# 2<sup>ND</sup> QUARTER 2019

REPRESENTING BROADCAST AND MEDIA TECHNOLOGY SUPPLIERS WORLDWIDE



Special Report: **Produce – more speed, less cost** 

Also featuring

Are we underestimating the role of Al in Media and Broadcasting?

Incorporating IABM Business Intelligence Quarterly Digest



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# **Something for everyone!**



Peter White CEO, IABM

This edition of the Journal is timed to coincide with ConnecTechAsia, so the Regional Market Focus in this Business Intelligence Digest section of this edition takes an in-depth look at the state of the broadcast and media industry and future prospects in Asia Pacific – the fastest growing region in the world.

Despite the challenges of the business and political environment in some countries, and the uncertainty caused by international trade disputes, the overall picture is of a healthy, growing industry in Asia Pacific with plenty of opportunity for IABM members.

We were very warmed by the many tributes to our Head of Training, Andy Jones, following his untimely death in March, and we have gathered some of these together in his memory on page 4. Andy touched many lives, and always made a lasting impression. We will greatly miss his boundless enthusiasm and dedication to spreading the power of learning wherever he went.

This month's Special Feature zeroes in on the Produce link in the BaM Content Chain®, with some thoughtful contributions from members as always. As with the other content chain segments, development is continuing at breakneck speed: as Limecraft's Maarten Verwaest says, "Eventually, we expect producers to create 10 times more content at a fraction of the cost, with a consistent high quality."

SaaS will undoubtedly play an ever more important role in that future, with Exponential-e one of its leading players. As the company's Edoardo Pescosolido says in the 'SaaS and Beyond' article on page 40, "The key lesson is that, as well as compelling

content, the future of broadcast and media is the platform. To succeed today, then, media and broadcast businesses needs to think and act differently across every aspect of what they do." In addition the UK Executive Summit taking place on 11th July will also focus on SaaS

The IABM Voice of the Customer event just prior to NAB Show this year provided compelling insights for technology vendors not only in terms of the kind of products they should be developing, but also in the way they need to do business to succeed in today's fast-changing broadcast and media landscape. The write up of the lively panel session from this event on page 28 is highly recommended reading for everyone who wasn't able to make the event – and also, perhaps, a timely reminder for those who were there

We are about to launch our Technology and Trends Roadmap. With our industry pouring up to 25% of its revenues into R&D to meet constantly changing challenges, it's vital that every penny spent is as close to a sure bet as possible. Our roadmap was developed by our CTO, Stan Moote, in consultation with a group of vendors and end-users, and provides a blueprint for common understanding that can be customized to each company's exact requirements. You can read Stan's introduction to the Technology and Trends Roadmap on page 10.

Creative Collaboration is at the forefront of IABM's commitment to fostering deeper working relationships between technology vendors and buyers. Rohde & Schwarz provides an excellent example of the fruits of working together in the article on the development of its PRISMON.cloud – its cloud-based A/V OTT monitoring solution, developed in conjunction with MX1. Read about it on page 41.

The deployment of AI in various segments of the BaM Content Chain® is growing rapidly according to all our research. In his thought-provoking article on AI on page 6, IABM Director Strategic Insight, John Ive, gives us a helicopter view of where the industry stands now with AI, and where it could take us in the future.

I've mentioned just a selection of the wide-ranging contents in this edition of the Journal – there's something for everyone! I wish all members attending ConnecTechAsia a successful show and look forward to seeing you all there.

Peter White CEO. IABM

## Andrew Jones



I am sure that many members will have heard by now of the untimely death of Andy Jones. Andy passed away in March at St Richards Hospice in Worcester, UK, after a brave and protracted battle against leukaemia. His family were with him, and his last few days were peaceful.

After a long career in training and education at the BBC's Wood Norton Training Academy where he rose to become Principal Technologist, Andy joined IABM in January 2016 as Head of Training. In this role, as well as leading on IABM's extensive training portfolio, Andy was also responsible for the IABM University forum and initiatives to deliver technical skills certification, engineering student awards and initiatives to develop the next generation of talented people for our industry.

Andy had a major impact on IABM's knowledge and educational capability and that will make up part of his huge legacy to us and the industry. His mantra was 'Never stop learning' and he inspired many with his passion for knowledge and its communication.

Andy was held in the highest esteem by all who knew and worked with him – as you will see from the small selection here of the many unprompted tributes to Andy, written when the sad news of his passing emerged.

Andy's knowledge of broadcast and media technology was unsurpassed but despite his penchant for bow ties he was always reflective and considered in his manner. He was one of life's gentlemen and it was a privilege to have known him; we will all miss him immensely. Our deepest condolences to his wife Ruth and their family. Peter White, CEO, IABM

#### **Tributes to Andy**

Andy was a delight and inspiration to all and will be much missed.

Dr Martin Salter, Director, IABM Investments and Advisor, IABM Student Awards

Andy was a true expert in broadcast technology and education. I discussed these issues with him for a number of years and it was a real pleasure. Andy was always friendly and correct. He was always a real gentleman in all words and deeds. I will always remember Andy – the real gentleman. This is an untimely death. Tragic event. Please convey my condolences to Andy's family and friends. *Professor Konstantin Glasman, St. Petersburg University* 

It was with great sadness that I learnt of the recent passing of Andrew Jones. After spending over 20 years in the BBC training people before running the IABM's training programme, he was well-known and well-loved throughout the industry in the UK and doubtless further afield. His passionate energy and tireless work in education have made an immeasurable contribution to the industry. Russell Trafford-Jones, Manager Support & Services, Techex

Andy was such a unique character and will be sadly missed by many people. His enthusiasm for education and encouraging others was something I first experienced as a trainee going through the many weeks of courses at BBC Wood Norton - I later moved to work at Wood Norton and shared an office with Andy. He certainly wasn't your typical manager (in a very good way!), he was a great mentor and always had time to help people. I will miss him. Let's all aim to live up to his standards and do all we can to educate and encourage the next generation.

Ed Calverley, Broadcast Technology Specialist

Andrew was the epitome of everything that is great and good about the broadcast industry. His generosity in time, and in particular with his knowledge, ensured he will be remembered and appreciated by generations of broadcast engineers, technologists and project professionals. I am personally indebted to his outstanding teaching ability and leadership during my own courses at the BBC's Wood Norton training facility. I always looked forward to Andrew's lectures, regardless of the subject matter, because he effortlessly made it engaging. However, what I will really miss about Andrew is his truly remarkable personality,

somehow combining 'true geek' with wit, humour and a relaxed persona that put everyone at ease. You, and your bow ties, will be greatly missed Andy.

Andrew Davies, Director, Media & Entertainment EMEA, Diversified

I'd known Andy for almost 30 years. I remember what was apparently his first lecture at Wood Norton when I was a rather green 19 year old trainee engineer, and Andy was master of all things video camera back in 1990. I was lucky enough to work with him from 2000 to 2003 when not only was he a stunningly good boss, but also became a really good friend. Andy made time for everyone, was always interested as well as so extraordinarily interesting, encouraging, engaging and fun, and so, so very smart. I wouldn't be doing half of what I do today without Andy's encouragement and 'you really can do this' attitude. These are just words; anyone who knew Andy would know that words can't do him justice. Andy was unique, and irreplaceable. I will miss you Andy, and your bow tie and your humour and how you were always there to help in any way you could. Goodbye my friend, rest in peace.

Graham Collins, MD & Lead Technologist at Advanced Broadcast Integration Ltd

That very lovely gentleman was generous enough to impart his knowledge to all that he taught, including students and experts in industry. This is terribly sad news.

Neil Chater, Lead Engineer, Media Technology Systems – Turner Broadcasting EMEA

That is such sad news. I was a consultant trainer and course writer for the IABM since 2011 covering a range of new technologies. I then took a part time, interim position as the IABM's Training Manager for six months from August 2015 after Steve Warner left until they secured Andy into that full time position. I found Andy engaging, knowledgeable and humorous – both during the handover and when we worked together afterwards. A lovely man. Very sad news.

Martin Parsons, Martin Parsons, Founder & CEO of Image Eyes Ltd

Sad news. I worked at Wood Norton when I first entered the world of Broadcasting. Andy was very supportive and full of fun and enthusiasm. A lovely gent who will be incredibly missed.

Ian Rogers, Development Lead at Sky

Very, very sad news. He was an amazing guy and a brilliant colleague.

Wendy Miller, Principal Service Manager Connectivity, BBC

I first met Andy at BBC Wood Norton when he was both a trainer and a customer when I worked for Aston in the early 90s. He was a very endearing, engaging character and had a huge effect on all the people he trained, and by extension on the wider broadcast community. Sad news indeed. He will be missed and my thoughts go out to everyone at IABM and of course to his family. Alison Pavitt, Marketing Manager, Pebble Beach Systems

I knew Andy from our first days in the industry in Wood Norton many years ago. Andy was a great guy and one of life's true gentlemen. He will be very much missed. Andy had many friends within Sony. Please let his family know that we are thinking of them at this sad time.

Peter Sykes, Strategic Technology Development Manager, Sony

Incredibly sad to hear this news. Personally, I had the opportunity to work with Andy during his time at BBC Wood Norton and of course since he joined the IABM on numerous Training matters. As you said, such a helpful and charming gentleman in the industry who will be sadly missed.

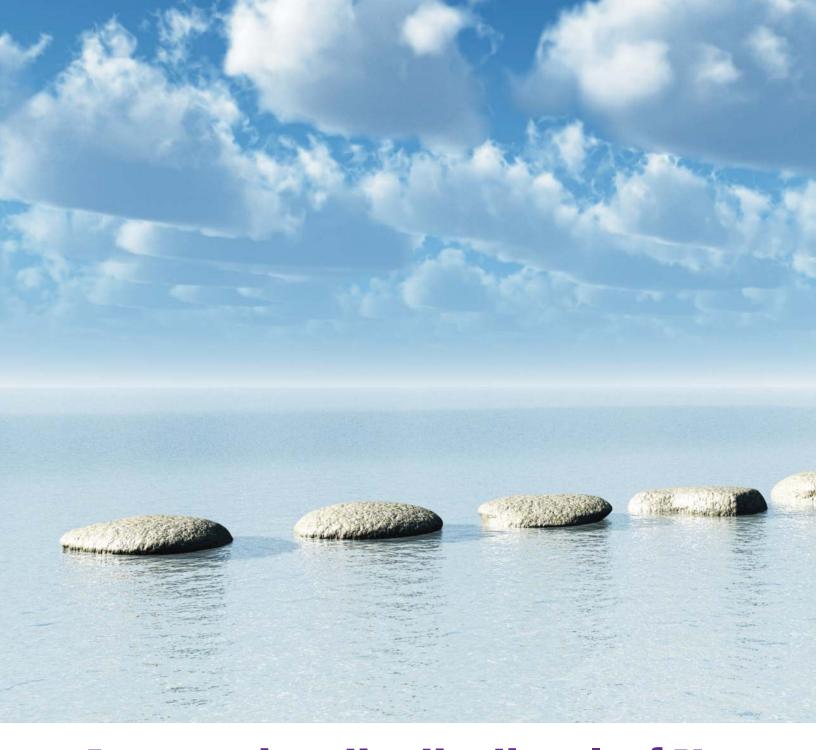
Nicki Fisher, Sales Director EMEA, Clear-Com

That is such a shock and so very, very sad. Andy was such a gentleman and it was always a pleasure to meet him at any of the events. What a lovely man has left us, but that smile in the photo is just him to a tee. We will remember him very fondly.

Ciarán Doran, Exec VP International Sales and Marketing, Pixel Power

This is incredibly sad news. I have known Andy through industry circles and it was truly a great pleasure to talk to him. Andy possessed keen insight and I always saw him as the incarnation of an English gentleman. His deep knowledge and passion for education, paired with optimism and sense of humor, were thoroughly impressive. Andy's support and contributions will not be forgotten.

Professor Wolfgang Ruppel, RheinMain University



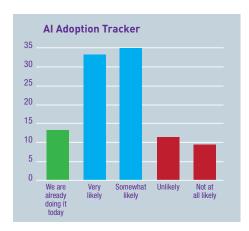
# Are we underestimating the role of Al in Media and Broadcasting?

In a world currently dominated by discussions around the transition from point-to-point connections of video and audio to network connections over IP, we may have overlooked that this is not the end game but rather a stepping stone to something bigger.



Networked media operations open up access to resources and processing power that were just not available in the proprietary world of fixed non industry standard (IT) connections. Therefore the huge resources and rapid developments occurring in those areas could only be partially exploited. The obvious example here is access to Cloud storage and compute.

But increasingly those barriers are being eroded and new opportunities are emerging, and the Cloud with a range of processing and management tools is an important component. Most of the Cloud providers have AI tools on offer as services coupled to on-demand storage and processing power. This is a real gamechanger. The IABM report on 'Media Tech Trends – Artificial Intelligence' highlights an already growing interest, as shown in the adoption chart.



Even if the Cloud isn't on your radar, the world of IT offers on-site technology that can revolutionize operations by reengineering efficiency, opening up new programming opportunities, changing how on-line providers service consumers and redefining the skills needed to develop and maintain the resources.

There is no need to be overly bothered by the semantics and differences between Al and machine learning. True they are often wrongly used interchangeably, but collectively they contribute to the trends outlined in this article. Strictly speaking Al is the broad science of mimicking human abilities, while machine learning is a specific subset of Al that trains a machine how to learn from experience.

Media and broadcast is a very broad discipline, ranging from content production to consumer interaction plus the orchestration of everything between. So what AI means to each subset of the journey from camera to viewer is totally different. We can however neatly categorize the different aspects using the IABM BaM Content Chain® which is built around the following creative, technical and business processes: Create, Produce, Manage, Publish, Monetize, Consume, Connect, Store, Support.

#### Applications of Al

For content production which covers the Create and Produce categories of the Content Chain, projects are underway to enhance creativity and also to produce more content with reduced resources. This has led to controversial discussions around the potential for AI systems to replace creative activities. Creativity is seen as a precious human skill and a capability which, if replaced by software and processors, is considered by some a threat to our very existence. This is not the right way to view these developments.

The use of AI and machine learning to automate camera production is a huge opportunity to bring new content to viewers that would otherwise be prohibitively expensive to produce.

Obvious examples are sports events and music concerts, and even drama is a potential candidate in the longer term. Current experimental productions have shown that while a human can make editorial decisions which trump what automation can do, the gap will narrow but probably not close completely.



**John Ive** *Director Strategic Insight, IABM* 

The use of AI and machine learning to automate camera production is a huge opportunity to bring new content to viewers that would otherwise be prohibitively expensive to produce.

Nonetheless, lower cost automated production is a gamechanger.

Audiences' expectations have developed over the years; they appreciate the 'hand crafted' skill of a high budget production but they also appreciate access to events and programming that reach good (but not the best) production values, if the alternative is no access at all. So Al and machine learning can help meet the need for more content at reduced cost.

Importantly though, all those in production roles will acknowledge that the process is very labor intensive and not all of it creative; anything that can be done to optimize the production process and support the human creative process is positive. It will almost certainly lead to an even higher level of innovation and job satisfaction.

Orchestration is a word increasingly used across the Content Chain, particularly in areas such as Manage, Connect, Store and Support. With systems becoming increasingly complex, the challenge of operating them efficiently is growing exponentially.

Orchestration is defined as the automated configuration, coordination, and management of computer systems and software. From this definition we can immediately see the potential for Al.

These are multi-faceted activities and highly repetitive. In many cases, the decisions made influence costs, performance and reliability. These activities lend themselves to automation driven by artificial intelligence decisions. Importantly though, they can still alert operators to the most important issues requiring their skill, decisions and expertise by separating these out

from the mass of lower order issues which can be taken care of automatically.

Data is the fuel that drives all forms of Artificial Intelligence and automation.
Collection and use of many types of data quite rightly needs careful control or it becomes an intrusion on privacy or worse, opens the door to serious malicious practices and theft.



Optimization is an important element of orchestration and in a virtualized world with software defined networks, the potential for intelligent automated operations is clear. Decisions have to be taken to ensure resources are used efficiently, are available when required and produce reliable, consistent performance.

Finally, we can envisage the growing need to manage content, making intelligent decisions about finding content with specific criteria, and decisions about storage based upon anticipated content usage – for example, to make content available instantly on-line or archive it to less accessible deep storage.

Engaging consumers with Publishing, Monetization and Consumption is where the money comes from to power the entire industry. Finding the keys that unlock consumer engagement is a prime role for Artificial Intelligence. Every consumer can be treated uniquely as an individual – something that is impossible without this kind of support.

As the Internet of Things becomes a reality and with products such as Alexa becoming ubiquitous, consumers expect a personalized service that understands their needs, interests and aspirations. Unfortunately they don't want to pay for it directly, so this new intelligence needs to provide a service to consumers they value and at the same time maximize the monetization opportunities. The good news is that directly or indirectly there's plenty of source information to analyze and to derive insights from. So with the right Al tools and enough processing power, the potential is there to redefine the user experience.

### Security – threat, help or hindrance?

One aspect that complicates progress is security, with several very high profile breaches and abuses of personal data demonstrating the challenge.

In many areas the use of AI can and will do a better and more consistent job than even skilled staff.

Data is the fuel that drives all forms of Artificial Intelligence and automation. Collection and use of many types of data quite rightly needs careful control or it becomes an intrusion on privacy or worse, opens the door to serious malicious practices and theft.

There is no doubt that while progress is slowed by the need to respect data protection, it is not stalled; the need to develop new tools for more sophisticated and complex operations is too compelling.

# So, are we underestimating the role of AI in Media and Broadcasting?

Almost certainly yes. Without rapid development of AI and machine learning techniques applied to broadcast and media, our ability to manage facilities and grow businesses will be severely limited as complexity increases.

In many areas the use of AI can and will do a better and more consistent job than even skilled staff. Increasing headcount is the only alternative and that can be self-defeating: doing so increases complexity and the scope for errors especially as we are all different in our strengths and weaknesses.

We will see several examples of spectacular AI failures over next few years and claims they are the result of misplaced faith in the technology, but this is all part of the learning curve and not an indication of a flawed strategy. With every new technology, especially in the early years, there are examples of mature legacy systems doing a better job than the eventual successor.



Point-to-point
connections will
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processing
environment

In traditional broadcast engineering circles, there is a lot of debate and excitement around the move to IP interconnects. This in itself has a lot of legacy thinking, with the emphasis on point to point connections. In reality, it provides a stepping stone to massively increased use of virtual machines, Cloud processing and AI, which in turn opens the door to an exponential increase in processing and storage capacity. Point-topoint connections will become less important as different interconnected steps communicate within the confines of the processing environment.

What about innovation, creativity and the role of skilled operators? The good news is that, with the availability of more sophisticated tools, they will all evolve to a higher level and create even more compelling entertainment and solutions.

In the workplace, the skills needed are already changing and this is a huge challenge for traditional enterprises. Transformation is required at a much more comprehensive level than a change of technology. It's a sad fact that more attempts at radical transformation fail than succeed because restructuring the skills and work practices of individuals is substantially harder than replacing hardware and software.

The future is bright but very different and remember what we are experiencing right now is the 'stepping stone' to the future, not the end game!

For a more detailed analysis of the current status of AI and its deployment, visit the IABM report 'IABM Media Tech Trends – Artificial Intelligence' on the IABM website.

# Media and Entertainment Technology and Trends Roadmap



Stan Moote
CTO. IABM



One of the constantly changing challenges in our industry is not only keeping up with all the new technology trends, but also having a deep enough dive to understand what is relevant and not simply 'just a fad.' Our industry pumped 25% of hard-earned revenue back into R&D in the last half of 2018 – so every penny spent needs to be as close to a sure bet as possible.

Broadcast and media companies also have a similar issue understanding which technology to bet on, what they can't live without (must have), and will capture more market share, as well as providing a path of profitable growth.

This roadmap has been created in conjunction with a group of IABM members and tested with end-users. When asked to participate, they all were eager as many CTOs and business development individuals are tasked with creating this from scratch for each of their respective businesses. Their roadmaps typically become so internally and product(s) specific, they are next to impossible to share in a confident manner because there is no industry reference.

Technical stock analysts also do create various types of maps, however they are very specific to typically a single technology based on a group of public companies they have interest in. These are valuable in isolation, however not practical as an industry reference.

In a company sense, a technology roadmap is a high-level, visual plan that communicates that organization's technology strategy. Since IABM members are suppliers, these plans are about the products and services they are developing, marketing and selling. This internal focus can quickly swing into more product management so-called 'product roadmaps'. Additionally to be clear, this should not

be confused with so-called 'IT roadmaps' which are typically used by companies to help their internal teams make strategic decisions around their technical infrastructure.

The IABM roadmap group decided the distinct difference of this roadmap should be less about timing in quarters and years, and more about understanding where these trends are on the adoption and maturity curve. This also ties directly into IABM research on these topics.

#### Usage

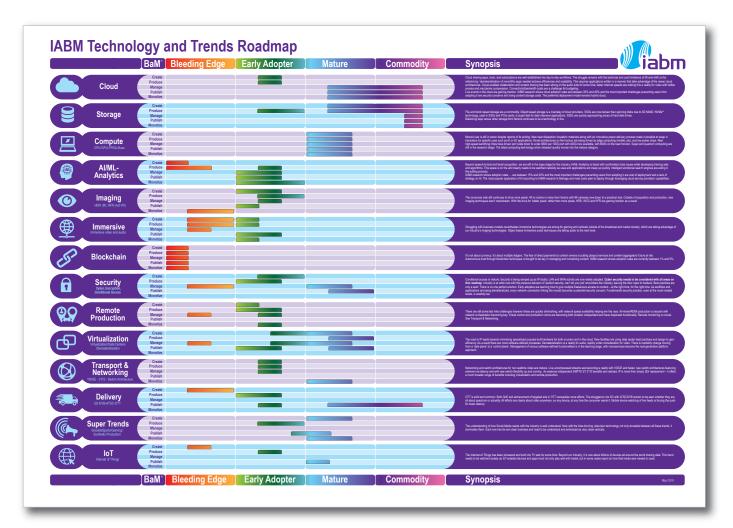
IABM sees two main uses for creating and distributing a common industry roadmap.

- Company Internal A reference internally so both board members and executives have a common view of the industry. This gives the CTO a strong reference or 'springboard' to further add in their own company's unique expertise to produce a companyspecific roadmap which will typically map into company quarters/years.
- Company External When presenting to customers and end-users, there is no starting point, no reference to begin. There is nothing worse than being in front of a customer having to waste half the meeting trying to explain your first graphic. Having a common industry roadmap may not provide 100% buy-in by every end-user, however it does give a common industry consensus that sets the stage for each vendor's distinctive roadmap version. This in turn becomes a key driver of strategic decision making for high-level plans that need to be articulated to end-users. IABM research shows how partnering is very important to growth and sales strategy.

#### Understanding the Roadmap

The IABM Technology and Trends Roadmap breaks out each of the fourteen main areas to line up with the BaM Content Chain® model areas of Create/ Produce/





Manage/ Publish and Monetize, which are IABM members' primary focus for producing products and services. Some of the areas are larger buckets as clearly identified by the descriptive text under the main groupings.



Each technology/trend is mapped into where it fits in the adoption curve – Bleeding Edge, Early Adopter, Mature and Commodity. In some cases they may be in different areas of the curve at the same time. The technology usage does vary when mapped against the different BaM Content Chain® model areas; for example, it could be Early Adopter in one area and Mature in another.

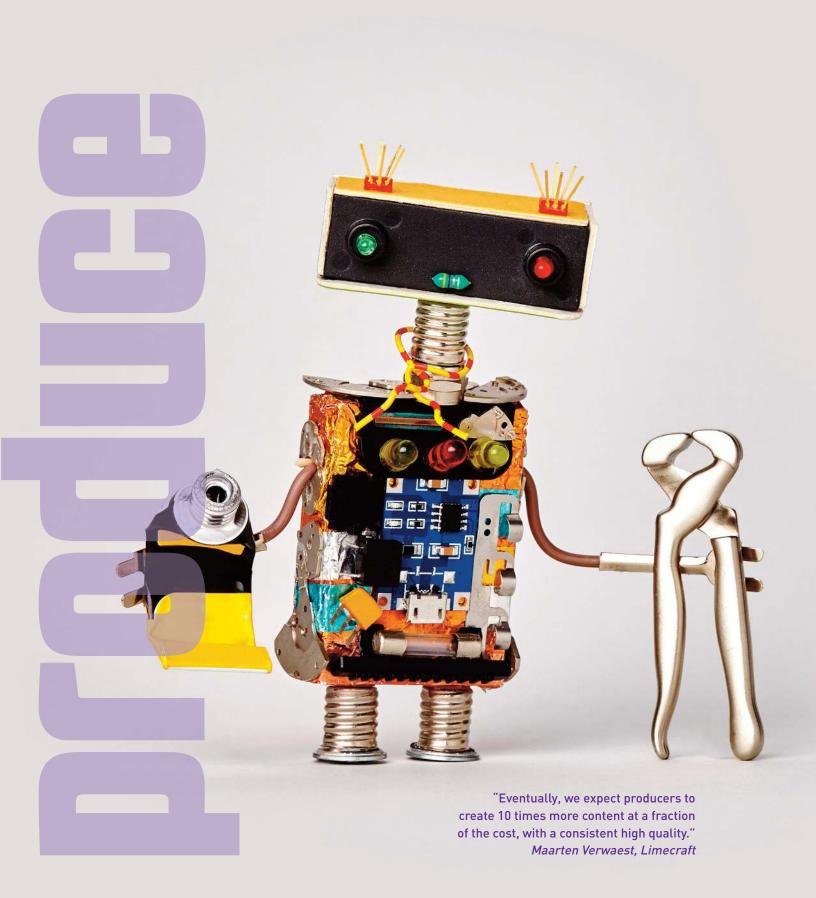
Do note that some 'trends' on the roadmap are a group of technologies that do affect our industry and members directly and demand to be considered in whole. Gaming and eSports are a prime example of this.

At a glance, viewers can see the fourteen overall main technologies/trends and where they fit on the adoption curve. By zooming in for more details the viewer can read the Synopsis that includes a brief commentary of the highlights.

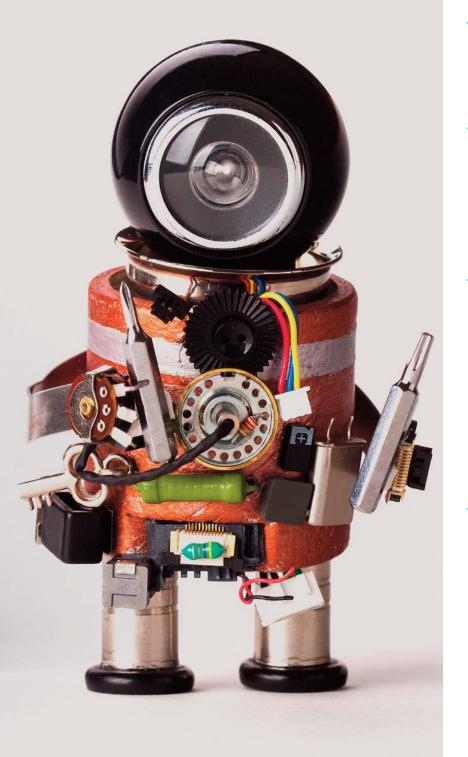
#### **The Great Debate**

Don't be alarmed if you come across some disagreement on the mapping. There were disagreements within the IABM roadmap working group itself, however being professionals, additional research was taken on and consensus for each mapping was achieved. As with all research, this is a reference where the user is free to add in their opinions and commentary. Adding this extra color in front of your audience viewing the roadmap will be sure to provoke meaningful debate, and hopefully help you to promote your own strategy and collect some PO's.

Visit the IABM website at www.theiabm.org to get your copy of the IABM Technology and Trends Roadmap.



# SPECIAL REPORT



# Produce – more speed, less cost



**Roger Thornton** *IABM* 

We spoke to IABM members

Marquis Broadcast and Limecraft to
discover what the state of play is in
the Produce segment of the BaM

Content Chain® and what we can
expect to see over the coming
months and years.



THE **BaM**® CONTENT CHAIN

from **Creator** to **Consumer** 

The biggest enabler is that the production process is no longer tied to a physical media type and compute processing can take place wherever makes most sense – Marquis Broadcast

#### What's driving change in Produce?

For Marquis Broadcast Managing Director, Paul Glasgow, the challenges remain constant, though the means of surmounting them is changing fast. "The Produce drivers of change have always been the same for content creators. This has been true since the earliest handcranked film productions; a desire to produce content, better, faster, more securely and cheaper, without compromising creativity. However, the speed of change is now remarkable. The biggest enabler is that the production process is no longer tied to a physical media type and compute processing can take place wherever makes most sense. So a production could be in a single location but also split between geographies, sharing processes and talent," Glasgow asserts.

CEO and Founder of Limecraft, Maarten
Verwaest, also sees the challenge lying in the speed of change – and cutting through the crowd. "Cheaper production technologies and increasing network connectivity have had a dramatic effect in the recent past, primarily enabling producers to extend collaboration and increase efficiency and productivity. In turn, the new 'Networked Economy' is dematerialized and has given producers and distributors a global horizon.

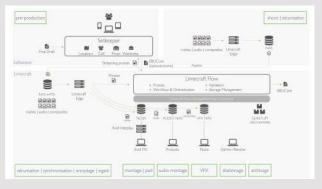
"However, a side effect of this, the shift from cable to OTT/linear to VOD/regional to global distribution, has an even more devastating impact. As content is now produced with the intention of being globally distributed, there's a deluge of content and consumers tend to get lost. Distribution is taken for granted but exposure is not; producers have entered a survival of the fittest race – life or death. It will cause the next great extinction," Verwaest warns. "To stand out of the crowd, global distributors such as Amazon, Netflix, Disney and their likes are competing for the highest budget content. Smaller producers do not necessarily aim for the big budgets, but can build a business by creating content in a valuable niche."

For Verwaest, the solution lies in creating and using data consistently right through the production process rather than retrofitting it after the event. "In either case, the distribution potential stands with the control of all relevant 'master data'. The master data must ensure content items are searchable and retrievable through search engines, and that recommendation engines can

recommend such content. More importantly, accurately time-coded master data will fuel new business models by connecting media and retail, replacing traditional advertising models that have been eroded because VOD services enable end-users to skip the commercials. Eventually, all dialogue fragments will have to be supported by subtitles in various languages to create maximum exposure to as large an audience as possible.

"At Limecraft, we believe that creating such master data and subtitles by image processing techniques or speech technologies ('Al') is a solution for the wrong problem. All these valuable master data, including characters, dialogues, locations props and wardrobe, are carefully planned and managed in pre-production. As a producer, the key is to link these data with the raw material from the set – the rushes – and manage the flow of master data through the consecutive steps in post-production."

Verwaest illustrates this with an example of a project Limecraft was involved in using its 'Setkeeper' for a major French producer. For a particular production, an average of 800 hours of rushes per season are shot, which are automatically and accurately tagged with location, cast, wardrobe and props.



"Consistently managing such flows of master data requires bridging the gap between digital production islands and to radically opt in for a more integrated approach," says Verwaest. "Producers and distributors that fail to adapt to will probably not survive the next great extinction."

#### What is the state of cloud adoption in Produce?

"The early adopters are now well into cloud deployment of all kinds," says Marquis' Paul Glasgow. "One misconception is that the cloud is a homogeneous thing when it is not; it is becoming extremely nuanced, with many new vendors addressing cost, security and As content is now produced with the intention of being globally distributed, there's a deluge of content and consumers tend to get lost – Limecraft



performance issues. The cloud also brings plenty of business and workflow benefits as well.

"It can make good sense to use cloud when a production is not concentrated in a single location and remote collaboration is desired," Glasgow continues. "Or perhaps the producer wants to host the production work-in-progress in their own cloud storage account so it can be managed off-site. To enable this kind of workflow, we recently released Postflux, which enables cloud and on-premise versioning for Adobe Premiere Pro Projects. Our next steps are to integrate more production tools into the Postflux platform – watch this space!"



Limecraft's Maarten Verwaest also acknowledges the many benefits the cloud can bring, but reflects that not all its customers are there yet. "50% of our customers are willing to store the metadata of their content in the cloud whereas 50% opt for a local installation. Limecraft can compare, because we offer both models at SaaSbased price levels.

"On average, customers that opt in for the cloud-based approach are up and running with a first production in 1 to 2 weeks and scale along with the production requirements. They can easily spin up new services and wind down those that are out of production. However, customers that opt for an on-premise installation usually spend around 6 months implementing their solution. This involves procuring hardware, configuring the servers, setting up backup and disaster recovery processes – all of which are available turnkey in the case of in a cloud-based implementation. People still heavily underestimate the total cost of ownership of an on-premise architecture," says Verwaest.

#### How big a concern is security?

"Since Marquis Broadcast makes production disaster recovery software, we get to hear real production horror

stories: fire, floods, earthquakes and system failures – the list goes on," says Paul Glasgow. "Some of the most 'on-trend' disasters are malicious crypto-locking ransomware attacks, which will destroy shared storage systems, deeming them unrecoverable. We know of this happening to three major organisations, destroying petabytes of production work-in-progress.

"Fortunately, our disaster recovery and business continuity software uses analytics to ensure that any encrypted files will not be copied to the backup," Glasgow continues. "Since the backup can be on-premise and/or in-cloud, we can recover from cloud to another location and continue operations. Using our clever technology, we are able to recover individual projects within hours – not weeks compared to using conventional technology. We have recently delivered two Workspace Backup systems to an LA-based company, which write backups to the cloud to be recovered to a second location in the event of a disaster.

"We have also developed a remote service, called Fotonflite, which combines with our applications to securely connect between Avid and other types of shared storage systems. One key security requirement is that files shared between production centres can never be at rest between connected systems. So Fotonflite will sync a server in LA with one in London, with data never at rest, plus encrypted and multi-threaded, so it's not possible to intercept the data stream and recreate content," says Glasgow.

Limecraft also sees security as a major issue, but tackles it in a different way. "The main hurdles to adoption of cloud-based infrastructure are security and performance and Limecraft has mitigated those completely," Maarten Verwaest says. "First of all, for maximum performance, we ensure that the high-res footage is stored on disc or tape storage services owned and operated by the customer. We only need a low-res copy of the media in the cloud for collaboration and pre-cut purposes. As such, Limecraft customers benefit from the collaborative aspect of the cloud without trading off the performance overhead.

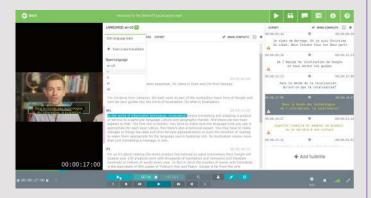
"In terms of security, cloud-based infrastructures rather have a competitive advantage. The infrastructure is scalable and resilient, so we offer premium uptimes. Backups are designed in and restore procedures are executed on a daily basis. Finally, to mitigate human mistakes, all media and their associated metadata are

50% of our customers are willing to store the metadata of their content in the cloud whereas 50% opt for a local installation – Limecraft

copied on a daily basis on the infrastructure of the customer. So in the unlikely case the main repository becomes unavailable for an extended period, there are alternative procedures in place to make sure the media remain available for processing and distribution," Verwaest adds.

## What role does automation and AI play in Produce workflows today?

"Limecraft invests heavily in AI, either by adopting 3rd party services that extract meaning (so called AI engines like Valossa or speechmatics), or by developing core technologies ourselves, like automated rough cut editing based on the screenplay, automatic subtitling and localisation (2019 NAB product of the Year in the AI category), or automatic archiving," says Verwaest.



"The key to a successful deployment of AI in production is to understand that AI is just a feature, a solution looking for the right problem," Verwaest continues. "It may be instrumental for producers to eventually deliver a better service, but It changes the way people do their jobs and it will cause resistance by people that fear losing their jobs. We believe it is critical to lower the barrier to adoption by moving the focus from 'Artificial Intelligence', which is polarising and implicitly suggesting human work is less intelligent, to 'setting up a pipeline to make better content faster', which is obviously an offer creative professionals can't refuse. If we succeed, we give unprecedented creative power to smaller and mid-size independent producers that would otherwise not be able to leverage cutting edge technologies.

"As an example, one particular area where AI is useful and yields an immediate return on investment, is subtitling and localization. Granted that translation is an essential part of the creative work, no one enjoys then counting frames to set the cue points of each individual

subtitle. By leaving that to a machine, we can create subtitles in as many languages as required at marginal cost. So for independent producers, the proper use of AI ensures their content is accessible worldwide and accessible through search engines."

This is not just fine talk – Limecraft has backed it up with action. "Because we are convinced that making Al accessible to the average producer is a critical success factor for the survival of the culturally fragmented media landscape in Europe, Limecraft engaged with YLE (Finland), Aalto University, Helsinki University, Surrey University, Lingsoft, INA and Eurecom in a major research project MeMAD, funded by the European Commission," says Verwaest. "MeMAD stands for 'Methods for Managing Audio-visual Data: Combining Automatic Efficiency with Human Accuracy', and it deals with various ways of implementing Al technologies to the benefit of the media production community.

# According to IABM research, 4K/UHD adoption has been slower than forecast. Is this going to gather pace now?

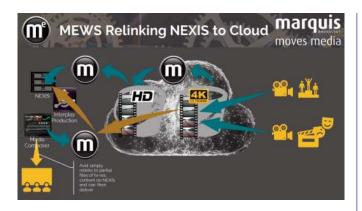
For Marquis' Paul Glasgow, the technology is all in place, though the sheer size of UHD files requires an innovative approach in post-production. Glasgow however questions whether UHD will find a major place on broadcast schedules in the near future. "As a software company, we already manage 4K/UHD/HDR codecs and, frankly, if a customer is using HD or UHD, the question is more about scaling the compute, network and storage infrastructure, so we are not overly fussed how fast the transition happens. UHD is pretty much here for the mainstream producers of quality high value content; whether this finds its way to non-OTT consumers is another matter," he says.

"However, for us, proxy relinking is making a comeback to reduce costs of UHD production," Glasgow continues. "With our Medway solution, we can do this easily on the ground between HD proxies on the expensive shared storage and UHD rushes on less expensive tier 2 storage. When the edit is finalised in HD, it can be automatically conformed at UHD, only retrieving the required UHD partial files.

"As a twist to this, we have just put into production a cloud-based proxy relinking system for a major US network who have finished production-quality content hosted in AWS. Using our MEWS service hosted in cloud compute, we automatically index, transcode and re-wrap

Increasing image resolution, better color representation and more audio channels are an ever-moving target; 4K and UHD are just an intermediary step. Today, all television and home-grown production shot by smartphones is at this level — Limecraft

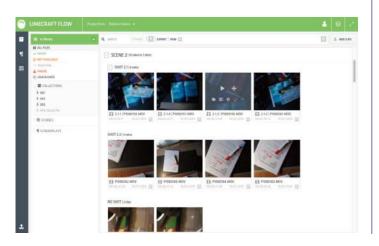




the source files in the source AWS buckets and deliver them in proxy resolution to an Avid Interplay system on the ground. When the Avid proxy edit is complete, we restore the production quality partials from AWS, check them into Interplay to complete the edit onground," Glasgow explains.

Maarten Verwaest at Limecraft sees UHD as just another step on an ever-rising resolution pathway. "Increasing image resolution, better color representation and more audio channels are an ever-moving target; 4K and UHD are just an intermediary step. Today, all television and home-grown production shot by smartphones is at this level.

"With the rise of lightfield detection to avoid optical artefacts and to give a better representation of depth information, we will level the playing field in terms of image representation. However, it will come with massive storage and bandwidth requirements, which will increasingly put pressure on present networks, storage and asset management services," Verwaest adds.



# What's coming next in content production technology and workflows, and what is your company planning?

"In the next 24 to 48 months, we expect further industrialisation of the production execution processes," says Maarten Verwaest. "Creative processes will be executed in the virtual domain, using advanced script animation tools. A three-dimensional and multi-modal 'script' will replace the conventional document-oriented approach; unstructured text-based information will be replaced by accurate structured and timecoded information. Shots of live action and synthetic imaging will be mixed ('mixed reality') and automatically linked to this electronic script. The script will a priori contain all further editing decisions, so that the execution can be automated and as many versions as possible can be produced at marginal cost."

For Marquis' Paul Glasgow, it's about tapping the cloud to put the best creative minds to work – wherever in the world they are. "Without giving too much away, our strategy is to enable seamless, hybrid cloud-ground production workflows, such that it becomes a producer's operational decision when and where to use cloud and/or ground applications, services, processing and storage. The immediate advantage is that these workflows open up the creative pool of talent almost irrespective of the region. It also improves security and protection of remote work-in-progress," Glasgow concludes.

The final words go to Maarten Verwaest, predicting the irresistible rise of the machines: "Eventually, we expect producers to create 10 times more content at a fraction of the cost, with a consistent high quality. To achieve this, IMF (Interoperable Master Format) has a pivotal role. A single customisable package of all components and a single configurable bill of materials will enable machines to create an arbitrary number of different versions on the fly," Verwaest concludes.

# **MEA region update**



Hassan Ghoul
Director of MEA,

#### **CABSAT 2019**

The 25th edition of CABSAT closed its doors on 14th March 2019. As expected, the number of exhibitors was below previous years. CABSAT has not yet released any official attendance numbers but the general feeling was that attendance was also down compared to previous editions.

Several IABM members have indicated that although attendance was down, they nonetheless met several good potential customers with serious business opportunities. The majority of attendees were from the MENA region, including Saudi Arabia, Kuwait, Bahrain and Oman. A number of attendees from Africa were also at the show, including visitors from Ethiopia, Nigeria and Tunisia.

Among the new features at CABSAT 2019 was an eSports pavilion – the MENA region's first ever eSports forum. The subjects covered included media & distribution rights and monetizing eSports opportunities in the region.

Another new feature was 'Flix on 86' which featured live cinema screenings with a mixture of Arabic and Korean content. It also included masterclasses and photography workshops given by industry experts.

#### IABM Executive Summit 2019 - Dubai

On 11th March, the day before CABSAT opened, the 'Arab HDTV and Beyond Group' held its Annual Meeting. This event was well attended by manufacturers as well as broadcasters. Following this meeting, IABM hosted its Dubai Executive Summit, which proved to be the most successful yet with over 90 delegates registering to attend, debate and network.

The programme was diverse with the opening keynote by Bassam Alas'ad, General Manager/Chief Content Officer of CMS and a partner in the Greener Screen initiative, focused on sustainability and

environmental protection through better working practices and using low-energy products.

Following this was a very interesting panel session discussing the future trends within the industry featuring Pankaj Kedia from Dolby and Hicham Ismail from Avid, followed by other keynotes from Red Bee Media and Skyline Communications.

The networking after the formal sessions was valuable and insightful with many members joining from the DWTC after having completed their stand build ready for the opening day of CABSAT the following morning.

Feedback received after the summit was positive and I got several positive comments about the idea of having the summit cover content as well as technology.



#### **Anti-Piracy Conference:**

This is the second edition of this conference which was organized by BroadcastPro Middle East magazine on 23rd April and was attended by about 120 media and broadcast professionals.

The conference included three panel discussions. The first panel looked at 'Assessing the impact of piracy on MENA stakeholders' and how the industry can come together to combat illegal streaming services and the overall piracy issue. The panel included panelists from DigiSay, MBC Group, Zee Network, Irdeto and YuppTV Inc.

The second panel was entitled 'Fighting back: using technology to shield media assets'. It considered the

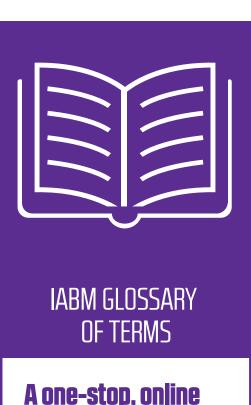
infrastructures and platforms used to build technology to fight piracy and how to balance security and cost. The panelists were from OSN, Rotana Media Group, Irdeto and U-TO Solutions.

The final session focused on the legal issues around piracy and was entitled 'The rule book: combatting piracy with legal experts'. It looked at the most effective legal tools to combat piracy and how governments can assist with this issue. Panelists included legal executives from OSN, Naik Naik & Company, Discovery Inc. and Rotana Media Group.

Vijaya Cherian, Editorial Director, BroadcastPro ME, commented about the outcome of the conference as follows:

"One of the key points that came out of that discussion was that pirates are not just smart and continuously evolving, they actually seem to have a much better understanding of viewer needs than traditional players. As a result, they have packaged their products better with greater SEO ranking and discoverability on search engines. They are userfriendly and affordable, and consumers like to view their entertainment on those terms. What pirates can't seem to guarantee is a reliable service. This is what legitimate services should pick on and in addition to offering packages at similar prices with flexible payment options, they should be able to ensure a consistent and reliable service".





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# IABM EMEA/UK region update



**Darren Whitehead**Director of Business
Development, IABM

#### **EMEA**

Earlier in the year, the EMEA Members' Council reached its second anniversary, and as members serve for a term of two years, we held elections to choose the members of the Council for the next two years. So positive was the response in terms of candidates and member companies wanting to get involved there was enough interest and momentum to launch a Members' Council specifically for the DACH region (Germany, Austria, Switzerland) in addition to the EMEA Members' Council – more details about this on the opposite page.

Those elected to serve on the new EMEA Members' Council are:

Ole Clausen – CEO, Danmon Group (Council Chair)

David Alexander – Commercial Director,

Brainstorm 3D

Muriel Le Bellac – CEO, Videomenthe
Franck Coppola – Co-Founder & CEO, Hexaglobe

Patricia Corral - Marketing Director, VSN

**Thomas Gunkel** – Marketing Director Broadcast, Skyline Communications

Laurent Lafarge - President & CEO, Anevia

Esther Mesas - CSMO, Tedial

Carlo Struzzi – CEO & Co-Owner, Video Progetti Chris Exelby – Managing Director, TSL Products

(UK Members' Council Chair, representing UK Members' Council which reports into EMEA Members' Council)

The DACH and EMI

The DACH and EMEA Members' Councils are looking forward to the Executive Summit in Cologne on 3rd June, the day before AngaCom opens. This demonstrates the flexibility of the Executive Summit concept, allowing IABM to support members at a wider range of shows and maintain visibility in local regions in support of Regional Members' Councils.

#### UK

The UK Members' Council has been very active behind the scenes working across the landscape to identify particular event opportunities to holistically assist the members in the region. I am pleased to announce that the fruits of this hard work will be seen at the beginning of Q4 with an event in London on Cyber Security and an event in Northern Ireland, once again in conjunction with our colleagues at the BBC.

The UK trade show landscape has become very competitive between BVE (traditionally in February) and Media Production Show (traditionally in June). The show dates for BVE in 2020 with be in June with the Media Production Show moving to May. The UK Members' Council's view is that the UK needs one quality trade show that delivers good ROI and continues to work towards this aim.

The UK Members' Council is due for elections in June to elect members for the next two-year term. If anyone is interested in joining a highly motivated and engaged Members' Council then please feel free to contact Darren.whitehead@theaibm.org for further information, or look out for the emails requesting candidates.

In general terms the market is still challenging with business levels and volumes remaining unpredictable. Speaking to many UK broadcasters, they are continuing to face challenges implementing significant projects, predominantly around cost and workflow efficiency. I have also detected a move away from cloud-based services requiring storage to on-premise storage and even a stay of execution for SDI, with 'older and trusted' technology being deployed instead of IP, due to concerns (and costs) associated with interoperability and control issues.

The trend to deliver content services direct to the consumer via an OTT offering continues to be driven by fear of competition (FAANG companies and newly amalgamated content behemoths like Disney and Comcast) and the opportunity to drive new advertising revenues. Interest and spend on Ad Tech continues unabated. In the UK and Europe, we are seeing significant collaborations between public service broadcasters as they amalgamate budgets and technology spend/services in order to generate scale to try and compete with the global organizations detailed above.

# **New DACH Members' Council**

### IABM further expands its regional representation initiative

We have just announced the line-up for the newly formed DACH Members' Council. The formation of the new Council was driven by the result of the recent EMEA Members' Council elections. So positive was the response in terms of the number of candidates and companies wanting to get involved, it was clear that an additional Members' Council specifically for the DACH region (Germany, Austria, Switzerland) would be welcomed.

IABM Regional Members' Councils serve for a term of two years, with a mission to be a powerful voice in each region's broadcast and media technology industry, provide a platform to bring local issues to the fore and deliver events and support tailored to regional members' needs. IABM now has Regional Members' Councils in APAC, EMEA, DACH, UK and the Americas.

Serving on the new DACH Members' Council are:

**Jochen Bauer** – *Marketing Director, Guntermann & Drunck* 

**Stefan Elbert** – Sales Manager File Based Media Solutions, Rohde & Schwarz

**Jan Eveleens** – Director Business Development Video Solutions, Riedel Communications

**Gunnar Lahmann** – Director Marketing & Communication, Aprile Consulting GmbH

Jürgen Loos - Director Sales & Marketing, BFE

Craig Newbury - EMEA Sales Manager, Lawo

**Claus Pfeifer** – Head of Technical Sales – Media Solutions, Sony Europe

Alain Polgar - Founder, mediaSTRAT

**Juergen Sommer** – VP Channel & Field Sales Enablement, Vitec Videocom

**Stefan Weidner** – Sales Director Central Europe & Russia/CIS – Grass Valley, a Belden Brand

**Gerlad Zankl** – Director of Business Development EMEA, Bitmovin

More information about the DACH Members' Council members can be found on the IABM website in the 'About us' section.

"For the past three years IABM has been implementing an initiative to set up Regional Members' Councils, allowing IABM to focus on particular regional issues that affect member companies and are key to growth and prosperity for all," said Lucinda Meek, IABM Finance Director, who oversees all IABM's Regional Members' Councils. "The formation of the DACH Members' Council further reinforces our commitment to supporting our members' locally in addition to the wide range of central services IABM offers."

"That we have been able to create a new Members' Council for the DACH region demonstrates the value that our members put on this initiative," said Darren Whitehead, IABM Director of Business Development, who facilitates activities for the EMEA, UK and new DACH Members' Councils. "I am looking forward to engaging with the council to focus on issues that are key to growth and prosperity for member companies within the region, and we will be announcing the first events shortly."

"Regional Members' Councils have enabled IABM to engender a greater sense of community and support in a time of unprecedented industry change," said Peter White, CEO, IABM. "As well as providing a forum to guide IABM's activities in each region, they also bring member companies together with a range of region-specific activities that deliver practical business benefits pertinent to local market conditions. The new DACH Members' Council comprises some of the leading industry figures and companies in the region, and I am certain it will add real value for all IABM members in DACH."

... the TV station MBC highlighted an autonomous tractor on its booth, which the broadcaster had developed as a spin off from its research on GPS guidance and tracking

# **APAC region update**



Peter Bruce Director, APAC, IABM

## ConnecTechAsia 2019 is upon us

ConnecTechAsia in Singapore this June is the rebranding and umbrella name for BroadcastAsia and CommunicAsia. The organizers have added NXTAsia, which includes the latest of technologies as per the organizers' explanation "...comprehensive array of disruptive technologies and emerging solutions".

I first went to BroadcastAsia around 1996. The show was held alternate. years; it was a very different time then. The broadcast show was held at the same time as CommunicAsia, but there was a distinct difference between the two events. BroadcastAsia was more of a B2B Exhibition. On their way from the airport, a regional sales manager attending BroadcastAsia would be comforted by the familiar sight of a large antenna, which would undoubtedly have a TV station beneath it. Meanwhile CommunicAsia was very much a telco show with a B2C feeling, with companies such as Nokia and Erickson launching new phone models at the event. Visitors coming to one show would mostly likely not visit the other; why would a production engineer be interested in the telcos' antennas and satellite dishes?

The reason that I highlight the coming together of the three shows under one umbrella into ConnecTechAsia is that this is a reflection of what has happened to our industry overall.

Both BroadcastAsia and CommunicAsia have changed significantly – and CommunicAsia is now a true B2B show. Just as the broadcast industry has moved to being digitized and software-centric, the communications industry has gone through a similar process as industry convergence happens at an everincreasing rate. These two disciplines are crossing over at a rapid pace: I could highlight Telstra as an example – its core markets in the past were the

home consumer and mobile phone users. Telstra's services division today has contracts to distribute (including all the metadata) sports events such as the WTA. Its OTT services are just as valuable to the broadcast and media professional (who would normally visit BroadcastAsia) as they are to the telecoms provider.

The addition of NXTAsia highlights the interest of visiting media and telco people in the total convergence of industries. They must also get to grips with a wide array of technologies such as IoT, Cyber Security, Cloud, AI, Smart Cities, blockchain and more. When I visited the KOBA show in Korea recently, I noticed the TV station MBC highlighting an autonomous tractor on its booth, which the broadcaster had developed as a spin off from its research on GPS guidance and tracking.

Thus the merging of the three exhibitions by the ConnecTechAsia organizers is just reflecting what is happening across the industry as a whole. Additionally, as the technology rapidly evolves, this is having an equivalent knock on effect on business models; media outlets are having to change their business models just as fast as the technology is changing. It has been very clear for some time that the old advertising income models that underpinned broadcasters' profits and the telcos' historic reliance on profits from phones is not working any longer.

For this reason, IABM will be running one of its Executive Summits in

Singapore on the Monday before
ConnecTechAsia kicks off. The sessions
will be relevant to both the
technologists and business-focused
employees of broadcast and media
companies. Under the banner 'New
Markets – New Business
Opportunities', the Summit will
highlight new and emerging
technologies, how they are changing
end-users' business models, and how
they are also opening up new
opportunities for technology suppliers.

Many media companies are reviewing their business models and looking into AV, events, eSports, House of Worship and focusing on how to address social media. Meanwhile, the supply side of the industry is focused on adapting and reskilling staff and gaining capabilities in different disciplines. This could be to refocus staff to become IT centric, understanding the differences in covering eSports or a ProAV event, or getting to grips with new forms of OTT distribution. The broadcast industry is not dead - it is just adapting to the new digitized world of media everywhere, at any time and on any device.

So the regional sales manager that in the past would visit an isolated building with a TV transmitter attached, is now more likely to visit a non-descript office block in which computerized OTT operations are running, using cloud or IT centric storage.

The media world is adapting and so is the ConnecTechAsia show in Singapore. These are exciting times.



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EREIGHTING

Buying and Selling Trends based on text I extracted from the report. Go to www.theiabm.org/iabm-special-report/

# North America region update



**Kathy Bienz** *Director, North America, IABM* 

#### North America: NAB-in-Review

From my perspective, NAB continues to reflect the major transformations taking place in the broadcast, media and entertainment industry. Over 200 companies on the NAB site had '1st Time' flags displayed by their names, newly joining the NAB exhibitor ranks along with the well-established industry providers.

Many of the latter companies continue to experience acquisitions and mergers as they jockey for market positioning and expand portfolios to keep pace with evolving buyer demand.

In recent years we have seen completely new offerings, such as drones, plant a stake at NAB. As media technology further expands into our daily lives, this year was a first in seeing passenger vehicles on display with the latest in-car news/media integration featuring hands-free content feeds with voice narration/control.

As the primary focus of NAB is bringing together Buyers and Sellers, below is from our NAB Special Report which succinctly reflects the current buying/selling situations based on extensive IABM research and interviews.

The overview below highlights only the Buying and Selling Trends based on text I extracted from the report. Go to www.theiabm.org/iabm-special-report/ to get more comprehensive text and a wealth of charted statistics into the buying/selling trends, plus Technology Adoption Trackers, Drivers of Change, Content Chain Analysis and more!

#### **Buying Trends**

The need for digital speed is prompting media companies to transform their organizations into media factories capable of delivering content to multiple platforms and devices.

In the brave new digital world, the value of a technology solution is assessed by buyers against these criteria: it either opens unexplored opportunities such as new revenue streams and quicker service deployment or enables them to carry out existing activities at lower costs.

Data is becoming an increasingly important asset for media factories. As media companies move to direct platforms, the importance of consumer data, as well as data on their operations, in powering decision-making is growing. This data is a goldmine and media companies want to leverage it in different parts of their content chains to drive automation, business analytics and business rules that deploy virtual machines depending on demand.

In media factories, workflow is everything. Workflows need to be tightly integrated and pieced together to function effectively and move to next-generation content chains.

As the market dynamics continue to shift and buyers adopt new technologies such as the cloud and IP networking, complexity is increasing with some of them requiring a high degree of customization and features built on top of existing solutions. Buyers have now a front row seat in future technology development, driving roadmaps along with suppliers.

Interoperability remains a key priority for an overwhelming majority of buyers. Some of the new tools to achieve that are microservices as well as an increased reliance on APIs to piece together the rising number of software tools used by media organizations.

To build integrated content chains and digital speed, media companies are increasingly driving technology development, by themselves or in partnership with suppliers.

New deployments increasingly feature co-development of technology solutions by both buyers and suppliers in a collaborative environment. The rise of IT technology and the changing dynamics in the industry have favored the rise of partnerships and a move to a service-oriented approach.

As evidenced by IABM data, some of the most promising new markets include eSports, security monitoring, telecoms and sports

#### **Supply Trends**

As the industry increasingly shifts towards software and the cloud, media technology suppliers continue to strive to transform their organizations by transitioning to new offerings.

Demand continues to shift from legacy to digital technology including everything from cloud-based and AI tools to apps and user interfaces. The new models demanded by buyers require vendors to transition to software subscriptions and consumption-based payments. R&D investment also continues to focus on cloud-based technology (for software suppliers) and IP technology (for hardware suppliers). The rise of new technology provision models has also opened the industry gates to a new generation of suppliers.

The move to software and the cloud continue to exert pressure on suppliers' financials as they move to subscriptions and consumption-based payment models.

The new models rely on a radically different financial balance that prioritizes OPEX over CAPEX – smaller, monthly (or daily) cashflows rather than larger upfront payments. This transition often entails an initial financial shortfall that may be difficult to implement (or accept) at some organizations. It also entails a complete re-organization of investment around the new cashflow paradigms.

Some industry sectors are increasingly under pressure from technology commoditization and rising competition from new entrants while buyers demand new features and functionalities. This double pressure on revenues and costs is prompting vendors to make changes in their offerings, or to go after new markets adjacent to broadcast and media.

**Convergence Zones:** As broadcast and AV technology converge, some suppliers are transforming themselves by going after adjacent sectors.

As evidenced by our data, some of the most promising new markets include eSports, security monitoring, telecoms and sports. As the boundaries between broadcast and these adjacent sectors become blurred, these have come to represent important growth areas. As one would expect, these markets have radically different needs compared to broadcast and media, requiring suppliers to adapt their marketing and selling practices.

#### **IABM Americas Executive Summit, New York**

The second of three regional Executive Summits was held May 9th in New York City on the morning following the conclusion of Streaming Media East. The topic was 'Disaster Recovery – Are you equipped to defend against all the risks?' It was a great collaboration with special thanks to Telestream, the Summit sponsor, and our contributing presenters below who provided thoughtful insights into multiple aspects of disaster recovery (DR).

I opened the event with a brief presentation on the valuable IABM member benefits that enable the industry's providers to expand their engagement and support of end-user clients.

Stan Moote, IABM's CTO, presented the latest information from IABM's comprehensive NAB Special Report. He examined the most recent drivers of change in the global broadcast and media industry and how these are translating into a shift in demand for media technology, from the deployment of cloud technology and remote production, to the adoption rates of artificial intelligence and blockchain.

Liz Davis, with Diversified, is the Director, Media Workflow Group, Media & Entertainment. She presented the 'Cost of Doing Business: Real-time Disaster Recovery' with the perspective that as we become more 'one world', how can we ensure that DR is accessible and efficient across the globe and how the Cloud factors in. In a well-rounded view of DR, she addressed the need for library reassessment as it relates to cost effective measures for content retention for truly real-time DR.



Malik Khan, with LTN Global, is Co-founder and Executive Chairman of the Board. His presentation, entitled 'A Well-Architected Network is Key', described how providing DR against both fiber and satellite failure comes down to a well-architected network. He presented two actual case studies: 1) TV station destroyed by the devastation of a hurricane; 2) Major Tier one internet provider's network which had a substantial failure. Malik presented the

impacts experienced with these failures and described insightful protection techniques to assure connections are resilient.





Mike Palmer, CTO at Masstech Innovations, presented on 'Storage Architectures for Disaster Recovery'. Mike understands DR in detail and provided a case study on a large content distributor's best practices. He also described several options to provide optimal content backup solutions, including cloud, hybrid and on-prem architectures that include options for seamless performance, automatic fail-over and cold fail-over workflows.

#### **Panel Discussion**

Following the DR presentations, a very lively discussion transpired among the following panelists, along with the addition of MJ Drouin of National Film Board of Canada, where she serves as Director, Information Management & Technologies, Finance, Operations and Technology.







# **New IABM Dealer Directory**

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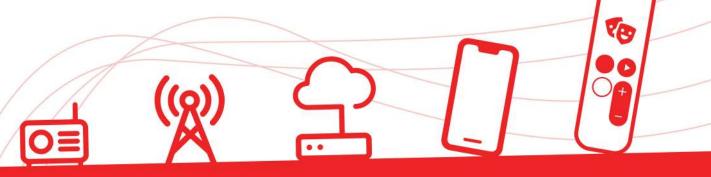
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# Voice of the Customer **End users lay out their priorities**



Roger Thornton IABM

The end-user panel session was undoubtedly the highlight of the IABM Voice of the Customer event, held on the Sunday prior to the opening of NAB Show 2019, producing some great insights for technology vendors. You can view the full video of the session on the IABM website; what follows is a summary of the key points. The panellists were:

**Maxime Caron** Senior Director of Architecture & Strategic

Development, CBC/Radio-Canada

Gordon Castle SVP Technology, Eurosport

Paul Clennell Chief Technology Officer, dock10

William T. Hayes Director of Engineering and Technology,

Iowa Public Television

Chris Ostertag Chief Technology Officer, KLRU-TV

Carlos Octavio Queiroz Director of Technology, Architecture &

Business – TV Globo



# What challenges and opportunities have panellists had in recent/current projects?

Carlos Octavio Queiroz identified evolving the

TV Globo technology stack – "We're using data to segment, improve efficiency and performance for advertisers both for programmatic and to help the sales team," he said. "The challenge is our legacy systems that we have to integrate with all these new processes to make it frictionless for advertisers. It's a very fragmented supplier market, so we will mix in-sourced and outsourced resources to achieve our goal. It's a three year project and we're in the second year. Another challenge is to get the suppliers working together – some from a traditional broadcast base and some from IT; we have systems integrators and consultants helping us, but it is still a challenge."

Eurosport's Gordon Castle said he was currently involved in building private clouds for live production at Eurosport which will encompass everything except ad-tech. "We're taking a partnership-based approach. To speed things up and take advantage of what the vendors can bring into the project, we haven't written RFPs or complete requirements documents – we've identified and engaged partners to work with on developing the scope documents and the detailed requirements," Castle said. "This is a way to condense the timeframe and avoid creating a huge document, then arguing about the parts that are not achievable. We are going to complete the project in 18 months. We are building two tech hubs that are offsite from our traditional facility and then we're going to connect, using remote production, all our existing facilities to them. The production centers and back-end technology are decoupled - we're using a cloud production model."

Does this way of working mean pre-qualifying companies rather than products? "Yes – this is working well but it is challenging. It makes the first few meetings tough because what we want to do is not pre-defined. We're looking to align roadmaps and are trying to influence them in some areas too. If they don't align there will be a problem at some point, and you will have to live with that for a long time," Castle added.

"KLRU-TV's facility is 50 years old and we're building a new facility now," said Chris Ostertag. "It's a big leap for us both



physically and technologically and we're looking for partners to help us become agile and efficient – we do a lot of events in our facility too, so are creating a hybrid facility. We didn't do a big RFP document, we set out what we needed to accomplish. A lot of these things are new to us – we're doing them for the first time, so we're not restricting things at the outset – looking for suppliers to work with us in achieving goals rather than starting out with the operational layer. We're working with an integrator on the design phase, but it's not a restrictive approach. The biggest challenge is the IP jump – our existing audio is analogue, for example; some of our staff have been with us for all those 50 years, so it's a change management process too."

dock10's Paul Clennell has been engaged in a wholesale networks replacement at MediaCityUK over the last year. "We're moving to a Cisco network architecture for the broadcast LAN which has involved very deep working partnerships, and for the campus LAN, we've partnered with Vodafone, who've come in to deliver some very cutting-edge services. The new system delivers all our broadcast services from the studios and post-production to onward distribution, as well as ICT services to the 250 companies based at MediaCity. We've already got 5G infrastructure and we're ready to start exploring its use cases, particularly in content production. The new broadcast LAN massively ups the bandwidth we can deliver – 40Gbps to the desktop, UHD workflows, multi-cam in the studios to satisfy the requirements of the likes of Netflix," Clennell explained.

"We're certainly capital-intensive – we still need to buy a lot of product," Clennell continued. "The challenge we face is that the demands from our customers are very diverse. This stretch of requirements really challenges our relationships with our suppliers. We can't charge a premium for using UHD capabilities for HD projects. We can't simply change from CAPEX to OPEX; as a business, we are measured on EBITDA. So our banking covenants are based on being more capital intensive. As soon as we move to an OPEX model, that affects the interest rates we get charged. Moving to OPEX can affect a business, how it performs, its daily costs. And then there's risk – if I buy a camera and amortize it over six years, that's fine, but if I move to OPEX software models, I'm having to charge a premium – I can't sweat that asset. There's no one size fits all - it's about choosing the right model for the right thing. This means you need

The production centers and back-end technology are decoupled – we're using a cloud production model *Gordon Castle* 

The biggest challenge is the IP jump – our existing audio is analogue, for example; some of our staff have been with us for all those 50 years, so it's a change management process too *Chris Ostertag* 

to be in close dialogue and partnership with your suppliers. They need to recognise the challenges that we face to make it all work. A quick sale doesn't really happen these days."

Iowa Public Television's Bill Hayes faces a very different challenge due to the ownership model of public television stations. "I have a vision of minimizing the amount of resources we devote to handling. We exist to create content, to serve the community. My vision is virtualizing the plant, where hardly anything of the mundane handling is done in the facility and all of the assets that creative people need to create compelling content are there. However, every year our budget goes before the legislature – every year is a new year so I cannot commit significant funding ahead into the next year. I can buy nothing over \$1500 without bids against an RFP, so I need to find vendors who understand that I can't go to an OPEX model."

CBC/Radio Canada is in the midst of creating a full IP production facility in Montreal, which will open in 2020. "IP is not only SMPTE ST 2110, but also nontouch provisioning, so we're pushing vendors in that direction," said Maxime Caron. "Keeping the relationship up to date is key. The business is changing so quickly we need new features constantly; we need to be agile and we need the vendors to be agile too. The broadcast vendors we deal with are those who have transitioned to software; we need to be agile and hardware won't do this. We want software running on IP. The lines are blurring between audio and video too; it's happening in the newsroom and also in production. The journalists are asked for story versions for radio, TV and digital."

#### Give us examples of good and bad practice

Bill Hayes reported that "Iowa Public Television is currently looking for a replacement for our automated playout system – integrating social media in playout is a great step forward. The vendors are thinking about how to integrate playout across the entire facility." On the negative side of the equation, Bill was forthright: "I beg manufacturers to understand that 'implementation issue' and 'broken' are the same thing!" he said.

For Carlos Queiroz, it's the change in the way business

is done, and how attitudes are changing. "Some suppliers understand they have to be more flexible and agile and are eager to adapt to this new way," he said.

For Gordon Castle, it's about "engaging in something that allows a vendor to evolve their product in tune with the media company's needs. But there's too much focus on the IP layer rather than the IT layer – they're not fully taking advantage of the IT landscape to better interoperate. We need to shift the value up the stack – the infrastructure is a commodity; it's how you get content out that matters."

The message from Maxime Caron was simple but powerful: "Multiple vendors are responsible for delivering a system. We all have to work together – even competitors!"

# Recent IABM Buying Trends Reports have identified an increase in BIY (Build it Yourself) among broadcast and media organisations – the latest report puts the figure at 41%. Was the panel following this trend?

"In certain areas we are, mainly in direct-to-consumer services," Carlos Queiroz answered. "We're creating a 'digital hub', evolving services and productions with our own staff – a lot of devops and data."

"We build a large number of applications ourselves," said Gordon Castle. "We own the integration layer – we take responsibility for it. We're trying to move this to a microservices framework."

"Only do what only you can do; we are divesting ourselves of things that are outside our core function and doubling down on the things that only we can do," said Chris Ostertag.

"We're a small business – we don't have a large software team; we doubled it in the last year to two people!" said Paul Clennell. "It's about developing very niche tools within our business to provide interoperability between systems that are otherwise off the shelf. As soon as I start to make the systems bespoke, I'm heading down a road of pain. Where we do focus in-house is around systems integration and services to our own production clients. We've got a real focus on virtual studios at present and we've employed talent from the gaming industry as developers, bringing in that expertise to give our studios a real USP."

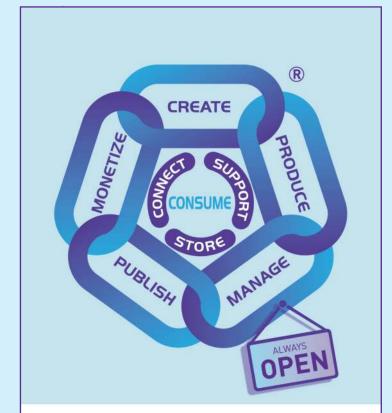
We need to shift the value up the stack – the infrastructure is a commodity; it's how you get content out that matters *Gordon Castle* 

CBC/Radio Canada also handles its own systems integration. "We do a lot of software development for all our digital platforms – we have a team of 13 people doing that and I do have a small team of four software developers who connect the APIs, and do the media pipeline for our orchestration system. This investment – made three years ago – has paid off 200 times. It helps us make steps forward much more easily in the future."

Multiple vendors are
responsible for delivering a
system. We all have to work
together – even competitors!
Maxime Caron

## Changing budgets and financial relationships

Carlos Queiroz reported that TV Globo is in transition to OPEX to be more efficient to use resources as they are needed and not provision them. "The CAPEX 5-7 year model is no longer sustainable. We're looking to cloud and outsourcing," he said. For Eurosport's Gordon Castle, it's a slightly different picture: "We will rent a data center rather than build our own - that will be cheaper for us to operate. How can we capitalize average utilisation rates - allowing for peaks etc - how can we negotiate and get an average utilization price and then capitalize that? We have seen an increase in software support fees as part of this." Bill Hayes has found some ways around his annual budget limitations: "I have got five years of support written into the purchase price. Many of the systems we get are capitalized to include service and support."



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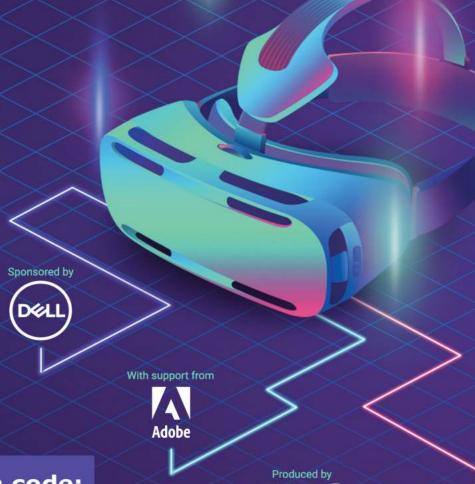
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# Fast forward to the past.....

Back in the day broadcasting was very different – or was it?
Certainly fewer channels, initially no color and of course no Internet streaming. With only a handful of channels, it was the broadcasters who decided what we watched and with only one screen in the house, television was a communal family affair. Much of that early television and radio experience was enabled by a Cambridge based technology company called Pye and the television division named Pye TVT.



**John Ive** *Director Strategic Insight, IABM* 

But those fledgling early days started something and can be credited with kicking off what is now the world of video and audio in all its various forms and formats. Certainly from the first TV sets in the 30s through to the 50s with black and white television broadcasts and then the transition to color in the sixties, they were exciting times. Those former days of glory have been brought to life with the May 2019 opening of the Pye Museum as a part of the Cambridge Museum of Technology.

William George Pye started something in 1896 that was to become an incredible hotbed of innovation and market leading electronics. As a company, Pye employed 30,000 people worldwide at its peak across all divisions. Pye products both for professional and consumer were marketed worldwide, which enabled the introduction of television in many countries. The







Pye started in 1896 that was to become an incredible hotbed of innovation and market leading electronics. As a company, Pye employed 40,000 people at its peak across all divisions.

company gradually disappeared after it was bought and taken over by Philips in the Netherlands.

The link here is that Tom McGann was the Sales Director for Pye TVT and past Chairman of IABM. IABM itself has a long history dating back to the sixties when Tom McGann formed a group of suppliers to campaign for a more cost effective trade show in contrast to the fabulous but expensive Montreux biannual event. In 1976 the IABM was formed by Tom and a group of like-minded suppliers. He was the IABM chairman for 23 years and led IABM to becoming a stakeholder in IBC. His work and activities are fondly remembered, especially for his support of the IABM and love and support for the industry to which he devoted the majority of his career. He gained tremendous respect for being a shrewd but scrupulously fair businessman and a passionate supporter of career development and the training of others.

The BBC was a big user of Pye products with many broadcast firsts captured using Pye TVT Cameras, OB vehicles and transmitters delivering the broadcasts to home TV sets made by Pye's consumer division. In fact, the first OB vehicle purchased by the BBC came from Pye and was used to air the whole annual Oxford and Cambridge Boat Race live for the first time. A more recent example was the World Cup in Mexico in 1986 - sadly close to the time when Philips decided to close the Studio Division.

Fast forward then to the past.... The opening of the Pye Museum is a fitting tribute to the achievements of a once great company and its contribution to television broadcast and many other sectors. Neatly arranged as a timeline, visitors can wonder at the high level of complexity achieved with components with a mere fraction of the capability of modern integrated circuits and processors.

Against all the odds many of those museum pieces have been brought back to life by a group of dedicated volunteers and are once again in full working order with support from the National Lottery Heritage Fund and Historic England.

For those of us who experienced at least part of the era, it's a trip down memory lane. For the younger generation, they can wonder why we would want to watch a soft 405 line, black and white picture on a nine inch screen and compare it to HDR color UHD on a mobile phone!

These were the pioneering days of television, Tom McGann, Pye and subsequently the early days of IABM. As we often say about our parents, without them we wouldn't be here today!

Codemill launched its first dedicated customer-facing product, Accurate Player, in September 2016, a truly frame accurate HTML5 player developed with broadcast, post-production and media professionals in mind

# **Codemill** – solving interesting problems for the media industry



Rickard Lönneborg
Co-founder and CEO

We caught up with Codemill co-founder and CEO, Rickard Lönneborg and Johan Bergström, Sales, to find out what drives this dynamic, young Swedish company that recently joined the IABM family as a Silver member.

Exactly where in Sweden Codemill is based has clearly played an important role in its success – alongside the drive and vision of Rickard Lönneborg and his cofounder and CTO, Johanna Björklund.

"600km north of Stockholm in the heart of Norrland, Umeå has quietly but successfully built a reputation for success in technology and innovation – particularly around serving the needs of the media industry," Johan Bergström explains. "Some of the companies which were either born or are based in Umeå include Ardendo (acquired by Vizrt), Codemill, Limes Audio (acquired by Google), Intinor, Toontrack and Vidispine (acquired by Arvato).

"In the case of Codemill, its founders Johanna and Rickard both studied here and developed the business with the support of local business incubator Uminova. As a digital product studio, with a special focus around media and video, Codemill works with major studios, broadcasters and publishers across Europe and the US, including ITV, the Guardian and ProSiebenSat.1 among others.

"Though only Sweden's 13th city by population, when it comes to technology, Umeå punches above its size," Bergström adds. "Key to that is its university, with more than 30,000 students. It holds an enviable track record, particularly in Product Design, Interaction Design and Computer Science and gets consistent top ratings for this faculty.

"One of the area's most famous sons is Stieg Larsson, author of 'The Girl with the Dragon Tattoo' series. The city is also the birthplace of a number of world-famous death metal bands. Umea's 'Guitars – the Museum' has one of the largest private collections of famous stringed instruments in the world. The museum featured prominently when Umea was awarded European City of Culture in 2014.

"Last but not least, Kung Fury, an 80s throwback action film which raised more than \$600k via Kickstarter, was conceived, edited and shot in Umeå, mostly in an office, before VFX was liberally added. The film now has more than 30m YouTube views, while its creator, David Sandberg, is now working on a full-length sequel, featuring Michael Fassbender and Arnold Schwarzenegger," Bergström concludes.

#### Interesting problems

Umeå is clearly a great place to start a media technology business. But a great location and resources is of course not enough. What makes Codemill stand out from the crowd? "Codemill began as an idea in 2007 but really came together in 2008," says Rickard Lönneborg. "The idea was to work with international clients to solve interesting problems' and the broadcast and media space was becoming an attractive place to do that. The move to the cloud was going quite slowly due to security concerns and data transfer costs, alongside competing with a lot of investment in legacy systems that needed to be amortized.

"Initially we were looking wider than broadcast and media, supplying development services for all kinds of projects, but we quickly realized this was the place to achieve what we wanted. Our first customer was Vizrt – providing extra resources for R&D work, followed by Vidispine. We then moved forward from sub-contracting R&D work to working as a partner with Vidispine's customers on custom workflows, MAM and supply chain. Our core value – then and now – is the UX, making workflows elegant and easily manageable with great user interfaces, then transforming those workflows with custom solutions either fully into the cloud or hybrid, depending on the customer's needs. Some customers keep storage on site with applications running in the cloud.

### More fun. less tedium

"What drives us is doing international business and all the ways we can simplify work for people, making it more fun and less tedious – meeting new people, taking on new challenges and learning new things," Lönneborg enthuses. "We're working with some big names including major Hollywood studios, and in London, New York, Los Angeles, Germany – sometimes we pinch ourselves!

"We have 60 people now at Codemill. It's a private company with three main partners. I look after the technical side, building relationships and business development, Johanna keeps our university links live, recruiting new talent and interfacing with research projects (particularly AI); and Niklas Jansson, who founded one of the fastest growing companies in Sweden, left it to join us to bring onboard his expertise in how to grow a company while maintaining its unique culture and values – the things that made it great in the first place," Lönneborg adds.

# **Growing product range**

Based on all its learnings in serving the media's diverse needs and use cases, Codemill launched its first dedicated customer-facing product, Accurate Player, in September 2016, a truly frame accurate HTML5 player developed with broadcast, post-production and media professionals in mind.

"Accurate Player, which can be integrated to cloudenable solutions, is a building block in most of our solutions," says Lönneborg. "We're targeting the professional media supply chain, from the studio and production to QC, QA, executive reviews and Dailies. Accurate Player has an easy interface to access highly secure material with custom workflows that have just and only the facilities customers need. We are acutely aware of the cyber threat studios face; we design with security in mind and team up with DRM watermarking

partnerships. We want to stay very focused on user interfaces – we are gaining quite a reputation for our user experience expertise."

Lönneborg continues: "We are also working on adding a second product – Adlede – using AI to deliver the best, most appropriate advertising content in the growing content-aware advertising business. We have a dedicated AI team working on Adlede and also on workflows for archiving, media tagging, compliance and finding/blurring brands. The cost of deploying AI will become less of an issue in a very short time – GPU processing will help greatly here. You will always need to be selective over how and why you want to tag content though – if you have too much metadata it can make it very hard to find the right thing quickly."

## 'Codemillism' and the future

"We want to continue to grow but I don't see us becoming an extremely large company – maybe we can double our size without breaking the culture that drives our success," Lönneborg explains. "Our staff care for each other and we all work together in a friendly atmosphere – we call it 'Codemillism' – and this includes popcorn on Fridays! Also, we are built on talking to our customers – digging deep into what they want and delivering it. We can't afford to lose that connection. While we will continue to develop custom workflows for our customers, we also see our product offerings being a greater part of our revenues over time.

### Codemill and IABM

"There's a lot of knowledge in the IABM network, and by being members we are showing that we are committed to this industry. IABM provides lots of good networking opportunities for partnerships, and so, more business. We also want to be contributors as well as takers – that way, you get more back," Lönneborg concludes.



# **Telestream & Tektronix Video**:

# a company integration powered by growth and innovation



Scott Puopolo CEO, Telestream

Within the broadcast and media industries, mergers and acquisitions are commonplace: they happen for various reasons and are driven by a range of factors. Last month saw Telestream acquire Tektronix Video in a very specific combination: it brings together two like-minded companies and seeks to build on their strong bases. In this article, Telestream's CEO, Scott Puopolo, explains what this integration means to the new expanded company and its customers.

"The combination of these two companies is another sign of Telestream's commitment to leading the quality management space," comments Scott Puopolo. "It solidifies our position within the monitoring portion of that industry which is an essential and differentiating component of the live video streaming challenge, as well as giving us immediate leadership in waveform monitoring, thus extending the Telestream quality management story.

"We are combining two strong product lines that are complementary. By bringing together the best of what each product line has to offer in stream monitoring or QC, we can create better products that more completely address the needs of our customers.

"Regarding Tektronix's waveform monitoring offering, we have acquired a business that is migrating over time from traditional SDI into IP protocols. Tektronix is a pioneer of waveform monitors in both the SDI and IP space, which is highly complementary to the Telestream business in terms of our core customer base which has traditionally bought both product groups," Scott Puopolo explains. "We have significant product synergies – a real 1+1=3 scenario – in a way that will enable us to accelerate innovation. Our plan is to integrate the intellectual property and skillsets of both companies so that we can accelerate innovation in certain key focus

areas. The new integrated Telestream will be better for the industry than the two separate businesses."

# How is Telestream's global footprint affected by this integration?

With Tektronix Video comes a strong global sales team and network of resellers. "Telestream is strong in North and Latin America, along with EMEA. Tek Video has a strong presence in Asia which is a market in which we see great potential. These combined footprints strengthen our global reach," says Puopolo.

"Tektronix has the infrastructure and customer contacts throughout APAC that will drive our business forward in that region. In addition, Tektronix Video has been really successful at leveraging value-added resellers. These relationships are critical in their go-to-market strategy and this is something that the new integrated company will benefit from," Scott explains. "It's all about market reach. A key element of our M&A strategy is to identify company combinations that extend our reach into new geographies, new customer types and leverage new distribution approaches. I'm excited to say that Tek Video ticks the box on all three."

# Tektronix Video: renowned for world beating R&D capabilities

"Tektronix has developed world class R&D processes, hiring and developing really substantial system architecture and engineering talent – both within the US and also in Bangalore, India," Scott Puopolo explains. "At Telestream, we have done something very similar. We have already started to explore how to use the collective engineering talent across our entire portfolio. We have a great appreciation for the technology innovation that Tek has achieved: now we're looking at ways to combine our technology bases to fuel our on-going product development operations.

"By cross-fertilizing our capabilities where Tek engineers work on the Telestream portfolio and vice versa, we will be able to innovate faster and better since we're leveraging some unique talents in ways that we wouldn't be able to do if we remained separate companies," he observes.



"At Telestream, we have made it a priority to embrace new media consumption models within the industry. The cost structures and capital requirements that our customers and potential new customers face today make the cloud a very attractive proposition. Both Telestream and Tektronix Video have made cloud-based solutions a key development focus. We are integrating aspects from both sides in terms of virtualization and cloudification of our product portfolios. Both companies have vast expertise in cloud solutions and architectures and by leveraging the combined virtualized portfolios in the cloud, will be able to offer the ideal solutions for scale and/or feature function needs of the wide range of serviced customers (e.g., Service Providers to Broadcasters).

"By doing this, we are succeeding in meeting our customers' needs faster than if

we were two separate companies,"
Scott Puopolo states. "Our customers will start to feel the benefits of this integration very quickly. For example, some of the existing Tek Video technology will enable us to accelerate our implementation plans for products around file quality control. It will enable us to get innovations on these products into the market faster."

Tektronix Video was the latest in a series of Telestream mergers and acquisitions. Puopolo reports that each of these have been strategic with a clear long-term goal in sight.

"This acquisition gives us reach and combined technology power that clearly differentiates us within a crowded marketplace.

"After this integration, Telestream has a scale and a scope of technology solution that is unique in our marketplace. Also, we have the financial resources to move aggressively as this live and file-based video market space continues to evolve," affirms Scott Puopolo.

"In the future, we will look back at this company combination as a watershed moment, moving Telestream more aggressively into the live video streaming market. Also, it will be regarded as a pivot point in transitioning Telestream to become a world class end to end quality management player. We live in exciting times," Scott Puopolo concludes.



# **SaaS and beyond**: why technology transformation is vital for the media and broadcast industry



**Edoardo Pescosolido** Senior Account Director, Enterprise, Exponential-e



entrants have been

successful because

they understand how

users and viewers have

been the driving force

**Jonathan Bridges** Chief Innovation Officer, Exponential-e

With Industry 4.0 in full swing, changing market dynamics driven by the digital revolution are fundamentally rewriting the business operations for broadcast and media organisations, affecting their technology choices and working practices forever. Tech-savvy viewers continually struggle to sate their appetite for data-intensive HD and UHD content. From

Killing Eve to Game of Thrones, royal weddings to Wimbledon, football matches to Taylor Swift's Stadium Tour on Netflix, people are consuming content online, on the move, live and on-demand at unprecedented rates.

Traditional broadcasters, such as Channel 4 and the BBC, are all too aware of the competition they face from Overthe-Top (OTT) operators such as Netflix, Now TV, Amazon Prime and DAZN – not

to mention traditional telecoms operators like BT, all of which are vying to get their hands on a slice of the content cake. The BBC, for instance, recently confirmed collaboration with ITV to establish BritBox, a new and exciting streaming service. Many new entrants have been successful because they understand how users and viewers have been the driving force for change. Subsequently, they have embraced virtual/cloud-based technology allowing them much greater agility and speed to market than the industry incumbents they have been disrupting.

The key lesson is that, as well as compelling content, the future of broadcast and media is the platform. To succeed today, then, media and broadcast businesses needs to think and act differently across every aspect of what they do. With the arrival of 5G networks, the

abundance of data will only increase, as will the popularity of technologies like augmented reality (AR). Already, Sky has used AR in marketing campaigns, as seen last year at London's Waterloo Station, where people could have their photos taken on a sofa with a computer-generated SpongeBob SquarePants or Spiderman.

The industry as a whole has been slower than others in adopting new technologies. Whilst broadcasters require special solutions, there is less need for dedicated hardware as infrastructure is increasingly complemented by cloud and SaaS platforms. The impact of new models and challengers has heightened the need to move beyond traditional thinking. For broadcasters to keep up, moving to Software-as-a-Service (SaaS)

business models – spurred on by cloud computing – is key to business transformation.

Nonetheless, it's important to note that, although OTT players like Netflix are cloudnative, the same can't be said for many late adopters. Consequently, it can be much more expensive to deliver streamed content for these operators – which is why most broadcasters are now moving away from traditional legacy technology. This includes the traditional format of Serial

Digital Interface (SDI), which carried the industry through the transition from analogue to all-digital operations, and then onto High Definition (HD) with HD-SDI.

Now the shift is towards Internet Protocol (IP)-based networks, it's increasingly beginning to replace SDI as standard for all types of communications, thanks to the ubiquity of IP networks. Further benefits of IP include the ability to react more deftly when a change in resources is required, managing large data assets and media content systems with more flexibility, thereby improving the overall viewing experience.

Across the broadcast and media industry, amid this explosion of data, the business case needs to be made for a complete service-focused shift, powered by cloud



computing. Not only have leading disruptors been adopting more SaaS services, they have also been delivering their content on a SaaS model to their viewers! Consumers need to be able to access data at any time, all over the globe; in turn, broadcasters need to provide this access in a cost-

effective way, which means moving away from on-premise hosting and towards a more flexible commercial model. A distinctive characteristic of SaaS models is their recurring, Opex-based, assetlight profile.

Just as the future of broadcast is the platform, so is the future of the infrastructure that powers it. To this end, embracing SaaS requires a new

landscape of multiple cloud-based environments, encompassing not only SaaS but also private data centres and public clouds. All of this needs to be powered by a scalable high-performance network with embedded security, centralised policies, and agile deployment.

This forms the integrated platform to underpin the broadcast and media industry's ongoing digital transformation, comprised not only of cloud but edge computing, which – in short – is computing carried out

close to the source of the data in question, instead of relying on one cloud in a data centre to do all the work. To maximise efficiency, both the centralisation of cloud computing and geographic distribution of edge computing must be bolstered by a robust,

reliable and smart network that allows data to flow freely yet securely between multiple clouds. These components form an intelligent, agile, safe, and cost-effective digital transformation stack for all modern broadcasters.

Ultimately, laying the right technology foundations is crucial for broadcast and media businesses. For example, a media asset management platform might be at a company's core, but

transcoding services might also be required, which is where specialist organisations that create 4K video can help. To make this a success, however, the appropriate controls need to be built first. To this end, the sector should enlist the collaborative expertise of engineers and solution providers, who can guide businesses to create the digital platform that is right for them. By doing so, it becomes possible to be competitive in a noisy and demanding marketplace; to re-engineer their future success.

Just as the future of broadcast is the platform, so is the future of the infrastructure that powers it.

# Creative Collaboration: **Rohde & Schwarz focusses on customers' cloud migrations in developing first fully virtualized monitoring service**



**Dr. Alexander Hackmann**Senior Business Development Manager,
Rohde & Schwarz

At NAB, Rohde & Schwarz announced its first fully virtualized broadcast product – PRISMON.cloud. In this article, Dr. Alexander Hackmann, Senior Business Development Manager at Rohde & Schwarz, explains the strategic importance of this product to a company that has 70 years' heritage as a hardware-based broadcast solution provider. Furthermore, he explains how a long-term Rohde & Schwarz customer, MX1, played a central role in the product's development.

# PRISMON.cloud builds on success of PRISMON monitoring

R&S PRISMON.cloud is a cloud-based A/V OTT monitoring solution that broadcasters and content providers can deploy quickly and without dedicated hardware. An intuitive analysis dashboard displays the latest quality of service (QoS) data in real time. A flexible and scalable pricing model allows users to reduce investment costs (CAPEX) by ordering their individual monitoring services based on current requirements.

At Rohde & Schwarz, we see that constantly changing consumer behavior means OTT service providers have to adapt to new transmission paths. Permanent error monitoring and the resulting quality assurance, especially of audio and video data, are the key to high customer satisfaction. R&S PRISMON.cloud is designed to enable OTT providers to quickly and easily adapt their monitoring infrastructure: for example, when peak loads during the transmission of large events require extended service. Thanks to the easy-to-use setup wizard, it takes minutes to add new virtual sensors and connect them to the dashboard at any time. A live multi-view function, automated analysis





of A/V data and error detection in real time make it possible to measure QoS, store it in a cloud and visualize it in a timeline format on a web interface.

In combination with the widely used on-premise R&S PRISMON monitoring solution, analysis data from a combination of physical and virtual sensors can be displayed in a single dashboard creating valuable synergies for our customers. End-to-end analyses quickly and easily reveal errors such as deterioration of video or audio quality or poor CDN performance as a cause of churn.

PRISMON.cloud is offered as a Monitoring-as-a-Service (MaaS) product. This is important since this model allows our software engineering team to continuously develop R&S PRISMON.cloud and support users with regular updates – even on mobile phones and tablets.



# To virtualize or not to virtualize - that is the question

Without doubt, virtualization is a key technological evolution focus and it will empower many broadcast and media organizations to work more efficiently and more profitably. But, there is a danger that the perception of this new technology can advance beyond reality. We still see many critical monitoring needs that are best served with on-premise hardware installations – the central issue is whether a technology provider can meet all these needs with a combination of virtualized and on-prem products that integrate and operate seamlessly.

# New skillsets and customer insight employed in developing PRISMON.cloud

At Rohde & Schwarz, we have built a reputation on our ability to develop specialized hardware-based solutions. When it came to developing the company's first virtualized product, the focus turned to software skillsets. PRISMON has taken more than 10 years to evolve to where it is today and during that time we have acquired some talented software engineers. However, we had to be confident that our first virtualized product meets the specific needs of customers. The best way to do this is to involve a customer in the development process – a customer that understands the importance of AV monitoring and understands how a virtualized monitoring platform adds value to their operations. That choice was straightforward: MX1, a wholly-owned subsidiary of SES, is a leading global media services provider. It works with leading media businesses to shape content into the ultimate viewer experience, ensuring it can appear on any device anywhere in the world. MX1 offers a full range of content aggregation, content management, channel playout, online video/VOD and content distribution services via its MX1 360 Unified Media Platform to amplify audience reach on any broadcast, online or VOD platform.

MX1 has 16 offices worldwide and operates global stateof-the-art media centres on three continents, enabling customers to reach a potential audience of billions



around the world. As well as managing more than five million media assets, every single day it distributes more than 3,600 TV channels, manages the playout of over 525 channels, and delivers over 8,400 hours of online video streaming and more than 620 hours of premium sports and live events.

"We are long-time users of PRISMON and we're confident that it enhances our operations, building customer trust in our 24/7 services," explained Matthias Heinze, Senior Manager, Content Distribution Engineering at MX1. "When Rohde & Schwarz asked for our input in the development of PRISMON.cloud we were excited to explore this option of monitoring our services which are delivered outside of our data centers. We need to monitor our internet-based distribution pathways, including ISPs and CDNs to gain better visibility over the internet for us and our customers.

"The development process was very interactive, based on a level of mutual trust that has built up over our long-term relationship. Also, the proximity of Rohde & Schwarz's Munich headquarters to the MX1 site at Unterföhring helps facilitate face-to-face meetings on a regular basis," Heinze explained.

"We were happy to contribute our experience from a service provider perspective to this project," he continues. "In the future, we will see many more workflows that combine public cloud, private cloud and standard IT in very dynamic ways, so virtualization is a 'must have' for operations such as ours.

"The availability of PRISMON.cloud is a straightforward fit into these future architectures. The development work with Rohde & Schwarz has been a very positive experience, and indeed it continues as we look at how to integrate monitoring within a completely cloud-based workflow," Matthias Heinze concludes.

Broadcast and Media Technology

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# **IABM UPDATE...**



# Congratulations to the winners...

# **Connect**

Embrionix – emVIRTU All-IP Core Infrastructure and Processing Platform

"This product lets broadcasters produce high-resolution UHD content efficiently and without constraints. It provides IP media processing power for mission-critical and All-IP UHD production environments. The flexible hi density platform allows a mix of processors to help deal with the complexity of converting multiple UHD signals in various formats. Flexibility at work. It will be very helpful in migrating a facility to an all IP infrastructure."

# Consume

# **Broadpeak** – emVIRTU All-IP Core Infrastructure and Processing Platform

"Broadpeak's nanoCDN solution improves live streaming experiences thanks to decreasing the latency. Latency measured in a perfect condition network of a lab, will be the same as a real-life system. It won't depend on the network condition at a given time. IPTV moving to a full ABR system is a true breakthrough for operators."

# Create

### Teradek - Bolt 4K

"Unlocking a 4K HDR camera from a cable while still being able to reliably watch full quality output in real-time opens up enormous creative possibilities – and new levels of creative freedom. A real game-changer for 4K HDR production."

# Manage

# **GB Labs** – Mosaic Automatic Asset Organiser

"A combination of AI and intelligent storage – an automatic media asset organiser saving time and money. An industry-first combination of AI and intelligent storage. Presenting assets in a way that the user decides is important."

## **Monetize**

# **Qligent** – Vision-Analytics

"Vision-Analytics is a powerful, cloud-based analytics solution that is uniquely designed to gather valuable data across three key domains – Creation, Delivery, and Consumption – and analyze these massive datasets in near real-time. Other solutions typically only take one or two of these domains into consideration."

# **Produce**

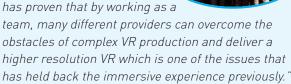
### Adobe - Content aware fill for video

"This product is an industry-first, innovative game-changer in the post-production industry. It can save editors and visual effects artists many hours of tedious manual work. It uses intelligent algorithms to automatically remove unwanted objects like boom mics or distracting signs from video. It aims to make it easier for video professionals, regardless of budget, to save time on tedious manual work."

# Project, collaboration or event

**MediaKind** – Enabling a world-first: 6K tiled 360-degree live sports streaming success

"This unique collaboration to deliver a live sports event in a 6K tiled 360° video format to real-world consumers has proven that by working as a toam, many different providers of



# **Publish**

# Telestream - OptiQ

"Great product that enables much more dynamic and easy to create opportunistic OTT channels based on events or late breaking news. Good approach to innovating more and more of the broadcast supply chain into the virtual world!"

## Store

## OWC - ThunderBlade™

"A product offering very high speed data transfers which is already proven in use. A valuable tool for creatives to capture large files efficiently."

# **Support**

**Skyline Communications** – DataMiner Precision Time Protocol (PTP) Management and ST2110 Media Flow Tracking

"Secures the vital PTP aspects of IP infrastructures. With the integration of PTP and flow management in the DataMiner off-the-shelf platform,

media operators have the right solution to successfully make the transition to all-IP and are able to adopt to future workflows that are still unknown."



# **IABM UPDATE...**



# **IABM Skills & Education**

Our training can be accessed via scheduled courses, at your premises and online. The option of having training delivered at a chosen location can offer huge benefits. It can reduce travel and accommodation costs, and meet your business and development needs directly.

Talk to us about your training and skills needs as we continually develop our face to face and online courses and rise to the latest industry developments. We are constantly monitoring where the skills gaps lie and adapting our portfolio to meet this demand.

Course	Location	Date
Practical PTP (Precision Time Protocol)	London, UK	7 October
Advanced IP Networks for Engineers	London, UK	8-9 October
Practical HLS and DASH Workshop	London, UK	10-11 October
Practical PTP (Precision Time Protocol)	Los Angeles, USA	28 October
Advanced IP Networks for Engineers	Los Angeles, USA	29-30 October
Practical HLS and DASH Workshop	Los Angeles, USA	31 Oct-01 November

# IABM appoints Dominic Louks as Events Manager



New appointment adds wealth of skills and experience to the IABM marketing team

Dominic Louks has recently been appointed as the new Events Manager for IABM, the international broadcast and media technology association. Dominic is responsible for the planning, delivery and execution of IABM's global events calendar, reporting to IABM Head of Marketing, Lisa Collins.

# **IABM UPDATE...**



# **NEW IABM MEMBERS**

### **Axinom**

www.axinom.com

### **BCNexxt**

www.bcnexxt.com

# Caton Technology Corp

www.catontechnology.com

# Digital Nirvana Inc

www.digital-nirvana.com

# disguise Technologies

www.disguise.one

# **Epiphan Video**

www.epiphan.com

# Etere (Singapore)

www.etere.com

# Karthavya Technologies Pvt Ltd

www.karthavya.com

### Lumens

www.lumens.com.tw

# Mediaedge

www.mediaedge.co.jp

### mediaSaaS Ltd

www.mediasaas.tv

# Nanocosmos

www.nanocosmos.de

### **NECF**

(Networked Everywhere, Connected Forever) necfglobal.com

### **OptoMedia**

www.opto-media.com

# **Oracle America Inc**

www.oracle.com

# Reckeen HDP Media Sp. z o.o.

www.reckeen.com

# Rip-Tie, Inc

www.riptie.com

### Singular.live

www.singular.live

### **SoftNI Corporation**

www.softni.com

# **SRI International**

www.sri.com

# **Synamedia**

www.synamedia.com

## Varnish Software

www.varnish-software.com

### Videon Central Inc.

videon-central.com

# Woody Technologies

www.woody-technologies.com

### Zixi

www.zixi.com

# **Executive Summit Series**

# Brand New for 2019!

Our Executive Summit series bring together the most influential and visionary thought leaders from broadcast and media companies and the world's best technology suppliers to collaborate and discuss key trends, opportunities and disruptors in an open, non-commercial forum.

These events are free to attend for IABM Members and includes networking events where you can enjoy drinks and discussion with your peers.

London – 11th July Atlanta – 4th October

For sponsorship enquires, please contact marketing@theiabm.org

# Where you can see us next

We will be present at a number of shows over the next few months where members can take advantage of a variety of member benefits



20-24 August 2019 CIEC – China International Exhibition Center, Beijing, China



13-17 September 2019 RAI, Amsterdam, Netherlands

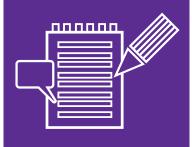
# Make the most of membership



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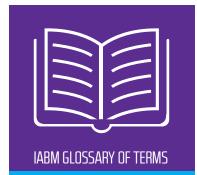
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