

1ST QUARTER 2019

JOURNAL 108

REPRESENTING BROADCAST AND MEDIA TECHNOLOGY SUPPLIERS WORLDWIDE



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IABM – Platinum Members



Optimism on the rise!



Peter White
CEO, IABM

Welcome to the NAB Show edition of the IABM Journal, packed with useful business information and resources, as well as a review of IABM activities in the first quarter of 2019. 2018 was a pivotal year in the broadcast and media industry, and 2019 is set to be another one as we see the impact of the explosion of viewing choices continuing to change every area of our businesses.

Given that the rate of change is only accelerating, perhaps I will be making this statement every year from now on! For those companies that are riding the crest of this transformation, these are exciting times indeed; and seeing the IABM confidence ratio grow from 6.2 to 9 over the last six months, there is clearly an increasing optimism pervading the industry.

The first chance to test this new-found confidence in person will of course come at this year's NAB Show, at which IABM is playing a very active role, both in supporting members and leading the conversation (and collaboration). As well as our three member lounges, bookable meeting rooms and IABM TV, we have a full events program including a session at Avid Connect, Voice of the Customer event, State of the Industry breakfast, and the BaM Awards® party. We'll also be distributing our new Strategic Industry Analysis special report, built from our latest research to provide a unique overview of the state of the industry on the eve of NAB show. Be sure to pick up a copy from one of the member lounges.

While talking of NAB Show, you will see from our Executive Interview with Chris Brown, EVP Conventions and Business Operations at NAB, that the show has taken many steps to attract more visitors and better support exhibitors at this year's show. I'm particularly interested to see the real autonomous vehicles with in-vehicle entertainment that will be on show –

amidst a plethora of other initiatives such as eSports, 5G, the AI & Cloud Campus and Connected Media event.

We also asked the board of our Americas Regional Members' Council to share their expectations and hot topics for NAB Show, which you can find on page 64. It's a really interesting short read and I think they have nailed all the trends to look out for. And don't forget to – as Florical Systems' Shawn Maynard says – “Keep an eye on companies introducing amoebas that will grow into a fully functional intelligent future”.

One of the major industry trends we have identified and tracked over the last few years has been the growth of BIY solutions at broadcast and media companies. One of the major tracks at our Annual Conference last December examined this trend in depth, and we have written up the highlights in the 'Why we built it ourselves' article on page 60. With 40% of projects now reported to be including BIY elements, this is a must-read for all technology vendors.

Since we introduced it at NAB Show 2018, the BaM Content Chain® has been widely praised as providing an accurate working model of our industry as it is today. You can expect to see it continuing to be adopted across the industry over the coming months as a result. In this issue, our special feature takes a look at the first block in the BaM Content Chain® – Create. As you will see, there's an awful lot going on in it as vendors

leverage every new technology available to help their customers deliver more and better content to their viewers ever more efficiently and cost-effectively.

Net Neutrality is still a major issue in the US – and one that will have far-reaching effects on OTT (among many others) if the 2018 ruling on 'Restoring Internet Freedom' is not overturned. Stan Moote probes the possible outcomes in his engaging article in this edition.

Our new Executive Summit series kicked off in February in Amsterdam immediately prior to ISE with a very well-attended event – followed in early March with another in Dubai on the eve of Cabsat. These Executive Summits are proving to be greatly valued by attendees and we have announced more to come over the course of this year in New York, Cologne, London, Singapore and Atlanta.

NAB Show 2019 looks set to be a positive, vibrant event as the industry pushes past the challenges it has faced over the last few years and embraces the new collaborative paradigm. I wish all our 300+ members who are exhibiting a very successful show, and I look forward to meeting with as many of you as possible in Las Vegas.

Peter White
CEO, IABM

IABM's 2019 strategy

More knowledge, more services and more support for member companies



Peter White
CEO, IABM

I don't have to tell you that our industry continues to change at breakneck speed, and IABM is determined to continue to deliver up-to-the-minute, appropriate and actionable business information, support and services to help all our members navigate that change successfully.

With that in mind, we have launched a number of new initiatives this year – in addition to continuing to deliver the full range of services and support members already receive. Here's a run-down of the new services and support members can expect from their association in 2019:

Personalizing IABM for members

IABM represents around 550 member companies. While every company is unique, a recently completed research project identified eight top-level member 'types', each with broadly common requirements and priorities. During 2019, we are creating tailored offerings to more precisely match the differing needs of each group. The result will be a more personalized and focused range of services for all IABM member companies.

In addition, we are organizing the new, geo-cloned executive summit series and promoting more engagement via the regional Members' Councils – taking IABM on the road to further internationalize our offering.

Delivering more world-class business intelligence

Already the go-to source for authoritative, actionable industry information and strategic intelligence, in 2019 IABM's Business Intelligence Unit is digging deeper, spreading further and reporting smarter. This is possible thanks to the addition of two new research

analysts to the team in late 2018, each with specialist skills and language capabilities, and the adoption of leading-edge analysis and reporting techniques to further sharpen forecasting. Existing reports such as Buying Trends, Supply Trends, Digests and Regional Focuses are being expanded to be even more in-depth and authoritative.

New reports are being produced, including the audio market, BIY trends, deployment trackers of new media technology, content chain maturity benchmarking, and the role of IT and telecoms in broadcast and media. In addition, more regional and market entry reports are being generated to support regional members and activities.

Fostering buyer/supplier collaboration

IABM is uniquely placed to provide platforms for dialogue and collaboration between buyers and sellers of broadcast and media technology. In 2019, we are launching Industry Advisory Boards (IABs) in APAC, Americas and EMEA to complement the UK IAB which was launched in 2018. There is also a series of Meet the Buyer events planned throughout the year in various territories to further promote the exchange of knowledge in a cooperative, non-commercial environment.

Driving industry collaboration

Believing that together, we're stronger, in 2019 IABM is actively building synergistic relationships with other complementary organizations in the broadcast and media space for the betterment of the industry. Sharing knowledge, best practice and platforms, this initiative will foster collaboration and provide the industry with a stronger voice.

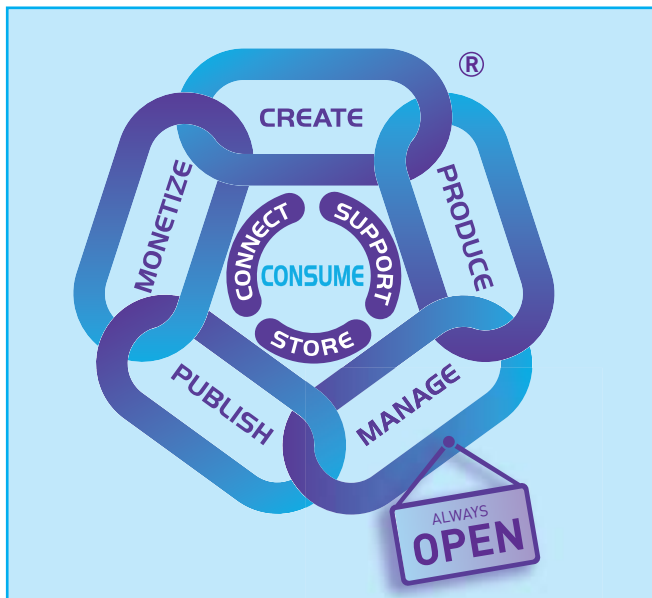
Creating new learning opportunities

The Future Trends Theatre at IBC 2018, curated by IABM, proved that there is a real thirst for knowledge and understanding about what's coming next – and afterwards – as new technologies and business models arrive at an ever-increasing rate. In 2019, we are taking this 'futures' concept forward to other shows and events around the world.

The Future Trends Theatre at IBC 2018, curated by IABM, proved that there is a real thirst for knowledge and understanding about what's coming next

Becoming the leading provider of CPD

The Knowledge Vault on the IABM website is jam-packed with business-enhancing content. In 2019, we are further developing this to aggregate all educational content. It will include a training portal that brings together in one place all relevant industry courses from all providers, making it an easily searchable, go-to resource for everyone. We are also creating more online e-learning courses, delivering 3rd party-supplied training and proactively engaging with more universities to attract more young talent into the industry.



The BaM™ Shop Window

The one-stop portal for technology buyers

The BaM™ Shop Window aims to bring all of the products and services available across the industry together into a single portal to enable all solutions and alternatives to be quickly discovered by technology buyers.

Visit the
BaM™ Shop Window now at:

www.theiabm.org/iabm-bam-content-chain-homepage/



Leveraging the BaM Content Chain® across the industry

Introduced mid-2018, IABM's BaM Content Chain® has been universally welcomed as the definitive model of the structure and working of the broadcast and media industry today. In 2019, we are working with organizations around the world to roll out the BaM Content Chain® model to provide a universally understood and accepted reference framework against which companies can benchmark their operations and organize their offerings. We are also further developing the BaM Shop Window™ to make it easy for buyers of media technology to find the products and services they require, using the same reference structure.

In conclusion

This ambitious plan reflects our commitment to providing members with ever more knowledge, support and services to help them do better business in this period of unprecedented transformation in broadcast and media. IABM membership is already a 'no-brainer' for most companies operating in this space. These initiatives will further broaden our offer, making IABM membership essential to every company in the industry. As I said earlier, we're stronger together and I'm looking forward to working closely with all our members to help you achieve your objectives this year.

We think we can drive attendance over 100,000 and perhaps longer-term back to peak levels at 110,000+

Executive interview



Chris Brown
Executive Vice President, Conventions and Business Operations at NAB

We spoke to Chris Brown, Executive Vice President, Conventions and Business Operations at NAB, about what members can expect at this year's NAB Show Las Vegas, and what steps NAB Show has taken to change the event up again for 2019.

Tell us about how things have shaped up coming out of the 2018 NAB Show. What have you learned in your follow up and research to shape the 2019 NAB Show?

Well to start, our attendance did drop off in 2018 so that was an obvious concern. We've run through the data a whole range of ways, focusing on getting better insights from all the data we have. We've looked at it up, down and sideways and in the end it all points back to the enormous change that's occurring in the industry; no individual sector appeared to drop off disproportionately. Consolidation on both sides of the industry was one of the reasons for the drop. Of the top 20 media brands attending over the last few years, we saw drop-offs in 2018 of, in some cases, 20%. A number of organizations were also going through cost reductions – part of their drive for efficiencies; it all comes back to the change in the business.

On the subject of data, we're getting better at gathering and analyzing it – becoming more sophisticated in the way we look at our audience, and at the same time staying tightly connected to exhibitors to gain insight into where they see the challenges and opportunities.

It does seem that there was a process issue that also affected the numbers last year. This was tied to a significant reduction in guest passes. Last year we changed our approach to guest passes, which are mostly distributed by the exhibitors. We pushed the date back to five weeks prior to the show, and the show itself was earlier than usual too. This threw the pattern for many exhibitors, who we have found tend to really fire up their marketing drive only 2-3 weeks prior to the show. So for this year, we've moved the guest passes deadline back again; it makes us more nervous of course not being able to see the numbers until so close to the show, but in the end, it has worked in the past so we are confident this will help in 2019. We're also giving exhibitors new, simple tools to use to promote the show to their audiences – we're partnering with them to drive attendance to everyone's benefit.

What feedback did you get from exhibitors on the 2018 show?

The reaction of the exhibitors to the reduced attendance numbers very much reflected their reaction to similar drops as a result of the 2001 and 2008 recessions – they reported that the quality remained the

Esports is a great example of this – it's a very real and interesting new segment. It has a great spread into the media and entertainment business

same or better as the previous year, with leads gathered also holding up. In other words, they still got value out of what they did at the show. This backs up the theory that those who stayed away were in the main less qualified buyers. However, we are taking many steps to ensure visitor numbers are the maximum they can be, not only within the mainstream of broadcast and media, but also from adjacent verticals where video is playing an increasingly important role.

Overall, we're going through an amazing period of change and had a whole lot of factors coming together in 2018. We've seen the change coming, but now it's here, it's having impacts on both sides of the aisle. We're responding positively.

What types/verticals of attendees do you see as potential growth areas?

We're always interested in gaining new audiences. I call it 'cake and eat it too' syndrome: quality matters but so does quantity. We have to have sufficient scale on both sides of the aisle – in exhibitors and attendees – to satisfy all who participate. We think we can drive attendance over 100,000 and perhaps longer-term back to peak levels at 110,000+ – it's challenging but we see new opportunities and categories.

Among the categories that we see coming in bigger numbers are the digital platforms, streaming, content producers and distributors. The big digital platforms are becoming such a critical piece of our industry – we need to get them more involved. This year, we've got Google on the show floor again as well as the Facebook Live pavilion, which also demonstrates that these companies

represent truly unique new players – they can engage on both sides of the aisle. These companies, including the other major players like Netflix and Amazon Prime, represent incredibly important new networks from the content side and so they will also be well represented as visitors to the show.

In summary, we're looking at any business that uses video. As a result, I'm completely optimistic because of the growth in delivery methods and screens and the overall increased consumer demand for video content.



The cine side is becoming more important as well; the Los Angeles production landscape has changed quite a bit. We see a resurgence in work being done out of Hollywood driven by a need to produce content for distribution across multiple mediums. The lines have blurred a bit across what is made for the big screen, TV and even the smaller screens, meaning laptops and phones. The good news is there is no shortage of content being produced – it's a good competitive landscape which will hopefully continue to grow.

Advertising is also important – agencies and brands are definitely

opportunity areas. And we even have new audio content creating new players and growth – in the form of podcasting, yet another interesting area and opportunity. It gets even more interesting as we see the examples of it migrating to TV.

There are also emerging segments that we feel will yield new opportunity and new potential attendees. Esports is a great example of this – it's a very real and interesting new segment. It has a great spread into the media and entertainment business; it has its own content genre tied to live events, which overlap into live event production, which is a healthy part of our industry right now. Thus, we are placing a spotlight on Esports at this year's show.

Another important emerging, or better put – converging, element is the automotive industry, which is bringing progressive and new media opportunities as autonomous vehicles effectively become rolling media platforms.

On the tech trends side, there are a few that could have bearing on future attendance. 5G is obviously coming but it's not real yet and the timeframe is not solid. Our Tech Team feels it is a bit early to be fully focused on this – deployment issues need to be worked through first – but anything tied to IOT including autonomous vehicles needs to be part of the dialog in terms of where the opportunities are for people in the media space.

In summary, we're looking at any business that uses video. As a result, I'm completely optimistic because of the growth in delivery methods and screens and the overall increased consumer demand for video content.

The next priority is electrical services, where we're aiming to eliminate additional charges by offering exhibitors one guaranteed price for bundled services

Last summer you announced a new flat rate for drayage/handling which should reduce costs for most exhibitors and give them more certainty with budgeting. You also indicated that further cost-containing measures would follow. What progress have you made on this?

We've built an entire customer service program, NAB Cares, and we've brought in an outside group to help us deliver it. I'm really happy about how it's going – we're working through all the pain points for exhibitors. We dealt with drayage last year and the next priority is electrical services, where we're aiming to eliminate additional charges by offering exhibitors one guaranteed price for bundled services. We're also negotiating special prices for exhibitors who take less than 400sq ft of floorspace, giving them a reduced overall cost for the basic service that most require.

The next area we're working on, with a target of 2020 to have new arrangements in place, is Internet connectivity. This is critical for the way our industry is moving and we know exhibitors require fast and reliable Internet connections to demonstrate their technology. The LVCC Internet is not directly in our control – it is fixed infrastructure, run by the building owners in conjunction with Cox. The LVCC has recently appointed a new President and CEO who has great experience in big capital projects and infrastructure, and is very open to working towards solutions that will make things better – and more cost effective – for exhibitors. We're looking for a lower cost on basic service for the smaller booths, while for the bigger companies,

we're looking to push the technology envelope – maybe introducing a cloud-based option as well as bringing costs down – so exhibitors don't have to pay for multiple high-speed connections.

How does NAB Show take the pulse of the industry to ensure that the focus of the conference and the exhibition's special features are on-point for our rapidly changing industry?

There are a whole range of sources we tap into to stay as current as possible. These include industry trade publications, research organizations and sister trade organizations serving the broadcast and media industry. We have long and strong partnerships with most, if not all, of the major players in these categories. We also work with a range of other partners to both frame out and build a good number of the programs we produce at the show, tied to both our conference and exhibit offerings. So to answer your question, constantly.

There are a couple of committees we work with as well on specific programs. For example, for the major technical program we produce – our Broadcast Engineering and IT Conference – we work with a committee of leading technology executives from the industry. They meet several times before the show and work through a fairly rigorous paper submission process.

Our Exhibitor Advisory Board is also very important in this – it's the voice of the exhibitor customer for us, and the members talk to other exhibitors to get us as much feedback as they can. And finally, our technology team is also vital in this – they are charged with staying

fully in tune with the latest developments in TV, digital and radio technology, so they help ensure we are able to keep up with the rapid changes both within and alongside our industry.

Following on from that, what new features and pavilions will be unveiled at the 2019 NAB Show?

There's an awful lot of new stuff going on this year, as well as the return of some popular features. I would recommend a visit to the NAB Show website and click on the 'New this Year' and 'Hot Topics' buttons on the front page for a full rundown. I'll highlight just a few here, which reflect the growth areas I identified earlier.

On the exhibit floor we have focused on adding a number of featured areas that center on education and engagement. I think altogether, including a few returning feature areas, we have seven or eight special destinations on the floor, mostly themed to major new technology trends. On the new side we are highlighting esports, in-vehicle infotainment, 5G, AI and cloud.

The In-Vehicle Experience is aimed at giving visitors a peek at the forefront of in-dash entertainment – what are the opportunities going forward? We've got some actual next-gen automobiles at the show delivering actual in-vehicle entertainment experiences. It's in the North Hall which is essentially 'Innovation Central' alongside the Futures Park, SPROCKIT and Start-up areas – our Innovation Pipeline.

As I said earlier, esports is an area of great potential in our industry, and the Esports Experience, in the North Hall, will help broadcasters

The Streaming Summit is back – introduced in 2018 and produced by Dan Rayburn, a streamer and leading authority on streaming technology

to understand what's happening in the space. It'll have a live gaming area, a theater and other activities.

Then there's Destination 5G in South Hall Upper. This will be principally educational – getting the dialog going, looking at the opportunities and challenges.

Downstairs in South Hall Lower is the AI and Cloud Campus – all about the new workflows. There will be theater-centric discussions and dialog and a few demonstrations of real-world applications.

In terms of familiar features, topping the list would be the Connected Media IP show-within-a show, located again in the South Hall Upper and showcasing an expanded roster of mobile, streaming and other leading-edge vendors, as well as two theaters with non-stop presentations. Another important returning feature will be the IP Showcase in Central Hall, where we continue to look at the advantages of switching to IP, how to implement new infrastructure and make the shift as securely as possible. Other returning featured destinations include the Podcasting Studio and Advanced Advertising Pavilions.

On the conference side of the ledger we are excited to be introducing a new Influencer Series. This brings together the people, companies and brands that are focused on taking an idea and building it into a media business. It will be a combination of fireside chats, TED-style talks and intimate panel discussions.

The Streaming Summit is back – introduced in 2018 and produced by Dan Rayburn, a streamer and leading authority on streaming technology. It will be expanded this

year with an extra half day of presentations.

We're also supporting specialized training – AWS, AbelCine and others have their own specialized training that they're bringing to the show.

Two final things: we're introducing the NAB Show Product of the Year awards to recognize and reward companies doing innovative things in 12 categories. And we're also launching Show and Sell. Retail has been forbidden on the show floor in the past because of tax issues. Well, we've taken on the burden of facilitating the tax administration to enable companies in the Central Hall to sell inventory right out of their exhibit space.

And we're also launching Show and Sell. Retail is now on the show floor... companies in the Central Hall can sell inventory right out of their exhibit space.

What's the overall theme for NAB Show this year, and why have you chosen it?

Our theme this year is 'Every Story Starts Here', with the M.E.T. Effect still threaded through everything – how media, entertainment and technology all come together at the NAB Show. The new theme brings the story back to content and the passion around it – this is what's at the heart of our industry. NAB Show is a platform-agnostic event – content on any platform is brought to life at the show.

IABM research points heavily to the industry moving towards becoming a content factory, where speed and efficiency of the whole process from creation to consumer delivery are paramount – with every link in the chain increasingly connected and interdependent. How is this being reflected at NAB Show?

We are dedicated to helping people understand workflows – even esports puts content at its center. Content is the centerpiece of our industry – technology is the enabler, and all the features I have mentioned above will help guide visitors through the modern content chain. NAB Show brings together the community to answer the questions of what's possible and what's next.

Are you seeing a change in the way exhibitors use their booth space?

Our industry is a rapidly changing environment and buyers have a different perspective – they're looking for a different kind of interaction. In response, exhibitors are changing up the way they engage with people – more meeting rooms and taking suites in hotels, which we are facilitating. The essence of our job is to facilitate interactions however people want to do it. We can help give people new ways to engage, to activate.

It's much more interactive now – not just static equipment displays, and these interactions are perhaps presented more in a learning than a selling sense. So, we're working on unique and extra ways exhibitors can expand their engagement in the show. This is a good thing – our goal is to drive good returns for exhibitors, and we want to facilitate this in every way we can.

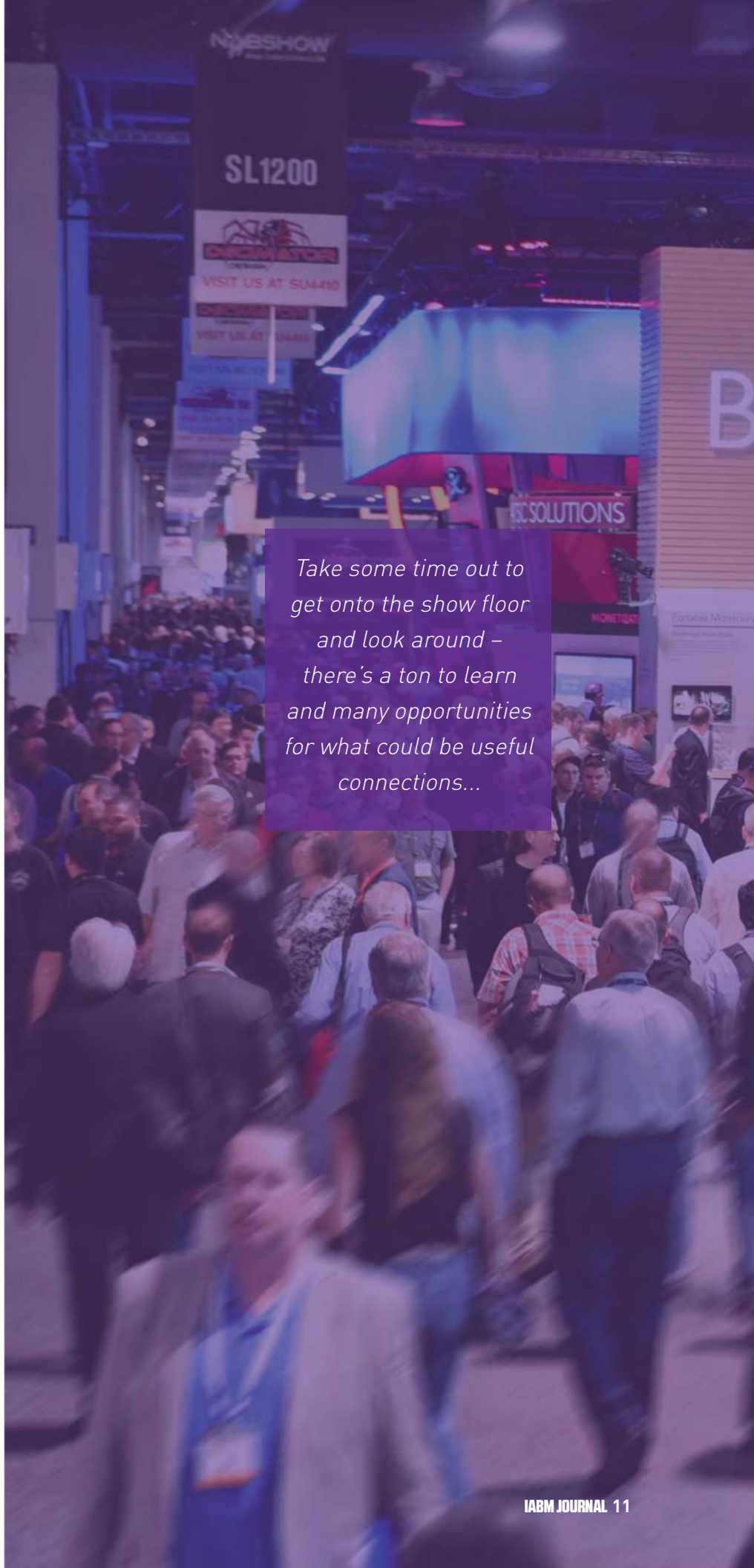
AWS, AbelCine and others have their own specialized training that they're bringing to the show

Following on from the previous question, what would your advice be to IABM members to help them maximize their return from their investment in exhibiting at NAB Show Las Vegas?

Obviously, I would recommend maximizing pre-show marketing and appointment setting, but the first thing I would say is talk to us; tell us what you want to do, and if you want to do it differently, we'd love to work with you – to get creative. Trade shows have to evolve – we want them to and need them to – to break out of the traditional way of doing things. It's our goal to help exhibitors get to the people they need to. There are a lot of options to look at for this, and we welcome discussions.

The second thing I would say is promote your presence at the show to the maximum. We have tools available to help with this, so please make use of them. It's always paramount to get the best returns on your investment in exhibiting at NAB Show, so I would also say you can't assume that you can just do or look the same from year to year. Have a clear and strong message. Consider what you can do to truly stand out. You need to get creative!

The final thing is to change your patterns. Some exhibitors never get out of their booth to take in what else is going on around the show. Take some time out to get onto the show floor and look around – there's a ton to learn and many opportunities for what could be useful connections and engagements that you would otherwise have missed.



Take some time out to get onto the show floor and look around – there's a ton to learn and many opportunities for what could be useful connections...



It's started but is the best yet to come?

There's no turning back but the future is far from clear or certain for many. New tools for broadcast and media in every department but how to put them to work to best advantage is still a challenge for most.

There are so many dimensions to consider when planning a new installation, with very little prior experience to call upon due to the disruptive nature of the new offerings. To compound this the product and services offerings in many cases are 'work in progress' rather than well rounded solutions.

Having listened to many recent case studies where IT technology is replacing dedicated video hardware, very few have fully delivered on the promise. This is primarily due to lack of maturity in the evolutionary cycle and the penalty of being an earlier adopter.

In many cases more conservative buyers would normally elect to stay with tried and trusted solutions but in the majority of cases this has not happened. Investing in technology known to be heading for imminent obsolescence and with a limited upgrade path to the future, is seen as even more risky.

Whether it's production or distribution the dilemma is the same.

In production, the future is clear: it's IP-based systems and there are now several installations to learn from. None have expressed regret at going down that route but hard lessons have been learnt with surprises along the way.

Here's a collective overview of the challenges faced in production

Planning and system design take longer than expected. This is partly due to the newness of the technology but in general, schedule in extra time to put together a detailed system plan.

Test, test, test. It should work but will it? Many early adopters have cited the need to test offline a version of what is proposed to minimize risks.

Costs in these early days can be higher than for conventional alternatives. The promise of COTS (commercial off the shelf) hardware is not the reality right now. Expensive IP routers with

adaptations for broadcast and media applications are frequently deployed for mission critical program paths.

Interoperability still has some way to go. Who said, "The good news is that we have standards, the bad news is that we have so many of them"? Not only is it true that there are multiple ways to create a system but in these early days the interpretation of the standards can lead to ambiguity and failure of interoperability. The result is several rounds of software updates.

To manage the overall complexity, orchestration is an important element, ideally with a degree of automation. Many end users report this component to be slow to emerge and also requires components from different suppliers to be responsive to overarching control and management.

Beyond the technology and in some ways more important is the team operating and running the new installation. In this case two aspects need to be considered; the operational practices and what happens 'under the hood'.

Tackling the 'under the hood' aspect first, this is going to be uncharted territory for an experienced video engineer. Not only is there much greater configurability but also a new language to make it happen. Gone are the days of one cable equals one video stream. Some organizations have merged their IT and Video technical support teams in order to achieve the necessary range of skills. All have said involving those people in the planning and training as it evolves helps with familiarity and a smooth start. Plus, of course, experience with the system using the test set-up or allocating 'dry run' time before it goes live is critical.

The operational teams represent an interesting dilemma. They have honed their skills over many years to achieve efficiency and creativity using operational panels with a high degree of



John Ive
Director Strategic Insight,
IABM

Over time we will see radically different operational practices; the first in its infancy is remote production

familiarity. Asking them to change their operational practices will be problematic. To this end many new installations look no different intentionally, despite the radically different underlying technology. The revolution here is yet to happen, with many projects turning out to be more expensive and more complicated to recreate an environment that hasn't changed for the operators. Over time we will see radically different operational practices; the first in its infancy is remote production.

Integration of Social Media and other media formats: running two or more teams to produce the program and social media content is inefficient. Many broadcasters are working on this but there is no clear template for how that will work.

Broadcasting and Distribution Challenges

Broadcasting, and the technology to make it happen, have for years been different around the world – in some cases terrestrial, cable, satellite or a combination of all three. In some ways similar to production, there is a realization that the future is IP and Internet delivered. Several broadcasters are progressively prioritizing their on-line offerings or at least giving them the same status as traditional delivery.

Netflix, Facebook, Amazon and others have forever changed the face of content delivery; not just how but also what is delivered. The Internet has enabled some of the highest quality content to be delivered to the home but also democratized delivery leading to an explosion of content from consumer to professional.

On the topic of content and the growing volumes, this provides a backdrop for further changes in the pipeline: an explosion of content needs fresh management thinking.



In production, the future is clear: it's IP-based systems and there are now several installations to learn from. None have expressed regret at going down that route but hard lessons have been learnt with surprises along the way.

In North America the transition to ATSC 3.0 is in process and while it also offers greater flexibility there is still a period of exploration of how it's going to work in practice.

Around the world the advent of 5G draws closer and this promises to change the world of content transportation. In some countries, broadcasters have lost spectrum to mobile services as 5G is built out. It's highly likely they will migrate services to this platform with radical new opportunities.

In distribution much of the change is happening around the content in managing the huge volumes and providing new services to consumers. It's here that new technologies such as Artificial Intelligence are working hand in hand with metadata and automation to create those new services and reduce the manual complexity burden, so staff numbers don't skyrocket. In fact, many of these considerations also apply in production with the pressure to produce more without increasing costs.

As in production, most of the broadcasting and distribution developments discussed so far are in their formative stages and it's the brave pioneers at the forefront of the changes.

The overriding impression is that the true impact of the new technologies is yet to emerge. It's also hard for traditional broadcast and media companies to embrace the full extent of the revolution. So as we've seen with Facebook, Netflix and Amazon, new start-ups that have changed the face of media delivery, perhaps it will be new start-ups that do similar things for production and distribution by adopting revolutionary technology without the legacy?



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Net Neutrality Still Plagues the US



Protestors advocating for net neutrality rally on the streets of Philadelphia, January 2018.



Stan Mooté
CTO, IABM

Last year in The Journal, I explained how the US 180° turn on Net Neutrality could have a ripple effect for the rest of the world, yet as of March 2019 could there be a full 360° turn?

For those of you who aren't familiar, net neutrality is all about Internet service providers (ISPs) not being able to block or, for that matter, even slow down specific Internet traffic to their customers. Commercially, without net neutrality, this could mean that competitive services could be slowed down or blocked by ISPs. For instance an ISP that is owned or associated with a media company could block or slow up competing television services that are using OTT for distribution. For that matter, the reverse could happen where media providers that rely on OTT could indeed pay the ISPs to give their services higher speeds hence slowing down others in the same business.

Net Neutrality was passed in 2015, then overturned in June of 2018 by, as some called it, a 'deceivably-named Restoring Internet Freedom bill'. Jim Burger, who is an attorney in Washington at Thompson and Coburn explained this to us at the time it as a result of the current administration's belief that 'less regulation is good'.

Overtuning the ruling certainly didn't mean it was dead. The state of California put in its own rules, albeit backing off for a time while a court case in Congress progressed. The case is where the proponents of net neutrality, including some states, have sued the FCC saying the decision to change the regulatory scheme is

unreasonable, arbitrary and capricious. This is all about the definition of the Internet – is it an information service? Or is it a telecommunication service?

The saga continued in March 2019 where 'A bill to restore open Internet order of the Federal Communications Commission' was introduced. The goal is to reinstate the 2015 Net Neutrality rules. To do this it would define the Internet as a utility not unlike that of city water and electricity. Additionally there would be rules put in place to prevent net neutrality constantly going back and forth.

Among all the questions that came up with the net neutrality reversal is who monitors and polices the Internet now in the US if not the FCC (Federal Communications Commission). Well it is the agency that protects consumers in the US, the FTC (Federal Trade Commission). Perhaps that is why ISPs haven't gone overboard blocking services to date. This is because they still are governed under the so-called 'transparency rule.' Under this, ISPs must disclose which traffic they block or slow, and if they are paid to give any services priority.

Sound confusing? It is a true political battle being fought in the courts. Is it about possible rising Internet prices, or freedom of speech?

Watch my latest IABM-TV interview with Jim Burger. He fills you in on the details and his alarms as to the court case outcome.

www.theiabm.org/jim-burger-net-neutrality/



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The MENA region is forecast to be the biggest global contributor to the growth in Entertainment & Media industry at a CAGR of 11.5% and anticipated to reach US\$66 billion by 2022

MEA region update



Hassan Ghoul
Director of MEA,
IABM



CABSAT 2019

As I write this, we are two weeks away from CABSAT 2019. The 25th anniversary edition of the show will run from 12 to 14 of March 2019 in halls 2 to 7 of the DWTC Convention Centre. Show timings are from 10am to 6pm on the first two days and 10am to 5pm on the last day.

For visitors of the show, CABSAT remains the place to meet the people from the Broadcast and Media industry in the region and to catch up on the latest changes taking place in our industry.

2018 is behind us now and, although it was a tough year for the broadcast and media business in the MEA region, or even globally, CABSAT attendees will be looking for the upcoming opportunities. The CABSAT website highlights that 'The MENA region is forecast to be the biggest global contributor to the growth in Entertainment & Media industry at a CAGR of 11.5% and anticipated to reach US\$66 billion by 2022' (Source: PWC Global E & M Outlook 2015-2019).

CABSAT 2019 will feature a few new initiatives including an eSports Pavilion (the region's first esports B2B forum), Photography sessions with professionals offering workshops, demonstrations and presentations, and 'Flix on 86' live cinema shows.

The Content Congress will run over two days, 12 and 13 March, and will feature several panel discussions and presentations which will tap into some of the key challenges and opportunities facing the global and regional markets.

OTT technology is bound to take a prominent role at CABSAT as media consumption is steadily shifting from conventional linear TV to the Internet, and Middle East viewers are demanding more video content. The CABSAT Digital Hub will focus on the Digital & Over The Top (OTT) technologies that

facilitate the delivery of video or digital content via internet protocol.

On Monday March 11th (the day before CABSAT 2019 opens), the 'Arab HDTV and Beyond Group' will hold its Annual Meeting in Dubai. This event is usually well attended by manufacturers as well as broadcasters. The meeting will take place in the Crowne Plaza hotel and will run from 9:30am until 1:30pm.

Following the 'Arab HDTV and Beyond Group' meeting, IABM will run an Executive Summit. This is the first time we have run a content event like this in Dubai alongside CABSAT and in conjunction with ASBU. The summit will run from 3pm until 7pm. It will include presentations by IABM staff and IABM members as well as two panel discussions. The event will close with a networking reception. We anticipate a mixture of delegates between IABM members and end-user customers.

IABM has always run a networking event before CABSAT and this has proved to be highly popular in the past. Attendees are mostly (80%+) C-Level and a mixture of international and UAE delegates. IABM will promote the event to all its stakeholders in the UAE region.

ASBU

ASBU will be organizing the 20th edition of the 'ASBU TV & Radio Festival & Convention' in Tunisia from 28 until 30 June 2019. The IABM has been invited to participate in this event.

This 20th edition coincides with ASBU's 50th anniversary and will include several activities including TV & Radio Programs contests, a Broadcast Convention, ASBU Awards ceremony and several conferences and seminars.

IABM EMEA/UK region update



Darren Whitehead
*Director of Business
Development, IABM*

The election held in Q4 of 2018 for the EMEA Members' Council proved how popular Regional Members' Councils have become with over 15 candidates putting themselves forward to help shape the future direction and benefits of IABM.

In fact, the number of candidates wishing to serve on this Member Council was so great that IABM has been able to launch another 'region specific' Council from the surge of positive engagement. This new Members' Council will cover the DACH region and its first meeting will be held this month.

It's tremendously exciting that Regional Members' Councils are being so warmly embraced by the membership. IABM has established a truly positive platform for engagement, not only with members and non-members but also with end-user customers as well. I know that the newly elected members of EMEA Members' Council are as excited as I am to begin raising the profile of IABM in Europe and to create a greater level of end-customer engagement.



2019 has seen the implementation of a new series of events by IABM labelled The Executive Summit Series. These events are designed to be intimate, less formal and more engaging than the traditional thought-leadership events IABM runs at major industry shows. In addition, they allow IABM to support members at a wider range of events and to offer a higher level of support to members attending traditional broadcast shows. This has become more important as some members have been reducing their financial and resource commitment to some of the regional broadcast shows.

The first Executive Summit event of the year took place in February in Amsterdam, the day before ISE opened. The membership response to this event was very positive with presentations from AWS, Digibox, Guntermann & Drunck and TSL Products. The theme for this particular event was diversification and new markets. The presentations were around how members worked with broadcast products and services to provide solutions for customers from the Education, Aviation and Live Production industries. The networking after the content sessions proved that this theme was warmly received!

The next Executive Summit event in EMEA will be on 11th March, the day before CABSAT in Dubai. Full information on all the events across all the regions can be found on our website at www.theiabm.org/iabm-executive-summit-series-2019/

UK

Q4 saw the UK Members' Council run its event in Cardiff with our colleagues from BBC Cymru Wales 'lifting the lid' on their very pioneering and ambitious IP project. The venue was the 'relaxed' studio for BBC Wales' Scrum V programme.

83 delegates attended in total with a third being end-user customers from different UK broadcasters. The UK Members' Council events prove how important these engagement platforms are, both in terms of the topic and the quality of discussion as the industry moves through transformation and change.

This interaction with customers was also manifested at IABM's Annual Conference through the 'meet the buyer' session that was actively supported by the UK Industry Advisory Board. My thanks go to those Board Members that not only joined this session but also stayed throughout the whole conference adding to the business-critical experience!

The UK Member Council is working on its event plans for 2019 now and the first event of the year, focusing on cyber security, will be announced shortly.



In general terms the market is still challenging with business coming in spurts that are totally unpredictable as budgets get released or put on hold. Forecasting and planning is obviously extremely difficult in these conditions but across UK and Europe I detect a level of optimism for the future despite the uncertainty of the current trading conditions. Many member companies have gone through the pain of transition and are now able to focus on building business in tangential industries as well as the broadcast industry. Myself and my Regional Director colleagues remain committed to supporting members as much as possible through this period, so please reach out to us with anything that is important to you.



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The nature of 5G will easily allow return feeds back to the camera operator. Will this boost remote production? – absolutely!

APAC region update



Peter Bruce
Director,
APAC, IABM

5G in Asia: this is not a drill!

At the tail end of 2018 there were many announcements from telcos and governments regarding the roll out of 5G in the APAC region. What is really going on behind those headlines and what should we expect in the coming 1-2 years?

Firstly, it is true to say that 5G will shake things up for many industries and that includes Broadcast and Media. Already at International media conferences we are hearing the words ‘Game Changer’ and ‘Paradigm Shift’ when referring to 5G. In this case the words are not overstated.

What’s the technology about?

Before we address the individual political, economic and commercial reasons affecting 5G roll out in the APAC countries, it is important to understand why 5G is such a big thing. As anyone working with waves will know, the higher the frequency, the more bandwidth available hence the greater the data rate, but higher frequencies also have a shorter range and reduced ability to penetrate barriers such as building walls. On the practical side of the roll out, this means many more sites are required compared to the much lower frequency (so longer range) 3/4G networks that we know, but with physically smaller receive antennas (and the ability to have miniature Tx devices). In some countries these sites will number not just tens of thousands, but hundreds of thousands of receive and redistribution sites.

To give you a glimpse of the technical detail, 5G will transmit over three frequency bands. ‘Low-band 5G’ has the cells running at 700 Mhz (in some cases up to 2.6 Ghz) as in use today. The ‘High frequency band’ is between 3 Ghz and 5 Ghz and ‘Very high 5G band’ (often referred to as MMW – millimeter wave) uses frequencies from 24 GHz to 30 GHz, with some countries also allowing from 37 Ghz to 45 Ghz.

So what is the benefit and what is the fuss about?

The high data rate will enable speeds of tens of Gbps direct to the consumer with very low latency. This directly competes with the likes of cable and fiber offered now. Already some telcos are discussing that the way to go is to ‘cut the cord and go wireless’. On

the professional broadcast side, the higher bandwidth will be ideal for use in applications where contribution links from the stadium to TV station are presently using the assigned RF spectrum. The other major advantage is the very low latency, enabling fixed links and contribution via direct wireless cameras – for example, live contribution into the production. The nature of 5G will easily allow return feeds back to the camera operator. Will this boost remote production? – absolutely!



NTT Docomo demonstration and testing truck at InterBEE 2018, Japan

Additionally we have already seen 3/4G solutions take over camera contribution feeds for news gathering and remote production. 5G will replace that and then take over the permanent fixed links market too. There are just too many practical applications where 5G will benefit live broadcasters who are using bespoke industry solutions at present; this could even be down to sensors inside the ball at a sporting event for example. Once the initial 5G roll out is complete, new applications will be arriving for the professional if not the consumer end of media.

What’s happening on the supply side to get the sites together and develop the multitude of consumer technologies that will be coming online?

We see the major suppliers (DT Mobile, Ericsson, Huawei, Nokia, Samsung, and ZTE) battling it out on the world stage. Recently we have seen moves to prevent

Researchers also foresee 5G supporting 22 million jobs around the world and an estimated \$12.3 trillion of revenue across a broad range of industries

Huawei infrastructure technology being used in a number of countries at the behest of national governments and major telecom companies citing security concerns. Because the 5G network will be core to the movement of data including IoT, autonomous cars, communication data and so on, it is becoming a highly political and sensitive subject, particularly in 5G receive and re-distribution sites. This is not only a battle to control long term technology and communications devices, but also a fight for very well-paid jobs in those countries developing and supplying the technologies.

What type of numbers are we talking globally?

MIT Technology Review reported that 'By 2020, analysts estimate that there will be more than 20 billion installed IoT devices around the world' and that 'Researchers also foresee 5G supporting 22 million jobs around the world' and an estimated '\$12.3 trillion of revenue across a broad range of industries'. This is big jobs and big economics, so it is the top priority for the major technology suppliers of the Asian nations to focus on and prepare for 5G. The race is on among the three technology power houses of China, South Korea and Japan who are promoting and pushing the roll out of 5G. They are fully aware of the impact of 5G and potential economic advantage that they can gain.

So where are we with the roll out of 5G in Asia Pacific?

This is an interesting topic as the timing will depend on the individual strategic, political and economic situation in each country within the APAC region.

As mentioned previously China, South Korea and Japan see 5G as key to future technologies; all three countries have started 5G testing.

Within China's 13th 5-Year Plan, 5G was very much in focus and announced as a 'strategic emerging industry'. The three main Chinese telecoms companies are all state run, and they are in full planning to roll out 5G across all major cities of China – they began research in 2013 and initial testing in 2016. The roll out will help China achieve its 5-Year Plan to increase internet speeds across the vast country.

Japan's main telecommunication companies (NTT Docomo., KDDI Corp. and Softbank Corp) have announced the roll out of 5G one year earlier than expected and they are rolling out sites in main cities in 2019. Japan's move forward may be impressive, but South Korea will not be left behind with the switch-on of 5G sites for commercial use already having happened in December 2018 and consumer mobile services expected to start in Q1/2 of 2019. The initiatives are being led by KT, LG UPlus, and SK Telecom. From the media perspective all three countries see 5G as suitable for the distribution of UHD signals.

For the other countries in Asia the roll out will depend on several factors. Thailand set up the first test bed in South East Asia with the help of Huawei (ignoring pressure from the USA to not work with Chinese companies). Meanwhile in the Philippines, President Duterte has been frustrated with having one of the slowest internet speeds and infrastructure across ASEAN, having not seen speeds increased by the two incumbent telecom operators (PLDT and Globe) in the 2+ years since he took office. Duterte has taken action by announcing a third licence for a telco operator in the country, and this has prompted both PLDT and Globe to announce 5G services launching in mid-2019. Singapore was the first to

switch off the analog TV Signal in ASEAN in December of 2018. This has allowed Singapore to re-allocate the spectrum for low frequency 5G use, with announcements from Singtel on a 5G switch-on plan in 2020. Almost all other countries in South East Asia are now starting to test and have plans in place for the roll out of 5G within the next two years.

There are several risks that may delay the roll out of 5G in many countries in Asia. At Convergence India, the main topic of discussion was the commercial aspect of the 5G roll out. Many of the telcos had over-paid for the previous 3/4G licences that were auctioned, causing huge debts and either closure or mergers of the companies. 5G fits very well with India's (and Prime Minister Narendra Modi's directive) program of smart cities, IoT and Digitising India. Additionally India and many Asian countries are in an 'election year', delaying any decisions on licences. In some countries in Asia (and globally) the government's strategy must be to understand how to fund the 5G roll out and is influenced by the individual countries' political situations.

Conclusion

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

Americas region update



Kathy Bienz
IABM Director,
North America

2018 is in the record books – after being capped off with a terrific IABM Annual Conference (more below) – and 2019 has rocketed out-of-the-blocks with on-going major shifts in the industry. IABM is here to help strengthen the understanding of these changes and to foster successful collaboration between media providers and suppliers.

IABM Annual Conference

I experienced my first Annual Conference, held in the U.K. on December 6th and 7th, 2018, and am proud to be associated with an organization that delivers such a relevant and engaging information-sharing event for our membership. While held in the U.K., there were numerous Americas region attendees and I want to encourage greater Americas representation in 2019 – it will be well worth it.

The four major themes for the Conference were thoroughly explored via captivating presentations and interactive events:

- **THEME 1 – Why We Built It Ourselves:** More and more broadcast/media companies are taking the lead on developing their own content supply chain solutions, completely changing their relationships with technology vendors. We heard how partnerships are being redefined and case studies of exciting build-it-yourself projects.
- **THEME 2 – Transformational Technology:** New technology is changing the face of the content supply chain. We met the Blockchain pioneers, asked if AI is more than marketing hype, and looked at the future of sports with virtualized remote production.
- **THEME 3 – New Revenues, New Business Models:** As established media revenues come under threat from the FAANGs, it's time for new business models, new approaches to ad tech and subscriptions, and new ways to pay for the enabling technology.

- **THEME #4 – New Media:** The rise of OTT is spawning a new generation of disruptive digital media businesses connecting content and brands to consumers in completely new ways. We learned how these new players are changing the game in the way they run their content supply chain.

We hosted our first 'Meet the Buyer' event in which several end-user organizations spoke of upcoming projects and what each seeks in successful relationships with vendors. These were followed by a type of 'speed dating' where vendors had about 10 minutes of speak one-on-one with buyers for whom they had applicable offerings. This event was extremely well received by both buyers and vendors and you won't want to miss a future one.

During our Gala Dinner and Awards Ceremony, we announced the 2018 BaM Award® winners from the NAB and IBC finalists in each of the 10 Content Chain categories. The competition was stiff and judging challenging, and congratulations to the 2018 winners!

IABM Americas Executive Summit, Los Angeles

The first of three regional Executive Summits was held February 27th in Marina del Rey, CA, on the afternoon following the conclusion of VidTrans. It was a great collaboration with special thanks to Telestream, the Summit sponsor, Video Services Forum and the IABM Industry Collaborative Group.

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



methods to find the desired information on the IABM website.

Randall Heer, Founder, Partner & CEO of Vista Studios, presented a case study on a global, live production at Vista Studios that included extensive interaction from across the globe on a range of social media platforms. The preparation and agility needed to handle this type of leading-edge live production was fascinating.



Pat Griffis, VP Technology at Dolby Labs and President, SMPTE, presented an enlightening presentation titled "HDR: From Dream to Mainstream". We learned how HDR color volume and dynamic HDR color mapping can spectacularly improve viewer experiences, as evidenced



by the many impressive image comparisons that were presented. Pat highlighted the extensive adoption of HDR within the marketplace across all types of media/broadcast organizations, video source devices (Blu-ray players, STBs, game consoles, etc.), mobile devices, PCs and more.

Stan Moote, IABM CTO, delved into the most recent drivers of change in the global broadcast/media industry as revealed from IABM's latest technology and business intelligence research.



He illustrated how these are translating into a shift in demand for media technology, from the deployment of cloud technology and remote production, to the adoption of artificial intelligence, machine learning and blockchain.

During networking time following the presentations, the attendees sought out the presenters and many good conversations took place for almost two hours over appetizers and drinks.

Check the IABM site to register for upcoming Americas Summits on May 9th in New York City (follows Streaming Media East) and October 4th in Atlanta (precedes Cine Gear Expo).

Highlights in North American Broadcast and Media Industry

The NAB Show is all about keeping your finger on the pulse of the latest developments across a myriad of areas and evaluating if and how they factor into your business. The IABM can help you to summarize the breadth, speed and impact of change in the industry in the annual NAB Show 2019 Special Report, which is nearing completion. It delivers invaluable insights from direct feedback from content providers and solution suppliers. Visit the IABM site to sign up to receive the full report. Here are some sneak peaks to keep in mind as you traverse the NAB halls.

Drivers of Change

We consolidate the latest drivers of change into three areas.

1: Under Pressure – Increased competition and investment from the rise of ‘infinite’ content

In the U.S., the number of original scripted series has grown from just over 200 series in 2010, to almost 500 in 2017! In 2018, the investment in original content by FAANGs has grown by over 30%. This exacerbates the efforts by all media providers to consistently draw eyeballs to their content. Closely tied to this is driver No.2 below.

2: Face-To-Face – Media companies get closer to consumers with DTC offerings

Direct-to-consumer focus is evidenced by our survey of the top technology priorities for content providers, and 60% state their highest priority is multi-platform content delivery. Content providers want to be on all devices and platforms and need to establish relationships with device manufacturers in order to capture younger viewers with their fragmented viewing habits.

3: Bigger Than Us – Search for scale via consolidation, collaboration & globalization

Multi-billion-dollar acquisitions are on the increase as media companies consolidate to find better scale and reach. Bob Iger of Disney circles together all three of these drivers in his statement when they acquired 21st Century Fox: “There are three primary strategic priorities fulfilled by this acquisition. It will deliver more content, the production capabilities and talent to produce even more. It will enhance our direct-to-consumer initiatives with platforms, technologies, brands and existing customer relationships to build on. And it will greatly diversify our businesses geographically”.

Buying Trends

The above drivers show key business strategies media companies are taking. Let’s take a deeper dive into the three major buying trends to expect from them in supporting these strategies.

1: Media Factory – Search for operational efficiency & agility

Our survey of end-users reveals that of their 13 top factors influencing technology purchases, they reported the top three as:

- ‘Make us more efficient’ from 47% of respondents
- ‘Make us more agile’ from just over 41%
- ‘Total cost of ownership’ from almost 39%

Clearly, vendor solutions need to deliver operational speed, flexibility and cost-effectiveness.

2: Flexibility – Transition from CAPEX to OPEX & New Payment Models

The industry shift from CAPEX to OPEX is not new, however it is now augmented with the need for new payment models. Subscriptions, permanent licenses and pay-as-you-go software solutions are on the rise as media companies transform their infrastructures.

3: BIY – Need for flexibility prompting media companies to build their own solutions

Media companies are ramping up their build-it-yourself (BIY) capability through two avenues. First is bolstering internal development teams, with 53% of media companies set to increase internal software development investment in the next year. The second is through acquisitions of technology suppliers, such as Disney of BAMTech.

Our surveys reveal the top area they are implementing BIY is in the BaM Content Chain® category of Manage, which is managing and preparing completed content (audio, video, metadata) for publication. 44% rank this most important. Next in important is Microservices, which has already been adopted by a fourth of users.

I hope this snapshot of these initial insights from IABM’s research can assist you as you conduct your NAB business. Register to receive and read the full report in advance of NAB.

Have a terrific show and don’t forget – wear comfortable shoes and hydrate!



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"The likely use of automation/AI/Machine learning will be in the form of 'auto assist', where a level of processing/decision making is done by an automated system, but the ultimate creative/artistic process remains the domain of skilled humans,"
Neil Maycock
Grass Valley

creat

"The power of images to communicate, to influence, and to create has never been stronger. At the same time, the challenges for image creators have never been greater as they strive to maintain creative integrity while meeting the market's accelerating demand for compelling content."
Dave Dougall
Vitec Group

Producing great images – the technology and art of content creation



Roger Thornton
IABM

In each coming issue of the IABM Journal, we will be working our way through the nine blocks of the BaM Content Chain®, looking at what the current state of the art is in each block, what the challenges and opportunities are, and what's coming next. In this edition, we have spoken with 10 IABM members with products in the Create block – which covers a wide range from cameras, lights and mounts to graphics, production systems and virtual sets – anything that's employed in the creative process.



THE BaM® CONTENT CHAIN
from **Creator to Consumer**

Many of our customers find themselves in extreme locations and harsh environments, and they need to have the utmost confidence in their gear so that are not distracted from their own creativity.” Vitec Group’s Dave Dougall

More, faster and better – for the same or less

With ever-increasing demand for great content as viewing choices continue to expand, vendors need to empower their customers with cost-effective technology that delivers faster turnaround while still maintaining the highest quality results for ever more discerning viewers. The cloud and automation are helping Sony stay ahead – particularly in the news arena: “Audience demands for ‘any time, any device’ content are driving innovation within broadcast and media organisations,” says Peter Sykes, Strategic Technology Development Manager at Sony Professional Solutions Europe.



“This push for faster turnaround is impacting most types of programme making and is particularly acute in the area of news. In response, Sony has introduced XDCAM air – a cloud-based subscription service that links remote camcorders with newsroom infrastructure. A secure wireless workflow lets studio-based teams send story metadata from the newsroom to camcorders in the field. XDCAM air automatically uploads proxy footage to the cloud, allowing editing to start immediately back in the studio. News teams can even start logging clips as shooting continues, saving more precious time while a story’s breaking,” Sykes adds. “In the world of audio, developments such as Sony’s MI Shoe are helping speed up camcorder configuration. A two-channel wireless receiver can be attached to the camera with no need for XLR connecting cables or an additional power source.”

BR Remote, which develops and manufactures remote controlled broadcast camera systems, is at the sharp end of doing more for less. “With the ever-increasing number of channels, both on DTV and Internet streaming, more and more content is needed to fill the time. At the same time budgets are reducing and have to be spread thinner. Our camera systems lend themselves to reducing costs,” says BR Remote Development Director, David Bradley.



“From our customers’ perspectives, the content creation challenge centres around meeting the market’s exploding demand for content, but at the same time, executing on their creative vision,” says Dave Dougall, VP Sales EMEA & APAC at the Vitec Group, a global provider of products and solutions to the image capture and creation market that encompasses many well-known brands. “With that in mind, our brands are constantly

communicating with our customers to learn more about the limitations they face day-in and day-out when it comes to the current hardware and software products they are using. This way, we can continue to develop solutions which allow our customers to create content without sacrificing creativity. In the case of broadcasters, we know that building a distinct brand identity is as important as it is challenging. As a result, our solutions are built to give broadcasters the ability to adapt efficiently so that they can break down stories for their viewers within the fast-moving landscape of modern news, and while continuing to support the underlying brand values.”

Automation unlocking efficiency

Automation is also key to accelerating turnaround for NewTek, which manufactures software-driven IP video production tools for modern media workflows. “NewTek products offer intuitive user interfaces and can be completely automated to insure virtually anyone can operate the systems, while still providing high-quality and consistent content in an efficient manner,” says Brian Olson, NewTek VP of Product Management.



Automation also plays a vital role for BR Remote. “The built-in intelligence and Smart Control in our systems enable a single operator to operate a number of cameras – some of them in areas not accessible for a normal camera operator,” says David Bradley. “We are always pushing the boundaries for picture quality and quality of movement and control. Our aim is to make our remote camera indistinguishable from manned cameras.”

Brainstorm, the real-time 3D graphics, virtual set and augmented reality provider, is tapping new hardware and interoperability. “Developments in hardware technology allow for including more complexity in graphics and virtual sets, producing realistic results by using PBR (Physically Based Rendering) materials, HDR or game engines to create excellently rendered backgrounds,” says Miguel Churruca, Marketing and Communications Director at Brainstorm. “Also, the ability to make different solutions compatible and the use of collaborative workflows increase the resources dedicated to the creation and development of such content, from pre-production to finishing and delivery.”



The migration to IP networks means that multiple signals can be carried over the same cable, which – once the infrastructure is completed – leads to the ability to dedicate future capital expenditure to other needs besides more cabling



For SGO, the developers of the widely used Mistika range of post-production systems, it's all about flexibility. Says Managing Director, Geoff Mills, "Mistika Technology enables multidimensional, non-linear and completely non-destructive post-production workflows due to its native integration between SGO applications. The possibility to change any parameter at any time and to move entire projects between different Mistika Technology products without the need of rendering, unlocks smarter, faster, and highly cost-effective content creation."



Staying close to users

For Dr. Joerg Pohlman, Executive Board member of the ARRI Group, which designs and manufactures camera and lighting systems, it's all about feedback from its close relationship with its users – and maintaining the highest quality standards. "For over 100 years, ARRI has been committed to providing the industry with top quality, highly reliable tools for the best content creation," Pohlman says. "We still build our products by hand in Germany and test each and every one of them before they hit the market. At ARRI, we have stayed true to the core concept our founders created which was to always have our finger on the pulse of the industry. Through our intensive contact with filmmakers we receive important impulses and suggestions, which can be incorporated directly into the development and continuous improvement of our products and services. After all, we want to provide our customers, users, distributors, partners, and friends with precisely the technologies they need to implement their ideas."



According to the Vitec Group's Dave Dougall, meeting the need for ever faster turnaround is about supporting creative people so that they can do their jobs ever more efficiently. "The power of images to communicate, to influence, and to create has never been stronger. At the same time, the challenges for image creators have never been greater as they strive to maintain creative integrity while meeting the market's accelerating demand for compelling content. Rather than providing the image-creation tools themselves, such as cameras, we design and manufacture everything that goes around the camera, into the shoot, and behind the scenes. Our products support content creators, freeing up their minds and eyes by giving them technically advanced equipment that performs at the highest level and that can be trusted when it matters. Many of our customers find themselves in extreme locations and harsh environments, and they need to have the utmost confidence in their gear so that are not distracted from their own creativity."



Vitec Gemini-flowtech-location

At NEP, the outsourced technical production partner that supports premier content producers for live sports and entertainment worldwide, it's all about responding to viewers. "Consumers' demand for content consumption, and the way they want to consume it, has never been driven by the way we as an industry get that content to them," says Mike Werteen, President, NEP Broadcast Services. "It is our responsibility as leaders in the industry to make sure we have solutions that focus on

Remote IP production generally utilizes smaller OB's which are faster and cheaper to operate and require fewer onsite engineers

quality, reliability, scalability and speed of response. As always, the NEP Group overlays the needs of our customers and of consumers with a reliable solution and a solid business plan on all the products and services that make up NEP.”

Grass Valley's take on the 'more, faster and better' conundrum is rooted in its approach to R&D, says Neil Maycock, VP Global Marketing at Grass Valley, a Belden Brand. “Grass Valley's Core Technology initiative develops state of the art technology using modern agile development techniques. These core technologies are then deployed across many product lines affording individual products a level of R&D that they wouldn't warrant in isolation.” Grass Valley, which offers solutions from live production to playout, has the 'more for less' angle covered too: “As with other parts of the content chain, within content creation there is the ever-increasing pressure to produce more for less cost. This is particularly manifest in the area of remote production, where IP centric solutions are enabling significant changes to the economics of covering live events,” Maycock adds.

Is content creation experiencing the same fundamental changes we are seeing in other blocks in the content chain?

The need to do more for less is impacting the Create segment in the same way as the other blocks in the content chain – as Grass Valley's Neil Maycock says above. Sony's Peter Sykes certainly thinks so too, and sees collaboration and interoperability as enablers: “Throughout the content chain, media organisations are trying to do more for less. And this is also the case for content creators. Ours is a fluid, constantly evolving digital world, typified by greater collaboration and driven by social media and other new platforms and technologies. Content creators are themselves part of this change – and today they're looking to integrate the best acquisition tools, including for 4K & HDR, into their evolving workflows.

“Today no single company can answer all the needs of the market – and one of the most exciting opportunities that these changes offer is the potential for increased collaboration. We see this reflected in technologies such as the use of file formats based on industry standards, as well as industry-wide partnerships that allow customers to take advantage of these opportunities to ensure open



interoperability,” Sykes adds. “One example of this is Sony's XAVC Alliance Partners programme which includes over 75 XAVC supporting organisations. Similar programmes are also in place to ensure the highest quality RAW and X-OCN workflows can be established between our highest quality CineAlta cameras and industry standard tools for on set operation, colour grading and mastering.”

ARRI's Joerg Pohlman also sees new formats and workflows driving the future. “At ARRI, the passion for film and the passion for technology have always met. This is our heritage and the same enthusiasm can still be felt around the company today. Innovations have always been extremely important for ARRI and we are dedicated to producing optimized solutions from pre to postproduction. From High Dynamic Range (HDR), large format, and 3-D capture to more efficient workflow solutions and modern deliverables, ARRI is committed to constant innovation.”



For Brainstorm, the ability of its virtual sets and augmented reality technology to replace physical sets across broadcast and movie production is a key enabler to doing more for less, while also offering new creative possibilities. “For the audience, not being able to tell what is real or not can represent a huge difference, and for content creators, being able to produce photorealistic 4K or 8K scenes and drive them in real time significantly cuts production costs while maintaining the same or even higher quality levels. This technology also makes possible shooting scenes in restricted spaces or monuments which do not allow for real shooting,” says Miguel Churruca.

Currently there might be a broadcast controller in the production area who is not aware of the WAN network between the stadium and production area, and this will lead to issues and outages



While gaming engines such as Unreal can help with super-fast, photo-realistic rendering, specialist technology is still required to complete the picture. “For live, real-time virtual set operation, photorealism is one of the toughest challenges, because what makes the difference for the viewers is to be unable to tell whether the images they are watching are real videos or digital renders. Game engines provide excellently rendered backgrounds, which are almost re-defining broadcast virtual set technology because of the quality they provide. Because of the quality achieved, greater attention to detail must be taken, so fine, dynamic adjustments of physical lighting to match that of the virtual set, or chroma key parameters are also paramount, concepts that are common in broadcast workflows, but not contemplated by game engines to date. Once the scene is solved, it is also important to understand that broadcast graphics workflows have specific requirements that are far beyond what a game engine can do, often requiring external database connections, text, statistics, tickers, social media or lower-thirds – such a variety of graphics that are alien to the game engine framework but essential for broadcast operation,” Churruca adds.

NEP is also heavily involved in virtual studio and augmented reality development, powered by gaming engines. “NEP is building upon broadcast industry standards but is also actively developing state of the art virtual studio and augmented reality propositions based on open-source gaming render engine technology,” says Mike Werteen. “It is a fact that these open-source platforms can develop new features at an unbelievable speed as their main driver is not media and broadcast but a multi-billion-dollar gaming industry that has an increasing demand for live rendered, hyper-realistic

graphics. By building our AR and virtual studio proposition on these game render engines we can benefit from these developments in broadcast. NEP has built a team of 25+ 3D artists, Technical Artists and game developers who are specialized in working with these new game-based platforms. The team has delivered the most high-end virtual sets on large entertainment productions and for news and sports production in Europe, the UK and the Middle East.”

SGO’s Geoff Mills sees the constant progression of consumer formats continuing to drive change in Create. “The Tokyo Olympics in 2020 will be captured and broadcast in 8K and the pursuit of a higher resolution is never going to stop. Even higher resolutions, like 16K and beyond along with high frame rates are already being used on various projects, which is why software and hardware development is constantly evolving to meet this demand.

“Another in the line-up of recent technology evolutions which have emerged from market demand is High Dynamic Range (HDR), where both the broadcast and movie sectors have defined the future delivery standards,” Mills continues.

“Extended Reality (XR) is an umbrella term encapsulating Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR) and everything in between. Although drawing the line between AR and VR experiences can be challenging, it is clear that many of the same underlying technologies will power revolutionary XR experiences. XR is already transforming everyday consumer experiences and many market verticals from industrial manufacturing and healthcare to education, retail, and even the arts,” adds Mills.

NewTek is looking to the cloud to deliver more for less. “Video is now seen as the best way to communicate your message to others,” says Brian Olson. “With that being the case, more people need to produce more content than ever before. Whether in corporate, HOW, government, education, or broadcast, customers need accessible production tools that will help them tell their story and deliver it to their audience. Software tools that can ultimately reside in the cloud are the best way to empower users to create more and better content. The shift from hardware to software and IT/IP-based workflows is already underway and will continue to accelerate in the future.”

Operating at the sharp end in many different Create environments, NEP has a naturally broader view. “Content creation is divided into so many verticals, each of which demands focus, it’s hard to come up with an overarching answer on the challenges and opportunities without missing an important part of the unique content chain for each. Whether it’s live sports, live entertainment, studio-based productions, scripted dramas, reality productions...they all require specific focus on making our solutions and products relevant to the needs of that segment,” says Mike Werteen.

Will automation take over or is Create quintessentially human?

Automation is making inroads in Create – camera operations, parts of the editing process, highlights production etc. How far can this go while still retaining the human element that has always been inherent in the creative process? It seems to depend what part of the process you’re undertaking – our respondents were near unanimous that the human touch will always be essential.



“The likely use of automation/AI/Machine learning will be in the form of ‘auto assist’, where a level of processing/decision making is done by an automated system, but the ultimate creative/artistic process remains the domain of skilled humans,” Grass Valley’s Neil Maycock predicts. “This will certainly help with the drive to reduce costs, by eliminating the more menial aspects of producing a show.” SGO’s Geoff Mills agrees: “There is one essential factor that automation will never be able to replace – human creativity. A robot responds to

programmed patterns, and at the moment that you want to think outside of the box and create something unique, the automatisms simply do not work. Currently, most of the automated tasks in the professional post-production sector are used as a back-up and at the moment we do not have to worry about robots doing subtle color corrections.”

NewTek’s Brian Olson sees some potential in using automation to support operations, but points clearly to where it currently falls down. “I think this technology will speed up the process by giving producers content options quickly, but fully automated content will have some drawbacks. If you’ve ever seen an automated Facebook video of your last month or your anniversary of having a Friend, you’ll know what I mean.”

Brainstorm’s Miguel Churruca doesn’t expect to be replaced by a robot any time soon either, but welcomes automation’s ability to undertake the mundane tasks. “Automation and artificial intelligence will surely evolve and become part of the broadcast environment, but still, I strongly believe in human creativity, and our ability to think out of the box,” he says. “We do not really understand how creativity works, therefore it doesn’t seem to be something that can be easily translated into algorithms. If automation and AI allow for relieving operators from tedious tasks, they will be more likely to use such gained time for new ideas, rather than spending time in boring or repetitive tasks.”

“It makes far better use of camera operators to have them out and about, getting stories, than standing behind a news camera for the occasional re-frame or move,” adds David Bradley of BR Remote. “Robotic cameras with built-in intelligence enable the freedom to do this. The moves are always programmed by a human and most often triggered by the director, so you still get the human element here but with the consistency of a robot.”

“Robotics can be a crucial element in transforming the look and feel of a production to elevate the final output and thereby increase viewer engagement,” says Vitec Group’s Dave Dougall. “Vinten has recently released new creative features within its robotic product range that offer signature moves, new camera angles, more flexibility in studio design, and additional support of advanced studio graphics. This creativity helps a broadcaster, for instance, better engage with its target audience, and in turn, build a better connection with that audience – ultimately strengthening brand loyalty. That



all being said, automation and robotic solutions can only offer so much; the creativity, the vision, the passion of capturing and producing content is most powerful and most exceptional when it comes from the human mind.”

“Our opinion is that AI will continue to be more influential in our industry and NEP will continue to invest in automation in the areas we feel are relevant to our clients’ initiatives,” adds Mike Werteen. “We do, however, feel that the creative processes that have engaged consumers is more than just the output of an algorithm and will require the unique and experienced individuals who make great stories come to life on our screens, tablets and phones.”

As one might expect, ARRI is very much in the creatives’ corner – reducing the obstacles in the creative process is the focus. “Usually creativity and automation do not mix, and the human element will always be vital to storytelling,” says Jorg Pohlman. “Producing a piece for cinema or television is an inherently creative process and we believe that filmmakers need to be able to follow their creative instincts. At ARRI, we strive to be as close to the film industry and to filmmakers as possible and we seek to understand and even anticipate what creative minds need to make their lives easier.”



Is remote production now a solid reality?

Being at the forefront of live production, NEP is very well qualified to answer this question. “At NEP, if there is one thing we know, it is that there is no one-size-fits-all solution for productions. There have always been different size trucks, studios and flypacks because the needs of productions varies greatly,” says Mike Werteen.

“Speaking specifically about the US, there are many productions done by local crews where only the producer, director, AD/AP and announcers travel. In those scenarios the savings are minimal. In many cases, the

production teams don’t live in the same city and the various teams of crew members don’t live in consistent cities, so even in a “remote production” scenario, they might need to travel, eliminating most, if not all, savings you would see. This can be compounded by the fact that crew rates vary by city, so in some cases we have discussed with clients, we have seen that the costs of the crew would go up by moving to a major city - and if the HUB wasn’t in a major city, there wouldn’t be enough crew to support the local shows and the increased costs of these added productions. Additionally, the cost of connectivity varies, so the savings varies as well. Having said all of that, yes, a central location for production could increase utilization and realize some cost savings, but the schedule needs to be planned carefully. One major issue is that there is a limited season where most sports are going full bore, rights vary by client, and so the economics above prevail,” Werteen concludes.

Hitachi is also aware of current limitations.

John J Humphrey, VP Business

Development at Hitachi Kokusai, explains:

“REMI (REMOte Integration) is the current term for minimizing on-site personnel and equipment. While much smaller trucks can deliver audio and video to a distant control center, REMI has come with significant limitations. The trucks and/or trailers are generally cramped for production people and not built for the rigors of long trips. Their signal transmission capabilities for sending multiple cameras, audio and control from remote venues tend to be limited, and ultimately cost more. Networks have also been struggling with the best mix of local or remote equipment and announcers.”

NewTek’s Brian Olson sees an altogether rosier future for remote production. “I think REMI or At-home production is going to be huge. There is too much cost-savings for broadcasters to not go that direction. The biggest obstacle right now is uploading the video from the site. You need expensive dedicated connections or must compress the streams over the public Internet (and receive them in sync). There are multiple vendors now doing remote video over bonded cellular or regular Internet connections, but the critical mass has not been reached. Watch this space.”

“Remote productions have been proven to achieve cost reductions, the savings in logistics costs of both equipment and personnel are significant,” agrees Grass



Valley's Neil Maycock. "The challenges have been not only with the right functionality in production system equipment, but also the availability of affordable connectivity that provides the required QoS and latency."

David Bradley at BR Remote is also a firm believer. "Yes – enormous savings. In a series of recent tests, we reduced the cost of coverage by about 60%. This enabled twice as many events to be covered in the same time for the same budget. The barriers we found were only perception that 'it couldn't possibly be as good'. Well it was, and in some areas better. By halfway through the events, all the directors said they had completely 'forgotten' it was a remote operation. Now I'm not saying that in all circumstances remote operation gives optimum coverage, but with experience, many shows and events can be covered perfectly well entirely with remote cameras. If the budget allows, one or two strategically placed manned cameras can also add value."



*BR Remote
CamBall Lite*

While Sony's Peter Sykes acknowledges there are challenges, he says, "Remote production has the potential to revolutionise the way that live events are captured. Challenges include the requirement to maintain consistent high quality images, low latency network performance and the requirement for operational staff to adapt to new ways of working. There are some excellent examples of how these challenges have been addressed, including at operational centres like NEP's new Andrews Hubs in Australia. This new all-IP production facility connects with 29 sports stadia across the country, comprising a hub in Sydney and in Melbourne and complemented with multiple new all-IP OB vehicles. HDC-4300 and XVS series switchers from Sony are just some of the components used within the system.

"New services like Sony's Virtual Production system are also changing the game, allowing production companies to create a very flexible, on-demand and high quality live streaming workflow. Virtual Production connects handheld camera crews working over a wide geographic area and provides live cloud-based switching for new ways of working. Looking forward, technologies such as 5G are set to make a major impact for tomorrow's remote applications, with low latency and high bandwidth providing exciting opportunities for distributed production," Sykes concludes.

Is the camera market becoming increasingly commoditized?

Hollywood director, Steven Soderbergh, famously shot his latest movie 'Unsane' with just iPhones. With some video journalists now recording on mobile phones and a plethora of lower cost camera options in the industry, we asked camera manufacturers whether there is still a real distinction between high-end cameras and those aimed lower in the market. NewTek's Brian Olson thinks the gap is closing: "Affordable, high-quality cameras are becoming more and more of a reality. With mobile phones now having cameras that go beyond what broadcast cameras were capable of just a few years ago, the gap between the high-end and low-end is closing. Resolutions are improving on the sensors and prices are going down. Customers are also looking at easier connectivity with IP cameras that only need a single network cable for video, audio, tally, control, and power. This is becoming a bigger part of the purchasing decision."

BR Remote's David Bradley agrees – but only to a point. "The gap has certainly closed over the last 20 years – however there is still a clear difference between the quality and features from the top to the bottom of the market. For some undemanding acquisition you probably couldn't tell by looking at the delivered pictures what level of camera was used. You may not care – it depends on what you are watching and what device you are watching it on. But when the conditions get difficult or 'drama' quality is expected it soon notices."

For Neil Maycock at Grass Valley, it's horses for courses too: "There is still a diverse range of requirements for cameras, and we are far from a 'one size fits all' situation. Whilst there are prosumer level products that produce 4K/HDR images, they can't handle the production values required for high-end events, for example high frame rates in those formats for slow motion replay. And for the converse, the economics of some events don't warrant the highest production values."

Hitachi's John Humphrey sees functionality as the key differentiator. "While the gap has narrowed somewhat from a purely image quality perspective, there continues to be significant distinction in overall functionality. Many low-priced (consumer cross-over and DSLR) cameras have entered the video market in the last 8-10 years, made possible by the transition from analog to digital signal processing and less-expensive imagers.



"Most, however, use a single image sensor and don't use broadcast-style lenses, limiting their acquisition capabilities," Humphrey adds. "While the picture performance of the low-priced cameras has improved, they have struggled to provide the features, controls, accessories and capabilities of traditional professional system cameras – and are particularly limited for rugged, live applications. In contrast, Hitachi Kokusai has primarily manufactured three-sensor, 2/3" system cameras for the broadcast industry, supporting a wide range of demanding live events, remote venues, and production and studio applications."

ARRI's Joerg Pohlman is unequivocal. "There is still a difference in price and performance between high-end professional cameras and those aimed at a lower segment of the market. ARRI's ALEXA 65, ALEXA LF, ALEXA Mini as well as the ALEXA SXT W and AMIRA provide outstanding performance for DPs by offering a wide range of possibilities in production, workflow, as well as outstanding picture quality."



"Delivering the best pictures whatever the content genre has always been our top priority," says Sony's Peter Sykes. "However, when it comes to camera technology, one size definitely does not fit all. In content acquisition, the technical requirements will vary depending on the application. Latest-generation sensor technology in Sony's entry level cameras has made superb image quality even more accessible."

"In Live Production, as 4K Ultra HD becomes widespread, there's more innovation in our latest system cameras to excel in handling specific challenges like difficult lighting conditions and fast-paced, complex movement. Alongside technologies like HDR, we're seeing other tools playing their part – including latest generation digital signal processing and Global Shutter to help production teams create pictures that bring viewing audiences even closer to the action. System cameras like the new HDC-3000 series offer exceptional workflow flexibility with the ability

to use multiple format outputs on various interfaces including IP, the possibility to mount professional studio/field lenses and sophisticated creative features – like paint control – that entry level cameras don't offer. So while entry level solutions compare in some aspects, it's at the high-end that the state of the art in Live Production is being defined.



"In filmmaking, the powerful capabilities of our next generation VENICE CineAlta digital motion picture camera are tailored for the world's most demanding Cinematographers. Features include a 6K full-frame image sensor offering a range of aspect ratios, compatibility with anamorphic and spherical lenses, ultimate quality RAW and X-OCN recording and a sensor extension kit. It is features such as these that contributed to filmmaker James Cameron's decision to select VENICE for his upcoming Avatar 2 and 3 sequels," Sykes adds.



Lighting up

We asked whether, with LEDs now well established, has the lighting market hit 'maturity'? Not according to the Vitec Group. "On the contrary, the LED market continues

to innovate in exciting new ways,” says Dave Dougall. “A great example is the Gemini Soft 2x1 panel from our Litepanels brand. Gemini is a next-generation LED panel that provides not only an agile source of bright, beautiful, and accurate full spectrum white light, but also the ability to create over 16 million colors and a wide range of special effects. With Gemini, we have created a light that works to the same high standards and lighting intensity whether powered by mains or with batteries, such as the Dionic or VCLX batteries from Anton/Bauer. This light has quickly become a must-have fixture for studio and location lighting professionals, and we will be building on its success with additions to the range throughout the year ahead.”

“Although LED technology itself is relatively old, it took a while until the benefits and challenges of lighting diodes were evaluated and mastered for general applications,” ARRI’s Joerg Pohlman reflects. “In feature film or theaters, the requirements on light are much higher since the ‘old’ tungsten lights might be beautiful but they are not efficient. The journey into LED started at ARRI already more than 12 years ago. The breakthrough was the L-Series in 2012, successfully followed by the SkyPanel in 2015. Especially with the SkyPanel, we exposed the true potential of digitized light sources. This journey is to be continued. ARRI is still pushing the boundaries of technologies – LED and conventional.”

Security matters

We asked our correspondents about the increasing challenges of securing valuable content from cyber threats and theft. For Grass Valley – as others – this is key. “As content creation solutions are increasingly IP connected software systems, security has to be a top priority for any business (suppliers and operators). For too long the broadcast sector has been complacent behind the inherent firewall of SDI, but that is no longer true. Grass Valley works closely with our customers on ensuring the maximum possible security for their operations,” Neil Maycock explains.

Sony’s Peter Sykes agrees. “Security has risen to the top of the agenda for media companies, with many organisations appointing dedicated security teams to address the challenge. Attacks can come from multiple sources, and high-profile breaches continue to hit the headlines around the world. In the production environment, there are additional challenges to secure the activities of creative teams who are sometimes

tempted to resist constraints to their working practices and production tools.”

NewTek’s Brian Olson sees the move to the cloud as a potential saviour. “Security is going to be a big problem for traditional broadcast manufacturers. There simply isn’t much of it out there. However, as solutions move into the public cloud, some of that will be taken care of by the large data centers that deliver production software to clients.”

As a service provider, NEP is again at the sharp end when it comes to security risks, and Mike Werteen has good advice for everyone involved. “The largest risks, especially in the US, are the portable drives used to configure the various equipment list switchers and audio consoles. These are operated by freelance technicians that go from truck to truck with their configuration. Most times these drives are also used for personal use and their security is not controlled by the facility provider or the rights holder. The other big risk is around general internet access on the trucks and how the networks are configured. To mitigate these two risks, we have led the SVG IT security group to place two recommendations for the industry:

1. All facilities will have a computer that has malware/threat protection software on it and all portable drives are scanned prior to being used on the truck. This computer is air gapped from the rest of the system except when the threat protection software is being updated.
2. All facilities will have at least two networks, both with ACL (access control list). One network is for the facility systems like the switcher, router etc and the other is for general use of the internet. The ACL prevents non-authorized people from joining either network.

“In addition, we have begun discussions with various manufacturers to see how/where they can help and the current status of their technology. For example, if a piece of equipment can’t be operated with malware protection, that is an issue we would expect a manufacturer to resolve,” Werteen adds.

What’s new in Create?

Hitachi’s John Humphrey had a very clear answer to this question: “High Dynamic Range (HDR) and Wide Color Gamut (WCG) unlock video’s full potential. For 80 years, our television system has been limited to reproducing



Sony World Cup

10-12 F-stops. With HDR and WCG, we now have 15-16 stops and the ability to display images with improved color. HDR allows us to see images with more detail in the darker and peak bright areas of the picture, more like what we see in real life. Hitachi Kokusai has pioneered HDR for live television, and our HD, 4K and 8K cameras support multiple HDR profiles and Wide Color Gamut.”

For Sony, it’s about “putting exceptional imaging into the hands of all professional content creators,” with a wide range of innovations, according to Peter Sykes. “One example is our ‘4K for all’ camera family that’s uniformly raised the bar for image quality. Handheld and shoulder XDCAM camcorders and single sensor Super35 models – such as the popular PXW-FS5 and PXW-FS7 – combine great sensor performance with highly efficient XAVC video encoding, a Sony codec based on the H.264 specification. Complementing this, there’s a growing family of XAVC alliance partners who offer a choice of workflow tools to meet the requirement for open interoperability demanded by customers today. For demanding Cinematographers and Directors of Photography, Sony’s CineAlta family includes the F5, F55 and F65 cameras plus the next-generation full frame VENICE. Meanwhile our system cameras for studio and live production include the industry acclaimed HDC-4300, plus the new HDC-3500 featuring

the world’s first 2/3-inch 4K CMOS sensors with global shutter.

ARRI has plenty that’s new on offer as well. “Just to mention a few highlights: Our latest large-format camera system, consisting of the ALEXA LF camera, the ARRI Signature Prime lenses, the LPL lens mount, and the PL-to-LPL adapter, has been very well received around the world. Featuring a sensor slightly larger than full frame, the ALEXA LF camera records native 4.5K with ARRI’s best overall image quality. ARRI has been working with external lens expert partners for years, however, with our Signature Primes, we have created a range of lenses designed and manufactured only by ARRI. The Signature Primes have already won international design awards and exemplify state-of-the-art optical precision. From our Lighting department, we introduced our newest app Stellar just recently. Stellar is the perfect app to quickly and easily control ARRI lights while on set,” says Joerg Pohlman.

“We are seeing an increase in the use and demand for VR and AR capable equipment,” says BR Remote’s David Bradley. “This can be as simple as adding graphics to a simple news show up to complete VR studios. Our latest cameras have metadata outputs to be plugged directly into a graphics computer. We are also seeing a demand for simple automation – just a pre-programmed move in

a talking head studio, for example. Again, our latest cameras offer this built-in feature.”

Geoff Mills at SGO sees the drive to ever-higher resolutions as the next step, alongside HDR and XR he mentions above. “8K production is complex and seriously demanding, so we strive to equip our customers with the best technology out there. Already deployed for live 8K broadcasts in Asia, the new Mistika Ultima 8K System provides real-time finishing and workflow for UHD 8K at 60p, even with uncompressed formats. Real-time capture and playout at 8K 60p is also possible when using the latest 8K recorder from Panasonic.”

For the Vitec Group, it’s what’s supporting the camera that’s opening up new possibilities. “One development that we’re especially proud of is flowtech, an innovative carbon-fibre tripod designed by our Sachtler and Vinten brands and manufactured on-site at our new UK production facility that opened last summer,” says Dave Dougall. “We say flowtech is “ground-breaking” because it truly has the potential to change the way cinematographers and directors of photography are approaching their work.

“flowtech is a multi-award-winning tripod system – including an IABM BaM Award® – featuring the world’s fastest-deploying legs. With unique quick-release brakes conveniently located at the top of the tripod, flowtech’s legs can be deployed simultaneously in an instant and adjusted automatically to the ground’s surface, saving operators from having to bend over and manually adjust multiple brakes on each leg. And because flowtech is super-light, it can be carried easily and comfortably on the filmmaker’s shoulder to virtually any remote or rugged location, whether in the arctic, to the top of a



flowtech

create

mountain, on the beach, or in the sea,” Dougall adds.

NEP sees integration across the content supply chain as central to its mission. Says Mike Werteen, “We feel that by making sure we integrate all aspects of the content creation chain we separate ourselves from others. Whether it’s acquisition, contribution, production or distribution we focus on the unique elements of each, while integrating the hand-off from one to another, to provide a unique proposal of engagement with our customers. There are significant developments that are announced by forward thinking companies all the time. Whether in technology, operations or commercial endeavors some developments have merit while others are not sustainable.”

In conclusion

The Create content chain block encompasses a wide range of activities that feed great content into the media factory – and it clearly remains a hotbed of innovation as creators strive to do more and better with ever greater efficiency. The cloud, automation, higher resolutions and better pixels are all being exploited to feed the ever-hungry consumer – the people who ultimately pay all our wages – with more engaging and higher quality experiences. With expenditure on content continuing to grow exponentially, the future in Create looks bright indeed.



THE **BaM**® CONTENT CHAIN
from Creator to Consumer

For Scenic it's the user experience. It looks amazing – I think they could rule the world

Scenic tames the Dragons

One of the many highlights of the IABM Annual International Business Conference in December 2018 was the Dragons' Den session. Three start-ups – Codices Interactive with Quiz Kit, Metaliquid with AI-powered metadata extraction, and Scenic with Watch Together – had ten minutes each to pitch their new idea to a panel of three Dragons and a very engaged audience.

After each presentation, the Dragons – Sinead Greenaway of UKTV, David Berlin of DAZN, and Anna Lockwood of Telstra Broadcast Services – grilled the presenters with searching questions to test the viability and applications of the innovations, and the audience was then invited to vote for the winner.

All the Dragons were impressed with all the pitches, but all picked Scenic as their top choice. As Sinead Greenaway said in her summing up, "For Scenic it's the user experience. It looks amazing – I think they could rule the world". The audience clearly agreed – voting for Scenic as this year's Dragons' Den winner.

We asked Paul Bojarski, Scenic CEO, to talk us through Watch Together and give his reaction to winning.

How did the idea for Watch Together come about?

When I was living at home, I used to watch volleyball with my dad but of course couldn't do this after I moved away. So now when the matches are on live TV, we watch from our respective homes and have Skype open, so we can comment on every point and open beers together!

I quickly discovered I'm not unique in doing this. In fact, recent research shows that 43% of people watching live TV are talking with their friends about what they are watching via text, Twitter, WhatsApp, Facetime, Skype etc. – they're already doing these workarounds. One of the problems with Facetime etc. is the need to mute one microphone so you don't get an audio infinite loop – and of course you're having to switch your attention away from the live action to communicate via a second screen.

This gave me the idea for Watch Together – enabling you to spend time with your friends and family when you can't be together. Watch Together is a simple API & SDK software solution to enable media corporates to quickly launch co-viewing and watch party experiences on the same screen as you're watching the live action – so not needing a second screen. With the Watch Together API/SDK added into a client's platform, a group of friends can chat using a USB video camera in real-time, or if they're watching on mobiles (as with our BT Sport application), then participants simply switch to the 'selfie' camera in the device. Each participant's camera feed is shown in a tile to the side of the live action on the main screen, so you can see and hear their reactions almost as if you were watching together in the same room.

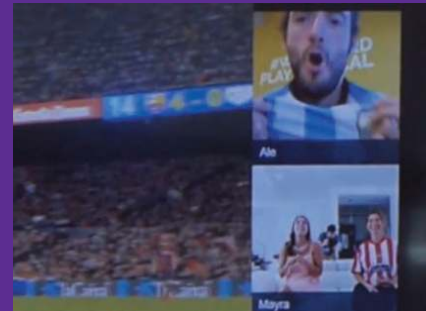
Is the extra bandwidth required for Watch Together a problem?

Watch Together adds a very light extra streaming load – typically a half to one Mbit per second extra upload requirement. Most homes' Wi-Fi and 4G networks today are good enough for it. We also do some background analysis on each connection and if speeds are really low, might prioritize voice over video chat, for example.

How do your clients deploy Watch Together – is it a big technical deal?

Because it's software-based, implementing the Watch Together API & SDK is fairly straightforward. The Watch Together SDK / API sits on top of the client's existing video platform. We also deliver a back-end reporting platform so the client can see how much engagement is being driven..

"The whole IABM Annual International Business Conference was a 5* event with amazing speakers from DAZN, Avid, COPA90 and others with quality, high calibre info and case studies. Can't wait for next year!"



Tell us a bit about your first customers

We are currently rolling Watch Together out with a major UK cable platform but we're under strict NDAs so I am not able to reveal the name of this customer quite yet. We are also working with BT Sport and EE for mobile watching together on smaller devices; With 5G coming this is a great use case.

We're also in eSports working with companies such as WeLoveGaming, enabling a Watch Together experience on their Twitch streamings. In other use cases, we're finding that 2-3 people typically engage with Watch Together but in eSports the average is up to six friends watching together in the same 'room'.

In addition to increasing engagement, does Watch Together have further monetization potential?

Watch Together has considerable potential for eCommerce – for instance, using one of the online food delivery services to deliver pizza at the same time to everyone who's watching, or offering sports fans the opportunity to purchase replica kit and suchlike. It will be interesting to see where our customers take us on this – the increased engagement that Watch Together delivers could be leveraged in all sorts of ways.

Sentiment analysis is another potential extension. We need to be very careful which is why the video is end-to-end encrypted, and think carefully about how data applications could be implemented without raising privacy concerns.

You did a live demo of Watch Together in your pitch – how confident were you in pulling it off?

As I walked up on stage of the IABM 2018 Dragons' Den, one thing was going through my mind: "Only 300 media execs connected to the hotel Wi-Fi - a live demo should be a walk in the park!". It went without a glitch. I'm very confident that our video chat API & SDK works in all sorts of conditions including congested hotel Wi-Fi networks, so I was pretty confident about it.

I'm extremely proud to have won as it's a vote by all the members and a recognition of our innovative solution. The whole conference was a 5* event with amazing speakers from DAZN, Avid, COPA90 and others with quality, high calibre info and case studies. Can't wait for next year!

Top tips for a successful NAB Show 2019



Tanya Roberts
PR account manager,
Red Lorry Yellow Lorry

In just a few days, broadcast technology companies, global brands and innovative start-ups will take over Las Vegas for NAB Show 2019, the largest tradeshow for media, entertainment and technology. If you've ever been to NAB, then you know there's a lot the show has to offer, from industry panels, educational talks and conferences to networking socials and awards celebrations. NAB Show is where global visionaries come together to bring content to life in new and exciting ways.

For many exhibitors, the final preparation is coming to an end and the fun is about to start. But once you're at the convention center, what's next? Are you prepared to get the most out of the show while you're there – and after? If you're panicking because you haven't even thought about how you can make the most of your time at the show and are just glad you've made it to Las Vegas in one piece, don't fret! I've put together some top lorry tradeshow tips on how to make the most of your NAB Show before, during and after. So, relax. Put your sunglasses on and turn on Elvis' Viva Las Vegas because have you covered!

1 Stay organized. Whether you're an NAB Show veteran or a newbie, it's important to plan your meetings carefully so you're not trekking from the South Hall to the Central Hall and then back. That's when a scooter would come in handy! You can download the NAB Show Mobile App, which will help save you time and keep you organized during the busy week. You can view an interactive floorplan, find event highlights and sync with myNAB Show. The NAB Show App is available in the iTunes and Google Play stores.

2 Finalize messaging & materials. Good content matters. Make sure your marketing materials, promotions, PR and social media efforts (before, during and after the show) are up to par. They should be engaging, consistent and in line with your messaging and overall strategy. Do you plan on having video content at your booth? It might be a wise choice to subtitle any video content because tradeshow floors are LOUD.

You'll also want to make sure your media and analyst briefing books, media packs, and all other essentials for a successful show are finalized and ready to go. It may

sound obvious, but proof read any materials again, and again. The last thing you'd want are typos. And double check it's all there! If you're bringing it out to the show yourself, consider splitting the load between you and a few colleagues – that way, if someone's bag disappears you won't lose it all.

3 Prepare your team. Make sure your team is briefed on your key announcements and story for the show. Give them a cheat-sheet to make sure they stay on track with the messaging and are all saying the same thing. Also, be sure you prep your spokespeople carefully. In press interviews, make sure they don't solely focus on product features. Journalists will run to the hills. Remember the bigger picture and speak about industry trends. We have a handy top tips card for media interviews that we can share if you email us hello@rlyl.com.

4 Learn something new. With over 800 sessions over the six days of the show, it's definitely a good idea to schedule some time to attend a couple. Where else can you learn and hear from some of the industry's top influencers all in one place? Not sure what to attend? Here are some we think you might want to add to your list:

- Throughout the show floor, you'll find various stages and theatres where you can attend panel discussions, keynote presentations and sessions, like the NAB Main Stage (North Hall), IP Showcase (Central Hall), AI+Cloud Campus (South Lower Hall) and more.
- The Streaming Summit will explore the business and technology of OTT video. You'll hear from more than 75 experts focused on real-world technical and business use cases.



■ Cybersecurity & Content Protection Summit is a half-day event providing technology and business updates on cyber security and anti-piracy initiatives in the film, TV and broadcast industries.

Some sessions will require a specific badge or conference pass, so make sure you have the correct credentials in advance.

5 Measure for success! Prior to NAB, agree internally what your goals are. What do you want to achieve? Do you want to generate leads, promote new products, or create overall brand awareness, or are you launching a new product? How will your marketing materials and on-site activities help you achieve these goals? Whatever it is, be sure to set goals and measure their success post-show because it will help you plan for the next one. Having booth 'assistants' scan hundreds of badges doesn't prove ROI – sorry.

It's also important to quantify the outcome and follow up with any leads and show meetings as quickly as possible. Remember, your NAB presence should be an integrated, well-coordinated effort.

6 Network and socialize Now, don't think staying glued to your booth meeting people counts as networking and in-booth drinks counts as socializing. I mean, yes that's what you're doing, but you should really try to step away from the booth. If you stay organized (see tip #1), then you can take some time to walk the show floor to meet new industry professionals. Take advantage of the opportunity to make new connections and see new technologies and innovations for yourself.

Here are a couple NAB networking events you might be interested in:

- Community mixers bring together a broad variety of professionals looking to connect through idea sharing, learning and networking.
- Silver Social Happy Hour is where you can go to end your say with networking, an open bar, snacks and entertainment (tickets are \$20).
- Streaming Summit Beer Garden Reception is where you can join Dan Rayburn and other Streaming Summit executives for drinks and networking.
- And, of course, there is a full schedule of IABM events, including the Voice of the Customer session on Sunday, State of the Industry Breakfast on Monday and BaM Awards® party on Tuesday – more details on the IABM website.

So that's it. You're officially ready for Las Vegas and NAB Show 2019 – right? See you at the show!

Are you using Intellectual Property without a Licence? How to manage the risks.



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Businesses risk infringing copyright or other rights if they use software, information or brands without necessary licences. This article examines how these risks arise, how to manage them, and how to deal with problem scenarios.

Risks of Infringing Intellectual Property

The UK Intellectual Property Office recently published a study of claims brought in the intellectual property (IP) courts, divided by subject-matter. In 2016 (the most recent year covered), 262 copyright claims were initiated. Of these, 85 per cent were brought by agencies representing music and broadcasting rights holders. Whilst those types of claims are less likely to affect IABM members, the figures highlight that wherever IP is infringed repeatedly on a significant scale, rights holders will get organised and take enforcement action. A classic example is where photo libraries pursue royalties for images used on websites without permission. Another is the role of the Business Software Alliance (BSA) in investigating and pursuing businesses that are using unlicensed business software (for example, Oracle, Adobe, Microsoft, Akamai or other software), or going beyond the scope of licence.

Businesses may also acquire copies of third-party IP, often unintentionally, when they take on new employees. Such IP could be embodied in software, algorithms, customer lists or technical know-how, for example. Without appropriate policies and procedures in place, the business risks liability for IP infringement, as well as a lack of clarity over what IP it owns.

These are business-critical issues, since IP infringement could result in substantial monetary penalties, criminal liability, embarrassing publicity and

loss of access to systems, products or technologies.

A related IP management issue is where a business makes use of branding which it does not own. Perhaps surprisingly, this is common.

In this article we examine the risks and suggest solutions in relation to these three categories:

- Unlicensed business software
- Wrongful acquisition of competitor IP
- Failure to clear and protect brands.

Unlicensed Software

The BSA encourages employee whistleblowers to report unlicensed use of software, on a confidential basis. Indeed, it offers monetary rewards in cases where the BSA pursues an investigation and, as a direct result of the information provided, receives a monetary settlement from the reported organisation. Allegations may come from current employees or ex-employees (which of course may include disgruntled ones, although there is usually no disclosure of their identity, for obvious reasons).

A letter from the BSA's lawyers will typically list examples of software packages that may lack required licences, and demand an audit of the use of software in the business, as well as appropriate compensation. These letters can be worrying. Even if the allegations

The Business Software Alliance (BSA) investigates and pursues businesses that are using unlicensed business software (for example, Oracle, Adobe, Microsoft, Akamai or other software), or going beyond the scope of licence.



are inaccurate, many businesses do find that they have some element of unlicensed software, whether or not intentionally. Although some cases are less clear-cut, often the target company has been caught 'red handed'. Of course, buying a new licence does not cure the requirement to compensate for the past.

In the UK, it is also a criminal offence to possess software for business purposes where you know or have reason to believe that it infringes copyright. If the offence is committed with the consent or connivance of a director, manager or other officer of the company, that person is also criminally liable. Similar criminal liabilities arise under the laws of many other countries.

Responding to Demands

IABM members, as technology businesses, will recognise the need to take these matters seriously and carry out any required remedial action. (Indeed, IABM members include software companies who are engaged in such copyright enforcement!) It is reasonable, however, to tailor responses to what is appropriate in the particular case. The extent of appropriate investigation will depend on the nature of the allegations and the proportionality of potentially engaging substantial resources. An audit as such may not be necessary. Timescales for a response are often short but may be

extendable. And the sums demanded should of course be carefully checked in case mistakes have been made.

In all of this, reassurance can be gained from instructing a lawyer to advise and respond, not least because this may focus management on avoiding similar problems in the future. But it also ensures resolution through dialogue: the worst response is to do nothing and stay silent. Another benefit of legal advice is that it is privileged against the need to disclose it in any court proceedings, whereas internal emails and memos are not privileged and may have to be shown to a claimant and the court.

New Employees and Competitor Information

Code42's 2018 Data Exposure Report revealed that 72% of CEOs admitted taking "IP, ideas and data" from a former employer. And it is not just CEOs. Sales personnel are often tempted (and in some cases encouraged) to take contacts and customer data, and technical staff may want to work from software code or algorithms they have developed elsewhere.

These are risky behaviours for an organisation to absorb, because potentially they engage liability for copyright infringement (or, in the UK, the related 'database right'), inducing breach of contract (if contractual covenants apply to the employee), breach of confidence, and crime.

Both the EU and USA have in recent years issued legislation to protect trade secrets and aid enforcement of rights. An employer certainly ought to avoid connivance in such behaviour which could make it directly liable. And even in a case where the employee bears the brunt of responsibility, successful action by rights holders can be highly disruptive.

It is often difficult to distinguish residual market knowledge from proprietary information when employees and consultants move within small marketplaces to work on projects with a degree of overlap.

These risks can be addressed at several levels within the organisation:

- Recruitment offers should make it clear that the employee should not expose the business to IP infringement risk.
- Employee policies should make clear what materials may and may not be brought in to the business, and employees' responsibilities. In particular, confidential and proprietary information should not be imported from a previous company. Ensure that your HR department is alive to these risks and that onboarding materials reflect the policy.
- Policies should enable the organisation to document all know-how and software used in the business and to be clear as to its source.
- Procedures should be in place to enable monitoring and tracking of uploading, downloading, printing and other IT and communications systems and contents (including email and telephone).
- Employees with potentially problematic knowledge of competitor trade secrets may need to be kept out of a relevant project, and 'clean room' procedures adopted for new product development.
- Put in place stringent confidentiality agreements with consultants.

Getting Brands Wrong

It is surprising how often we as IP lawyers are asked to help a business enforce brand rights against a competitor, only to find that the brand is not protected, or the business does not own the rights. No company would buy a business without checking ownership of key assets, and the same approach should be adopted when creating IP assets in the first place. Given the fairly

modest cost of getting this right, it is worth ensuring that marketing personnel and finance directors flag IP protection as a priority when adopting new brands.

The first common oversight is to forget to acquire copyright in a new logo design. Typically these are created by an external agency, which will own the copyright unless there is a legal transfer. Whilst there might be an implied licence, this should not be relied on since its scope is uncertain, it may not provide full enforcement rights against third parties, and it leaves ownership residing in a third party organisation that may be here today but gone tomorrow.

Secondly, if you adopt a new trade mark that is in use by another company, you run the risk of a costly infringement claim against you. Other businesses may also have acquired rights through registration without yet using the name. To deal with these risks, new trade marks should be cleared through appropriate searches conducted by experienced lawyers or trade mark attorneys. These searches can check for existing registrations of similar or identical trade marks and, where appropriate, unregistered third party uses. Existing domain names should also be checked.

Summary

It is not only inexperienced or cash-strapped start-up businesses that make mistakes resulting in IP infringement claims. Avoiding potentially costly issues is fairly easy provided that sound policy measures are put in place and enforced at every level of the organisation. But if problems do arise, don't panic!

This article is for general information purposes only. It is not intended and should not be used as a substitute for specific legal advice. Specific legal advice should be taken before acting on any of the topics covered.

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Regulatory Updates for 2019



Nigel Burt
IABM
Technology
Specialist

The topic of regulatory change isn't exactly 'sexy', and it is difficult to discuss without mentioning the dreaded 'B-word' (and in case that is too cryptic for non-UK/EU based members, I mean the irritating term that has entered common parlance meaning the 'British' exit of the United Kingdom from the European Union.)

It is equally difficult to venture into this minefield with a dispassionate approach to the politics involved, but whatever personal views are held, the fundamental problem caused for business and industry is one of a lack of certainty and clarity. The legal mechanisms of regulations and standards are essentially there to provide clarity and predictability for all manner of trade and other interactions, so the absence of this lies at the core of our current difficulties. Just to give one example, the 'product passport' of the CE-mark – which indicates compliance of products for import into or sale within the EU – may not be recognized without UK-EU agreement and there is already a proposed 'UK Conformity Assessed Mark – UKCA' intended to be potentially used for future independent compliance certification and in particular for the 'No Deal Brexit' scenario. Whilst this is mainly of interest to members supplying and selling goods in the UK, it would be an additional marking needed to be applied for products that are sold in both the UK and EU, in addition to the CE mark and other compliance logos

It is near impossible to provide a relevant and up-to-date summary of the impact of Brexit because the situation changes almost daily – at least if you believe what is reported in the media. The reality is that the UK is still going to have to deal with changes to EU regulation whatever the outcome is, be it a 'No Deal', a 'Deal with Transition Period', a 'Delayed Brexit' or some other scenario. Even in a post-Brexit world, UK business will still have to work with and adapt to changes in EU regulations, as well as coming to terms with other global regulatory regimes that may alter the interaction with an independent UK. A useful source of information are the regular free webinars provided by the consultancy Compliance & Risks.



In December the topic covered in their webinar was the RoHS Directive and noted that this was becoming increasingly stringent in 2019 with the 'open scope' update coming into effect on 22nd July, meaning that all electrical and electronic products are now affected unless explicitly excluded from scope in the text of the law or covered by a valid application specific exemption. On the same date, the original six restricted substances are increased to ten, with the inclusion of four phthalates widely used as plasticizers in cable insulation and rubber components for example. Meanwhile there is an ongoing consultation to add a further seven substances with draft updated legislation likely to be proposed later this year too. A further consultation with a general review of the RoHS Directive will begin in 2019 too, which might, for example, tie the law more tightly with the EU's Circular Economy measures.



Outside the EU, versions of the RoHS Directive continue to develop in other countries, for example: China, India, Brazil, and the nations of the Gulf Co-operation Council – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. China’s existing version will undergo some changes later this year. This was also part of the content of the January webinar on ‘Compliance Trends for 2019.’ This covered a wide range of topics in addition to the RoHS Directive: Brexit; Internet of Things; Circular Economy; Plastics; Eco-Design; Energy Labelling; Batteries; Chemicals; California’s Proposition 65; Low Voltage Directive; Climate Change; and Modern Slavery.

The section on the ‘Internet of Things’ (IoT) was particularly interesting in that it noted that the EU is investigating the likely need for an update to the Product Liability Directive, with preliminary guidance expected to be published later this year. Given a claim I heard from the UK government’s Scientific & Technical Advice Unit at a recent meeting I attended that there are already more than 4Bn IoT devices operating online right now, the need for regulations and standards that apply to this technology is probably overdue and it won’t just be the EU looking carefully at this.

Note that for Eco-Design it is well worth IABM members taking a careful look at the proposed EU draft

regulations for electronic displays and for servers and data storage products. These regulations also include some provisions to improve product lifetimes by making them easier to repair for re-use. Meanwhile some US states have recently also introduced similar measures to facilitate repair of products.

Also worth noting that the Low Voltage Directive is also being assessed by the EU with a public consultation in progress and it is expected to have proposed revisions in place by the second half of 2019.

It also points out that an EU initiative is in progress which aims to improve the sustainability and environmental performance of batteries and revised measures tackling batteries are also underway in Saudi Arabia, Brazil and Mexico, all of which are likely to come to fruition in 2019.

The most recent webinar suggests that in addition to functional product safety, a concurrent new engineering design approach for public health and environmental safety (HESE) is needed. It points out that the recently updated UL/IEC 62368-1 safety standard for AV, IT and communication technology equipment may unintentionally increase the use of toxic substances designed into products – for example, using flame retardants known to have negative impact on the environment and human health.

Standards, Specifications...help



Paul Treleven
IABM Technology
Specialist

The IABM devotes a lot of effort to supporting and helping to develop the standards that underpin the technology in broadcast and media. Much of that effort occurs ‘behind the scenes’ – we attend SMPTE and AES meetings and contribute to the smooth introduction of standards and improvement of their content. While there are many other standards bodies that are relevant to members, we have selected these two as the best places to channel our resources.

We feel that it is important to encourage greater engagement with IABM members to ensure that their views are understood and contributed. This article will focus on what the IABM does and how technologists in member companies can stay in touch with standards developments with just a small investment of their valuable time.

It’s a Complicated Landscape

Keeping up with standards development has become increasingly complicated, with more organizations entering the field and publishing specifications (rather than standards).

A good example of this is AMWA with their Networked Media Open Specifications – NMOS (link 1 at end). These sit alongside SMPTE’s ST 2110 suite of standards for Professional Media over Managed IP Networks to provide these additional services:

- Discovery and Registration API (IS-04, considered stable)
- Device Connection Management API (IS-05, considered stable)
- Network Control (IS-06, not yet declared stable)
- Event and Tally API (IS-07, will not be declared stable for a while)

Even with these specifications alongside the ST 2110 suite, a further set of interoperability requirements has been put forward by the Joint Task Force for Networked Media. It is called System Environment and Device Behaviors for SMPTE ST 2110 Media Nodes in Engineered Networks (link 2 at end). Its goal is:

to enable the creation of network environments where an end-user can take delivery of new equipment (compliant

to this recommendation), connect it to their network, and configure it for use, with a minimum amount of human interaction.

The above example illustrates how three organizations have worked together to define a plug-and-play IP ecosystem for live media production.

In addition to AMWA and JT-NM, it is likely that we will see a greater number of organizations affecting the broadcast and media content chain and producing specifications that either sit alongside standards or which are submitted to standards development organizations to be adapted into standards.

This includes organizations like Digital Production Partnership (sponsors of two SMPTE Interoperable Mastering Format technical specifications), Streaming Video Alliance, Virtual Reality Industry Forum as well as long-term contributors Video Services Forum, European Broadcasting Union.

Fortunately, SMPTE maintains very strong liaisons with other standards development organizations and industry associations in our field – currently around 30 organizations. This provides IABM with a window on what is happening throughout the broadcast and media ecosystem.

Standards vs. Specifications

The traditional value of a standard has been that it is produced by an accredited, respected body and so there is an expectation that it will be widely implemented, persistently available, and responsibly maintained in the light of technology developments. However, the due processes that have to be in place for standards organizations often mean that it can take a while to get a

There are currently over 150 active SMPTE standards projects and over 40 active AES standards projects

Standards Monitoring Group (SMG) is a forum where members can comment on the provisions contained in draft standards documents and the IABM can submit those comments as part of the consensus-building process in the drafting group

new standard through to publication – this is not always the case, though, and the speed often depends on the energy of the proponent!

Specifications (or documents that have a similar purpose) are often produced by organizations that have been set up to work on some specific industry needs and don't have the infrastructure to be a long-term repository and maintainer for their documents. However, these organizations are usually agile because they have a short time-line to develop and test their requirements. Frequently, if their documents have proved useful, they will be handed off to a standards organization for adoption and publication for longevity.

Last year, SMPTE decided to back both horses. It now has a Technical Specification process that cuts out some standards development steps but which leaves the door open to develop the specification into a standard at a later date.

But now, back to the topic of what standards-related support IABM provides to members.

IABM Standards Meeting Reports

After each of the four SMPTE standards meeting rounds and the two AES standards meeting rounds that we attend each year, we publish reports that can be downloaded from the website (link 3 at end).

These reports focus on the standards development projects that we think are of most relevance to members – feedback is welcome to help us target our focus more accurately! There are currently over 150 active SMPTE standards projects and over 40 active AES standards projects. As a result, our reports have to be quite selective to allow us to go into a bit of depth.

The last round of the SMPTE standards meetings was held in New York in March and the last round of AES standards meetings was held in Dublin – also in March; both reports are available on the website.

IABM Standards Monitoring Group

The bulk of the standards development work that gets reported at the SMPTE and AES meetings actually takes place in drafting group teleconferences. The more active groups hold teleconferences typically weekly or fortnightly between the meeting rounds. The IABM participates in many of these teleconferences and therefore has up-to-date information on the state of the various documents that are in development.

For technologists in our member organizations who need up-to-date status information, we have formed a Standards

Monitoring Group (SMG). Indeed, the SMG is a forum where members can comment on the provisions contained in draft standards documents and the IABM can submit those comments as part of the consensus-building process in the drafting group. It is usual and encouraged for the participants in drafting groups to consult with their colleagues to review and improve the provisions of the document. For information on joining, see link 4 at the end of this article.



SMPTE and AES Online Resources

In addition to the help that the IABM provides, members can also get information from the SMPTE and AES websites.

Access to all SMPTE standards projects is available to individuals who have joined their Standards Community (\$500 pa). There is no simple list of projects that is available if you are not a member. However, SMPTE does publish a public report after each meeting round (link 5 at end) and it gives brief details together with links to overview pages for every project.

Access to the list of AES projects is open to all (link 6 at end). Open navigation around other AES standards resources is available via the menu at the top of that page. Membership of the various standards committees and their task groups is also open to all interested parties free-of-charge.

Links

- 1 NMOS: www.amwa.tv/projects/interface_specifications.shtml
- 2 JT-NM's TR-1001-1 document: jt-nm.org/documents/JT-NM_TR-1001-1:2018_v1.0.pdf
- 3 IABM standards meeting round reports:
SMPTE – www.theiabm.org/standards-activities-smpte/
AES – www.theiabm.org/standards-activities-aes/
- 4 SMG info and sign-up: www.theiabm.org/standards-monitoring-group/
- 5 SMPTE quarterly summary report: www.smpte.org/standards/outcomereports
- 6 AES development project list and summary: www.aes.org/standards/meetings/project-status.cfm#projects
- 7 IABM hosted a webinar on this subject earlier in 2019. You can find it at: www.theiabm.org/iabm-webinar-standards-specificationshelp/

Trams' time and expertise meant they were able to deliver the ideal set-up, which they installed, trained our staff on, and will support into the future

Creative Collaboration: How Trams equipped Canis Television & Media with Cinegy Air Payout

Canis Television & Media is a UK-based specialist broadcast services company providing its clients with a one-stop-shop for everything from production facilities to asset valuations to traffic control. In response to growing demand from its clients, Canis identified a need for channel playout facilities.

The company reviewed the market, looking at both traditional playout infrastructures and software-defined, IP-connected systems. Given that the facility would be built as part of its tenancy of the Arqiva control centre in Chalfont St Peter, west of London, a compact solution would have distinct advantages.

Having reviewed the available options, Canis selected a proposal from UK Systems integrator Trams Ltd, which utilised Cinegy Technology. "We required a bespoke, cost-effective playout solution which would be designed and installed, then supported on a continuing basis," said David Wright, managing director of Canis Television & Media.

"Trams took the time to understand our needs and the goals we wanted to achieve," he continued. "Their time and expertise meant they were able to deliver the ideal set-up, which they installed, trained our staff on, and will support into the future."

The requirement was to enable Canis to deliver four channels (SD or HD), with inputs and outputs over IP and SDI. To provide continuity, the playout servers needed to be duplicated for redundancy. Trams configured the installation with two Cinegy Air PRO playout servers.

Under normal circumstances, each server handles two channels, but should there be a hardware failure, one Cinegy device can take over all four channels.

The Cinegy software provides full playout functionality and is hosted on a pair of HPE DL360 1U servers. The commodity HPE hardware is augmented with NVIDIA Quadro M2000 graphics and Deltacast SDI interfaces. The NVIDIA Quadro cards allow GPU-accelerated encoding for the H.264 outputs, another important boost to efficiency and cost control.

The installation also includes switching for SDI (Blackmagic Design) and ethernet (HP). Shared content storage is on a Synology RS816 NAS, providing capacity for 12TB. The rack also includes a firewall from Sonicwall to protect the installation from online threats, and a long-term compliance recorder to meet the legal requirement to review the past six months of broadcasting on each channel.

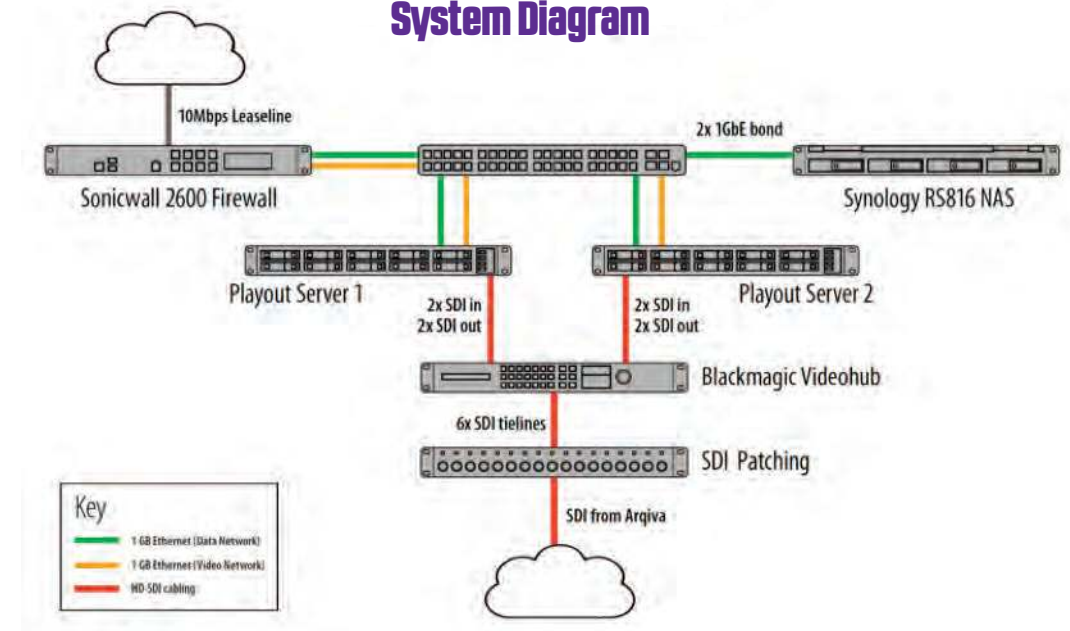
Along with power management, the whole installation fits in 21U of rack space inside the existing machine room at Arqiva. It is designed to be scalable with growth in the playout business at Canis. It is also designed to be compatible with future demands, such as 4K Ultra HD transmission.

The result is a powerful and resilient playout infrastructure that meets the expectations of Canis's clients and has been achieved in a compact and cost-effective form. It can accept content and deliver channels online, with strong firewall protection, and it retains SDI capabilities to allow local ingest and connectivity to existing multiplexing.

"The Canis Project was an exciting solution for us to work on and we're pleased with the result," commented Warren Peel, MD Trams. "Our company motto is 'the customer comes first' so we make sure to listen and



System Diagram



understand their needs... and then deliver exactly what they want.”

Canis’s Wright concluded, “Trams’ expertise and knowledge were very obvious during the specification, build, and installation. They knew what to do – and how – and delivered exactly what they promised. Trams, and Cinegy technology, certainly eased the process of us introducing a new service delivery capability, and we look forward to working with them in the future.”

Cinegy

Cinegy develops software solutions for collaborative workflow encompassing IP, capture, editing, and playout services tools, integrated into an active archive for full digital asset management. Either SaaS, virtualizable stacks, cloud or on-premises, Cinegy is COTS using standard IT hardware, and non-proprietary storage technology. Cinegy products are reliable, affordable, scalable, easily deployable and intuitive. Cinegy is truly Software Defined Television.



CP Cases customers include many from the world music scene with players such as Deep Purple, Pink Floyd, Queen, The Who, Genesis, Rolling Stones, Wings, Rod Stewart, Thin Lizzy, Moody Blues – and many many more

CP Cases – High-performance protective cases



Peter Ross
*Managing Director,
CP Cases*

Please give us an overview of CP Cases' product range and vertical and geographic markets you serve.

CP Cases are designers and manufacturers of high-performance protective cases, camera rain covers and 19" rackmount enclosures, used for secure transport, storage and operation of essential equipment. We serve global markets across a range of industries these predominantly include broadcast and media, defence and security, medical and scientific sectors and many more.

Give us an insight in CP Cases' history – who set it up, where and why, and how the company has developed over the intervening years.

Like so many small businesses, our very humble beginnings started from the proverbial 'garage' in the late 60's, originally a partnership, but we incorporated CP Cases on 9th August 1971.

The founding partners were both working semi pro musicians, with strong connections to the Professional Touring Rock n Roll industry. In the late 60s and through the 70s, CP Cases dominated the world music scene with players such as Deep Purple, Pink Floyd, Queen, The Who, Genesis, Rolling Stones, Wings, Rod Stewart, Thin Lizzy, Moody Blues – and many many more – all of whom were, and some still are, customers.

Flight Cases had never been seen in the UK (or Europe for that matter), until some of the Super Groups started bringing them back from their US tours – and seeing these was akin to 'love at first sight', that then set us in motion. With absolute conviction, but no real business plan, we knew these cases were our future – getting the necessary component parts however proved much more difficult as, in those formative years, they were only

manufactured in the USA. Remember then, no internet, no PayPal – just a landline and a lot of research.

Although a fledgling enterprise, our passion to make the finest products from the off, and bring success to the business, was unprecedented and, with 100% commitment, CP Cases grew throughout the 70s to become THE name for professionally built Flight Cases to the Touring Rock industry. Our R&R client list (available on request) was the Who's Who of every touring act and, without any serious sales or marketing strategy, we became known to almost every touring act and management company. We lived and thrived on our reputation of understanding and building exactly what the customer wanted – regardless – and always delivering on time. Our phone never stopped ringing, but we knew those halcyon days of stupendous growth, working 18 hours a day, 7 days a week, could not continue indefinitely.

During the mid-70s, we shaped a simple business plan – to widen our markets to include commerce and industry, and to develop a marketing strategy that would make those markets aware of us – no simple feat!

With our new marketing strategy, also came some innovative product development and, by the early 80s, we were manufacturing not only Flight Cases, but a range of aluminium cases and rugged textiles.

Not only are we immensely proud of keeping our old and new customers, but we are even more honoured about retaining most of our loyal, experienced and committed staff – many of whom stretch right back to those energetic days of the 70s.

What kind of clients and applications do you supply and serve in broadcast and media?

For more than 25 years we've worked with industry goliaths like Sony, Vinten, Ikegami and Apple to develop equipment protection for their products. We also provide OB specialists like NEP Global, Euro Media Group and RaceTech UK with protective cases and foul weather covers often customised to suit new fleet additions and particular events which require corporate image compliance.

What are the special considerations for cases for broadcast and media clients?

We recognise the importance of weight, protection and the need to ensure clients can access their equipment quickly and easily. Equally important is durability and portability during transportation. With many of our cases built in line with IATA standards global travel doesn't need to cost a fortune.

Is there such a thing as a standard case? How much of your business involves custom design, and do you design and manufacture every aspect of your products on site?

We generally work together with customers to deliver a customised solution that meets their requirements. It is an end-to-end service which includes both design, manufacture, delivery and maintenance of the final product. All products are designed and developed here at our HQ in West London.

Our fully equipped sheet metal fabrication shop, textiles assembly department and library of more than 200 sizes of Amazon roto-moulded case sizes to choose from, our highly qualified design team excel at specifying just the right product to match the budget, environment and timescales of each project.

Why do your clients choose CP Cases over competitors? What is your 'secret sauce'?

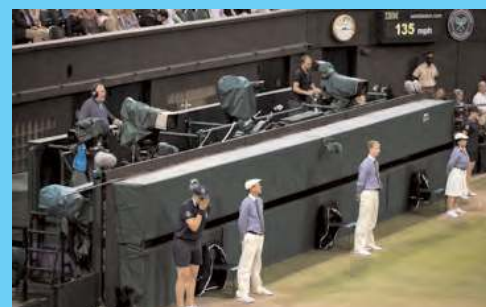
Carefully we win clients by listening to their requirements; fully comprehending the application. Thereafter, we are an agile responsive business which delivers exactly what's needed, at the right price and on time.

Environmental concerns are very much top of mind at present. What is CP Cases policy and practice in this area?

Using sustainable raw materials that can be fully recycled is always our target. In manufacturing this is a continual challenge, but is at the forefront of our thinking.

You've recently become IABM members. Which member benefits do you think you will find most useful?

The IABM website is great source of up to date information on market trends, and industry news. Members lounges at trade shows are really useful areas for businesses to arrange meetings away from the hub-bub of the walkways. Importantly membership to the IABM enables businesses like ours to network and connect with new developments within this fast-moving industry.



Collaborating to transform the customer experience through AI and Machine Learning



Bhavesh Vaghela
*Chief Executive,
Paywizard*

Paywizard recently launched an artificial intelligence-driven subscriber intelligence platform, Paywizard Singula™, which is designed to help Pay-TV operators and OTT providers take a more data-driven approach to precise customer engagement. Singula™ uses artificial intelligence and machine learning to generate ongoing subscriber insights, enabling operators to reduce churn, grow average revenue per user and acquire new customers.

In collaboration with Microsoft and the University of Edinburgh, Paywizard is making AI a reality in the Pay-TV sector, offering a way to provide operators with targeted, real-time customer intelligence. In launching Paywizard Singula™, an innovative standalone platform, the company is empowering Pay-TV operators and over-the-top (OTT) providers to take a more intelligent, data-driven approach to subscriber engagement than ever before, offering personalized interactions and targeted benefits based on customer behaviors. The platform allows operators to utilize subscriber insights, AI and machine learning to proactively retain subscribers, grow average revenue per user (APRU) and entice new customers to join TV services.

Whether a provider is operating an OTT streaming service or offering a more traditional satellite/cable/IPTV package, more effective targeting of both existing and prospective customers at each key decision moment in the customer journey is critical to success. For most OTT providers, the challenge is to keep subscriptions rolling over each month, while for many traditional Pay-TV operators, preventing cord-cutting is where the real battle lies.

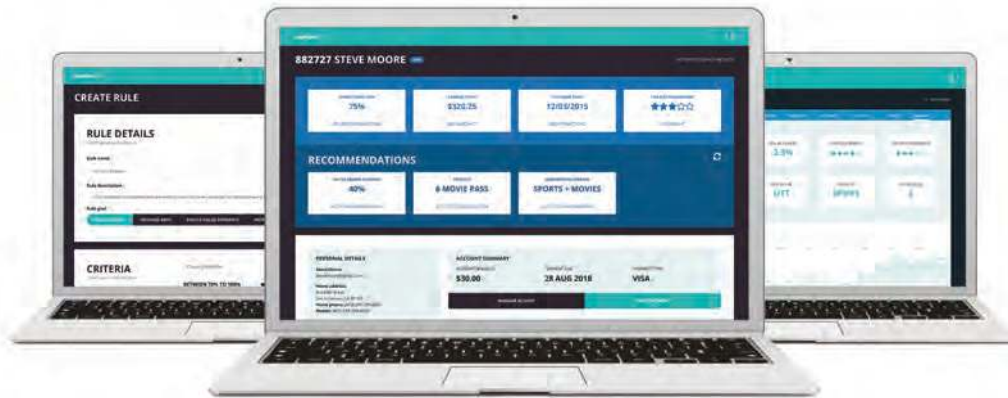
Research commissioned by Paywizard in key markets across the globe demonstrates that Pay-TV operators can no longer rely purely on the strength of their content offering to maintain subscriber loyalty but must raise their CRM game to survive in an increasingly competitive market. The research shows that around 85% of consumers want a provider that demonstrates they understand their subscribers' needs and provides them with a positive customer experience at every stage of engagement.

What's more, the research also highlighted that nearly a third of consumers have experienced a negative interaction or issue with a provider in the previous 12 months. And even worse, more than a quarter of consumers had, in fact, terminated a relationship with a Pay-TV provider, in the previous year, because the service, support and overall customer experience were poor.

The research makes it all too clear that being able to adapt to changing subscriber behavior and expectations amid today's shifting trends is crucial for both OTT and traditional Pay-TV service operators going forward. In order for operators to evolve with their customers, they must be equipped to take advantage of the insights and opportunities uncovered by analysis of subscriber data and use this data to drive the best customer interactions – and the quicker the turnaround, the better.

Designed to draw on all available customer data in real time – including billing, viewing and behavioral information – Paywizard Singula™ was created so operators of all types can gain a comprehensive single customer view of each subscriber at key stages of the customer journey. This helps to identify the 'next best action' that strengthens the customer relations. Using AI and automation to determine and execute each action, the platform then incorporates the result via a valuable feedback loop that utilizes machine learning to update the analytical models – generating ongoing insight for future recommendations on how to best target individual subscribers.

What makes Singula™ so powerful is that it allows Pay-TV and OTT operators to accurately identify or determine



the next step or interaction that will most likely achieve the result that is best for the business and works for the customer. This action could be to offer a timely promotion, an informative communication, or even the decision to do nothing, depending on the next best action recommendations provided within the platform.

For example, based on AI-driven analytics, a male sports subscriber who also watches family movies during the weekend but cancels his subscription at the end of every football season could be offered a 40% discount during the off-season to stay with the sports package or a movies-only package for the family. An offer may be sent to him via email or SMS service, but if he fails to respond to this mode of communication, the AI could alternatively present the offer via a pop-up banner when he is logged in and he accepts – thus strengthening the long-term relationship with the customer.

Using AI to determine next best action based on data and analytics means we may also identify customers who are serial churners – regularly signing up for free trials and then cancelling their subscriptions at the end of the trial period. In this instance, the action recommended by Singula may be not to take any action at all as there is still a cost to the operator to manage these customers and there is no return on investment in the long term.

Being able to harness data to predict how likely a subscriber is to churn or to purchase a particular package can be a major advantage for an operator, but what makes Paywizard Singula™ so unique and powerful is that it allows operators to accurately identify the best action to take next in real time – in other words, determine what interaction will keep that customer happy, on-board and positive about their experience.

How does Paywizard Singula™ work?

Built in the cloud on the Microsoft Azure AI platform, Paywizard Singula™ leverages the expertise and innovation of the EPCC at the University of Edinburgh – a globally recognized, world-leading center of excellence in the field of data science – and taps our 20-year heritage in Pay-TV subscriber management. Leveraging expertise gained from supporting more than 100 subscription and pay-per-view businesses across the Pay-TV industry – with millions of subscribers in total – we offer a combination of customer management experience and innovative technology that enables service operators to advance their analytics capabilities and gain a competitive edge.

The takeaway: a smart approach

In the golden age of television choice, when every consumer is faced with a huge array of viewing options, it's natural that they look for the best value. But consumers today also expect personalized experiences in which providers know exactly what they want down to niche content and particular consumption habits, so it is little wonder many operators are looking for new ways to build loyalty and brand.

Many operators now understand the value of leveraging data to deliver the personalized, highly targeted experience consumers expect, and have started their analytics journey. By forging closer relationships with customers, informed by data insights and nurtured by AI-driven actions, both OTT and traditional Pay-TV operators can provide a consistently positive consumer experience while boosting reputation. Nevertheless, many lack the expertise, infrastructure and resource to deploy business models or activities to utilize data effectively. It's why an AI-driven platform such as Singula™ offers the smart approach for delivering an exceptional customer experience and, in turn, better acquisition, retention and revenue growth.

Why we built it ourselves



Whether you're talking future technology or working practices, what was very evident from the first day of the IABM Annual International Business Conference is that the future lies in collaboration. From the 'Meet the Buyer' session that kicked off proceedings, through hearing about the Crucial Content Chain to Why We Built it Ourselves, the underlying message was 'collaboration is the way forward'. In this article, we're concentrating on the Why We Built It Ourselves session, which shone a bright light on this growing trend for delegates.

IABM's most recent Buying Trends Survey found that end-users are building 40% of the products/solutions they need using in-house or contract resources, and the outlook is for this to increase to around 50% in 2-3 years. In this session, we heard from Red Bee Media, Réseau Vià and Volucap Studio about why they have taken the BIY path, what they achieved and how technology vendors can play a part in the process.

Red Bee Media – building a relationship with vendors

Alex Dubiez, Head of Global Playout and Studio Solutions at global broadcast and media services provider Red Bee Media, opened the session. "We have to meet a new paradigm – ready to consume, on-demand, interconnected. This has an impact on the whole value chain, starting with the audience and working all the way back through broadcasters and media companies to service providers and integrators to technology vendors," he said. "Beyond technology and beyond innovation, it is the very relationship between these groups which is impacting things. What we need is more collaboration – more interactivity."

Dubiez went on to give two examples where greater collaboration would help everyone. "The first is how we build solutions today – we need off-the-shelf building blocks which are far more flexible than monolithic architectures." This means vendors need to get their products ready to onboard a services supply chain – building blocks that fit seamlessly into the space between the infrastructure and control layers. "Vendors

need to ensure that their products can be hosted in our environment – guaranteed to work and be very quickly deployed."

Equally important to Dubiez is the commercial model. "We need true modular pricing and licensing – what we want is output phase pricing. This is not just a question of Capex v Opex, but also the value we get from the product has to be mapped to the product price. We need to know this from the start so we can plan properly."

What does this mean for vendors? "We need you to get your products ready to onboard into a services supply chain. The service provider also has a role – we need to collaborate to understand how we can make best use of your product," Dubiez explained.

Dubiez's second example was how Red Bee Media delivers value to its customers. "It's about how we manage innovation. Our customers need to change – to adapt to the new world; they're facing fierce competition. They come to us to do things differently – they are ready to have the conversation, and want value delivered to their door.

There is a whole lot of copy missing here:

"The first step is for our vendors to deliver innovation as a commodity that we can test with minimal investment for all of us. Otherwise the risk is that innovation stays in the lab – which is not good for anyone.

"The next challenge is how we turn this innovation into true business value," Dubiez continued. "Is it more cost-effective? How does it scale? Does it deliver value? The last thing we need to take into account is speed – the



market is changing very fast. We need speed – from the research lab into production as fast as possible – which will deliver ROI for both the vendor and the broadcaster. With greater collaboration we can face this challenge and be far more efficient in how we turn innovation into business value.”

How does this new way of working affect Red Bee’s supplier relationships? “Today we have fixed terms, contracts, RFPs etc. What we need is more collaboration – we need to test, experiment together, use a phased approach, be proactive – ready for when it needs to happen; we need to be fast; this means being prepared. Is it good enough? The contractual relationship will exist but how can we bring more collaboration into it? How do we make this happen? Vendors need to communicate about how they do things, how easy is it to onboard, deploy, operate, interconnect their product – and check the commercial model. Be ready to test your solution with us, get ready to do a POC with us. We have a facility for this – our Red Lab London is where we test new products in a service supply chain environment, as well as providing a collaborative space to have these conversations.”

Hyper-local news in the cloud – Réseau Vià

When French news provider Réseau Vià launched its pioneering local TV service spanning 22 stations, it needed a new approach for fast, low-cost production. The solution was a BIY content supply chain with AI-enabled advertising and cloud playout. Philippe van de Velde, Technical Director of parent company Médias du Sud, explained how the company married its own technology with products from Imagine Communications to achieve this, and described the benefits Réseau Vià is now enjoying as a result.

“In 2014, we had a number of local stations producing a lot of content but the workflow between them wasn’t sufficient; we needed a solution enabling easy exchange between them in terms of video content and global workflow – so we created the Myvideoplace platform. The key to the system is the common video core – enabling editors to share more, broadcast more and monetize more – all through a web standard browser. Myvideoplace handles everything including formats, with automatic

transcoding. We also developed iOS and Android apps with Aviwest to enable recording and editing, and sending video over Wi-Fi/4G. The thing that really stands this solution apart is the qualifying of the content metadata; copyright is already managed in Myvideoplace. The icing on the cake is that it is a native anti-fake news system because all partners are journalists, and you can connect your story to any outlet you choose,” said van de Velde.

Today Réseau Vià has 22 local TV channels covering 32million people, and plans to grow this to 30 channels reaching 40 million people by 2020. “The network we have built makes it possible to do this cost-effectively. To make our advertising offer powerful we needed to be able to offer the same slots across all channels – a common brand and graphics, global negotiation power and subscription support without hiring dozens of people. For playout we needed a solution that fits in 4 sq meters of space to support these 30 channels,” van de Velde explained.

“Each local station had its own workflow and way of working – we needed to create a new standardized workflow that enabled them all to concentrate on creating content. This gives us cost saving on space, power and network. For playout we chose Imagine Versio – which gives us a bilateral relationship between playout and our platform. It’s a full IP system with no video cabling. To achieve this, we had to skip from traditional broadcast skills to IT – to learn our jobs again!

“This system gives us flexibility and a much more software approach; this means the system can follow our needs – we are not locked into one approach. We manage all hardware and infrastructure in-house. Myvideoplace is used today by 50 companies – newspapers, players, linear TV. We process 12,000+ videos a month; all information and content go through this platform. It’s not just a regular MAM but a global solution which includes services such as web streaming and players for live and VOD. A single video can be embedded on several websites increasing viewership massively – enabling us to share more and monetize more – all with a single post of the content on the platform,” van de Velde added.

“For linear TV we needed a powerful traffic tool. Having looked at existing solutions we realized we had already built a big bit of the traffic system and I didn’t want to spend time adapting, so we decided to create it ourselves. Based on a web interface, we have brought this into service in less than a year. It’s also connected to the back office so we can track all the metadata. We work with containers – I haven’t seen this anywhere else; this is a great way to produce news programs; again, we built it ourselves. We push out blocks of playlists and get a direct response from the playout system, with no flat files exchange. For managing monitoring on the remote sites (TV Channels) – usually you could spend 20,000 euros on hardware coders – we again decided to develop this ourselves. Our remote decoders are based on raspberry’s (£50) and we managed a little delay. For system and hardware monitoring, we turned to Zabbix – a very powerful open source program – and adapted this to our needs.

“Why did we do all this? Mainly because we couldn’t find tools that matched our needs. On a philosophical level we also wanted to do something smarter for our industry with new economic models, special for the cross advertising (TV & Web). There is an open source tool for almost everything, and we have also hired specific skills and involved geeks, ‘forgot’ the usual broadcast way of doing things and adopted an agile methodology,” van de Velde concluded.

The Volucap 3D studio

In June 2018, the first volumetric studio on the European mainland opened in Studio Babelsberg under the flag of Volucap GmbH. Andreas Martin, Manager Media Solutions, Interlake Media and Rainer Kellerhals, Industry Lead Media & Entertainment EMEA, Microsoft, explained how this milestone was achieved.

“Mixed reality sits at the interface between physical reality and digital reality – blending the physical and digital worlds,” Kellerhals explained. “There’s a continuum between AR – augmented reality, where data and graphics are inserted into the user’s field of vision, and VR – virtual reality, when the user is immersed into a digital world. With Windows Holographic, we’re supporting that entire continuum, allowing you to create those see-through experiences where holograms are inserted into your field of vision and also occluded headsets to immerse you into a digital experience. So Mixed Reality gives you all the options – from

‘enhancing’ the physical world with digital objects to ‘immersing’ the user into a digital experience.”

“We did a proof of concept at the Porsche museum in Stuttgart by projecting a hologram of the designer of the Porsche 911 – shot at the Microsoft volumetric studio in 2016 – explaining his design around an actual car, giving visitors a really immersive experience,” Martin added. “This encouraged us to move forward and develop our own ‘high end’ volumetric studio – the Volucap 3D Studio in Babelsberg.

The companies collaborating on Volucap are ARRI, Fraunhofer, Interlake, Studio Babelsberg and Bertelsmann UFA. It has been up and running since summer 2018, and is larger than the Microsoft volumetric studio. It is centered on a 6m rotunda with 200 ARRI light panels to produce flat light and eliminate green screen reflections. It has 32 3D stereoscopic cameras to give depth estimation, producing 34Gbytes/sec of data. This is processed using Fraunhofer human body reconstruction technology.

“The Volucap 3D studio offers new ways to connect, interact and share ideas with audiences,” said Martin. The studio produces a point cloud from characters acting in the rotunda, builds a texture mesh and then compresses it for use on mixed reality devices. These holographic representations of real people can be processed in the same way as computer-generated models and placed in either real or virtual worlds. The studio is fully booked for the first half of 2019, with applications ranging from fashion to medicine and 3D e-Learning. Kellerhals sees plenty of applications in the media industry: “This technology extends users’ ability to interact with content,” he said. “This creates new opportunities for media because it gives viewers more time and new ways to view and interact with content.”

Why did the group decide to build it themselves rather than just recreating a version of Microsoft’s volumetric studio? “First of all, we wanted to make it bigger and maybe a little bit better than Microsoft’s studio, from which we have learned a lot,” said Martin.

“Improvements in the capture technology and processing were required; it’s pioneering technology, which requires ongoing R&D.” Collaboration is also key: “We learned a lot from our first shoots and are making week-to-week improvements and we are also exchanging information with the handful of other volumetric studios around the world,”

A great product making powerful machine learning modules available to the masses with multiple use cases to drive operational efficiency and revenue

Video Indexer wins Peter Wayne Golden BaM Award®

Microsoft recognized for 2018's top technology innovation

At IBC2018, Microsoft's Video Indexer won the prestigious BaM Award® for Content Management, which was perfect timing, as Video Indexer was announced as a generally available product at that same time; meaning that it reached product maturity in Microsoft and Azure standards. At the IABM Annual International Business Conference in December 2018, Video Indexer went on to win the Peter Wayne Golden BaM Award® – recognizing it as the year's top innovation from the shortlist of 20 individual category winners at the NAB Show and IBC editions of the IABM BaM Awards®. The judges said of Video Indexer: "A great product making powerful machine learning modules available to the masses with multiple use cases to drive operational efficiency and revenue. It enables media organizations to make sense of their content in a period in which this is exploding."

"Video indexer started two years ago as a small incubation at Microsoft with a team of only four people," shares Ohad Jassin, Principal Software Engineering Manager at Microsoft Azure, and founder of Video Indexer. "The team and I are super excited and proud to see how far along it has come since that humble beginning and the impact it has on our customers and on the media industry. We are looking forward to continuing our journey and enhancing Video Indexer with the aim of helping our partners and customers get the most out of their data."

Video Indexer is an artificial intelligence service in Microsoft Azure Media Services that provides an orchestration of 27 different machine learning models to extract deep insights

easily. Many of the insights make use of multiple channels of the video (audio, speech, visual) to provide more advanced and accurate insights. For example, brand extraction uses the transcript taken from the audio channel and OCR taken from the visual channel, while emotion extraction uses both transcript and audio cues.

This pre-integrated and customizable set of machine learning models enables leading broadcast and media companies such as AVID, Ooyala, Dalet, Box, Endemol Shine Group, AVROTROS and eMAM to take advantage of the latest and greatest in artificial intelligence and cloud computing without needing any machine learning skills in-house or to invest in the heavy lifting of integrating to build their end-to-end solution. They can simply get one coherent response over one shared timeline of all the insights found in their content, as well as predict in advance and control the cost of their content indexing. As a result, companies can get the most out of the growing amount of content that they own and stay competitive in the rapidly changing media industry.

This award represents the industry's recognition of the value and innovation that Video Indexer brings to the media industry and the way it helps media companies stay competitive and get more out of their data in this era of digital transformation, data explosion data, and movement to cloud computing. We are absolutely honored and thrilled to have won this award!



NAB Show 2019 – technology and business



Kathy Bienz
IABM Director,
North America

Ahead of NAB Show 2019, we asked members of our Americas Members' Council to lift the lid on what they see will be the key trends at the show this year. Judging by the spread of their responses, show visitors are going to be very busy keeping up with all the action in our very fast-moving industry. What is clear though is that it is increasingly about technology being harnessed to drive new business models as opposed to the old tech-first approach.

Thomas Tang, President, Apantac **Looking for innovation and emerging technologies**

We're looking forward to another exciting NAB. The pace of change seems more rapid than ever and we see continuous challenges to navigate through these changes. Our customers come to NAB to look for innovative ways to manage and deliver and monetize their content and we enjoy the NAB platform to showcase our solutions to help them do this.

We still see demand for 4K UHD and 12G support, which is why we've proactively incorporated HDMI 2.0 output support into our full line of Multiviewers. This ensures an enhanced visual monitoring experience for our customers. This year, we'll also be keeping a close eye on other emerging technologies and how our customers and the end-users will adopt them. We always try to see beyond the entertainment value and hype of new announcements to see what the real benefits along the content chain are.

John Miller, SVP of Sales and Marketing, BeBop **Technology**

Learn about the advantages of moving to the cloud

Creating in the cloud is a change from how you've used the technology at the office, and a drastic shift from the way we've been creating locally for decades. We are no longer limited by geographic constraints, and no longer hindered by creating on a single computer. Just as creative collaboration has evolved from a single meeting room, so has the technology available to enable creation anywhere. But is this technology ready for prime-time post-production?

At NAB Show 2019 I'd recommend you spend time learning about the advantages of moving to the cloud,

and the tools and platforms available to do it. You'll be pleasantly surprised at some of the technologies available today and how working in the cloud can enhance your creative process and make collaboration possible in amazing new ways. Manipulating media in the cloud affords you the freedom to create from wherever you do your best work. Cloud computing allows you to use high powered machines that are often faster than you currently own. Not only are these machines faster, but you have access to more of them! And just as the power and flexibility to create can be dramatically enhanced in the cloud, the same applies to collaboration.

Shawn Maynard, SVP/ GM, Florical Systems **This just might be a 'wow' year thanks to AI**

NAB is the Media & Entertainment's version of CES with the Las Vegas convention center packed full of vendors promoting their latest and greatest concepts with the hopes of attracting the attention of the decision makers and buyers. Although long gone are the days of buying products straight from the showroom floor at the special discount prices, NAB is still the place to be to get a pulse on the shifting sands of the industry. Year after year we have seen micro-evolutional progress of products but it has been a very long time since we have seen a macro-evolutional leap product that has caused us to stop and say, 'wow!'

This just might be that year. Is it 4K, 8K, ST-2110, or cloud playout? No, although those are noteworthy they are still micro evolution level advancements of technology. AI/ Machine Learning is the only technology that has the opportunity to radically shift how we do business. Cloud computing is interesting but not compelling from a business standpoint, however, introduce AI technology and we will say 'wow' once again with the endless

possibilities. Keep an eye on companies introducing amoebas that will grow into a fully functional intelligent future.

Keith Adams, Marketing Communications Manager, GatesAir

Empowering OTA with IP and Software Services

From an OTA infrastructure perspective, it's clear that broadcasters are planning to integrate even more IP-based and virtualized systems into their existing processes.

IP is no longer optional; it has become a requirement. As with today's transmitters, IP-based technologies drive today's control, monitoring, and transport systems with optimal efficiency across time, cost, and a variety of other business-critical factors. Virtualized versions of those systems will further improve their efficiencies, boosting maintenance ease and offering a centralized means of managing multiple aspects of their engineering operations.

As someone who cut the cable cord 10 years ago, I personally rely on OTA and OTT for my TV viewing. I'm hoping that both can embrace more of a cooperative, collaborative relationship built toward mutual success.

To that end GatesAir continues its 97-year legacy of innovation and excellence by pioneering the next-gen tools that OTA TV and radio stations alike need to compete in the mobile, streaming, and increasingly interactive world of today and tomorrow. Between our software-defined Maxiva™ XTE exciter, our fully-embedded Flexiva™ FMXi 4g importer/exporter for HD Radio™, and our new Intraplex® Ascent COTS STL solution, we are actively building and strengthening that digital foundation.

Sean Moran, Chief Operating Officer, Hitachi Kokusai Electric America, Ltd.

Bringing SMPTE 2110 and IP to acquisition

The move to IP-based video transport will continue to be a central theme for our customers and a majority of attendees at NAB. The IP transition is revolutionizing production infrastructures, and the SMPTE ST 2110 suite is critical in ensuring the interoperability that customers need to transition smoothly from SDI to IP.

SMPTE ST 2110 was built on the ST 2022 foundation and uses some of the existing developments but makes several important changes. For bandwidth efficiency, audio, video and data are now separated into different

streams. This allows a user to send/receive only what is necessary, instead of the entire SDI package.

Newer network components that are faster and less expensive have become available, enabling ST 2110 to deliver uncompressed video. A future compressed version of ST 2110 is currently moving through the standards committees. Broadcasters and production professionals are eager to understand the technical aspects of SMPTE 2110 in any of these environments, and the new opportunities that come with it.

Hitachi will bring its SMPTE 2110 and IP video transport message to the content acquisition side of the business at NAB. Hitachi HDTV broadcast cameras offer support for SMPTE ST 2110 when paired with IP-enabled models in the CU-HD1300 family of camera control units – thus protecting customers' investments by not requiring them to purchase new cameras. While development of SMPTE ST 2110 continues, Hitachi lets customers take advantage of the benefits today.

Brick Eksten, CTO, Imagine Communications
Education, standards and embracing new tech to improve ROI

The 2019 NAB Show will mark another milestone for the industry. The three key areas I monitor are awareness and education around new standards, vendor and customer investment in support of those standards, and the level of sophistication in discussions of technology.

In the area of awareness and education, we experience broad acceptance and a greater degree of knowledge around SMPTE ST 2110, virtualization, and cloud. Requirements are starting to appear which provide focus for the vendors, and requests for features are becoming much more specific in their nature.

The level of investment in the industry has improved, and we are seeing those results in the interop sessions where quality, reliability, and interoperability have improved dramatically.

What excites me the most, however, is the level of sophistication in the discussions with our customer partners around advanced topics such as microservices, ML/AI, and streaming data. Topics such as cloud-native designs, dynamic infrastructure, and data governance between microservices are where the industry is becoming much more in tune with how these technologies can come together to improve ROI – and that, of course, is the whole point of the transition to IP, COTS, and cloud-native software.

**Dan Montgomery – President of Imagine Products, Inc®
Moving to the cloud across the storytelling chain**

At NAB Show 2019 there will be plenty to pique everyone's attention, though perhaps not as much hardware as software solutions and services. I don't expect a significant 'game-changer', just more of the push towards better handling of digital assets and higher quality imagery.

Last year a search of NAB exhibits mentioning the word 'cloud' was about 120. This year it's over 425. That hints at more fluid digital workflows embracing cloud tools throughout the storytelling chain from beginning to end, rather than simply storage and VOD play-out.

Since one can learn about digital products any time of the year from the web, NAB Show is becoming more of a networking event than ever. Most exhibitors will tell you it's less about attracting the casual floorwalker and more about acquaintances, friends and attendees who pre-plan their steps and have a focused purpose. That's good news as visitors are more 'qualified' (but it also begs the question about the need for lavish expenditure on booths.)

PS: At some point rebranding maybe in order as 'National' isn't a particularly good fit anymore and neither is 'Broadcasters'. It's a global event for anyone handling media.

**Ian Sharpe, CEO, Promethean TV
It's about interaction**

NAB has always been about getting 'up close and personal' – meeting old colleagues, getting quality face time with new prospective partners, signing up new customers.

Increasingly, the broadcast world is all about the same thing. The audience want to get up close and personal with our content.

It's not just television (which literally means vision at a distance). It's about interaction. It's about a lean-in experience, with direct engagement with touch screen devices. It's personalized transmissions and tailored advertising that is driven by data. It's about bite-sized messaging that doesn't disrupt our viewing. Our audiences crave something that demonstrates context and relevance, that offers them a meaningful choice and it is up to our technologies to deliver it to this exciting new world of cord cutters, binge watchers, content connoisseurs, and esports streamers.

At Promethean, we're looking forward to the seeing all the innovation and insight that is going into the evolution of how we all watch.

"...how the mega trends are moving and shaping the industry, specifically, Cloud/Virtualization, IoT/Big Data, and AI/ML"

**Ted Korte, CTO, Qligent
Business models catching up with technology**

We have entered the era of 'infinite media' and the battle over Content or Data being King rages on. Not an either/or, it's both! Advancements in 360, 8K/4K/HDR, Immersive Audio, and AR/VR will be on display from a creation perspective and advancements in Low-Latency OTT, ATSC 3.0, and 5G will dominate from a delivery perspective.

What we are keeping an eye on is how the mega trends are moving and shaping the industry, specifically, Cloud/Virtualization, IoT/Big Data, and AI/ML. These technologies, along with a few others, are essentially pushing for 'Speed and Efficiency' via a data-driven strategy and applies throughout the entire supply chain to deliver great content with great quality and a great experience. Savvy visitors will be seeking vendors, such as Qligent, who can support this growing ecosystem. From the list of pavilions and educational forums, many are rethinking old models of how best to produce, deliver and reconcile. Everything is being investigated from advertising, long-form vs. short-form, live vs. on-demand, podcasting, eSports, streaming and In-Vehicle experiences. We're seeing that business models are finally catching up with technology.

**Joe Commare, Marketing Manager, Riedel
IP – learn in audio first and apply the lessons to video**

Besides the flurry of M&E activity that we typically see this time of year, the IP transition is gaining speed as many manufacturers and end users have gone from fear and apprehension to understanding and plan formation. The SMPTE ST 2110 suite of standards is firmly established and now we're working on the last important bits: automated connection management and security.

There will be plenty of new product announcements based on IP workflows and the big decision for end-users will be whether to gradually transition over to IP or just rip off the band-aid and do it all at once. Now that there are some great success stories in the marketplace, clients have much more information to base their decisions on.

At Riedel, we've had a fully IP-ready intercom system for several years and, at this point, Artist is the only intercom that's fully 2110-30 compliant. We believe that audio and comms are a great place to begin an IP transition so that the lessons learned can be later applied to video. Our MediorNet MicroN, equipped with the IP App, can create a bridge from MediorNet networks to IP networks, allowing broadcasters to make the transition at their own pace.

IABM UPDATE...

Meet the Buyer

Introduced for the first time at conference this year, the Meet the Buyer session began with a panel of broadcasters and media companies laying out the challenges their organizations currently face and advising the audience of vendors on how to meet their needs.

This was followed by a speed dating session where vendors were invited to talk one-to-one with the panelists and other broadcast/media companies in five minute sessions.

While every panelist faced different challenges, all are time-poor. Several common themes emerged:

- Understand what drives the customer's need – whether that's innovations that improve on-screen presentation and story-telling or improving efficiency behind the scenes
- The need for speed – projects have to be completed quickly to be effective given the current rate of change in the industry

- It's about partnerships – not them and us; working together to achieve the end
- Promising the world and not delivering is not the basis for a long-term relationship
- We have to be selective – keep the pitch short, simple and to the point
- Meet the engineers and developers; more pre-project, pre-tender work
- We're not interested in a 'boil the ocean' pitch. We don't want turnkey systems, we need products that integrate with and enhance our operation

This session was judged a great success by both the end users and vendors, and IABM is planning more such sessions at future events. We'll keep you posted!

Our next Meet The Buyer event will take place on Thursday 11th July. To find out more visit www.theiabm.org/eventcalendar

New IABM Dealer Directory

Designed to make searching for dealers in new markets simple.

Dealers have been selected based on their expertise in the media technology marketplace. The database includes more than 300 listings searchable based on specific countries and type of dealer.

All dealers on the database are experienced operators in the broadcast and media technology industry. They are also knowledgeable about what local customers require, resulting in faster exposure to the market to achieve sales success.

A complimentary resource for the entire broadcast and media technology industry.



Available at www.theiabm.org/dealer-directory/



IABM UPDATE...

ANNUAL STATE OF THE INDUSTRY BREAKFAST

Monday April 8
(7.30am–10.00am)
Ballroom B, Westgate,
Las Vegas Resort

IABM BaM AWARDS PARTY

Tuesday April 9
(6.00pm–8.00pm)
Ballroom B, Westgate
Las Vegas Resort

IABM MEMBER LOUNGE

N110LMR

IABM TV STUDIO

N110LMR

IABM MEMBER LOUNGE

C556

North Hall
Meeting Rooms

Westgate

North Hall

Central Hall

Encore
Las Vegas

E DESERT
INN ROAD

Wynn
Las Vegas

IABM'S NAB SHOW VOICE OF THE CUSTOMER SUPER SUNDAY SESSION

Sunday April 7 (3.00pm–5.00pm)
Networking with drinks and canapés
(5.00pm–7.00pm)
The Wynn, Alsace Room 2



Sunday April 7

IABM's NAB Show
Voice of the Customer
Super Sunday Session
(3.00pm–5.00pm)

Networking with
drinks and canapés
(5.00pm–7.00pm)

S LAS VEGAS ROAD

NORTH RD

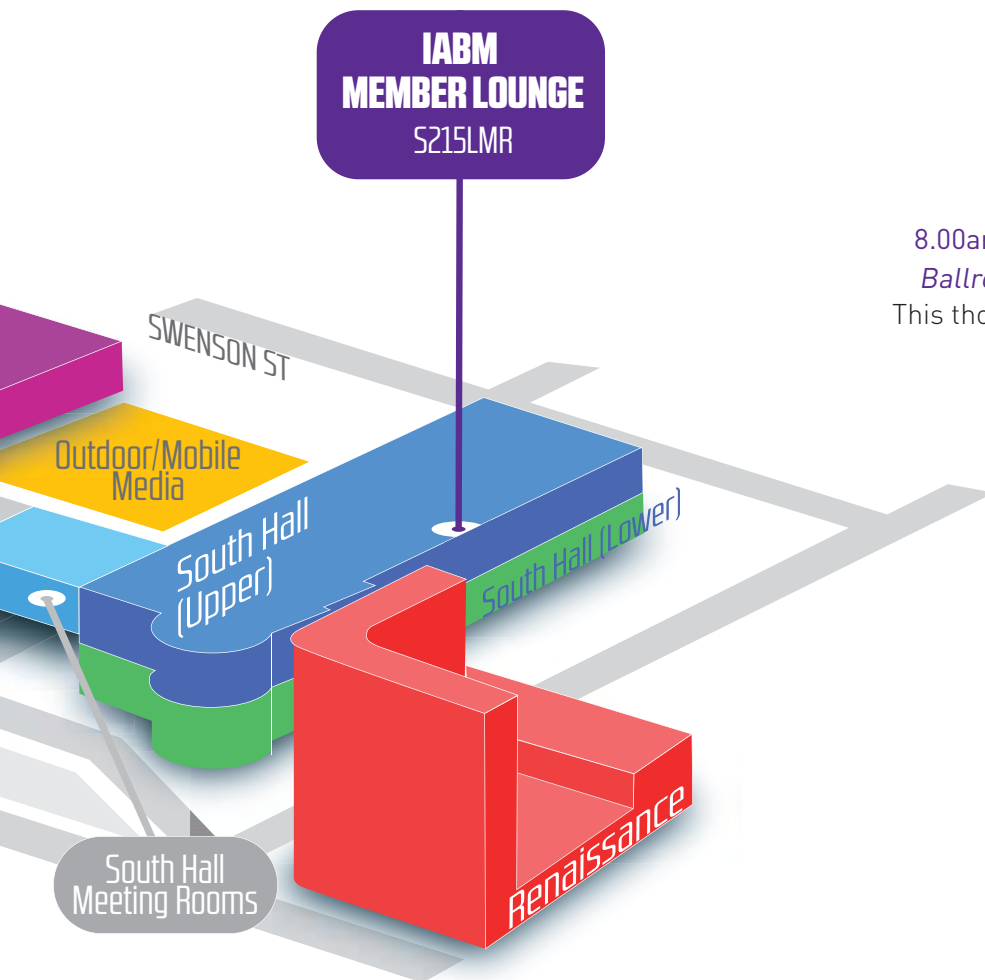
CONVENTION CENTRE DRIVE

Silver Lot

PARADISE ROAD

E DESERT INN ROAD

IABM AT THE LAS VEGAS CONVENTION CENTER



Monday April 8

State of the Industry
The business of broadcast and media, technology supply vital statistics

8.00am-10.00am Breakfast from 7.30am

Ballroom B, Westgate, Las Vegas Resort

This thought provoking session will give an understanding of the dynamics and disrupters of the industry, together with vital objective business data and informed debate.

BaM[®] AWARDS 2019

Tuesday April 9

BaM Awards[®] Party

6.00pm-8.00pm,

*Ballroom B, Westgate,
Las Vegas Resort*

This is the only event during NAB Show where you will see the top innovations from the show in one place. The Broadcast and Media awards (BaMs[®]) will be presented at NAB Show Las Vegas to recognize outstanding technological innovations that deliver real business and creative benefits.

This is a must-attend session on the eve of NAB Show where technology suppliers and end-users come together to discuss and define the future of our industry. As well as arming delegates with the insights they need to drive their business forward, it also offers a unique networking opportunity to make new contacts and strengthen relationships.

IABM UPDATE...

Finalists **BaM**[®] AWARDS 2019 iabm

Connect

Alteros, DVEO, Embrionix, Cerberus

Consume

Vista Studios, Verimatrix, Broadpeak

Create

LEDGO Technology Limited, Ross Video, Shure Incorporated, Teradek, Opus Digitas, Inc.

Manage

Piksel, VoicelInteraction, Yella Umbrella, GB Labs

Monetize

Paywizard, Amagi, Veritone, Inc., Qligent

Produce

Adobe, Marquis Broadcast, Lawo AG, Grass Valley

Project, collaboration or event

Zhejiang Radio and Television Group, MediaKind, GrayMeta, Vista Studios.

Publish

Red Bee Media, Telestream, Broadpeak, AWS

Store

Rohde & Schwarz, GB Labs, OWC, Symplly

Support

PHABRIX, Skyline Communications, Microsoft, Touchstream

NEW IABM MEMBERS

Amino Communications Limited
www.aminocom.com

Bitmax
www.bitmax.net

Cerberus
www.cerberus.tech

Cheng Seng
www.chengseng.com

Codemill
www.codemill.se

Es'hailSat
www.eshailsat.qa

GB Labs Limited
www.gblabs.com

Nanjing Magewell Electronics Co. Ltd
www.magewell.com

Opus Digitas, Inc.
www.opusdigitas.com

Paywizard
www.paywizard.com

Spin Digital
www.spin-digital.com

Utah Scientific
www.utahscientific.com

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

KOBA

22-25 May 2019
COEX, Seoul, Korea

BroadcastAsia

18-20 June 2019
Suntec, Singapore

BIRTV

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

ib
2019

13-17 September 2019
RAI, Amsterdam,
Netherlands



Training Dates Coming Soon!

Our technical classroom courses are coming to a location near you – see our website for further details.

Singapore – Week commencing 13th May

Germany – Week commencing 24th June

New York – Week commencing 8th July

London – Week commencing 7th October

Los Angeles – Week commencing
28th October

All IABM training courses can be delivered on demand – so consider getting together with your partners or customers and we can come to your premises to deliver our technical training without you having to travel.

Executive Summit Series

Brand New to 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 include networking events where you can enjoy drinks and discussion with your peers.

For sponsorship enquires, please contact marketing@theiabm.org

New York – 9th May

Cologne – 3rd June

Singapore – 17th June

London – 11th July

Atlanta – 4th October

NEW COURSE

Practical HLS and DASH Workshop

A 2 day practical workshop that shows the delegate how to setup the native windows web server to stream adaptive bit rate services such as Apple HLS and MPEG DASH.

Delegates will configure the server with pre-packaged VoD content, test the stream, capture the stream using Wireshark and process the captured stream to extract and analyse both the index/manifest and media content files for both HLS and DASH delivery. In addition, delegates will process Wireshark captures of live DASH streams and extract and analyse the index/manifest and media content files.

Broadcast assets will be prepared, from first principles, for delivery by HLS and DASH. For HLS delivery, delegates will be provided with copyright free content and a Windows batch file that uses VLC or ffmpeg to transcode and package the asset for HLS delivery. The operation of the batch file will be explained to delegates prior to use. Delegates will also use either x264 library or ffmpeg to transcode the same asset for DASH delivery. The asset will then be packaged for DASH delivery using the GPAC mp4box software.

The underpinning theory of TCP and HTTP will be covered and the effects of packet loss and delay on the TCP-based streams will be investigated practically using an Internet simulator.

This workshop will be based around software running on Microsoft Windows OS and

delegates will be expected to bring a laptop and have full administrative rights to make changes to the machine. Delegates will be expected to install software, change IP addresses and enable Windows services to set up the web server.

A basic understanding of IP and IP Routing is a highly desirable prerequisite for this course.

Delegates who have previously attended the Network Essentials and Advanced Networks courses will derive maximum benefit from this course.

It is possible to run a one day version of this workshop where delegates will concentrate on analysing the index/manifest and media files only.

Note: the practical elements of this course have also recently been developed on Mac OS. There is a need to install Homebrew on Mac OS and then install both ffmpeg and GPAC within Homebrew. Guides are available for this by searching on the Internet. Installation of a web service such as the free Abyss web server is also required prior to course attendance. Delegates can then be provided with editable script files that allow for transcoding, segmentation and packaging of DASH and HLS content within Mac OS.

Make the most of membership



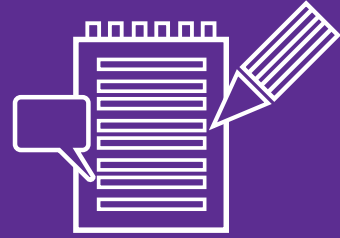
BaM™ SHOP WINDOW

Connecting you to the entire broadcast and media technology eco-system



PROMOTE YOUR COMPANY

A wide range of opportunities to promote your company across the broadcast and media industry



INDUSTRY NEWS

Up-to-the-minute news from the entire broadcast and media industry



INSIGHT & ANALYSIS

IABM is the leading provider of data, research and business intelligence reports in the broadcast technology sector



IABM TV

IABM TV keeps you up to date with key industry events and trends, no matter where you are



SKILLS & EDUCATION

Our portfolio represents industry newcomers, established experts and everything in-between



IABM GLOSSARY OF TERMS

A one-stop, online knowledge base for everyone involved in broadcast and media



IABM PRESENTATIONS

Access all presentation decks from seminars, events and keynotes delivered by IABM throughout the world

KNOWLEDGE SUPPORT & LEADERSHIP FOR MEDIA TECHNOLOGY SUPPLIERS



Join us today – www.theiabm.org

IABM BUSINESS INTELLIGENCE QUARTERLY DIGEST – MARCH 2019

The information contained in this Regional Update is derived from our newly published Regional reports, which are available on the IABM website. The latest Regional report focuses on North America and Latin America and will be published soon.

The full report on North America and Latin America contains an overview of the business environment, an overview of the broadcast and media technology industry and an analysis of technology demand drivers.

This should provide member companies more tools to better address opportunities and challenges in new markets. In an ever-changing industry such as media technology, it is increasingly important for suppliers to keep track of regional trends and broadcast and media technology developments within these regions.

The table of contents for the full report is provided:

- **Introduction**
 - Report Contents and Structure
- **Executive Summary**
- **Global Business Environment**
- **The Media Business**
 - Media Business Highlights
 - Supply Trends
 - Media Technology Special: Cloud
- **Regional Focus: North America**
 - Business Environment
 - The Broadcast and Media Industry
 - Media Technology Demand Drivers
- **Regional Focus: Latin America**
 - Business Environment
 - The Broadcast and Media Industry
 - Media Technology Demand Drivers



**Knowledge, support and leadership
for media technology suppliers**

IABM is the international trade association for suppliers of broadcast and media technology. IABM facilitates the important networking and interaction between suppliers that shape and define the unique ecosystem of the broadcast and media technology industry.

IABM supports member companies with a comprehensive range of services across market intelligence, training, technology, exhibitions and best practices – all designed to help them do better business.

We hold the interests of member companies as paramount, and strive to provide strong guidance and support at every level in all geographies.

We understand that in today's rapidly changing media landscape, our members have never had a greater need for timely, relevant and effective advice and support. IABM's mission is to be an ever more powerful beacon that is highly responsive to all our members' needs in a timely fashion, helping them to prosper and navigate change successfully.

Platinum Members

aws  elemental



DELL EMC



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ORACLE

 piksel

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