasingly following the example set by the telcos, with a greater emphasis on broadband speeds than on TV services. This emphasis on broadband has intensified as incumbent telcos become more involved in offering bundled services. For many telcos, TV is a periphery activity in their bundles. Telcos usually provide few channels in their basic packages. The telcos provide premium channels but spend more effort on promoting their lower-cost bundles.

IPTV revenues will reach \$12.53 billion by 2024, up by 38% from \$9.11 billion in 2018. China (\$5.90 billion) and Japan (\$1.57 billion) will supply 60% of the 2024 total. IPTV revenues overtook satellite TV revenues in 2017.

The number of homes paying for IPTV will take off from 190 million in 2018, to 272 million by 2024. China will add 40 million IPTV subscribers, but will lose 25 million cable ones over this period. Only six million satellite pay-TV subscribers will be added between 2018 and 2024, taking the total to 89 million (10.1% of TV households).

India (56 million in 2024) will remain the largest satellite TV country by some distance, but it will lose 2.67 million subscribers between 2018 and 2024. India will generate \$2.51 billion of the region's \$7.17 billion satellite pay-TV revenues in 2024. □

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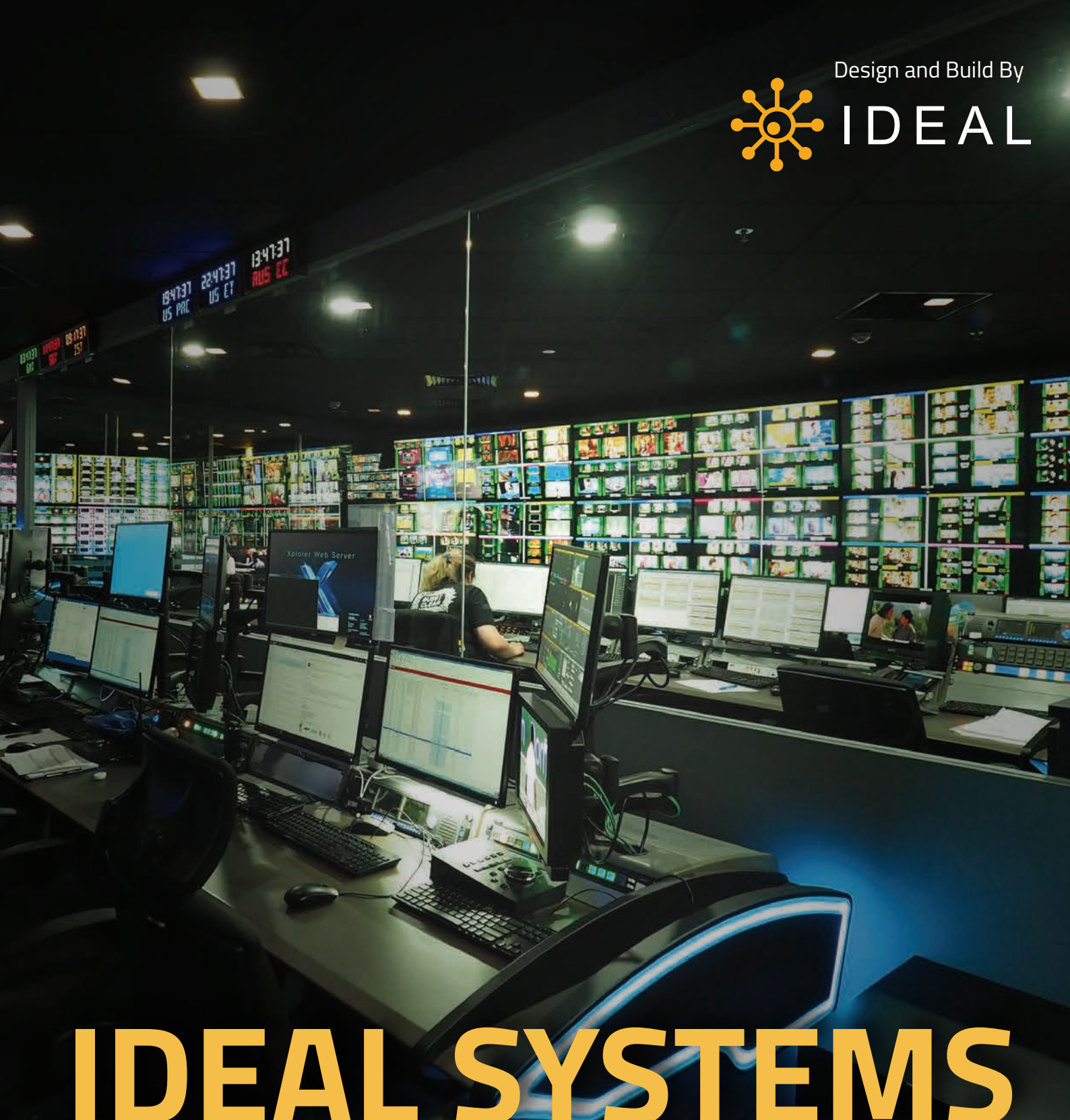


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