

3RD QUARTER 2020

JOURNAL

114

REPRESENTING THE BROADCAST AND MEDIA TECHNOLOGY INDUSTRY WORLDWIDE

Special Report:

Support

Bringing it all together

Also Featured
Covid success stories

**IABM Future Trends
Channel**

**5G will revolutionize
broadcast production
and delivery**



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IABM – Platinum Members



Keeping up, getting ahead



Peter White
CEO, IABM

Welcome the 'IBC' edition of the IABM Journal. I will greatly miss the opportunity IBC normally affords to meet up with so many industry colleagues and discuss trends and the future of our industry. Our industry relies heavily on the vital, concentrated networking and business meetings between buyers and sellers that major events such as IBC provide. However, while we await effective treatments or a vaccine for Covid-19, neither our lives nor our businesses can stay on hold.

That's why IABM acted early and decisively in the pandemic to give our members a comprehensive and accessible virtual platform to promote their products and services. As well as engaging a very wide audience through a program of webinars and virtual events, it has also massively increased visits to the BaM Shop Window™ by technology buyers.

We have taken this concept one stage further with the BaM Slider™, which you can read more about on page 53. In essence, it aims to give all 550+ IABM members the opportunity to promote the new products/services they would normally have been launching at IBC as visitors 'walk by' their online 'booth' on the IABM website – all organised under each BaM Content Chain® segment to make finding suitable solutions simple and quick.

We have been successfully curating the Future Trends Theatre at IBC for the last few years. This year, in conjunction with IBC, we have taken the same concept online in the form of the Future Trends Channel, which throughout September and early October, will host 125 presentations on new and emerging technologies. You can read more about it – and see the full schedule of presentations – on page 34.

We have two major features in this edition. The first is on the Support segment of the BaM Content Chain®, where four IABM members with products/services in different subsets of the segment talk us through current and future developments in this diverse but critical area, which enables and empowers the whole content chain.

The second feature is a set of Covid Success stories from 13 member companies – how they reacted to lockdown, continued to support their customers and what the longer-term effects on the way they work and do business might be. What is instantly clear is that they all put people at the heart of their plans, and out of adversity have found motivation and innovation. These are indeed inspiring stories of our times.

Standards and regulations play a vital role in keeping our industry moving forward, and IABM's technology specialist consultants, Paul Treleaven and Nigel Burt, continue to do a fine job in keeping members informed of all the latest developments. We asked them to provide a summary of these for the Journal; both have provided instructive articles, starting on page 46.

Our Regional Members' Councils continue to provide vital local focus for our members spread around the world. The APAC Members' Council has recently had its third election

(mandated every two years) and we have a very impressive new line up – see page 45. The Americas Members' Council is also up for re-election; details of the new members will be in the next edition of Journal.

There is also a host of excellent member articles in this edition across a wide range of applications and segments. I urge all IABM members to take advantage of the opportunity to submit their articles; as well as appearing within the Journal, the articles also feature as standalone pieces in the Knowledge Hub on the IABM website, traffic to which is continuing to grow very fast – so you get comprehensive exposure for your efforts.

I wish all our members good health and continued success. Broadcast and Media has proved itself to be highly resilient in the face of these unprecedented (there – I said it!) times. IABM is at the service of all our members to support you in every way we can – both in keeping up and getting ahead. If you have ideas how we could do more, please email or call me or any IABM team member.

Peter White
CEO, IABM

IABM: collaboration is the new normal



George Jarrett,
Journalist

A decade ago, when Peter White became CEO of IABM, its membership was about 250 and the staff numbered five. At its peak in 2020 before Covid-19 hit, membership reached 600+ and the staffing had quadrupled. George Jarrett reports.

IABM now bristles with valuable data and knowledge, and smart initiatives and partnerships, but when White emerged from another industry that had adopted digitisation, he was surprised by the sloth with which the broadcast business jumped from tape to file, and joined the digital age.

"We just played catch up, but very quickly in doing a decade's development work in five years. That's what's happened with Covid-19 too – two years' work in just three months," said White. "It has put us at the leading edge now: we have the technology, the expertise and the knowledge, and it has all been fast-tracked."

How did Covid-19 impact IABM and its relationships with its incredibly varied membership?

"Nothing in my lifetime has caused as much upset. This has changed the world, and it has changed how we are going to view the industry going forward. It has accelerated the processes of remote production,

of cloud usage and of IP adoption," said White. "Shows won't be the same, and neither will organisational structure. The virtual office will be more prevalent.

"We were particularly well placed for the pandemic because IABM has been widely distributed and by necessity an online, digitally connected business for a long time. We very quickly created a virtual platform that was free for members to use," he added. "We produced tons of data, and did dozens of interviews through our own TV channel."

IABM members were engaged with a wide-ranging programme of webinars and webcasts, and a series of courses that handle the issues around managing and changing of mindsets with a new normal in mind. IABM also teamed up with SMPTE, the DPP, SVG and HPA for joint web events.

"We have played our part in bringing the industry together. We worked with all those bodies so that

"Through the last four months I have been inspired by the level of innovation and sheer resilience of the industry, and the way that we pulled together."

Peter White – IABM





our members and the industry in general do not have to worry what camp they are in. It is now all about working together in a collaborative way," said White. "This is the way of the future."

Can IABM members make the commitment of coming back greener, while sustaining R&D budgets?

"That is a very credible wish. I heard great stories about organisations that just continued with their R&D development throughout lock down, working with engineers distributed all over the place to produce new products. It is not just doom and gloom. During lock down there was cleaner air, and an attitude that was more responsible. There has been a shift in the mindset to be more aware of our planet," said White. "The longer burn of environmental pollution needs to be dealt with, and we can start with not getting in our cars and travelling to offices. We can be as virtual as is practicable, and with shows we need to think of ways of making the experience good, while massively reducing our carbon footprint."

"All the owners of IBC and all the members of all the industry bodies have been similarly impacted by Covid-19, so it makes sense from a general logical aspect that we collaborate and drive things forward together," he added. "Doing those web events with the other organisations proves they are willing to do this."

Many IABM members were hit by the wipe out of production during lockdown, others in niche product areas may have struggled too. But live streaming companies, codec vendors, and platform and cloud enterprises have had a field day, whilst other companies just concentrated on R&D innovation.

"I am proud of what the IABM team has achieved. They have all bought into the new philosophy, and just keep on delivering."

How does Brexit mix in here?

"Brexit has not been a particularly constructive thing for our industry from a UK perspective, and it can only be exacerbated by a no deal Brexit. Covid-19 has magnified the other big issues that were there." White is worried by another issue that Brexit will magnify. "There has been little support for the freelance part of the creativity chain in the UK, and that has impacted tremendously on the level of unemployment. This will take time to recover," he said.

Has the IABM Global Engaged Partner Program, giving it a dialogue with end users, been a help during the pandemic?

"Massively. Engaging when they were working from home has been easier, so we have been able to stage some great end user panel sessions. That has enabled them to understand what IABM does and how valuable this dialogue with the supply side of the industry can be," said White. "It is important from a collaborative development point of view. They have a different need, a thirst for knowledge, and we can make that available to them."

How will the IABM create a new normal for itself?

Its Business Intelligence Unit has fed out a mass of reports covering technical change. And IABM sits on huge banks of both data and content.

"Our Knowledge Hub has grown and grown, particularly with the amount of activity during the pandemic lock down. And continuing the amount of virtual work we were doing has just added to the Knowledge Hub," said White. "Our focus now is making

that knowledge much more discoverable, with a better user experience.

"Making the journey through our website easier is one significant change. We won't be back to being such a physical presence everywhere. We will choose our moments and will take a more hybrid approach and be more discerning about what we deliver and what we invest in," he added. "We have had to focus our resources like the rest of the industry has."

"There is a complete kind of paradigm shift here that we are all going to need to recognise. We are pretty well placed because we have taken in a lot of new members who represent this drive."

Peter White, IABM

IABM is also looking at getting back to supporting some of the big shows.

"We are aware that even that will be different going forward. The game changers, the disruptors, the new service giants are going to shape the way the shows look in the future. It will not just be about a supermarket of products, but about delivering innovation and building around it," said White.

"We keep on preaching 'adapt to change' and that is what we have

done ourselves. It has involved changing our structure and changing our approach. I mean to transition the IABM by keeping it moving and keeping it fresh," he added. "To give it a younger image, we will make sure that our younger team members, who are brilliantly talented, are always at the forefront of delivery. That is what our industry is about."

With the broadcast industry now morphed into a wider media business, and with many enterprises using the same core technologies as other industries, does media sit at a top table now?

"Yes. We are at the top table now in terms of developing technologies in partnerships with Telecoms, Automotive, Medical, IOT, Cyber Security, IT and IP companies, and Cloud services," said White. "In the future it will be difficult to look for boundaries. We will still need optics to capture the image, but the rest of it is becoming so virtualised, so software driven; all the barriers have now gone."

"We still have those core production fundamentals around creating content, and that is never going to change. The way it is being finished, managed and delivered is so much more exciting. New people keep bringing in new things that we could not have dreamt of even a decade ago," he added. "I was impressed by the HPA's complete remote production of a feature film, which it showed at its retreat. The workflows and the focus on collaboration and efficiencies was kind of like a proof of concept for what happened during the pandemic lock down; I think HPA's work before and during lockdown has been sensational."

Make the most of membership



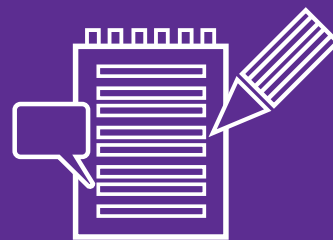
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IABM GLOSSARY OF TERMS

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



IABM PRESENTATIONS

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KNOWLEDGE SUPPORT & LEADERSHIP FOR THE BROADCAST & MEDIA TECHNOLOGY INDUSTRY



Member Opinion – LIVEU

5G for media and entertainment: from theory to practical use cases



Baruch Altman

AVP Technologies and Projects, LiveU and Chair, 5G-IA Trials & Pilots Working Group International Stream

In recent years 5G has very much been the talk of the technological town in general and increasingly in the media industry. People expect it to play a significant role in live production and contribution as well as distribution to consumers. There are trials and real-world 5G deployments and testing of media use cases going on behind the scenes. In this COVID-19 era, the role of 5G in remote production becomes even more relevant to cut production costs while complying with strict social distancing guidelines.

LiveU's successful live 5G field broadcasts with leading US, APAC and European cellular providers, including AT&T, NTT DOCOMO and Korea Telecom (KT), together with our three-year participation in EU 5G collaborative research and validation projects, have put us at the forefront of 5G-based field production. It's strengthened our 5G understanding and expertise, resulting in enhanced 5G-native algorithms and implementation across our cellular bonding technology.

We have been actively involved in the EU collaborative research and

5G Infrastructure Public Private Partnership (5G-PPP) projects funded by Horizon 2020, the biggest EU Research and Innovation program. The projects' goals are to provide the broadcast community and other verticals with insights into 5G performance in real-world scenarios, both in production and in consumption/distribution. LiveU's bonding technology has been an enabler in several important use cases.

As a result of this commercial and research exposure, I can say on the production side, these are the key media and entertainment use cases (and variations upon them) as benefitting from 5G.

The first is remote production, sending compressed real-time, in-synch multi-camera feeds (including 4K) from the field (venues, events sites, outdoor sports locations...) into the cloud or to the production facility, rather than sending out an OB unit with all the equipment and staff. This is a complete remote production scenario, including in extreme cases multi-room

distributed production, such as multiple production staff operating remotely from one another working collaboratively on the same live content. We see strong demand from customers due to the economic and operational benefits and we've responded with our LU800 multi-cam and remote production software solution.

Secondly, there's remote production in the field using private 5G networks (i.e. Non-Public-Networks – NPNs), with uncompressed, or slightly compressed, feeds from cameras sent to the on-site production truck: cableless, non-line-of-sight, high-quality field production. Then there's wireless studios: a vision where an all-IP, 5G NPN cableless wireless studio(s) is used, with all A/V devices connected over a 5G network, all IP-based etc.

Lastly, enhanced news gathering for live and recorded coverage and much faster pre-edited file uploading (LiveU FTP), benefiting from the additional uplink capacity and enhanced user density support.

On the distribution side, we see mass



validation projects, partnering in five



HD content distribution for consumer consumption, both live and non-live. More users, watching more content, at higher quality, with no buffering etc. For live content, 5G broadcast and multicast have the important potential to reduce network load, enhance the viewer experience and reduce operators' costs.

Then there's AR/VR viewing: consumers on mobile devices experiencing AR/VR, either passively watching or with gaming or other collaborative experiences. The AR/VR content may be live or pre-arranged. The requirement for high bandwidth at very low latency (otherwise physiological phenomena will inhibit usage) is expected to be resolved by 5G.

eGaming and eSports is similar to AR/VR but also requires multi-player synching with very low latency. In addition, we see possible use cases in other verticals, where video or other media is required, making very good use of 5G. These include telemedicine – high-quality, remote access to medical experts, home treatments etc. We're also taking about remotely operated, or assisted, medical robots and machinery. Very low latency, high uplink bandwidth and very high reliability are key to this remote point-to-point telemedicine use. COVID is expected to further boost the exploration of these use cases, including remote patient monitoring in ambulances or other out-of-hospital locations.

There are also AI-driven media use cases where back-office AI is used to analyse and work on high-quality video coming in from mobile field devices for various outputs.

5G offers a range of key technologies to enable and support these cases. The main ones are higher bandwidth, both

downlink (mainly) but also uplink; edge computing that enables latency reduction in some uses; support for increased user density – to reduce congestion both for production and consumption; slicing and orchestrated virtualised services using 5G Core to enable QoS 'guarantees' for paying customers in stand-alone (SA) networks; NPN networks and NPN-PN roaming and collaboration models; and broadcast/multicast support.

The issue is to close the huge gaps between the promised performance and the current or imminent 5G network deployments, if and when all these 5G 'goodies' are enabled and fully deployed. This requires a lot of research and validation – technological, operational and economic (return on investment). Then there's the capital investment, including spectrum, basic infrastructure, optional advanced infrastructure and more expensive end-user technologies; we all need to understand the possibilities versus the limitations. Then there's the issue of how widely networks are deployed and network resources allocated. It depends on investment priorities and ROI analysis, which are in competition with other verticals/use cases/markets/businesses such as IoT, smart logistics, autonomous vehicles, smart cities etc. Such full 5G deployments are some way off, though in some countries that see 5G as an engine to drive their economy, rollouts will be earlier than in others.

Being at the heart of the testing and validation of these innovative use cases, especially in production, we can assess the advantages, limitations and market viability of these advanced 5G technologies. We see, and experience in our work, bonding multiple links is required to fully enable these cases. It simply ensures the maximum effective

use of current and future 5G capabilities. On the one hand there's fluctuations in service levels, limited consistent uploading for any single modem, partial deployments, sub 6GHz spectrum penetration and propagation issues, and NSA (Non-Standalone) deployments are the standard (using 4G cores and sometimes jumping between 4G to NR (New Radio) in the middle of transmission). On the other hand, there's increasing demand for 4K production, multiple-cameras, remote production in news and across top sporting events. LiveU multilink combining any 5G connection, with or without additional 4G or Wi-Fi, is essential in satisfying the strict requirements of these use cases.



As an aside, I am proud to have become 5G-IA Tests and Pilots International Stream Chair, where I will be trying to promote global collaboration around trials. LiveU is a proud partner in these EU 5G collaborative research and validation projects: 5G-Solutions (#856691), 5G-Tours (#856950), 5G-RECORDS (#957102), COPA EUROPE (#957059) and 5G-Xcast (#761498).

5G will revolutionize broadcast production and delivery



Phillip Neighbour

Chief Operating Officer, PlayBox Technology UK Limited

As you may know, the world of broadcasting is a constantly moving feast. Changes are happening all of the time. One significant change that's always worth keeping an eye on is the ongoing deployment of 5G networks. In this article, we will explore 5G broadcasting, including how 5G networks are more efficient for mobile and the impact they will have on broadcasting specifically. And, of course, we'll cover the widespread misconceptions. Let's delve in, shall we?

What is 5G?

5G is the fifth generation in terms of mobile internet connectivity. With global consumption of mobile video content expanding at astronomical rates, consumers are always demanding more. You can expect more reliable Internet connections, as well as faster speeds. By combining the very latest research and cutting-edge technology, 5G will provide connection speeds that are multitudes quicker than 4G. Soon, it will be the baseline norm to have an average download speed of around 1 gbps.

We have already seen 5G networks launch, and 2020 has seen a worldwide push to further roll out the technology across the world. Verizon became one of the first companies to do so. However, their 5G network is still only available in certain areas. AT&T has rolled out 5G in a number of cities too. In the UK, EE and other mobile carriers are leading the charge as 5G becomes more and more accessible. However, we are still very much in the early stages in terms of mass adoption.

Some Asia-Pacific (APAC) territories are well within the more advanced stages of 5G rollout – with China, Japan, Australia and South Korea taking advantage of early 5G launches to cement the foundations for further rapid expansion. The benefits will be widespread across multiple instances, including mobile broadband and the


internet of things – marking it as a top priority for multiple industries.

What isn't 5G?

Forget what your neighbour might have heard from local Facebook groups and comments on the internet – there is no evidence that the presence of 5G is detrimental to your health. Earlier in the year, we even saw theories that 5G was somehow linked to the Coronavirus. This ultimately led to acts of vandalism carried out on new masts, at a time where connectivity was more important than ever.

The fears and conspiracies that surround 5G have a long history preceding them. Most theories can be traced back through the development of 3G (remember that?), and even the introduction of mobile phones themselves.

As 5G moves through its adoption phase, expect to see such theories lose momentum. Until 6G is formally announced, of course.



Some Asia-Pacific (APAC) territories are well within the more advanced stages of 5G rollout - with China, Japan, Australia and South Korea taking advantage of early 5G launches to cement the foundations for further rapid expansion

5G and broadcasting

Despite the fact that 5G networks are not universally available at the moment, we have already seen 5G in broadcasting. At its core, 5G represents a more efficient mechanism for delivering linear services and content to mobile devices across the world. It's something that we have already experienced in a limited capacity within the UK. BT Sport and EE conducted their first-ever 5G two-way broadcast at the end of 2018. Moreover, the EE Wembley Cup was the first-ever sporting event in the world to broadcast utilizing 5G-enabled remote production. It makes sense that premium live sports are embracing 5G, as subscribers demand the next level of quality.

Broadcasting technology may not be directly aligned to 5G – but we will continue to see broadcasters and media organisations explore new opportunities for 5G. Fundamentally, broadcasters will be looking for the ability to directly reach expanding mobile audiences with the next generation of connectivity.

Transforming production

There is no denying that 5G is one of the most exciting progressions for broadcasters. There are a number of reasons why this is the case. When it comes to the production of live sports coverage, remote production is much more efficient. This means fewer camera operators are going to be needed at matches and events. Staff can work on a number of different events in one day because they can do so via a centralized location, rather than staff needing to all attend each event. To give you a better understanding of this, the National League in the UK is now entirely produced remotely. The greater speed and reliability that is offered by 5G makes this possible.

Whilst 5G is still in its early stages, 2020 has seen incredible movements in the direction of mass adoption. Of course, there are still a lot of cities and towns that do not have access to 5G. As with any technology in recent years, this can change in the blink of an eye. This is especially the case if broadcasters need to power remote production in your area. It is exciting to see what lies ahead in the ongoing deployment of 5G and the impact it has on broadcasting specifically.

At PlayBox Technology UK, 5G represents a truly exciting prospect for both us and our customers. On our end, we'll be taking advantage of the advancements made possible by 5G in our Production AirBox and Cosmos products. For our customers, it could completely redefine their linear content delivery – staying ahead of the mobile revolution and making their content more accessible to mobile audiences than ever.



Updated Cloud Adoption Trends report published

We have recently published the latest iteration of our Cloud Adoption Trends report – one of a suite of regular technology updates covering key technology/business areas produced by IABM's Business Intelligence Unit. The full report, sponsored by Net Insight, is available to all IABM member companies on the IABM website; what follows is a summary of its key conclusions.

The top-level finding is that cloud adoption has accelerated significantly over the last six months – partly as a result of a continuing trend but noticeably accelerated due to the coronavirus pandemic and lockdown; 45% of respondents have already adopted Cloud compared with 39% a year ago – and the survey data was obtained early in the coronavirus pandemic.

The acceleration of cloud adoption was notable in all segments the BaM Content Chain® – which can also be clearly seen in IABM's Coronavirus Impact Tracker – with the Manage and Publish segments leading the way with 43% and 39% respectively in a drive for efficiencies which can realize widespread savings throughout the content chain.



Other highlights of the IABM Cloud Adoption Trends report include:

- Tapping of cloud's potential for improved efficiency in Create and Produce by improving collaboration and decreasing time to market
- A move towards 'pay-as-you-go' solutions in the cloud in Manage for payment flexibility and increased collaboration
- Growth in hybrid cloud models enabled by cloud providers offering solutions for the transfer of large video files
- Increased use of AI, which often leverages cloud providers' capabilities
- Shift from IaaS to CaaS as the use of containers and microservices grows

"The Covid-19 crisis has re-shaped the media ecosystem," said Per Lindgren, CTO at Net Insight. "In line with the findings of the IABM Cloud Adoption Trends Report, we've seen numerous companies ramping up to

cloud to gain more autonomy and elasticity while optimizing their costs. In this context, open, interoperable and secure cloud and IP solutions are needed and are helping media companies to create profound and durable changes in the way they produce and distribute content."

"The report is built on feedback from end-user broadcast and media companies and gives a clear indication of the unstoppable move to cloud across every segment of the BaM Content Chain®," said IABM Head of Insight and Analysis, Lorenzo Zanni. "This shift has been accelerated by the coronavirus pandemic: cloud has rapidly moved from being seen as 'too risky' by some organizations to becoming the natural way to mitigate the effects of mandatory remote working. I don't expect a return to the 'old ways' in the future as these companies are clearly beginning to reap the long-term benefits the cloud can bring."

Will life ever be the same again – supporting customers in a socially distanced world



Scott Murray
*Vice President
of Marketing at
Telestream*

Ever since news first broke of the coronavirus pandemic at the start of 2020, all the usual rules of customer engagement have been suspended in the broadcast & media tech industries. NAB Show was first to fall, and this has been followed, almost inevitably, by other global events such as Broadcast Asia and IBC.

For any organization – whether you are on the customer or the tech vendor side – things have been tough (and for many continue to be so). But we will emerge on the other side. The big question is how are companies managing to either disseminate or acquire the industry knowledge they require to operate their businesses?



Pause, take a deep breath, assemble your team of experts and determine the best strategy... then go like gangbusters on the execution!

without tradeshow



Seemingly forever, NAB Show and IBC have been cornerstones of the industry. So how have companies accommodated their demise this year, and are there lessons to be learned and positives to come out of the virtual environment that has replaced these mega events? Scott Murray, Vice President of Marketing at Telestream, gives his opinion.

So Scott, by losing NAB Show, what challenges does this pose to Telestream in terms of engaging with its customers?

The greatest value of NAB Show is meeting with our customers and partners, many of whom have been friends for years. It's so great to greet them with a smile and a handshake, catch-up about life and discuss how we can help them achieve their business objectives. By losing NAB Show, we have had to transition to video conferences, phone calls and remote demos, which are great, but there is nothing like sitting down and talking directly to our customers. We are confident that, sometime in the future, we will be able to greet our friends and customers like we have in the past.

Flipping that coin, how big an issue is it for your customers not to be able to meet with you at NAB Show?

This is interesting because there have been both positive and negative issues around this. When a customer comes to NAB Show, they not only learn about the new solutions we have that can help their business, they also learn about products that we had previously announced, but maybe they didn't know about. We like to think our customers are always up on our latest & greatest, but the truth is that we may have introduced something a year ago and at NAB Show, our customer may just get

their first introduction to it. No fault of theirs, they are busy running their business and have so many vendors to pay attention to. So, by not having NAB Show, it is hard for customers to know about all the great tech that's out there in the video world... you discover a lot by wandering around the show floor. On the positive side, we've had to switch to virtual meetings and our customers have been able to have many more people attend than would have attended in person at NAB Show.

How quickly did the size the challenge become evident to your team after the announcement of NAB Show's cancellation?

When news started spreading about COVID, we began speculating about the potential of not having NAB Show and what we would do. Then, as the pandemic progressed and several companies started cancelling their attendance, we seriously began putting a 'Plan B' in place. By the time NAB Show was officially cancelled, we were well under way. The great thing is that we learned a lot by hosting all of our webinars and are making some great adjustments for fall now that IBC has been cancelled.

What was more important – to act fast and get a strategy of customer engagement in place; or to reflect and take time working out the correct engagement strategy?

Abraham Lincoln said, "When I have six hours to chop down a tree, I will spend the first four hours sharpening the axe." So, it's always better to #1, not panic. Pause, take a deep breath, assemble your team of experts and determine the best strategy... then go like gangbusters on the execution!

Do customers need to tell their vendors what information they need, moving forward, or is it the responsibility of vendors to present all that info?

The responsibility falls on both parties. Our objective is to help our customers be successful. With that comes the responsibility from the customers to explain the projects they are executing on so they can run their business. Our responsibility is to clearly articulate how our solutions can be integrated into their business ecosystem to ensure a successful outcome. The interesting thing about this is customers need to trust us and value our solutions and our expertise. We like to be seen as someone our customer can trust and turn to when they need help figuring something out.

What new activities have worked best and why?

Our own employees have been working from home and so we have had to find way to, for example, play 'unplayable' media files. Hence, we developed GLIM to solve our own need and realized it was perfect for our customers.

GLIM is designed for ingest QC, engineering, master control, news, postproduction, and more, GLIM enables media professionals to play full resolution, mezzanine grade media files from their centralized storage over the Internet in a web browser.

GLIM was developed to solve well known remote work challenges where remote employees waste hours every day downloading mezzanine grade media files just so they can be played back. Many collaborative video production



NAB Show provides a great service to the industry (as all trade shows are intended to do). The bringing together like-minded individuals to discuss the latest technology trends and how best these can be deployed for the entertainment, and betterment, of society.

Scott Murray
Vice President of Marketing at
Telestream



applications require transcoding prior to uploading to the site. GLIM allows users to play files immediately, from a browser interface, without any delays caused by transcoding and uploading. It supports playback, frame scrubbing & stepping and display of file properties and metadata. The GLIM playback experience is vastly superior to remote and virtual desktop techniques.

What activities have not worked so well and why?

With the shutdown of essentially all sports, live production has taken a hit. In addition, episodic production in Hollywood has also been put in hiatus. A lot of our NAB Show story has been focused on production and it's tough for customers to get excited about some of our advances in areas that may be on hold for a period of time. We're seeing signs that this is changing and we're excited for customers to learn about our new production solutions.

How big a deal is it that IBC has cancelled now? Does it make a difference that there will be no big tradeshow in 2020 – would it have been easier to bridge the gap up to September or doesn't that make much difference?

We're not surprised IBC was cancelled. What is super interesting is that this gives us an opportunity to rethink our fall production announcement lineup. Given that we will be doing these announcements virtually, it gives us the opportunity to make it a worldwide event, not one that mostly is a European focused event.

When the big shows start up again, do you think they will follow the traditional model – if not, what changes do you think we will see?

I believe in tradeshow...but augmented with virtual presentations and meetings. I predict companies will look at their financials this year and ask themselves, did I really get my money's worth out of that investment...did I miss NAB Show and IBC? Tradeshow are notoriously hard to analyze the

The key is going to see if we can do both...host an awesome booth where we can meet our customers face to face, and for those unable to attend, provide them with a compelling experience

return on investment. But in the 30+ years that I've been involved in NAB Show I've only ever heard pitches about how to "Spend more! Get greater return! Bigger Booth!" when in reality, I believe we need to "Spend Smarter". No one in any of the trade organizations has ever come to me to say "OK, looks like we'll be able to give you more space for less \$".

Has non-NAB Show taught you anything new about customer engagement – will you continue any of the new activities to support your attendance at the tradeshow?

NAB Show provides a great service to the industry (as all trade shows

are intended to do). The bringing together of like-minded individuals to discuss the latest technology trends and how best these can be deployed for the entertainment, and betterment, of society. The conference & technical sessions associated with trade shows are invaluable for any industry. What we really missed this year were these technical sessions and the face to face meetings.

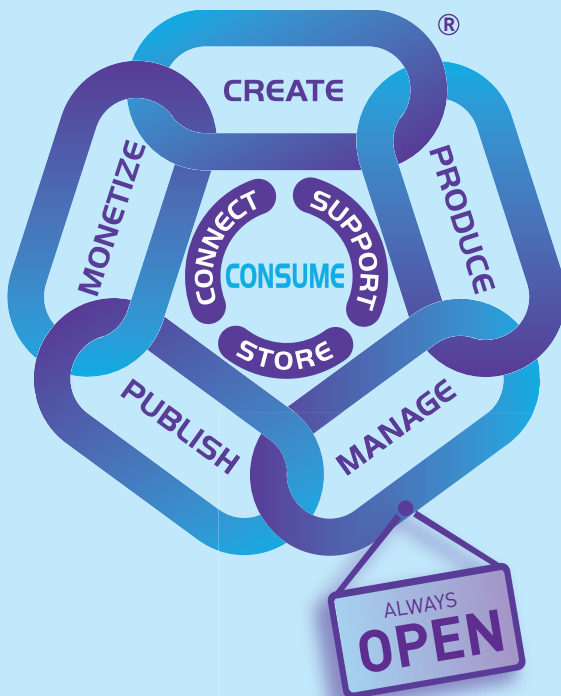
Do you think your customers will stand to gain anything from this whole experience?

With vendors doing webinars and virtual demos, it provides exposure to more people who can't attend the tradeshow. This is a plus and

something that we saw. The key is going to see if we can do both...host an awesome booth where we can meet our customers face to face, and for those unable to attend, provide them with a compelling experience.

And finally, how much of a watershed moment will the 2020 pandemic prove be in the broadcast industry's evolution – for example, will it rank alongside the introduction of color television?

Probably not as big as the shift to color (and BTW, I was a wee lad when color came out). However, 2020 will be seen as a year when the 'world shifted' in so many ways.



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Covid success stories

The Covid-19 pandemic came as a shock to everyone – turning our world and the way we interact within it upside down almost overnight. With stay-at-home measures widely mandated, how would broadcast and media cope with a massive and instant change in the way it worked – as well as with the huge increase in demand for streamed content?

We asked IABM member companies to share their experiences – how they reacted themselves, continued to support their customers and what the longer-term effects to the way they work and do business would be. What is instantly clear from the following stories is that they all put people at the heart of their plans, and out of adversity have found motivation and innovation. These are indeed inspiring stories of our times.

In terms of the remote work of Zixi's staff, it is amazing how efficient we have become. We have leveraged virtual working with a series of connected offices, from New York to Boston to Tel Aviv, and beyond

Covid
success
story



The current climate has certainly spurred a movement towards the virtualization of broadcast media infrastructure. Zixi's Software-Defined Video Platform can help media companies navigate this transition expertly, without sacrificing continuity of broadcast operations. Despite the challenges brought on by the COVID-19 pandemic, Zixi has been able to provide continuity and quality of service, both within the company and for our clients and partners.



Eunice Park
*VP Global Sales
and Revenue, Zixi*

Zixi is a Software-Defined Video Platform that enables reliable live linear and live event delivery over any IP network, any protocol, any cloud provider, and any edge device. As a provider of software-defined solutions, Zixi has always operated in a virtualized world, and so our transition to working remotely during the pandemic was very natural.

But for most of our clients, some of the biggest names in the media business, it was a different story. As soon as the pandemic hit and operations in big media centers like New York and LA began to mandate remote working for employees, it was clear that to maintain business continuity, companies would need to shift quickly to virtualized infrastructures.

While many had always planned to virtualize their workflows, the pandemic forced some customers to migrate more quickly than they had planned to software-based operations, accelerating a migration process that might have taken several years into a matter of weeks and months.

As a SaaS based platform, Zixi was ready to help media companies navigate this transition expertly. Zixi's customers leverage IP distribution to gain flexibility and immediacy that is essential when it comes to remote monitoring and operations. Our SDVP helps broadcast

and media customers redefine their workflows for people operating remotely, and gives them the tools they need to provide the monitoring, management, telemetry and orchestration that allows them to work from home while still maintaining broadcast continuity and delivery of broadcast-quality live video.

When our customers were forced to quickly virtualize their operations, they needed to maintain visibility to their live streams and monitor and manage complex contribution and distribution workflows from outside the office. For many within the live video business, the pandemic created a need to move production from on-premise infrastructures to a remote-based set of workflows, which put a lot of pressure on the production environment. Zixi's ZEN Master helps live video engineers and operations teams diffuse this pressure. A cloud-based control plane, ZEN Master allows for the orchestration, management, and monitoring of live linear streams, enabling on-premise and remote access to the entire Zixi-integrated chain of software and hardware devices, video streams and signal paths, providing data telemetry and alerting on stream health. For our live customers who had reduced their onsite engineering operations and moved into virtualized operations, the toolsets and benefits provided by

ZEN Master allowed them to maintain continuity and quality of their broadcast operations at scale.

In terms of the remote work of Zixi's staff, it is amazing how efficient we have become. We have leveraged virtual working with a series of connected offices, from New York to Boston to Tel Aviv, and beyond. Like most companies, we have accelerated the percentage of virtual meetings, leveraging the video platforms out there to stay connected and engaged. In terms of fostering team spirit and collaboration, Zixi has embraced weekly social happy hours to make sure we are continually sharing information, staying connected, and engaging with our employees across the globe.

When the decision was made to cancel NAB Show in Las Vegas in the Spring, we took the opportunity to virtualize our meetings, pivoting to a virtual "NAB" of our own. In September, we are doing the same with a virtual "IBC", hosting Zixi Delivers, a series of webinars and virtual meetings through which we can virtually connect with customers and partners. We anticipate that this will be another big success and look forward to connecting again with global audiences, to show them how the Zixi SDVP can provide software-based solutions to facilitate the delivery of live and live linear broadcast-quality video around the world.



We created Partyline as a professional cloud-based alternative to the mass audience video conferencing platforms and designed it specifically for video production teams who require a much higher level of virtual collaboration

Covid
success
story

TVU

We're all in this together. These were the words we came to say and believe as an organization in early spring as the coronavirus spread across the world and began to paralyze the business operations of our customers and the broader community. Even as we were transitioning our worldwide staff to long-term work-from-home arrangements and restricting travel for safety, we were planning and mobilizing as an entire company to help broadcasters to transition from physical studio operations to remote setups in living rooms and other shared living spaces in homes.



Paul Shen
CEO, TVU
Networks

As one of the first companies to initiate a Business Continuity Initiative at the outset of the pandemic, we provided immediate assistance by offering the tools and technology needed by our customers and the community with no-strings attached to help keep businesses going. For instance, we provided TV stations with essential remote tools such as our TVU Anywhere mobile app, and many major broadcasters adapted its use for their reporters and anchors for live daily reporting.

Reporters from Tegna stations in the US began using TVU solutions for at-home news production and transmission right away. One of these early adopters was Emmy award-winning meteorologist and reporter Krystle Henderson from KPNX in Phoenix, Arizona. Krystle converted the wine room in her home into a studio where she could produce and report live forecasts with the help of our TVU Anywhere mobile app.

As all of us in the general public looked to our government officials during the early days of COVID-19 for guidance, we as an organization also recognized that local governments such as governors' offices in the US needed to communicate regular vital information live to their state residents in a simple and effective way.

Project Pool Feed was a second community initiative we launched working with news stations and municipal government offices to set up no-cost video pool feeds using TVU Grid to streamline the sharing of critical information on COVID-19. Project Pool Feed allowed TV stations in a local area to share live content between each other as well as with local government. With local stations all connected using TVU Grid, live press briefings could be distributed from the pool. Many states in the US have used our pool feeds for daily public briefings including California, Florida and Georgia for example.

Despite the restrictions of COVID or perhaps because of its restrictions, we've also not stopped innovating within our organization or in developing new tools and technology for the broadcast industry. Internally, we've transformed our operational and development practices to allow us to react even faster to our customers' changing needs. It's now possible for us through the combination of platform tools such as Jira and processes like DevOps to capture user feedback and enhancement requests and have changes made, tested and implemented into production practically overnight. Customers who have experienced our way of rapid development have

responded very positively as it allows them to use the tool they need sooner without having to wait months as is the case with traditional development cycles.

In terms of product innovations, our latest solution, TVU Partyline, was developed from the frustration broadcasters we believe experience daily with using consumer grade video conferencing solutions for remote production. We created Partyline as a professional cloud-based alternative to the mass audience video conferencing platforms and designed it specifically for video production teams who require a much higher level of virtual collaboration. While consumer grade video conferencing may have been fine as a stop-gap measure at the outset of COVID, it is not adequate for this next phase of reproducing production quality up to the level of pre-pandemic expectations. This is what TVU Partyline was designed to address.

Although no one can predict the future, it's becoming apparent business has changed and will not operate in the same way as it was pre-pandemic. While business continuity was the main focus at the beginning of COVID, future success will depend on organizations finding ways to grow and serve. We are focused at TVU on continuing to help our customers and the industry do this.



Telstra

Over the last decade, with the likes of Uber, Monzo and Netflix dominating and disrupting traditional industries, we've seen first-hand the revolutionary potential of digital transformation.



Matt Williams
Head of EMEA,
Telstra

The acceleration of digital technology has become a buzzword yet again in 2020 with the emergence of Covid-19. The pandemic has sped up several incubating trends over the last four months and digital is now a universal requirement for every business that remains in business today. It is also the means to productivity and resilience from future crises and shocks.

Digital transformation is more than enabling state of readiness and remote working, it offers a choice to employees and the public at large of being able to work and play wherever it suits. This has been a benefit for many throughout global lockdown. The explosion in the demand for data has set new records and telecommunications companies, like Telstra, have been working around the clock to maintain international networks.

Online streaming traffic is a major growth area as people wanted to stay entertained with services such as Netflix and well-educated with 24 hour news broadcasts. Telstra has seen international data demand surge by up to 50% since the start of the pandemic; due to the use of video in work, play and education, and large-scale Software as a Service (SaaS) adoption from companies moving businesses online. Telstra keeps the network alive and thriving, due to sufficient capacity and headroom which caters for unexpected traffic peaks.

Aside from a high capacity network, supporting the world's ability to work remotely requires cloud, mobility and data. Telstra works with a number of

global companies and organisations to actively support these areas. For businesses around the world, the use of function applications accessible by the workforce from the cloud, has enabled businesses to continue.

Furthermore, teams can use data and AI to create new customer experiences. Digital technology allows various companies to work in disruptive environments. In one case, Telstra developed an online solution to enable 4,000 university students from the Royal Melbourne Institute of Technology learn and access courses from home, despite location.

Prior to the pandemic, significant investment was made by businesses for setting a transformation roadmap strategy, selecting technology to enable this and setting goals for minimising cost and risk. Priorities changed when Covid-19 hit. At Telstra, we worked with research company, GlobalData, to understand these changes.

One of the most surprising elements was almost a third of the workforce in Europe couldn't work from home.

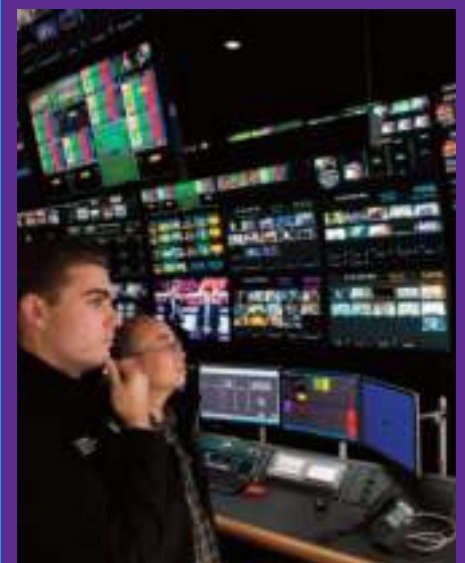
Companies had no contingency plan to compete with the rest of the world. 80% of businesses have since reprioritised ICT budgets to improve and are now migrating to the cloud, standardising workplace solutions, introducing new online tools to aid productivity and helping staff adjust to working from home.

Surprisingly, when asked whether there would be increased reliance on video conferencing post Covid-19. 100% were in agreement, despite it being rare to get a consensus of opinion. This indicates video conferencing and digital transformation are not trends but are here to stay.

With digital transformation comes increased security risk. Research shows it is our own employees that create this risk. To mitigate this, policy, training and instilling a culture of security can ensure awareness and compliance. Connectivity is our lifeline right now and with businesses and employees being distributed more widely across many points across the network that underpins transformation, controlling access requires more security.

Telstra's approach to supporting customers in their digital transformation journeys remains the same as it was before the pandemic. The strategy to devising a successful digital transformation plan and implementation is to put people first, above processes and technology, to understand what they want to achieve.

In a post-Covid world, our infrastructure must move with our people and be strategic. Companies currently at the start of their business transformation journey must begin by accelerating migration to the cloud, invest in videoconferencing tools and choose tools and applications that allow staff and customers to collaborate and socialise which has, and will, continue to speed up tech adoption.



As a SaaS business, transitioning to remote working was a relatively smooth process for us and we were able to continue to serve our customers and to innovate without disruption

Covid
success
story

Signiant

March of 2020, when much of the world went into quarantine, is a month most of us will not forget. For most businesses there was uncertainty and for many there was chaos as they scrambled to set up remote work environments and adapt quickly to new regulations without clarity on how long the situation would last. Since that time, the M&E industry has gone through immense change, and the disruption that the coronavirus pandemic caused has brought new workflows and, in many cases, accelerated changes that were already happening.



Jon Finegold
CMO, Signiant

On March 12 – a few days before Signiant itself went remote – CEO Margaret Craig announced that Media Shuttle customers would be able to add unlimited users to their accounts at no extra cost, through the end of May. Remote work had become a necessity across the industry – at least for some period of time – and we were glad that our products played a role in helping with that transition for media and entertainment companies around the world. As Media Shuttle is the preferred tool by the industry to provide fast, secure access to media assets from any type of storage, our offer was very well received and, as a result, we've seen a massive surge in usage, beginning in March.

Continuing to provide resources to our customers, Signiant became determined to understand the climate of the industry during this period of upheaval and began talking to many companies and industry professionals to understand their perspective. Through these conversations, we launched Signiant's Pandemic Series, to record the discussions and share insights and stories with the industry on how others were adapting.

While it often felt as though COVID-19 had put us all in a sort of deep freeze, the ironic reality was that this suspension caused rapid and unpredictable changes that organizations had to be able to adapt to on the fly. Stasis created dynamism, and – as it became less clear how long this would last – we received tremendous insights from those we spoke to, ensuring we could better serve the accumulating needs of a world where currently most work is remote.

As a SaaS business, transitioning to remote working was a relatively smooth process for us and we were able to continue to serve our customers and to innovate without disruption. For our customers, the challenges of transitioning to remote varied, but with

every company trying to do more with fewer people together, workflows were changing quickly and Signiant solutions played a critical role in helping keep people and systems connected. We saw a huge surge in cloud adoption and with the return of live sports, we've seen a lot of new workflows emerge as broadcasters work to create captivating events with far fewer people on site. Incorporating new camera angles, new graphics and AR capabilities, and expanded use of pre-recorded content to fill the void of no fans in the stands, these events have showcased the innovation and resilience of M&E. It's an exciting time in the industry and many of the changes being put in place look likely to stick for the long term.

While this has certainly been a challenging time for everyone, Signiant is proud of the role we're playing to help companies adapt quickly and keep content moving. Although there is still uncertainty about when things might return to normal and what that new normal might be, having the speed and agility to address new challenges as they arise will be critical to success and that's exactly what Signiant's SaaS platform provides. Onward!



One of the most surprising elements was almost a third of the workforce in Europe couldn't work from home

Covid
success
story

Red Bee Media

When we realised that we were heading into a lockdown situation we had three initial priorities. Top of the list was everybody's health and everybody's safety, followed by maintaining the mission critical services we deliver to our clients, and lastly the ability to continue with some of the vital projects we already had underway.



Steve Nylund
Red Bee Media

Happily, and with a lot of hard work, we managed to hit all those targets.

We managed to pivot very quickly to enable our staff to work from home, and while that has meant we have had to fundamentally change some of the ways we do things and the way we interact with each other, that's been really successful for us. In fact, the number of sick days we're seeing in the company is lower than it's ever been.

As we work with live broadcast services, we did have to implement some new solutions to ensure that remote working went smoothly. We couldn't have a situation where we were suffering from latencies and disconnections. Luckily being owned by Ericsson meant we had the inside track on getting those solutions in place.

For those that still had to work in production environments, and inevitably there were some people in key areas who could not work from home, we created safe environments using partitions and screens.

Once that initial phase was over, we started to ensure quite quickly that our staff's mental health was looked after as well as their physical safety. This was a very different situation for all of us, so we had experts and authors talking about things like organising your day, the importance of exercise, balancing children's needs with work, and so on.

We also made sure we looked at people's new workplace environments, ensuring that they had the monitors, lighting, keyboards and everything else to ensure they had a healthy, well-equipped work environment wherever they were. And, of course, we ensured regular communication with everyone. We have company-wide virtual meetings every couple of weeks now and I think it's brought me to a better understanding of our organisation and the people within it.

It's also accelerated digital transformation across the company. That was always a part of our production environments, but now you see it taking root in the marketing department, for instance, where we're starting to bring in new digital events, new means of lead generation; in HR processes; in financial workflows; pretty much in every part of the company.

Inevitably we've seen some delays on some projects, as our customers have had to delay new offerings or services they were bringing to the market. That's had some financial impact in Q2, but not as much as we had feared. Some of our

customers dependent on advertising revenue have had to switch their content strategy and mine their archives more than before, and we've been able to help them with that. But in general, as a managed services provider, much of what we do is mission-critical enough that it has kept going; the impact, if anywhere, has been in the willingness to invest in new services and technology software. We'll learn more about the effect that will have on the business as the year unfolds.

It has also led to opportunities though. More organisations such as churches and concert venues are looking at video streaming as a way of replacing the foot traffic that has disappeared, and we developed a self-service OTT proposition where they can launch their own version of Netflix within a couple of minutes. We're trying to figure out how we can create more self-service low tech offerings like this for the clients that don't have the muscle and the size most of our current customers do.

But we have a new normal. I think we will see the workspace redefined and that the office will become the new 'off-site' meeting place, the place where you go every now and then to congregate all together. I can see many companies reducing their real estate footprint and that will redefine how we all work as an industry and how we cater to our customers as a consequence.



During lockdown we've taken multiple channels on air remotely, and we have secured a number of orders including from a service provider for a 48 channel playout system for our Marina automation solution

Covid
success
story

Pebble Beach Systems

When the lockdown notice was officially declared, Pebble Beach Systems teams pivoted very quickly to work from home. As we are a global company, a large number of Pebbles are already remote workers, so the methods of communication were already in place and we've seen great results within our teams, and many successes in remotely supporting our customers through these challenging times.



Alison Pavitt

*Marketing Manager at
Pebble Beach Systems*

Of course, we are missing the face to face interaction with our customers, but one thing that the COVID-19 situation has proven is that as a business we can understand customer pain points, capture their requirements, design solutions, develop and commission them, and take them to air all in a remote capacity. Country to country through the pandemic, new rules and restrictions tended to be implemented almost as soon as they were announced, so it was crucial for our customers to know they had the support to react quickly to meet their requirements to access playout systems remotely.

We first shared a new tool for owners of our Marina automation platform, the Auto List Loader, to help ensure that programming isn't interrupted, and that playlists are loaded reliably and automatically, regardless of where the system's operators are situated. One of our clients, French culture channel ARTE, relies on Marina for its playout operations, including the management of playlists across multiple locations and countries. Their team also uses our web-based Lighthouse solution to monitor ARTE's playlists in a consolidated view within a web browser, whether at the broadcast facility or remotely and securely from their homes. In light of the changing global circumstances, ARTE approached Pebble

to expand its Lighthouse deployment to adapt its offering. We responded by promptly adding new user accounts for the operators and the maintenance team, allowing them complete access to view playlists, timelines and statistics from their respective remote working locations. ARTE has also deployed the Channel Exception Monitor, which gives a consolidated view of any playlist errors across all channels, enabling early intervention if, for example, media is missing, or there are timing errors or invalid metadata in the list.

Additionally, in early April, one of our customers based in Spain, a service provider handling playout for 25 channels, was advised that the entire team was to work remotely immediately, giving them less than 24 hours to transfer the control of all of their playout operations to staff working from home. Our engineers acted immediately to provide access to the Dolphin integrated channel device remotely, adding a

compressed IP output to the pre-existing SDI output, all within the same channel pipeline. They were able to configure most of the software whilst the preview channel was running. The Pebble team succeeded in making this happen by end of that first day and well within deadline, and the operators have been reviewing content, graphics and subtitles remotely since. During lockdown we've taken multiple channels on air remotely, and we have secured a number of orders including from a service provider for a 48 channel playout system for our Marina automation solution.

Obviously, every business has seen (and still continues to see) its share of challenges throughout the pandemic, but as a company we have seen our teams grow from strength to strength. Pebble focuses on doing our best to support our employees, as well as our customers, both new and existing. By the end of the year, the industry will see a series of exciting developments from Pebble which are geared toward future proofing broadcast playout and providing added flexibility and agility to be able to handle and maneuver anything that arises. We worked hard to set these ambitious goals for 2020 and we remain focused on working towards achieving them.



OWNZONES

Initially, when the lockdown ensued, like many, we were concerned about how it might impact us. We were quickly reassured that our business was inherently prepared for a situation like this. Our entire platform, operations, tools, and workflows exist 100% in the cloud. As lockdown measures went into place, business went on as usual for us. It was a smooth transition; everyone took their laptops, went home, and continued working.



Dan Goman
CEO, OWNZONES

All of our employees are working remotely and will until further notice. This entire shift changed my perspective on remote working; I used to be of the mindset that being present in an office made us all more efficient. But what I've noticed is that our employees are working harder and more efficiently than ever. We were already using tools like Slack, Teams, GSuite, etc., but now we are maximising our use of them to maintain good collaboration. We've maintained a focus on mental health and well-being by organizing virtual events and team meetings to ensure our staff knows they are well-supported.

From home, we've made sure to engage with our customers and ensure the management of their digital supply chains were running smoothly. Because our platform is entirely cloud-based, our existing customers experienced no disruptions to encoding, packaging, and delivering their content. New and potential customers reached out with a variety of questions, as they were now in a position where they needed to transition from on-premises to remote operations. They had content they needed to deliver, regardless of the obstacles that the pandemic had presented. As a result, we've been guiding studios and post houses with migrating their large content libraries and workflows to the cloud with

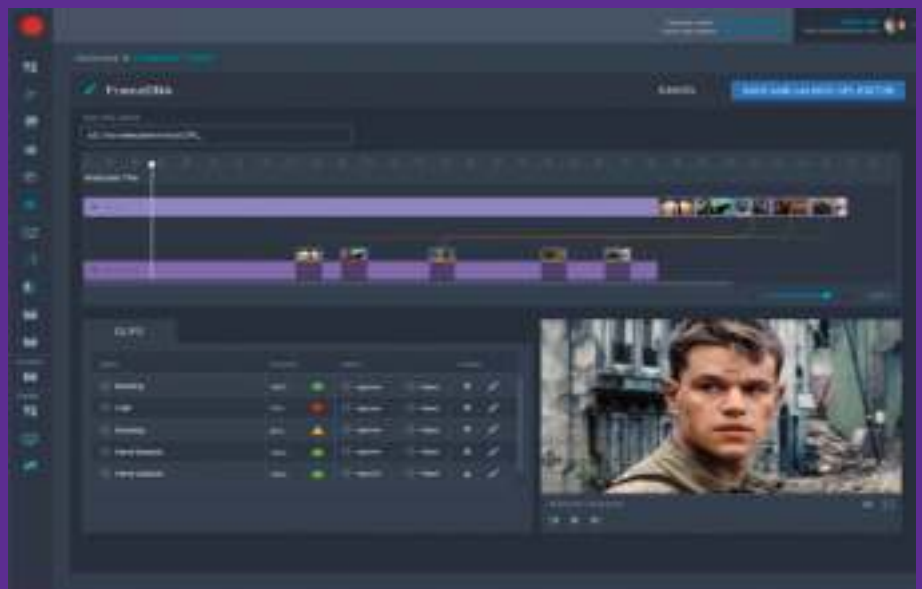
our content supply chain platform, OWNZONES Connect™.

Pre-pandemic, it proved somewhat difficult to convince our customers of the benefits and flexibility afforded to them by moving operations to the cloud. There was no doubt in our minds that this transition would happen at some point, but when it would finally happen was the ultimate question. Wider spread adoption of cloud workflows increased by unprecedented amounts due to the constraints from the virus. With chaos comes innovation, and everyone in the industry needed to find innovative new ways of working to ensure business continuity.

I have a friend who owns a few post production houses in the area, and a few years back I was in talks with him regarding OWNZONES Connect. As my

friend is a very direct guy, he blatantly stated that he hated the thought of moving to the cloud. His operations were working well, so why consider changing? I saw him a few weeks ago, and he was in a completely different mindset. He now understands the necessity for people to have secure, reliable access to their work from anywhere in the world as well as the ability to keep operations moving no matter what.

Instead of simply considering the change to cloud-based workflows, our customers, especially at executive levels, are implementing the changes now, and we've been advising them on the best strategy for how to get there most efficiently and cost-effectively. There has been a massive acceleration in implementation and an increased value placed on moving from on-prem to the cloud. Despite the challenges and hardships that the pandemic has presented across the media & entertainment industry, the silver lining is in seeing the industry making a drastic push towards the cloud. In the future, we look forward to the new opportunities for innovation that we anticipate arising out of a cloud-focused industry.



By working with technology that enables you to bridge gradually to the cloud, you can start to benefit from cost savings of up to 70 per cent while not compromising on quality and reliability

Covid
success
story

Net Insight

The pandemic has driven rapid change in business models across the landscape of live sports, news, and online video. Adopting cloud-based solutions has been a fundamental enabler of successful innovation. However, there are several factors that are key to unlocking the true potential of the cloud.



Per Lindgren
*Co-Founder and CTO
at Net Insight*

The importance of being open

The move to cloud-based platforms is at the forefront of the industry's response to the pandemic. During this unprecedented time, broadcasters, service providers, production companies and enterprises need to be agile and flexible as markets and audiences change. We believe the future of media, and content distribution depends on relevance and speed. Building on open standards has never been more important.

Maximizing content means using technology that is capable of reaching the biggest possible audience and supporting evolving targeted and personalized experiences. It's also extremely valuable to avoid vendor lock-in. To achieve all this, it's important to work with platforms that support a broad range of standards. Net Insight offers the only platform that supports all major industry protocols including ST 2022, ST 2110, RIST, Zixi and SRT. This means that our customers have truly agnostic technology that enables them to deliver any content on any network, in any way. They can deploy in a future-proof way that will support an evolving mix of onsite, hybrid or public cloud technology.

Under mandated government lockdowns we saw concerts and events turning into at-home productions with live online audiences. The World Health Organization's 'One World Together At Home' concert was made possible by The

Switch, powered by Net Insight. The flexible live media delivery workflow enabled the ingest of the domestic and international shows with playout for pre-feeds and live broadcast-quality. The Switch's solutions extended to domestic fiber and satellite connections to the US and Canada as well as international fiber and satellite distribution through EMEA, APAC and South America.

Maximize investments

Disruption to business models, means reducing spend is critical. Broadcasters, service providers and production companies are all conscious of adopting new technology in a way that maximizes existing investments. The cloud makes it possible to benefit from software defined, virtual and distributed media workflows without discarding existing hardware.

The shift from satellite is one example of the need to jumpstart the move to the cloud without immediately changing a whole infrastructure. By working with technology that enables you to bridge gradually to the cloud, you can start to benefit from cost savings of up to 70 percent while not compromising on quality and reliability.

For over a decade, Tata Communications and Net Insight have partnered on

technical solutions for media clients. Since the pandemic has impacted the entire media production and broadcast industry it has never been more important to transform collaboration and content production. Remote and distributed production is a major driver of services on Tata's Nimbra-based Media Network. Tata Communications is also currently lab testing the new Nimbra Edge for elastic cloud-based live media transport.

Trusted transformation

To successfully meet consumer demand for content in any location and on any screen – without delays – media companies need simple, comprehensive solutions. Technology that enables contribution, distribution, cloud ingest and orchestration on one platform makes deployments much simpler.

Delivering successful projects requires working in true partnership to create new solutions and to find alternative workflows for operational functionality. We're extremely proud to have helped our customers including The Switch, Tata Communications, LinkedIn and SVT to build networks to succeed in the new media era. Our solutions are deployed by hundreds of customers in over 70 countries to keep their mission-critical media services running smoothly.

The cloud is making it possible to rapidly create and evolve fantastic media experiences. Selecting open technology will help ensure these investments pay dividends now and in the future.

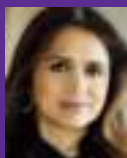


... in the case of one major broadcast client, users from one of its divisions, uploaded an explosive 1800% more minutes of video than in May 2019

Covid
success
story

latakoo

From our office in downtown Austin, Texas, there is a clear and often meditative view of the popular Lady Bird Lake and Trail, where on most days, you find hundreds of people enjoying the water or the trail. As Covid-19 began to permeate into Texas, it was like a valve suddenly shut off – the people disappeared.



Jade Kurian
President, latakoo

State and local governments issued lockdown orders. We sent our employees home. Our clients cleared out their newsrooms, production facilities and studios. Journalists began reporting from their living rooms instead of broadcast centers. Todd Bynum, KXAN-TV's Chief Photographer told me, "We made sure laptops had the latakoo app installed, then handed them out to our crews and said, 'you're not coming back here for a few months, use latakoo to send us your stories, latakoo will be your friend.'"

latakoo is a native cloud company celebrating our 10th anniversary this month. Our clients are some of the world's largest broadcasters. Their staffers were already comfortable using latakoo to transfer files quickly and securely from around the world. As the pandemic set in, they began to count on us more than ever.

What we saw in the wake of the shutdowns was unprecedented usage by current clients – with uploads from users growing 172% year-over-year in just one month. In the case of one major broadcast client, users from one of its divisions, uploaded an explosive 1800% more minutes of video than in May 2019. latakoo's cloud offers a platform for collaboration, downloading and viewing. One client streamed nearly 150,000 minutes of video in a single month, up an incredible 8,000% over the same month last year.

"We had been using latakoo as a one-way street prior to the coronavirus pandemic, taking files from the field, to the cloud, to the asset manager," said Rick Erbach, News Director of WGNO, in New Orleans, Louisiana during a webinar in April. "Now we've turned it into a two-way street. MMJs will say, 'I need this video or that video.' And so what we are doing now is putting that video up to the latakoo cloud so they can bring it down to their desktop at their home." Erbach says latakoo has been a "newscast saver" during the pandemic.

As we were scaling our service and adapting to the demands of increased traffic, clients started asking to use latakoo to enable novel remote workflows. We have always nurtured a very collaborative relationship with our clients. I was not surprised when they called us with questions like, "What if we used latakoo to record live feeds coming in from press conferences?"

We responded with rapid innovation. We set up workflows to create files from live streams, enabled cloud editing in beta and launched a unique disaster recovery workflow. And, our team pushed out a new service called Manifest to help teams discover, follow and request stories – ensuring delivery to multiple locations. Manifest integrates with AP's ENPS and literally helps news teams manage stories from birth to broadcast.

The question always comes up – "did you already have a plan in place?" We did have an emergency response plan, but if we're all being honest, we have to admit that we had never faced a pandemic. It's like a breaking news story where the facts as you know it will change in an hour, in a

day, in a month. You are forced to operate with only the here and now. Our marketing efforts, which included two major conferences, had to be shuffled as NAB and IBC cancelled shows. We're sponsoring and producing more webinars and using public relations teams in Europe and the U.S. to supplement marketing.



KXAN-TV correspondents Wes Rapaport and Maggie Glynn use the latakoo mobile app to send and track stories daily.

My heart sinks and I feel pangs of guilt when I hear about companies that have shuttered. We are growing and adding staff. I remember the days when buyers were skeptical about 'cloud' solutions. Now people are pandemic-proofing by using cloud companies. We don't know for sure how it will all shake out, but we believe the way to continued growth is to listen carefully to our clients, intelligently and efficiently build what they will use, pivot as needed and continuously be ready for change.

Our view is back, hundreds of people once again in the lake and trail here, but as the pandemic rages on, it's clear that nothing will ever be the same.

... we also deployed our brand-new cloud-based elastic CDN solution in a customer's large-scale commercial trial that will deliver ABR content to thousands of OTT service subscribers

Covid
success
story

Edgeware

Like many sectors, the TV industry is not how it once was. At Edgeware, we've had to adapt quickly to the challenges of the pandemic, remote working and the uncertainty that's hit all aspects of the market.



Karl Thedéen
CEO of Edgeware

Our customers – telcos, cable operators, broadcasters and content providers – have also had no choice but to respond to these changes. But doing so comes with potential risk, which has emphasised the importance of remaining in constant dialogue with our customers and partners. Providing support in a business environment hit by hesitancy and disruption is essential, even when conducted remotely.

Next-generation online TV

While it's important for all providers of online TV to emerge from the pandemic stronger, it's just as important to deliver high-quality content during it.

The interest in fine-tuning networks and making sure services are performing optimally has certainly grown. As more audiences picked up the remote or opened their streaming apps to escape the everyday mundane, the pressure mounted on TV providers to fill their services with compelling yet relevant content, while ensuring quality of experience (QoE). While this isn't exactly a new challenge, TV providers were suddenly faced with a surge in internet traffic, CDN usage and network pressures when delivering content.

This became particularly apparent when live sports came back on our screens after a hiatus – making the fight for internet capacity even more intense. With live sports being one of the key drivers for

TV streaming, we and our customers have inevitably been affected.

During the time of the pandemic, we launched our content processing platform StreamBuilder in June to give customers access to advanced technology – including OTT segmentation, packaging and subtitling, and channel creation capabilities – to create next-generation online TV. StreamBuilder empowers users to build online TV channels that enable future growth by adding relevance to its customers and advertisers, and increasing reach.

We also deployed our brand-new cloud-based elastic CDN solution in a customer's large-scale commercial trial that will deliver ABR content to thousands of OTT service subscribers. The solution's innovative functionalities will enable CDN owners to quickly spin up and down streaming resources when needed. With TV viewing rocketing, causing streaming traffic to fluctuate, this elasticity is hugely desired by our customers.

In addition, our multi-CDN delivery control platform StreamPilot has now been deployed by Norway's leading commercial streaming service, TV 2 Sumo. As more providers of streaming TV services turn to a multi-CDN solution for their content distribution, the ability to monitor and control the delivery from different CDNs in a unified manner becomes increasingly important to ensure the delivery is optimized for the best possible QoE.

Beyond customer successes

Like the rest of the industry, our team has been working remotely. Despite not being together physically, it has proven to be a positive experience and one that's likely to be a bigger part of our working life going forward.

And of course, we weren't able to meet our customers and friends at NAB Show and IBC this year, but that didn't put our show plans on hold. Alongside virtual product demos, we're encapsulating the online TV trends and topics that would have no doubt shaped our discussions at the shows in our new free quarterly eMagazine, Beyond Broadcast – from multi-CDN delivery to tailor-made content.

We remain optimistic about the future of our industry. Those who operate within it are already geared to be agile and adaptable; it's in our nature. This is something we can't afford to lose.



we also launched 'disguise OnDemand' at the start of the lockdown; a virtual hub designed as a place for our users to learn and better their skills in a time of limited work, whilst keeping up to date on industry trends and updates

Covid
success
story

disguise

With the lockdown came the abrupt halt in production, broadcast and live events. However, as a company disguise took immediate action going above and beyond to provide vital lifelines to our community, along with an upswing in our xR (extended reality) workflow being utilised on a series of projects aimed at providing an immersive viewing experience for remote audiences.



Tom Rockhill
*Chief Sales Officer,
disguise*

One recent project was Katy Perry's live streamed American Idol Finale performance, watched by over 9 million viewers around the globe with over 2 million YouTube hits on top of the 7.3 million strong viewers on the night, which saw the popstar completely immersed in a virtual animated world, powered by disguise xR technology. Additionally, Black Eyed Peas utilised disguise for a series of TV broadcast performances to push their new album which aired across primetime television slots across the globe, including Good Morning America and The Late Show with James Corden in the US, and TV shows in the UK and Europe.

To support our wider community, we also launched 'disguise OnDemand' at the start of the lockdown; a virtual hub designed as a place for our users to learn and better their skills in a time of limited work, whilst keeping up to date on industry trends and updates. OnDemand offers free online training sessions twice a week, running condensed versions of the Fundamental and Pre-Production Workflows Training, where attendees learn the core features of the software and freelancers and creatives can upskill for when the live events, production and broadcast industries start again. Sessions with key members of the disguise community are held in multiple languages, multiple times a week, and

feature exclusive content, opportunities for the community to join specialist discussions on industry topics, and hear from a variety of our customers during spotlight discussions on recent case studies.

An online community website was also launched to help existing and new members of the community connect, collaborate, share and support one another through these challenging times. We also decided to offer our Designer software for free until the end of October, gifting a series of discounted USB dongles (small pieces of computer hardware that activate the software license) in giveaways. Finally, we partnered with Notch, the real-time graphics tool and VFX company, on a dongle sharing scheme, allowing more people access to both of our softwares.

Our innovations team remained in tune with the community and listened to their needs and wants in regard to changes in workflows to assist in remote working. In response, disguise has seen the release of three software updates throughout the lockdown to enable our community to work more efficiently from home using our award-winning Designer software:

- r17.1 introduced support for HTC VIVE tracking accessories making it possible to develop AR experiences at home without the need to access high-end tracking equipment. Users can emulate camera or object tracking systems, so they can work up AR concepts from lockdown in their home office set-up, living room, bedroom, bathroom or kitchen. The release also included a 'Spherical Camera' feature, allowing users to render 360° video content to create engaging content for online audiences
- r17.2 introduced running Designer software in 'Application Mode' enabling users to run the software alongside multiple applications to perform tasks concurrently and switch effortlessly between its software and other apps. Users can easily pull content from the web to work up concepts and share work-in-progress with others to communicate progress, gather feedback and collaborate better remotely
- r17.3 delivered an improved workflow for enhanced efficiency and successful completion of projects for creatives post-lockdown

The user experience of our community sits at the heart of everything disguise produces. We are committed to continuing to recognise the challenges our industries face with the lockdown and in response, we're doing whatever we can to support our freelancers, partners, and customers across the globe during these unprecedented times.



Dalet

Amid the disruption the pandemic brought to our industry, there was an opportunity for our customers to rapidly transform their businesses and operations and do more than just weather this storm using our cloud solutions. Thus, change and transition are where we focused our efforts to ensure business continuity and provide a path in which customers and partners could leverage Dalet solutions to pivot towards the new business opportunities that emerged.



Stephane Schlayen
*Chief Operating
Officer, Dalet*

Dalet had been working on digital-first and cloud-based solutions for several years, so from the very beginning of the pandemic we were able to help our customers quickly to set up remote operations for clients like Telefe in Argentina, France Télévisions in France, and Metro TV in Indonesia. These and other customers that needed to enable their users to work from home, were able to get up and running within days, sometimes within hours, thanks to the flexibility at the core of our technology.

Now that we're no longer at the start of the crisis, we are beginning to understand it better, and how the world is responding to it. This is a good vantage point to reimagine our products, services, and set priorities that focus on mobility. For example, as an immediate response we swiftly delivered to market Dalet Galaxy xCloud - a full-featured version of the latest Dalet Galaxy five platform that leverages cloud infrastructure for end-to-end remote news production. Dalet Galaxy xCloud also integrates with on-premises Dalet systems and supports advanced workflows such as proxy editing with mixed content. In addition to the introduction of Dalet Galaxy xCloud, we have optimized the mobility of our Dalet AmberFin and Dalet CubeNG solutions, offering a high-quality media processing service with robust media packaging and

distribution capabilities, as well as premium broadcast graphics workflows, both in the cloud.

We have evolved our roadmap to adjust to new challenges and worked with our customers and partners to ensure we meet market demands. Dalet is moving its business model from perpetual CAPEX investment to OPEX with subscription and SaaS investments. And from software on local hardware to cloud-based infrastructure. We see this as an opportunity to seize and to use it to transform the way we imagine our products, how we move quickly towards agility and mobility, and for partnerships with technology vendors to deliver more value to our customers.

As part of this strategy, we recently integrated with Bitmovin to improve OTT preparation and delivery. The technology partnership, which features the advanced media logistics of Dalet's Ooyala Flex Media Platform and Bitmovin's blazing fast encoder technology, player and analytics, enables customers to expand existing offerings into new markets and geographies at scale; launch new services such as VOD, apps and subscriptions; and augment revenue opportunities thanks to better visibility across production and distribution operations.

Looking back, it has become clear that there have been two distinct periods in the history of Dalet. For the first, very successful twenty years, we essentially pioneered media asset management for TV and Radio. Over the last ten, we have

significantly evolved this concept to encompass the entire content supply chain. We developed advanced media logistics and orchestration platforms with a number of capabilities, integrations and emphases. All that time we were helping our customers to optimize the way they produced content and built their media supply chain.

As we move forward, recent events have made it clear that virtualization and mobility within the content supply chain are essential when it comes to dealing with rapid change - and when it comes to seizing new opportunities as they arise.



Clear-Com

Clear-Com experienced the effects of COVID quite immediately, as we are headquartered in Alameda, CA, and our primary manufacturing facility is in Carlsbad, CA—two locations that were mandated to work from home almost immediately after the virus reached the state. We were, however, deemed an essential business because we service all types of essential businesses, from major news outlets to medical applications.



Bob Boster
*President,
Clear-Com*

To facilitate continued activities, we reconfigured our production floor so that everyone could be properly socially distanced, we took everyone's temperature at the beginning of each workday, and we rearranged working 'day parts' to avoid potential crowding. Intensive cleaning protocols as well as a carefully restricted map of who needs to go where in our facilities also works to support our team's ongoing safety.

We had a disaster plan in place before COVID that acted as the foundation for our response to the outbreak, but given the unpredictable nature of the virus and the unfolding nature of the pandemic, we had to respond in a flexible way that was slightly different among our global facilities. Our IT team facilitated these changes very quickly, and most of our office employees in Alameda, Montreal, Cambridge, as well as our various satellite sales offices, were able to shift over to work from home. Things settled into a clear delineation with the critical Operations and Support personnel operating from our facilities and the rest of the company working from home.

From a product development standpoint, we were in the midst of finalizing preparations for a brand new product launch when COVID struck, as well as a major software update to another

product. While for us these processes were largely unimpeded by the pandemic because of our standard procedures and ongoing in-house Operational focus, the marketplace we have delivered these products into has of course been impacted and we are finding the traditional conduits for getting the word out are disrupted, like tradeshow and industry press.

While many of our customers in the Live Events industry had to halt all projects, other markets needed to pivot quickly and were calling in to expand, alter and adapt their workflows. Broadcast; Military, Aerospace, & Government; Energy, and even Corporate AV have all had to make changes and so we have helped them reimagine how they can do their jobs from different places, or under different circumstances than before. We have supported them in a way that matches the sense of urgency they feel, in the most cost-effective and time-sensitive way. In many cases this involved simply expanding or modifying equipment they already had to accommodate changing workflows.

The intercom capabilities we offer the marketplace are at the forefront of the AoIP trend that the industry has taken, and IP has been a key point in our product development, so the infrastructure for remote workflows was already there. For this reason, many of our broadcast and media production clients were able to take full advantage of what they had at hand, with minor modifications to accommodate a reduced and displaced staff.

What is new, is social distancing in media production activities. Clear-Com can facilitate ongoing activity where zones intercommunicate using various combinations of wireless, full-duplex and hardwired solutions, where some team members are remoting in using Agent-IC IP connections.

Although it is imperative to continue pioneering solutions in the 'new normal,' it is also crucial to remain conscious of our people's collective mental health as we navigate new challenges. COVID-19, the attendant economic disruption, and growing social justice movement are affecting us all in different ways, personally and professionally.

In an effort to keep internal communication channels as open as possible, we're hosting biweekly town hall meetings led by Clear-Com CEO Mitzi Dominguez and myself, where employees are encouraged to ask questions, share experiences, and voice any concerns. We also support internal communications with a biweekly COVID-19 business update meeting, a company-wide Microsoft Teams 'watercooler' channel to facilitate workplace conversation, as well as a Teams channel that includes riddles, games and inspirational content, and departmental happy hours and coffee talks to elevate team morale.

As is natural for a communications company, we put people first – customers and employees – and our primary goal is for everyone to remain healthy and happy until we can all meet again, whenever that may be.



When the pandemic escalated, sending the world into lockdown, new remote working measures were implemented, and CGI was internally well equipped to handle the changes. Our employees regularly work from home, and thus have the full set up to continue collaborating whilst supporting our customers. As our solutions are web based, our customers still had all of the tools to be able to focus purely on the story at hand, which was more important than ever before during a global event like COVID-19 has and continues to be.



Michael Pfitzner
*VP of Newsroom
Solutions*

There continues to be a significant demand for implementing CGI's media solutions across both news and radio production, and even more so during the global pandemic. Our workflows support remote working, and enable journalists to research, structure and plan their deliveries in advance, optimising broadcaster's efforts globally, despite any obstacles due to lockdown.

One of the top German Radio and Television Broadcasters, and a member of the ARD group, utilised CGI's Viura visual radio solution from the dira product suite, to broadcast a political radio show visually through the pandemic. They urgently needed to communicate top level information from politicians and virologists to inform citizens of the rapidly changing situation in Germany. The company navigated producing the broadcast and visual shows while adhering to social distance rules in a narrow radio studio. After launching they received high viewing figures and have continued broadcasting this way throughout the pandemic to ensure its listeners, and the people of Germany, had the most up to date information directly from the top government officials.

We are in multiple discussions with worldwide broadcasters on how to future proof their newsrooms and broadcast playout, to be able to adapt quickly, and access all assets and services remotely. Our services currently offer flexibility for remote workers, and tools to promote collaboration within teams, and across broadcast teams like radio and news, but, our goal in the 'new normal' when the industry fully re-opens up again, is to effectively help broadcasters deliver professional news content with ease.

We recognize the importance of staying connected, especially when many organizations have no choice but to adapt to an even more remote methodology, all whilst remaining cost efficient and within budget. This story-centric approach sits at the center of any modern newsroom, with online, radio, television, social and more being able to utilize those assets to produce material ready for cross-media delivery regardless of location or distance. Automatic publication reduces the effort, meaning stories can be taken online swiftly and securely. In a post COVID-19 world, newsrooms will need to be built around producing stories that can be packaged for any platform and as a system manufacturer, we are developing newsroom automation

and delivery tools to streamline this process to allow news broadcasters to focus on telling those stories, regardless of restrictions that may ensue.





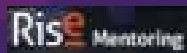








Indeed, the news workflow is ever-changing, and thus we need to keep adapting due to the trends we're seeing with customers and changes happening now. The newsroom will always be centered around producing stories; the platform they are being produced for will become less and less important to the workings of the newsroom and automated tools will widely assist the production process. There are also plenty of disruptive methodologies making waves in remote working to consider – the cloud being the most prominent, with its ability to allow workforces to continue remotely with more power and more efficiency than ever before.

We are seeing smaller production sites becoming much more central to many organisations as a result, and at some point, in the future the physical nature of the newsroom or studio as we know it of a contiguous space dedicated to a sole task might end up disappearing too. These are all things we are following and considering in our current research and development of new products and media solutions at CGI.





VIRTUAL EVENTS

-  **08-Sep IABM Future Trends Channel:** AI/ML & Analytics
-  **09-Sep BaM Summit Online:** Charting the uncharted – Plotting the course for the Media Technology industry
-  **10-Sep IABM Webinar:** Reaching the customer when someone cut the comms cable
-  **11-Sep IABM Webinar with RISE:** In conversation with Margaret Craig 
-  **15-Sep IABM Future Trends Channel:** Imaging & Immersive
-  **22-Sep IABM Future Trends Channel:** Streaming Content & Platforms
-  **23-Sep IABM Webinar with BitMovin:** Innovating SVOD and AVOD Strategies for a Reshaped Media Landscape 
-  **29-Sep IABM Future Trends Channel:** Future Media Economics
-  **15-Oct BaM Summit Online:** A Focus on The Newsroom 
-  **12-Nov BaM Summit Online:** The Generation Game

www.theiabm.org/event-calendar/

A photograph of a two-lane asphalt road stretching into the distance. The road is flanked by dense evergreen forests. In the far distance, a very bright sun is low on the horizon, creating a strong lens flare and illuminating the entire scene with a warm, golden light. The road's white dashed center line and solid edge lines lead the eye towards the horizon.

IABM Future Trends Channel

IABM has published the full schedule for the Future Trends Channel, which will run over five weeks from 1st September to 2nd October 2020. Produced in conjunction with IBC, the Future Trends Channel takes the IBC Future Trends Theatre – curated by IABM over the last few years – online, so that everyone in the industry has the opportunity to explore up-and-coming technology and business trends and how they will segue from today's environment.

The Future Trends Channel brings together a massive 125 on-demand presentations spread across its five themed weeks. In addition, each week has a live headline event each Tuesday (3pm BST, 45pm CEST) where all the key issues and opportunities are exposed and discussed by broadcast and media industry leaders.

1-4 September:

Virtual week – Cloud and Virtualization

The Virtual Week focuses on everything related to cloudification and dematerialization of media operations, including innovative technology solutions to address social distancing, at-home production and distributed media workflows.

Presentations include: Remote production; remote working; remote journalism; hybrid cloud; edge computing; microservices; 5G; SaaS; virtualized infrastructure, control, scheduling, monitoring and multi-viewing.

7-11 September:

Data week – AI/ML & Analytics

The Data Week focuses on data-driven media, including innovative AI and ML solutions to create, manage and deliver content as well as analytics solutions enabling informed decision-making at media organizations.

Presentations include: object detection; closed captioning; targeted advertising; reducing churn; growing subscribers; boosting fan engagement; simplifying content search/discovery; collaborative news production; performance prediction.

14-18 September:

Mesmerizing week – Imaging and immersive

The Mesmerizing Week dives into quality and sensorial experiences, including next-generation audio, UHD television, VR, AR and other immersive technology solutions.

Presentations include: 5G revolution; moving from 4K to 8K; NGA, UHD and HDR trials; portrait video;

perfect timing; virtual production; next-gen TV tools; leveraging augmented, mixed and extended reality; state of the UHD union.

21-25 September:

Streaming week – Streaming Content and Platforms

The Streaming Week is about efficient content delivery and preparation for direct-to-consumer platforms as well as the architecture and design of OTT experiences.

Presentations include: Low latency live streaming; IPTV-DASH and multicast ABR; watermarking; end-to-end monitoring; 5G quality contribution; reaching younger audiences; blockchain; effective content discovery; sustainability; personalization; connection management; aggregating CDNs.

28 September – 2 October:

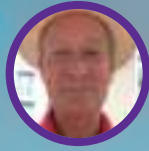
Money week – Future Media Economics

The Money Week looks at future media economics and digital business models, including the deployment of blockchain technology for content monetization, advanced advertising solutions that enable targeting and programmatic buying as well as media supply chain financial modelling.

Presentations include: Improving ratings prediction; maximizing live content value; microservices and blockchain; reinventing the supply chain; eSports going mainstream; transition to IP; cross-media advertising marketplaces using OTT data; standing out from the crowd in live; archive monetization; digitization of economics; new approaches to storage.

“The Future Trends Theatre at IBC has played to packed houses for every session over the last few years, proving that there’s a real thirst to understand what’s coming next to inform business and technology planning,” said Stan Moote, CTO, IABM. “With the acceleration in the rate of change caused by the coronavirus pandemic, such insights are even more vital today and the comprehensive program of live and on-demand sessions we have put together for this year’s virtual event covers all the bases.”

Support – bringing it all together



Roger Thornton
IABM

The Support segment enables and powers the BaM Content Chain® including monitoring, testing, communicating, and running compute and facilities. It encompasses a wide range of products and services, including supply and/or rental of video and audio monitoring, displays, test and measurement, KVM and PCoIP, compute power and cyber security, facility power and furniture as well as services to consult, design, build and run.

"The inclusion of 'AI' is more of a buzzword than a feature set for traditional services. This changes once services move from a traditional 'central equipment room' environment to one based in the cloud."
ET&S team, Diversified

"The effect [of IP adoption] is huge as it requires new competencies at all levels of the organisation."
Lars-Olof Janflod, Genelec

"Broadcasters are leveraging the benefits of the cloud today to achieve greater scalability and to ensure business continuity. In the coming five to 10 years, the cloud is the clear direction for the industry."
John Hickey, Black Box



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

For this special feature we have spoken with four IABM members with products/services covering KVM, ProAV, cabling and networking (Black Box), audio monitoring (Genelec), monitoring and testing (Telestream) and systems/technology integration (Diversified) about the state of the market today and the challenges and opportunities ahead.

Drivers of change

We asked our correspondents to share their views on the drivers of change in Support. "Remote working was a driver of change in support even before COVID, and it has been accelerated by the pandemic along with a closely aligned trend: virtualization," says Black Box senior director of R&D and KVM systems, John Hickey. "Two other key drivers include security and the demand for 24/7 operations. As they look at support, businesses need to think through all these things, as well as related sub-drivers."



Lars-Olof Janflod, Senior Advisory Officer at Genelec, identifies several factors at play: "IT, IP & software are more and more coming into the picture in our own and other manufacturers' products," he says.



As a technology solutions provider, Diversified needs to keep its eyes open across a wide horizon, and sees a number of key drivers in the market today. "Migration to software-defined services necessitates a new aspect of support traditionally reserved for the IT world – no longer, this must encompass varying degrees of services and support including: cloud technologies, remote or 'at home' network infrastructures, COVID-19 is driving people away from each other and away from the centralized operational model," says Diversified's Emerging Technology & Solutions (ET&S) team.

"SLA environments are requiring the systems integrator to change their approach to supporting the end user and retaining customers – driven by expectations that the end user has insufficient resources, experience or desire to retain extended services internally," Diversified's ET&S team continues.

"System complexities and the migration from entirely 'standards-based' products to 'open-source' and continually adjustable solution sets changes the model from 'buy once and amortize for 10-years' to 'buy-once and be prepared for regular updates' or 'buy-under-contract' and/or 'continually renew with annual support

contracts' that lead to an outright replacement (due to lack of support or obsolescence) in 3-to-5 year increments."

Telestream's Director of Product Marketing, Dan Murray, identifies two key trends – the SDI to IP transition and the rise and rise of OTT streaming. "The SDI to IP Production transition is accelerating to increase operational efficiency, flexibility, and scale resulting from IP networking," says Murray. "However, operations teams lose visibility of video networks now flowing across an IP network, creating the need for new ST 2110 IP Monitoring and Testing products. New IP networks require PTP timing for video synchronization which also requires new video aware PTP test and monitor products. So Telestream has introduced Inspect 2110 monitoring and PRISM waveform monitor testing solutions for PTP and ST 2110 to Support the SDI to IP broadcast video transition.



"OTT Streaming of services for customer demand of any video, any time, to any device is changing how television services are delivered," Murray continues. "The result is often hybrid delivery networks with on-premise video sources ultimately being delivered across cloud networks and CDNs, and often have multiple hand-offs. In addition, streaming delivery has new advertisement insertion workflows, including dynamic ad insertion for personalized targeted advertising. Streaming operators require ABR monitoring solutions that support cloud or on-prem environments, especially testing that can compare and correlate with the linear video acquisition and consumer player monitoring to quickly diagnose the increasingly complex networks." To answer these needs, "Telestream introduced IQ Surveyor ABR and Live ABR Monitor Service providing a full range of on-prem and cloud monitoring products and services. Combined with the full range of IQ Solutions provide single pane-of-glass visibility for OTT Streaming providers for complete end-to-end visibility to find and fix faults fast."



Test & Measurement

With test and measurement products moving away from dedicated hardware appliances to software-centric products, what challenges are our correspondents encountering in this process?

"Dedicated hardware with software driven operational models which can be modified, improved, and updated is a positive," says Diversified's ET&S team. "This extends the life of the original capital investment but modifies the financial support model through continual and mandatory support agreements – usually fee or subscription based. Not a great deal different from systems such as editing, graphics and such in place for the past two decades.

"Products based strictly in software, deployed on user-owned servers or computers, means that users will likely become 'self-trained' or will utilize manufacturer provided courseware (web-based) to support the equipment. This places increased demand on IT-support personnel; but also extends the potential serviceability of the device depending upon application or complexity.

"The downside is a requirement for continual updates and maintenance of the system at the software level; and the risk that the manufacturer (now a 'software' company) either discontinues support for the device, requires a hardware improvement, or fails and goes out of business," Diversified's ET&S team warns.

"The main challenge with respect to test and measurement products has been around interoperability," says Dan Hickey of Black Box. "With dedicated hardware appliances, checking interoperability was straightforward. Now, though, software-centric products can run on many different platforms, each presenting subtle interoperability issues. While software-centric products increase flexibility, they also introduce the challenge of selecting a supporting hardware system with the power to deliver required performance. The burden of making the right choice now falls on the end user rather than the technology vendor."

"As broadcast facilities and production networks transition to IP, one benefit and trend is the opportunity to use premium off-the-shelf servers and switches for the video network," says Telestream's Dan Murray. "This benefit however can lead to increased challenges in visibility, further requiring new IP Video test and monitoring products. Standards are new and have

evolved, network speeds and test needs can change, software-based monitoring and test solutions are required to 'future proof' testing solutions. Telestream test and monitoring products are software-based providing the future proof flexibility ST 2110 IP Video customers need.

"Delivery networks for new OTT workflows are increasingly software-based whether on-premise or cloud. Monitoring and test solutions must also be software based for delivery network monitoring to evolve with the network through software configuration or feature updates. A challenge for OTT delivery operators is having similar tools and operational practices across on-prem and cloud networks for efficiency and automation. Telestream IQ Solutions for monitoring are software based, offering a common suite of products on-prem and cloud workflows with a common single pane-of-glass management and analytics, increasing operational efficiency regardless of the type of hybrid network deployed," Telestream's Murray adds.

IP adoption

Our next question was around IP adoption – where has it got to and how is it affecting business right now? For Genelec's Lars-Olof Janflod, its effect is "Huge as it requires new competencies at all levels of the organisation."

Dan Murray at Telestream also feels we are still only at the start: "The SDI to IP transition is in the early adopter phase but accelerating to larger industry-wide deployments. The result is test and monitoring solutions must be proven and designed for large scale deployments." He asserts however that "Telestream's PRISM is the most widely deployed ST 2110 IP Waveform Monitor test and measurement in the B&M industry, and is experiencing strong growth."

Black Box's John Hickey agrees there is a way to go yet: "The industry is still in the early stages of the IP transition, and many organizations continue to work with SDI, matrix-based KVM systems, and other technologies that now are viewed as legacy technologies. Over the past 12 months, however, we have seen a larger push into IP-based technology with the roll-out of IP-centered facilities using IP-based KVM systems with connectivity to virtual machines. That trend is having a dramatic effect on our business, which two or three years ago was predominantly matrix-focused and now is leaning heavily toward IP."

"The trend [towards IP] is having a dramatic effect on our business, which two or three years ago was predominantly matrix-focused and now is leaning heavily toward IP." John Hickey, Black Box

As a technology solutions provider, Diversified is at the sharp end of the transition – in both its technology and financial implications. Its ET&S team reports that "Most large-scale media organizations have already committed to upgrades or complete renewal (replacement) of their infrastructures at some level. Large projects such as sports venues, network facilities such as studios, production and news, are already a significant part of our revenue. IP cannot be only 'partially' done – it is a full commitment to a change at all levels. Broadcasters, unless driven by small scale projects or upgrades, are not keen on using SDI for major upgrades or new locations, because they already see the success and level of IP implementation – despite the complications experienced or perceived from other sources.

"Business impacts have been positive with the possible exceptions that increased training is necessary; a somewhat lack of support from all of the vendors; the discontinuity or adoption of the full stack of standards or interfaces; and the inadequacies of providing all the needed components in a system from end-to-end which will vary in scope from facility to facility or project to project," the Diversified ET&S team adds.

"Manufacturers are now partnering with the IT-side of the vendor community. This takes away the more traditional discounting and/or profit margins experienced when more traditional projects (e.g., 'entirely SDI' based solutions) were awarded. Systems Integrators must leverage alternative technology or resource avenues to fulfil financial perspectives – including sales and support of other components in the systems.

"End users/customers are, in many cases, already aligned with the COTS IT manufacturers – due to enterprise level discounts and long-term contracts. This takes away the ability for the systems integrator to buy and resell the equipment, changing the model from a hardware provider to a services provider," the Diversified ET&S team explains.

The growing role of AI in monitoring

'Leverages AI...' is an increasingly commonly used descriptor for monitoring products/services, inferring natural superiority – as the ET&S team at Diversified says: "The inclusion of 'AI' is more of a buzzword than a feature set for traditional services. This changes once services move from a traditional 'central equipment

room' environment to one based in the cloud. [They are] driven almost entirely by the service provider and their product lines. These features are being integrated into the products (e.g., into Dataminer, inSITE, or SMARTscope products). One the service, to the end user, such AI technologies are essentially transparent or 'included' – so there is nothing necessarily obvious if the products are designed effectively. We are currently working with vendors and their AI-enhanced products; we will be using them in the future to improve monitoring of IP networks and auto escalation of issues as well as working with vendors on compliance monitoring using AI."

"Telestream continues to add intelligence to IQ Monitoring solutions to help operators determine issues, to prevent or find and fix faults fast," says Dan Murray. "This includes automated correlation of multiple monitoring points to identify trends and degradations, alerting operators with pre-determined problem and location. Identifying trends of advertising insertions to alert operators of changes that could be revenue impacting. And Video MOS pixel-based computer analysis to alert an operator of bad video quality."

Black Box is yet to tap AI but is working on it. "We have been researching how AI can be used in our systems, but we've not yet brought to market products that leverage AI," says John Hickey. "We do have partners who put their products around our KVM system to add functionality, such as using AI to identify an alarm event and trigger activity on the KVM system based on that condition. While the applications remain limited today, we definitely see that AI will become increasingly important moving forward."

BIY software?

According to IABM's recent reports, end-user broadcast and media companies are doing more and more software development in-house, often at the control level of their operations. Is there still a demand for specialist software developers? According to John Hickey at Black Box, "We see a bit of both in-house and external software development going on, depending on the type of broadcast and sort of media company involved. Some companies roll out their own, particularly as they try to figure out how to do next-generation technology around virtualization and the cloud. But because they're not pure development

"We have taken the cloud into use as an item in our acoustic measurement program."
Lars-Olof Janflod, Genelec



BlackBox-EmeraldRemoteApp

houses, it's likely that ultimately they will need to collaborate with external partners. As a result, it's a very mixed bag, often including in-house architects as well as more traditional software development companies specializing in broadcast."

Telestream is clearly busy developing software for its customers and not suffering loss to in-house teams: "Telestream provides software-based test and monitoring solutions to the broadcast industry, and we believe that the media industry is moving fast and leveraging leading edge, best of breed solutions such as Telestream software and cloud products," says Dan Murray.

"Professional AV installations frequently require or expect 'software' augmentation for control systems or monitoring," says Diversified's ET&S team. "This consists of customization of devices, e.g., Crestron or AMX systems – often found to be a requirement for certification or resale of those systems. Software to harmonize IP equipment – configurations primarily – is not especially common but may be required. Often this is identified by the systems integration team and then supported mainly by the vendor.

"DevOps is mainly confined to the end user, when applicable. Integration of those components developed may become part of a project (installation or pre-planning). Many of the projects that we lead have an inherent 'need' for a software solution to stitch many different products and services together. This can include functions of compatibility, a more cohesive user experience, or a function of the end user's go to market strategy. We have established key partnerships in this space to respond to this need and consider this discipline a necessary function that will shape the SI offering in the next 12-24 months."

Moving to the cloud

We asked our correspondents to reflect on their broadcast customers' adoption of the cloud – is it now an unstoppable trend? "Broadcasters are still in the early days of adoption the cloud," says John Hickey at Black Box. "COVID has accelerated exploration of the cloud, but the industry still faces many challenges around putting things into the cloud. There are latency and security elements to consider, and even copyright issues as content moves between buildings and onto third-party systems. Nevertheless, broadcasters are leveraging the benefits of the cloud today to achieve greater scalability and to ensure business continuity. In the coming five to 10 years, the cloud is the clear direction for the industry."

For Telestream's Dan Murray, the trend is also clear: "Telestream offers test and monitoring products on the cloud, as well as Telestream Cloud based monitoring services. Telestream believes the cloud can provide many benefits to broadcasters, not only for direct to consumer offerings, and that working with a trusted partner like Telestream Cloud to gain the benefits quickly in a proven environment to lower risks."

Genelec has its own unique approach to using the cloud to the advantage of its customers: "At Genelec we have taken the cloud into use as an item in our acoustic measurement program," says Lars-Olof Janflod. "The user can enter the cloud for the program, do the measurement of the room and our engineers can give advice based on the measurements stored in the cloud. By this we can offer the service remotely and we can also easily go 24/7 by involving our own people in the US, China, India, Japan as we then cover all time zones. In the time we have used the cloud the adoption rate has been good."

"We recognize this is a growing requirement and realize that migration from on-prem services to hybrid cloud/on-prem is a future for many," says the ET&S team at Diversified. "Cloud storage may become part of a secondary backup or processing system, however, because of the ongoing subscription or billing requirements of cloud services – this is primarily controlled and managed by the end user."

Consulting and integration

IABM research shows that demand for consulting and integration is growing, although this is reportedly more IT-centric than it used to be. How are our

"In the past 6-8 years, the level, type and consistency in providing consulting services has gradually been increasing." ET&S team, Diversified

correspondents managing this and the skills transition that the industry is undergoing? "Regarding consulting, this depends on the requirements or expectations of a particular project or RFP," says Diversified's ET&S team. "Consulting, for our SMEs or lead engineers, is not unusual. This varies from planning, budgeting or alternative configuration analysis to electrical engineering (grounding, interference) to architectural assistance in space planning and more.

"In the past 6-8 years, the level, type and consistency in providing consulting services has gradually been increasing. In some cases, the selection of a particular individual within the company is driven by past experience perceived or actually contracted for at the client (user) end. Services range from business (ROI) to long term (strategic) to specific requirements such as product advisement or large-scale implementation or change in operational, delivery, or transmission and networking needs (e.g., Public Broadcasting entities).

"We've responded to this boldly by creating the Emerging Technology & Solutions speciality inside of our M&E practice. This consulting group has effectively 'rolled up' the top SMEs in our company spanning 2110, Media Workflow, Master Control, Production, and Workflow & Process engineering and provided our customers with a turnkey solution from front-end consulting (ET&S) through implementation (Traditional Diversified Design/Integrate/Support)," adds Jason Kornweiss, vice president and general manager of Diversified's ET&S specialty.

For Telestream, consulting is a natural part of the way the company operates. "Telestream invested early in IP and Cloud products and solutions over multiple years, now leveraging that experience to assist broadcast and media industry customers in their IP and Cloud transition journey," Dan Murray explains.

For Black Box, it's still early days, but IT- and IP-based skills are more in demand. Says John Hickey: "As broadcasters migrate away from the traditional SDI KVM matrix to more IP-centric solutions, they want these new systems to integrate securely with standard IT systems, such as active directory login, email alerts, and SNMP traps, that help to manage other parts of their business. The skills transition to address this demand is still in the early days. While IT- and IP-centric knowledge and skills may represent a big learning curve for more traditional companies, they're becoming more and more mainstream."

Keeping the 'door' firmly shut

Cybersecurity is an increasingly important issue for broadcasters. How are our correspondents help them keep the 'door' firmly shut? "Cybersecurity is extremely important, particularly as broadcasters move toward IP and remote working," says John Hickey at Black Box. "In the past, security was about locking the doors and not letting anyone in. Things have changed with facilities being linked together and with people working from home. Maintaining security in this environment is an ongoing battle, and to support customers using our KVM and AV solutions, we're constantly performing security audits, upgrading the security in our products, and ensuring we've got state-of-the-art encryption."

With its central role in building and keeping its customers' facilities running, cybersecurity is central to Diversified's work. "Part of our services specifically address this for individual customers, for security and/or government/defence (secure, intelligence) purposes," says the ET&S team. "It is a specialized service, sometimes interleaved with specific RFP requests or may come out of an existing or recent contract – depending upon the needs for the services or from an awareness of our capabilities which were not previously included in a project.

"For broadcasters, when there are updates or greenfield builds, the networking components – if part of our scope – would certainly deal with security (e.g., firewalls, Internet access, access control lists, linking into software for real time uses, etc.). These needs become identifiable capabilities which may be offered in a project scope if not already provided by the end user/customer in some other form. We are offering security policy reviews as well as educating some of our clients on emerging trends that may impact their business, such as the impact of a remote workforce on security."

What's coming next in Support technology and workflows?

"IP Video networks are now being deployed in larger scale. Telestream announced the Inspect 2110 monitor solution to give video operations teams the visibility they need to operate their networks efficiently. Telestream continues to invest and introduce IP Video test and monitoring solutions, including introduction of 8K test solutions during 2020," says Dan Murray.

"Telestream Cloud continues to offer new services such as the new Live ABR Monitor Service for on-demand

"The future is IT and software based and that is what we're planning for."

Lars-Olof Janflod, Genelec



automated spin up of monitoring around the globe. Telestream continues to expand Telestream Cloud and monitoring offerings. Telestream invests in technology to enable media companies to work remotely or increase operational efficiency. Recently announced GLIM which enables remote workers to play huge mezzanine files remotely, increasing efficiency of video staff to work from home," Murray concludes.

"We're seeing a lot of interest in solutions that simplify remote working, whether from home or a satellite office, and ensure security while supporting a high-performance experience," says Black Box's John Hickey. "We have focused a great deal of our KVM development around those requirements, and we're also looking at how more automated workflows can help users to be more productive. We have refocused work with our partners and customers to determine how best to automate tasks so that life is easier for operators, and so they can focus on the show rather than orchestrating equipment and managing workflow. Another focus for us is bringing a real-time element to technical support. We're enhancing our technology to make sure we can work with our customers quickly and security. If they have an issue or want to change configurations or need support, we can deal with those challenges, even across facilities and time zones."

The ET&S team at Diversified has plenty of plans too: "We already offer support contracts and services in each of our project offerings whether new or updates. We have a global services division fully staffed with multiple NOCs, support ticketing and experts on call for various degrees of SLAs. Some of our divisions provide constant support and monitoring already – for example, digital signage for banks, large screen displays (Times Square, NYC), retailers, airports, etc. We support nearly 500,000 end points 24x7, and have extended those capabilities to all offerings in media and entertainment, ProAV, etc.

"Considerations for offering IP monitoring and remote support are being given using products which we already represent and/or resell. The concept is to offer "administrative class" support using specifically developed products that integrate with control, orchestration and COTS/IP/IT management components. We see these kind of offerings becoming a long term revenue generator, especially for those entities who cannot afford (or cannot find) the level of technical experience or talent necessary to support

cloud, IP, security or other similarly related technologies," the ET&S team concludes.

For Genelec, even as a hardware provider, the future is IT and software: "In the traditional hardware-business we were able to have our local business partners handle service issues. In the coming years with the increased complexity caused by IT and software related products the responsibility falls on our own shoulders. We realize that even for us, a hardware manufacturer for more than 40 years, the future is IT and software based and thus that is what we are planning for."

Final word on the future goes to John Hickey at Black Box: "If we look at the business landscape and the market now and into next year, we see COVID accelerating trends that already exist in the marketplace. Companies need to deal with challenges such as remote working and invest in supporting them sooner than they may have wanted to at scale. Virtualization is another clear trend we expect will continue, and we're working to address both these challenges while taking the burden of workflow management and orchestration off the end user. It's almost as if we're trying to make our KVM systems disappear into the background as our customers go about their day-to-day work."

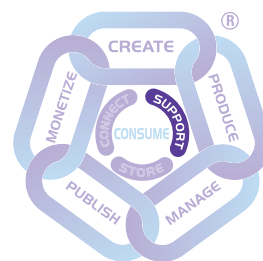
Diversified ET&S Team Contributors:

Jason Kornweiss, Vice President & General Manager

Karl Paulsen, CTO

Bob Timpone, Senior Solutions Architect

Tom Michaels, Senior Program Manager



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from Creator to Consumer

APAC Region – New APAC Members' Council elected

Every two years, elections are held for each of IABM's Regional Members' Councils – and the process has just been completed for the APAC Members' Council and its chair. Drawn from both regionally-based companies and international members operating in APAC, the new Members' Council will continue to provide a powerful voice in the region's broadcast and media technology industry under the new chair, Alex Timbs, Senior Business Development Manager at Dell EMC. IABM Members' Councils serve for a term of two years.

"I am delighted to take up the APAC Members' Council chair," said Alex Timbs. "These are challenging times but there are also great opportunities for companies in the region as the industry transformation continues to accelerate. We've gathered a highly motivated and talented group of people together for the new Council, and we will continue to actively support member companies in the region in every way we can."

More information on each of the APAC Members' Council members can be found at www.theiabm.org/apac-member-councils/.

"I'd like to thank Dennis Breckenridge in particular as previous chair for two terms, and all the members of the preceding APAC Members' Council for their support in providing a powerful platform and voice for our many members in the APAC region," said Darren Whitehead, IABM Director of Business Development. "The new APAC Members' Council will benefit from the

experience of several continuing members from the previous edition, while also bringing in new ideas and perspectives. The result is a fantastic line-up of all-round talent which I am certain will continue to serve the interests of all IABM regional members well."

"Our Regional Members' Councils play a key role in maintaining the international representation and influence of IABM in the Broadcast and Media world," said Lucinda Meek, IABM CFO, who is also responsible for governance of all IABM's Regional Members' Councils. "The APAC Members' Council has a mission to help all our members in the region to navigate these challenging times together – and help set a platform for future region-specific initiatives as things move forward. I am delighted that we have had such a positive response to our call for new Council members and I look forward to working with them all to advance IABM members' interests in the region."

Serving on IABM APAC Members' Council with Alex Timbs are:



Olivier Biot –
*Senior Product
Manager, Nagra*



Dennis Breckenridge –
*CEO, Elevate
Broadcast*



Marc Bruce –
*Managing Director
APAC, Encompass
Digital Media*



Patricio Cummins –
*Vice President, Asia
Pacific and Japan,
Dalet*



Ren Egawa –
*CEO, Rexcel
Nippon Co., LTD*



Dane Gambrill –
*Telco Media and
Entertainment Global
Markets Manager, IBM*



Amy Guo –
*Managing Director,
Gefei Tech*



Abdul Haleem –
*Director of Strategic
Accounts – ASIA,
Accedo*



Richard Jones –
*Director of Sales,
ASEAN, Grass
Valley*



Justin Knox –
*Marketing Director,
RGBlink Science &
Technology Co Ltd*



Paul Maroni –
*Sales Manager,
Magna Systems &
Engineering*



Ashish Mukherjee –
*CEO, Benchmark
Broadcast Systems (S)
Pte Ltd*



Charu Puri –
*Director – Marketing
Communications,
Interra Systems*



Chiranjeev Singh –
*Head of APAC
Marketing,
MediaKind*



Sumit Suri –
*Managing Director
& CTO, U-TO S
olutions (I) Pvt. Ltd*



Alex Timbs –
*Chair, Senior Business
Development Manager,
DELL EMC*

Keeping up Standards



Paul Treleaven
*Technology Specialist
Consultant, IABM*

In the Covid-19 era, the regular standards meetings that we attend have certainly been disrupted, but like many other aspects of our industry, virtual technology has stepped in as a substitute. The system is working, though not being on the meeting's timezone can require attendance at some difficult hours!

Many of the sub-groups have already been using virtual meetings for several years and this has proved an efficient way to develop documents.

Who Needs Standards?

I'll briefly revisit this perennial question. Sure, engineers developing latest / greatest code would like all the freedom they can get. But Standards are more of a strategic tool at Corporate level. IABM has established that customers want to build their systems from best-in-class products, without being tied to one vendor. Standards achieve this, and they can help to make customers take new technologies seriously – e.g. IP with ST 2110, streamlined mastering with IMF. For the purposes of this article, I will also cover some relevant trade organizations and consortiums that are producing important standards-like documents.

Latest Standards News

SMPTE's 'public CD process'

For a few months, SMPTE has been trialing a process where a document is released to the public while it is still at the Committee Draft (CD) stage. This exposes the document to the public before it has been balloted. The intention is twofold. The public becomes aware of the work much earlier than it would with the full publication process and it permits implementations to 'test' the provisions and contribute to improvements before publication. Documents currently at public CD status are two multichannel audio documents and two interoperable mastering format (IMF) documents. Details [here](#). More public CDs are on their way. STOP PRESS! SMPTE currently also has a very similar Technical Specification process – [here](#). This will be discontinued and transitioned to use the public CD process.

Video Compression

The video compression landscape was once dominated by MPEG (partnered with ITU-T). However, since MPEG-2, the licensing and royalty arrangements have become ever-more complicated and that is thought to still be the case with the latest offering, VVC, if you want to do anything beyond the baseline.

In a surprise move in June, 'father of MPEG', Leonardo Chiariglione, resigned from MPEG declaring MPEG 'dead'!

He has since initiated [the Moving Picture coding by Artificial Intelligence \(MPAI\) community](#).

Meanwhile, the [Alliance for Open Media \(AOM\)](#) that was formed in 2015 to develop a royalty-free alternative, continues to grow. Its AV1 codec competes with HEVC, particularly in the online market.

SMPTE's latest compression standard, VC-6, has just been published as [ST 2117](#). It standardizes technology from V-Nova.

Media over Managed IP Networks

The core parts of the ST 2110 transport suite are mature now, though some are getting minor revision as part of the SMPTE one-year-review process.

[Details on published parts](#). New parts in development are:

- Fast Metadata (FMX)
- Data Item Format for ST 2110 Technical Metadata
- Special Considerations for Standard Definition Video using SMPTE ST 2110-20

Alongside the ST 2110 transport suite is the growing suite of NMOS specifications from AMWA that are targeted towards control aspects:



- Discovery & Registration – IS-04
- Device Connection Management – IS-05
- Network Control – IS-06
- Event & Tally – IS-07
- Audio Channel Mapping – IS-08
- System Parameters – IS-09
- Authorization – IS-10

The latest status information for these documents is available [here](#) together with other documents on Natural Grouping; Securing Communications; Authorization; Certificate Provisioning; Parameter Registers. There is a very good introduction to NMOS [here](#).

Sitting atop SMPTE 2110 and NMOS is the Joint Task Force for Networked Media (JT-NM). This task force laid some early groundwork for these technologies and in 2018 published 'System Environment and Device Behaviors For SMPTE ST 2110 Media Nodes in Engineered Networks – Networks, Registration and Connection Management' – document TR 1001-1, freely available [here](#).

It aimed to 'plug the gaps' that still existed in the networked media environment for implementing fully interoperable systems. It includes an EBU Media Node Pyramid. Top-to-bottom slices are: Media Transport; Time and Sync; Discovery and Connection; Configuring and Monitoring; Security. The EBU has recently revised its [source document](#) with an updated pyramid that fortunately has less red! Webinar [here](#).



JT-NM is also running a 'JT-NM tested' program for validating products against ST 2110, NMOS and TR 1001-1. This year, 'self-tested' catalogs were added – see all catalogs [here](#).

Other Media Standards Work

A group within the Video Services Forum has been developing ideas for ST 2110 transport over WAN. This [AIMS / VSF webinar](#) from last month describes the issues. There is similar work in AES, where the group is writing a report – working title AES67 beyond the LAN – How to use AES67 on WAN and Cloud applications.

Microservices work has reactivated in SMPTE with a [standards project](#) 'IMF Registration Service API'. A second microservices project is expected shortly on Device Control and Logging.

A joint task force between the Entertainment Technology Center and SMPTE has started. It will gather requirements and study use cases around artificial intelligence (AI) related to media production and consumption. Project [here](#).

IABM Standards Resources

A good way to get up-to-speed on media standards is our [June 2020 webinar](#).

Standards Meeting Reports

We produce reports after each SMPTE standards meeting round [here](#) and after each AES standards meeting round [here](#) – or for just the latest report, click on the SMPTE or AES report image:

Deeper Dive – the IABM Standards Monitoring Group

We have selected SMPTE and AES project groups whose work seems most important to IABM members and we participate in their teleconferences – typically held weekly or fortnightly. This provides an up-to-date picture of the state of their documents and development work.

We make that information available to technologists in our member organizations with our Standards Monitoring Group (SMG). 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. Information on joining the SMG is on this [website page](#).

SMPTE projects currently monitored by the SMG:

- Media over Managed IP Networks – ST 2110 suite
- Network-based Synchronization – ST 2059 suite
- Microservices in Media
- Extensible Time Label (new timecode plus features such as source identification)
- Required application protocol standards for IP-based media production
- AI and Media

AES projects currently monitored by the SMG:

- Streaming audio metadata over IP
- Streaming audio-over-IP interoperability – AES67 (continuing revision and associated work)
- Open Control Architecture – AES70 (includes revision and adaptations for connection management of AES67 and other formats)
- Open Directory Architecture – Study group
- Projects on EMC mitigation and audio interconnections

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. Whilst there are many other standards bodies that are relevant to members, we have selected these two as the best places to channel our resources.



Standards and Regulations



Nigel Burt
*Technology
Specialist
Consultant,
IABM*

Despite the dominant news in 2020 all about the Coronavirus pandemic, the preparations for the UK's exit from the European Union, and a Presidential election in the USA, there have been important changes to note in environmental regulations too.

By way of an example, 'Chemical Watch' contacted its membership to help understand the impact of the pandemic and notwithstanding many businesses of all types suffering from the financial shock to the system, 40% said that their regulatory workload had increased, whereas only around 20% had seen a decrease. Chemical Watch sees very little let up in the regulatory agenda and suggests that the challenges created by this are made more complex by the likely impending global recession, combined with so many teams now working entirely remotely, or already being affected by job losses.

Proposed amendments to the EU's [RoHS Directive](#) list of restricted substances and exemptions have continued to be evaluated during 2020 by the Oeko-Institut e.V. (Institute for Applied Ecology) and the Fraunhofer-Institut for Reliability and Microintegration with details of the various consultations and reports can be found on their project website [here](#).

Meanwhile, as noted by Chemical Watch in their report 'Chemicals in Electronics – Regulatory Developments From Around The World' published in May 2020, laws and regulations having a similar intent to the RoHS Directive have been proposed, are being introduced, or are already in place in more than 45 countries other than those associated with EU. It notes that in the USA, a number of substances used in electronics are either already undergoing risk evaluation by the Environmental Protection Agency under the [Toxic Substances Control Act](#) (TSCA) or have been designated as a high priority for future risk evaluation.

Despite the Trump administration rolling back on the US reporting regulations on [conflict minerals](#) such that US Securities and Exchange Commission (SEC) decided not to enforce the law, it is worth highlighting that the EU's version of this is still due to come into effect on January 1st 2021 and details can be found [here](#). The UK, of course now destined to go its own way on this matter, only 'strongly encourages' companies to follow the Organisation for Economic Co-operation and Development (OECD) due diligence guidance [documentation](#).

The EU's Registration, Evaluation, Authorisation and Restriction of Chemicals ([REACH](#)) regulation is one of many problems that Brexit will cause. Since this piece of legislation acts directly within EU Member States and does not require transposition in national laws, the exit of the UK from the EU means that as of January 1st 2021, this no longer has any direct impact on UK companies or products imported into the UK. Instead the Government has now [confirmed](#) it will put in place a separate UK REACH regime irrespective of any negotiated deal with the EU or a 'no deal scenario'. For most companies this would appear to mean that a dual registration for both the new UK and existing EU REACH databases will be required. Meanwhile, the EU REACH system is, itself, due to get more complex with the new 'Substances of Concern In articles as such or in complex objects (Products)' ([SCIP](#)) database reporting requirements. While companies supplying products into the EU already have a responsibility to let their customer know if they contain substances of very high concern (SVHCs) on the [REACH Candidate List](#) in a concentration above 0.1% by weight, they will now have to submit this information to ECHA for inclusion in the SCIP database, as from 5 January 2021.



John Honeycutt becomes non-Blackbird – what's the scoop?

With a track record of innovation at CTO level in leading broadcast and media companies including Liberty, Fox, Discovery and most recently Google that stretches back over 30 years, John Honeycutt recently made a major change of direction, becoming a non-executive director of Blackbird. The company is currently making waves with its cloud video editing and publishing platform. We spoke to John to find out why and how Blackbird got his attention, and what he sees coming next for this innovative '20 year-old start-up'.



John Honeycutt

BLACKBIRD

"I think that the rapid turn world is only going to increase speed demands on content publishing. Blackbird has all the snap, snap, cut, cut tools people need to publish quickly, and there's also a lot of power in the platform for creative craft as well. Some great brands are recognizing the capabilities and signing up – sports leagues etc., the NHL in the US for example.

"I think post-production has been one of the last clear paths to the cloud. There's a lot of very fine craft work and things that use tons of compute that have had to be either on-prem or hybrid. But I think that, given the disruption we're seeing because of the coronavirus pandemic, given the direction of the industry, moving those functions to cloud makes sense. We need to get there because if you look at the workflows, and also the collaboration opportunity, by having that part of the supply chain be cloudified, you know that that is a logical point; this is the disruption."

Will everything go back to normal in six months? "I think two months ago people thought that, but I think now the genie's out of the bottle. Looking at BT's coverage of the FA Cup Final and the ongoing NHL playoffs (a Blackbird customer, by the way), it's amazing to see what people have innovated and done. Being able to have a tool like Blackbird in place to be able to help you spread people and move people around and have people be able to collaborate and work from wherever they want to do is exactly what we need."

Are you looking at other markets? "Sticking to your knitting and being very strategic

executive director of

"Blackbird has good IP and a clearly defined proposition on what it's trying to be within the marketplace, and is playing in a sector that I want to spend time in – sport – and needs the kind of experience I can offer; that's the attractor for me. Specifically, the IP within the company is compelling. The codec itself is hyper-efficient and very innovative, so how that is now optimized and used around the

media industry is very interesting. Especially at a moment of forced innovation, with disruption driving people to make that final step. I'm talking wider production here when things restart after the pandemic – documentaries, drama – having the ability to pull all of those assets and have them available remotely to someone to begin editing and have advanced craft features within that is a whole other place.



about where you go has to be a path, especially when you're competing against large scale providers within the space – but obviously, you have to grow. So being smart about where you grow, whether it's up or down, so to speak within your lane or horizontal, is the strategic question that I hope I will help Ian and the team think through.

"My personal view, speaking from experience as a CTO is, first and foremost, I want people to be good at what they do, and do it consistently and do it reliably. And then we'll think together about how to take it to the next level, not getting eyes wide and sensing, 'oh, big market opportunity, I should invest all of my development into an adjacent function'. By doing that my core product lags behind or has reliability issues or whatever. So I think it's the balance that not only Blackbird but any small company has to face when they get hot and start to grow.

"Blackbird's core offer is publishing, but what else can we do in that space? For example, are there things that we can do from an advertising perspective to put triggers, hooks, markers into our publishing process that allows monetization to be more efficient? While we're touching the asset, are there things that we can do that will

help the content owner monetize their content more quickly, more efficiently? Because what that does is it gets the conversation about the technology into commercial people inside of the company. When you bring this group of people into the conversation, then it gets really interesting because now you're talking about the company making more top line revenue, so you've got more fans of the product inside of the company."

So will all the changes we have seen that are driven by the coronavirus pandemic stick in the future? "There's a lot of people with infrastructure out there who need to use that infrastructure. And there's a lot of people who are looking to disrupt; I'm always on the side of disruption. I grew up in this business, and all this next level of innovation is learning for all of us. I think we've taken a massive step forward in dematerialization that might have taken another five years has happened in the space of a few months; forced innovation. Blackbird is in a great place to help people with that dematerialization."



BaM Slider™ – a Virtual Technology Tour of all the new products and services available to broadcast and media technology buyers

IABM has launched the BaM Slider™ – an intuitive Virtual Technology Tour that enables buyers and users of broadcast and media technology to quickly scan all IABM member companies' latest innovations and simply 'slide right' to save the ones they want to follow up on. IABM was originally inspired to create the BaM Slider™ to give technology buyers a complete overview of all the broadcast and media tech innovations in the absence of trade shows. Users only connect with the suppliers they choose; no unwanted conversations, badge scans or emails, and the opportunity to uncover ideas and technologies they might otherwise have missed.

The BaM Slider™ also greatly benefits IABM members; with no physical shows, it's very hard to get noticed – especially for smaller companies that may not have the bandwidth or skills to promote themselves online. The BaM Slider™ levels up the playing field for all IABM members.

The BaM Slider™ will be available and constantly updated 365 days of the year. It is a living, instant-access resource that connects broadcast and media technology buyers with the whole universe of suppliers and solutions – including ones they may not have been aware of in the traditional environment.

Visitors to The BaM Slider™ begin their virtual technology tour in the 360° BaM Slider Lobby, which offers a choice of routes organized according to the nine segments of the BaM content Chain® (Create, Produce, Manage, Publish, Monetize, Connect, Support, Store, Consume) together with a 10th option for Business Services.



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

Every IABM member company (550+ representing the vast majority of revenues in the sector, ranging from innovative start-ups and SMEs to large, established businesses) with products in that segment is then presented one by one, with a headline introduction to their offering. The visitor swipes right to save, left to walk on by. After they have completed a review of all the companies in the chosen content chain segment, they have an instant shortlist of 'favorites', each with links to further details of the

company's products/services of interest, all neatly organized on the IABM website thanks to the comprehensive BaM Shop Window™. This can be any combination of product information, white papers, videos or case studies, with links to put the interested visitor directly in touch with the chosen company – no 'middlemen' to deal with.

"We are offering BaM Slider™ as a resource for the entire industry – a unique virtual technology portal that connects customers with suppliers and opens up new possibilities too. The take-up from IABM members has been phenomenal and the BaM Slider™ has a huge range of innovative products and services on show," said Peter White, CEO, IABM. "The result is a one-stop-super-shop where broadcast and media technology users and buyers can quickly and easily find the solutions they need from a huge range of options thanks to an innovative user interface, underpinned by the BaM Content Chain® taxonomy."

Member Speak – Telstra Broadcast Services: five years of global growth driven by a start-up mentality



Carlos Farias
*Head of Market Development,
Telstra Broadcast Services*

Telstra Broadcast Services (TBS) celebrates five years of managed media and broadcast services, innovation and industry firsts.

Since its acquisition by Telstra in 2015, TBS has gone from strength to strength and seen great success in the broadcast industry. It has experienced exponential growth over the last five years supported by a large global company while still successfully maintaining a small business culture. Operating as a subsidiary, TBS has been equipped with a unique and agile business model more akin to a start-up than a major global player on the broadcast stage which sees the company promoting knowledge sharing and autonomous operation for its employees and value creation for its customers while excelling in the fast-paced broadcast industry.

TBS provides customised, managed content delivery, media solutions and broadcast operations to customers backed by Telstra's global subsea infrastructure, satellite services and IP capabilities. It very much has its own business structure within the organisation and has created an agile and dynamic team of industry experts that can move with accuracy and speed wherever they are most needed. Services provided to customers include end-to-end management, enhanced monitoring and real time reporting services, ensuring high quality content is delivered to audiences.

Telstra has allowed TBS to operate separately to the main body of Telstra to cater to the unique demands of the media and broadcast industry. Carl Petch, a longstanding TBS employee says, "You've got to give credit to Telstra and the Telstra team at the time for allowing us to do that, to notice that the media market was different and it needed a well-funded, well backed small company with small company ideals."

Many employees credit this business model and the small business team culture that has resulted as

championing the success of TBS; consistent success being a result of a consistent team. Karen Clark, Head of Sales for Australia and New Zealand says, "I recall one senior customer say to our Telstra leadership team 'We like these guys, don't break them'. It was that voice of the customer that helped secure the model that has been key to our success."

So, what are the keys to keeping the start-up culture intact even as TBS has shifted through the gears to being a global player at the forefront of innovation in several key broadcast areas? There are several, with a firm concentration on their employees and ensuring their individual success being a key factor at the forefront. Internal training and upskilling is thus highly prioritised in order to stay one step ahead of the competition and ensure that the company always consists of a team of highly trained professionals.

TBS also reflects the start-up ethos in that it is comprised of subject experts across all fields relating to broadcast from sales to field operations, who function at a level of autonomy and consistency that is consistent with the start-up culture. It balances this by also being comprised of long-term employees – something a start-up cannot do! – who provide a familiar face for customers while providing high quality services. TBS has many longstanding customer relationships maintained by a dedicated sales team focused on catering to the individual needs of each customer.

The company has also seen great success in the international market supported by Telstra's infrastructure and IP transit delivery capabilities and capacity to run remote production services. These capabilities in remote production have been the standout development of TBS in the last five years



affording customers the ability to have content delivered to a remote production hub, dramatically lowering costs for customers and benefiting the environment. Anna Lockwood, Head of Global Sales says, "Our remote production capabilities reduce occupational health and safety risk, are cost effective, and increase sustainability." In line with industry trends, TBS continues to dedicate significant time and resources to increasing autonomy to improve efficiency in its internet-based delivery and remote production capabilities.

Probably its most high-profile success to date in the field was in architecting the broadcast services of the Rugby World Cup from Japan in 2019. Up to 21 high bitrate video feeds were sent from the International Broadcast Centre in Japan to London via redundant routes – Path A via the Suez Canal, Path B via Los Angeles – where they terminated in two of Telstra's London PoPs before being passed on to IMG's production facility. Latency over the 16,000km circuits was measured at around 223 milliseconds.

What's more it was the team's ability to come together in the face of adversity that enabled it to happen. Its expertise was tested even before the tournament started with the arrival of the dangerous Category 4 storm Typhoon Faxai. This made landfall on 9 September and took out two of the primary circuits out of Tokyo as well as causing undersea cable damage. The normal timeframe to restore such damage is measured in months, but Telstra was back up and running in days, mainly due to the fact that it has ensured it still runs a combined operation. The on-site video engineers were able to communicate directly with the Network

Operations Centre based in Hong Kong and swiftly arrange alternate routes for the signals, something that more corporate-structured organisations with more management layers would likely struggle with. TBS has made a huge contribution to the Telstra brand in the broadcast industry making use of the infrastructure and harnessing its previously unrecognised broadcasting capabilities. This has not only continued to build the reputation of Telstra but provided customers with a service featuring unmatched resilience and stability. The major successes of TBS, according to Head of TBS, Andreas Eriksson, are the delivery of its professional services offering (known as Broadcast Plus), developments in remote production capabilities, and the sheer volume of high-profile sporting events that are broadcast using TBS services. In Australia the company built a dedicated remote production network, known as the Distributed Production Network (DPN), to transport HD feeds across almost 16,000kms from 27 venues to production hubs for Tier-1 sport and soon Tier-2 and 3.

All this success has been made possible by the industry leading TBS team, alongside long-standing industry relationships, the unique mobility of TBS as a business unit, and the stability provided by the support of Telstra and its infrastructure. It is predicted that TBS will continue to experience continuous growth and expansion of services powered by an agile structure of the business unit that lends itself to collaboration and knowledge sharing; providing its customers with a wide range of customised services to suit their individual needs – big business solutions with small business customer service.

Member Speak – Elecard – How to choose the right tool for OTT quality control



Vitaly Suturikhin
*Head of Integration
and Technical Support
Department, Elecard*

Adaptive broadcasting is gaining momentum quickly. Live TV is giving way to new services that not only adapt to the broadcasting bandwidth but also receive user feedback as well as generate and display targeted advertising. However, what spurred the broadcasting revolution was streaming, a technology that selects the best available quality.

It is unnecessary to have a DVB-T2 antenna, a cable run to your household, or a satellite dish on your balcony to receive such broadcasts: all you need is your favorite gadget, such as a smartphone, a tablet, a laptop, or an in-car multimedia system. These broadcasts have a low buffering capacity for guaranteed delivery of the content and can even tolerate having the user temporarily exit the coverage area.

That last point is the reason why everybody loves adaptive broadcasting. Users have become accustomed to smooth content delivery in any situation, wherever they are, be it in the kitchen, on the go, or at the summer cottage. Adaptive broadcasting comes in several formats, such as Smooth Streaming by Microsoft, HTTP Live Streaming by Apple, and Dynamic Adaptive Streaming over HTTP by the MPEG Group. All of them impose similar requirements: the content at the end device should play smoothly, without freezing and switch quickly and seamlessly between different profiles. The key competitive advantages here are the Quality of

Service (i.e. guaranteed delivery) and Quality of Experience (i.e. good picture even at low bitrates and clear audio even in remote country areas).

All formats are standardized. The standards specify how the manifest (playlist) and content chunks are prepared, how they are delivered, how the switching between different quality and bitrate alternatives (profiles) works, what the buffer capacity should be, what video and audio formats should be supported in chunks etc. Even if video complies with these standards, it is necessary to make sure it has made it through the entire delivery chain intact, without artifacts, hangs, freezes, glitches, or pixelation.

How is this done? Flexible software solutions for video stream analysis (including live streams and video files) come to our aid here. In this article, I will explain what to look for when choosing such a solution. We will consider HLS format as an example.

Functionality

The first thing that is assessed when validating OTT traffic is the general condition of the service. The analyzer should support real-time delivery (QoS) and decodability (QoE) analysis and automatic report generation. The results should be presented intuitively, whether using color coding, some kind of general score, or a stream status such as OK/Problem. For ongoing 24/7 visual monitoring, a task list with statuses is a familiar and friendly format. Each status or trigger (event) should have a detailed description to convey a general idea of what is going on.



Each project is unique, and it is important that the analyzer allows a flexible configuration of parameters to monitor. In some cases, picture freeze is a common case that should be ignored; in others, audio PID missing constantly is a phenomenon inherent to delivering the content in question. However, sometimes the stream needs to be so clean that even a few lost TS packets are a reason for alarm. In this case, the ability to set up monitoring for certain errors manually, specify error severity levels, and configure alert settings will come in handy. This is necessary to filter information that the operator gets in his or her work with streams. It is also useful when generating reports to exclude errors that can be disregarded.



Alerts

It would be inefficient to hire people just so they stare at their monitors the whole day. An engineer gets distracted by other tasks and often cannot respond quickly to a problem with a stream. Most modern analyzers, including those of the Mosaic View type, can send alerts. The alerts can be configured flexibly depending on the Fault Management system in place and the work schedule of the technical support department.

Such alert systems are often based on SNMP traps, GET requests, or webhooks (e.g. PagerDuty or DataMiner). Traditional methods, such as email alerts, also exist. In addition, smartphone push notifications and instant messages are currently gaining traction. It is convenient when several alert types are supported because you can then choose the one that suits you best.

Intuitive UI

It is important that the software be intuitive and user-friendly even for novices. User tips in the UI are good to have because they help learn the tool quicker than an extensive user manual describing various cases.

Tools for deep video analysis

For most top-level tasks a problem description, a timely alert, and an action to start the response process (opening a ticket or making a call) would suffice. However, modern solutions offer tools for a deeper analysis of video data.



Diagnostics and preventative measures help avoid severe failures and isolate hidden malfunctions in the service. The more information the analyzer can give about the stream, the more means the technical department has at its disposal to prevent errors from occurring. For example, detailed stream information makes it possible to diagnose playback problems on devices, especially if the device specification is missing along with requirements to input streams.

There are many possible causes of playback issues:

- Unsupported video or audio format supplied to the packetizer (HLS packager) input
- Invalid content generated by the encoder itself (e.g. interlaced stream sent instead of progressive)
- Playlist stopped updating but keeps creating chunks
- Some tags have been added to an existing media playlist, causing incompatibility with the end devices.

It is important to have such changes monitored by the analyzer in real time. If, in addition to stream parameters, the operator also gets their changes over time, it can save him or her time troubleshooting the error.

Ad insertion

In most cases, OTT services insert ads. This needs to be constantly monitored. Analysis of this type involves detecting special marks but also monitoring the operation of the devices that insert ads. The limits on volume level should be observed, and there should be no black frames or picture freezes.

Analyzer types

Analyzers can be software- or hardware-based. Each of these types has its own advantages, but recently cloud services have gained popularity. They are attractive because they do not consume space and can be easily scaled. Hardware solutions retain their stable market position and work in a set-and-forget fashion, although are often hard to upgrade and maintain.



IABM Virtual Offering

Let us help you overcome challenges

Exposure

We will promote your offering to our 23,000+ active contacts (including over 2,500 + opted in end users).

Lead Generation

We will work with you to generate opted in leads during our partnered activity.

Thought Leadership

Showcase your expertise with the on-demand content added to our Knowledge Hub and widely promoted.


IABM reach



550 Member companies



23,914 active contacts in total



An increase of 3,871 contacts since the launch of the IABM Virtual Platform in April 2020



2,454 Opted in End User contacts from 957 companies across the globe

End User Global Split



148,385 Unique website users



665,546 Pages viewed



Users from 213 countries



4,000+ Online event registrations in 2020



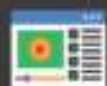
2.13 million impressions over 12 months



93,000+ impressions over 12 months



An average of over **10,000 BaM Shop Window searches** per month across **1,787 products**




62,091 video views



6,000+ Webinar on-demand views



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In some geographic locations we've seen an increase in home network usage during the day of over 120%

Member Success – Plume – How ISPs can boost revenues by leveraging whole home WiFi to create a new services bundle



Mark Goodburn
*Director of
Product
Marketing,
Plume*

We spoke with Plume's Director of Product Marketing, Mark Goodburn, about this innovative young company and its mission to transform broadband suppliers' offerings through a revolutionary new bundle of Smart Home Services delivered through a Consumer Experience Management (CEM) Platform. We have also included quotes taken from an interview between Plume CEO and Co-Founder, Fahri Diner with Wi-Fi NOW's Claus Hetting in June this year.



Fahri Diner
*CEO and
Co-Founder,
Plume*

"More and more people are relying on more and more devices connected to the internet," says Mark Goodburn, "and that has skyrocketed since the COVID-19 pandemic began. Even as lockdowns start to ease around the world, Plume data shows that home device usage remains much higher than pre-COVID levels. In some geographic locations we've seen an increase in home network usage during the day of over 120%. And with corporate leaders such as Amazon, Google, and Spotify announcing permanent or extended work-from-home arrangements, the baseline is set for a new hyper-connected future."

Competitive advantage

But the broadband that delivers this connectivity to the home is fast becoming a commodity – the only differentiation is price. "The traditional bundles that broadband providers offer the consumer are slowly dying," said Fahri Diner. "It used to be triple-play – voice, video, and data. But the modern consumer is not looking for a landline or 200 linear TV channels that they don't watch. They can get what they do want to watch via an internet application. Today they just need broadband internet – that's the key thing they are looking for. But for service providers, as their triple play customers turn into single play broadband customers, the differentiation – bigger, faster pipes – is only price now." And that means a slowly but constantly reducing ARPU (Average Revenue Per User) – not an attractive proposition for any business.

This is where Plume comes in. "ISPs need a new set of services to grow their ARPU," Fahri Diner continued. "Plume is betting on this new bundle in a big way – and the new bundle is the smart home. Broadband providers need to stop selling broadband, which is merely the connection of the smart home to the outside world. What they need to offer is a new 'Experience Bundle' – which can be 10, 20 or 30+ services and growing. This can be broadly split into four categories:

1. Adaptive WiFi and advanced controls – it's not just mesh/extenders, but dynamic, pre-emptive, adaptive wi-fi. You need a lot of control – both access and parental.
2. Security, safety, and privacy. Security is cyber protection for IoT and connected devices, safety addresses things like cameras and recognition, and privacy speaks for itself.
3. Automation and personalization – my home needs to be programmed to my behavior and requirements.
4. Energy management and independence – a key consideration for the young digital natives.

"Plume has solutions across all of these; the new frontier is providing experiences – the ISP becomes an 'Experience Service Provider'," Fahri Diner explained. And some very familiar names agree – current Plume customers include Liberty Global, Virgin Media, Comcast, and Charter Communications in the US. Sky Italia has also just announced a managed WiFi service underpinned by Plume.

“Plume offers a revolutionary bundle of Smart Home Services that is built on the foundation of providing flawless home WiFi – including AI-enhanced cybersecurity, advanced user controls, motion awareness, with more to follow,” adds Mark Goodburn. “All services are controlled by the user via the Plume App. The platform ensures that other services can be readily added in the future.



“The key thing is that it is an intelligent, managed SaaS offering, not a collection of boxes,” adds Mark Goodburn. “Plume is not a supplier of hardware; Plume does provide exceptional designs for WiFi access points (pods) that can be licensed by OEM/ODMs, however, our CEM Platform works together with open-source software called OpenSync that can be freely integrated into any CPE device. OpenSync facilitates sophisticated cloud management, and leverages AI to handle – among many things – intelligent control of the smart home.”

“To be able to scale, you must decouple the services from the hardware. This requires an open source approach,” Fahri Diner added. “OpenSync is the fastest-growing open source initiative for the smart home. It’s a kind of ‘SIM card’ that talks to everyone’s cloud – where all these services are created, provisioned, maintained and supported. We created OpenSync two years ago and it’s on fire! OpenSync is the device-level framework and software – the other part is the cloud, the control plane. The objective of the OpenSync project is to remove a major obstacle to the rapid deployment and scalability of services which is disparate software present in different hardware brands.”

How are ISPs responding to the Plume proposition?

“Very positively,” says Fahri Diner. “They want to be able to offer the new services to their whole customer base rather than just a small percentage that has the right ‘box’, and Plume makes this possible. It also unshackles ISPs from the box vendors, and because OpenSync is open source, they don’t just swap one dependency for another – they’re not beholden to Plume. This is accelerating the pace of deployment – there are approaching 1 billion devices supported by the Plume cloud now.”

The Plume offer

“Plume provides a number of services as part of the new bundle, turning an ISP into an ‘Experiences Service Provider,’” Mark Goodburn explains. “For example, Plume Adaptive WiFi intelligently adapts by using AI technology to analyze the home environment and device usage patterns to deliver the best possible Quality of Experience (QoE) for each device, reducing service calls. Better wireless connectivity is enabled via our intelligent, Adaptive WiFi service which requires licensed WiFi access points to be placed in the home, or by integrating any device-makers’ CPE (customer premises equipment) hardware with OpenSync. Plume automatically prioritizes certain higher-bandwidth applications (i.e. Zoom calls, 4K video streaming, gaming traffic) that can be susceptible to drop-outs due to bandwidth restrictions, latency etc.

“Plume also proactively resolves issues – for example, dynamically switching channels if a neighbor’s WiFi interferes. And it offers movement detection via Plume Motion, which is great for monitoring elderly relatives or ensuring the kids come home after school.

“It also gives granular visibility of all connections and opportunities to enhance WiFi signal reception via sophisticated built-in monitoring,” Mark Goodburn adds. “For the ISP, it enables much faster and more accurate customer service, reducing load on support departments while giving greater subscriber satisfaction and reducing churn. And of course, the OpenSync middleware is open source, so ISPs can build their own services on top of the core Plume offering.”

What’s next?

“We are the Experience Service Provider behind ISPs,” said Diner. “Beyond what the consumer sees, you also need to provide capability to the service provider so they can support, manage, maintain, upgrade and fix these services. This is enabled by a massive amount of data; as well as driving personalization etc., it also feeds the support and IT system. So everyone is looking across and understanding the dependencies. So we provide an amazing tier 1, tier 2 support capability proactively.

“I want to eliminate the concept of ‘call in rates’ which ISPs have been relying on. With our tools behind them they should be able to have a ‘call out center’ – proactive, pre-emptive – the network knows if something is going wrong. The winners and losers are separated by the ability to learn from and leverage data for a competitive advantage.”

Member Speak – ETERE Pte Ltd



Fabio Gattari
Director, Etere

Tell us a bit about the history of Etere

Etere was started in 1987 in Tolentino, Italy, by the partners, Fabio Gattari and Fabio Mazzocchi. Fabio Gattari remains the founding director of the company today. From its beginnings, Etere believes in preparing users for the future of technologies with

continuous innovation and service excellence. It is an early adopter of transformative innovations that allow its users to enhance their adaptability in the market.

The company was initially named Societa Italiana Software (SIS) and was launched to leverage the new efficiencies of personal computer networks which had just been launched on the market. One of its first products was the SETA, a management system for legal offices that was compatible with personal computer networks. Leveraging new technologies, SIS sought to help companies to improve their workflows and reach new levels of efficiencies.

Talk us through the development of the company

In 1989, SIS started the development of Etere software for private broadcasting. Etere was launched to solve the administrative problems of broadcasters and advertising agencies. It was adopted by the Ministry of Posts and Telecommunications for its implementation for the whole of Italy.

1991 was the year that SIS introduced a radio automation system that was adopted by a majority of radio stations in Italy. This marks full circle as 28 years later in 2019, the company re-entered the radio market and launched the software, Etere Radio-Live, as part of its ecosystem.

This was a milestone software only solution, in an area that was hardware only. It comes with a contract for remote support, using analogue modems. It was a product for the future.

By 2000, SIS was renamed Etere and moved its database to a SQL platform to leverage its speed, data security and interchangeability. In 2003, Etere presented at NAB a software-only Channel-in-a-Box solution that was absolutely the first of its kind worldwide.

The year 2012 saw an expansion move by the company with the setup of a new headquarters in Singapore, the hub for a worldwide company. The company continues to expand its global network of customers, distributors and partners from all round the world.

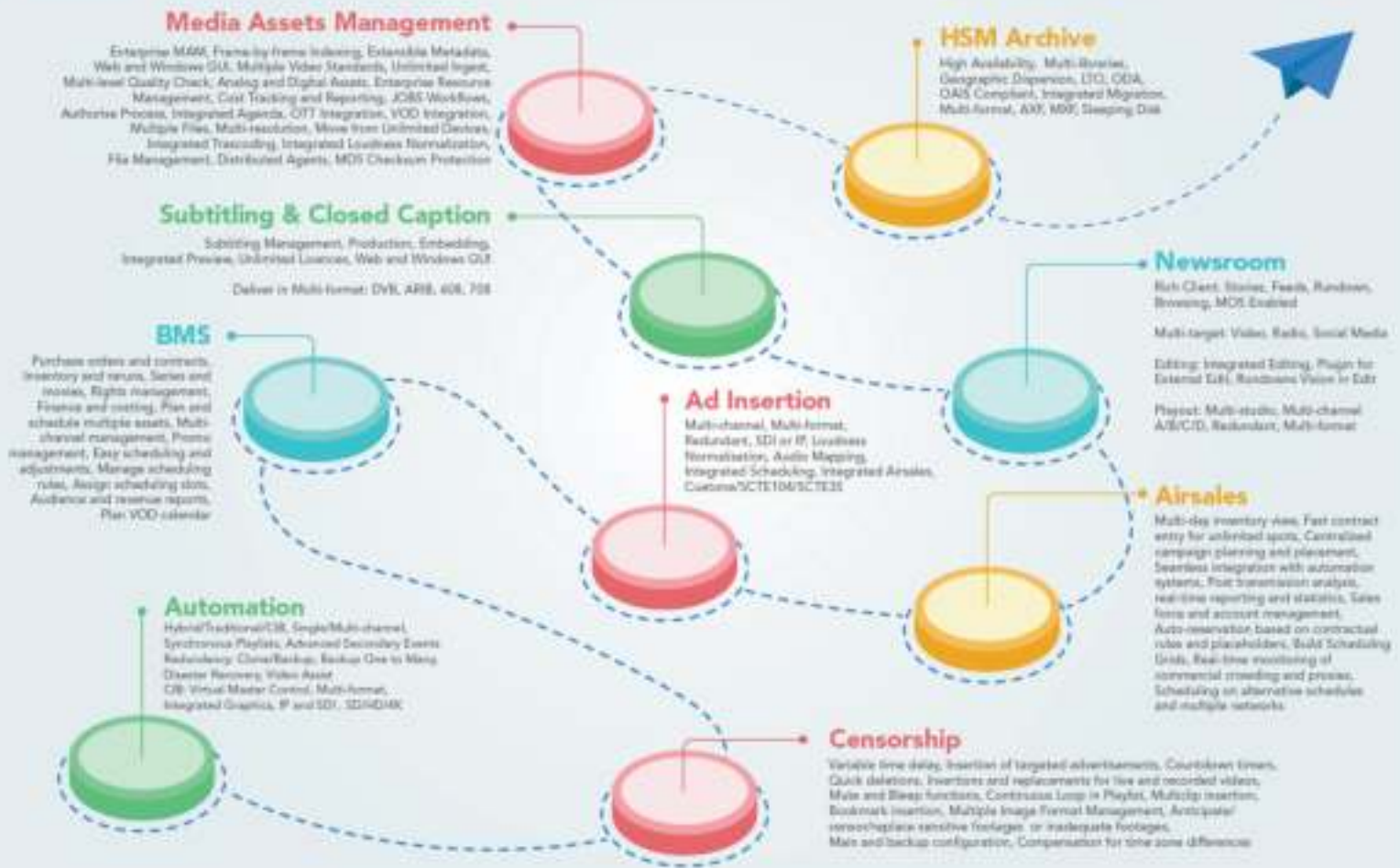
With more than 30 years of experience and still going from strength to strength, Etere is an established brand that has been adopted by users from all around the world. As a trail-blazing innovator, Etere strives to prepare its users to be future-ready at every step of the workflow.

Give us an overview of the company, its solutions and customer base today.

Etere is a worldwide provider of broadcast and media software solutions backed by its mark of excellence in system design, flexibility and reliability. Engineered in Singapore, the revolutionary concept of Etere Ecosystem promotes real-time collaborations and enhances operational efficiency across the entire enterprise. Etere solutions are built with an integrative Web and Windows architecture that are customisable to fit perfectly in any system.

Etere systems are developed by four different groups in different countries to ensure reliability and quality. Etere delivers on its service excellence commitment with its dedicated team and 24/7 worldwide support. Etere users with a valid support contract enjoy unlimited access to software upgrades and updates. Its portfolio of digital technologies and market-proven remote/on-site solutions including consultancy, training, installation and demonstrations are ready to run with your business no matter where you are. Etere enhances your adaptability for the future and empowers you with the software tools to drive your business to greater heights.

Etere is proud to celebrate its anniversary for over 30 years in the business. Currently the Etere team includes over 50 staff in Singapore, Italy, Russia and Ukraine. It features a strong and diversified portfolio of Etere Ecosystem software solutions spanning the complete media lifecycle including Media Asset Management, Channel-in-a-Box, Newsroom, Ad Insertion, Airsales, Automation, Broadcast Management System, Censorship, HSM Archive, Logging, OTT/VOD Delivery, Radio-Live, Subtitling and Captioning.



How has Etere responded to the move to IP and cloud-based solutions by broadcast and media companies?

IP migration is increasingly becoming a reality. Etere's market-proven full IP solution allows you to leverage the benefits of IP and gain a competitive advantage way ahead of other solutions such as SMPTE 2110, Aspen and AIMS. Newtek Network Device Interface (NDI) is a new open standard for live production IP workflows over Ethernet networks. Etere enables you to build an NDI playout that allows you to launch multiple channels without the associated costs and is less expensive than a traditional solution. It is a complete solution that includes Ingest, Media Asset Management (MAM), Transcoding, Quality Control, Playout, Graphics, Etere ETX-M Multiviewer and Closed Caption. It is also capable of managing 4K, HD and SD.

While no one video over IP standard does it all, with Newtek NDI, there is no limit with what you can do as long you have the right computing power, network bandwidth and storage resources (local/virtualised/cloud). With virtualisation, you can have unlimited streams at a much lower cost and easy maintenance as compared to an SDI setup. Moreover,

NDI allows you to be more cost-efficient and ready for the future with no hardware dependencies and an open system that can be compatible with future standards. The opportunity to be future-ready is one we cannot miss and NDI helps Etere users to be ready for the future.

What is Etere's 'special sauce'?

Etere offers unrivalled flexibility and control of all processes and media assets in the company. Without an effective control, you cannot achieve a high level of performance even with the best specifications in place. Etere Ecosystem features a seamless connection across Etere modules and third-party applications. It gives you real-time updates as well as fast and accurate information exchange processes between multiple departments. With a single system, you can have complete control and visibility of your workflow processes, media assets, monitoring consoles, resources and user rights management. Additionally, you have centralized resource planning that allows users to create, preview, accept and approve tasks with an interconnected network. Etere adopts big data

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technologies that give you valuable insights to understand how much each task costs, where are your performance bottlenecks, how to improve operational efficiency and increase revenue. Beyond the confines of the studio, Etere MAM provides both Windows and Web interfaces that allows your team to share resources, collaborate and drive workflows from anywhere in the world on multiple platforms including tablets, laptops and PCs. Etere is a system that is scalable and adaptable to fulfil your business needs today and the future. With its 24/7 worldwide support and unlimited software updates and upgrades, it is a system that is ready to grow with your business.

How has the Covid pandemic affected Etere and its customers? What are you doing differently now, and will those changes 'stick' for the future?

Etere has been diversifying our marketing strategies since 2010 and going digital has been a part of our company DNA. This year, we will continue to focus on our digital marketing strategies and enhance our cloud and web solutions. In this first quarter, we rolled out our upgraded remote demo, training and installation solutions. On top of that, our web platform, EtereWeb allows our users to drive their workflows and manage their media files from anywhere in the world on any internet browser. Etere offers one of the best support services in the market with 24/7 worldwide support for its users. Breaking geographical boundaries, Etere continues to provide a full suite of remote installation and consultancy services including multiple users connectivity, workflow creation, system configuration, workflow design solutions, troubleshooting and remote connectivity to your system. Etere is a software-only solution. As a result, there is no need for delivery and installation of hardware. Our solutions are an agile approach that prepares you for the future. The good

news is, even in the midst of the Covid-19 situation, we are ready to run!

Have you missed demonstrating your products and meeting prospects at exhibitions? How have you compensated for this during lockdown? What do you think the future holds for exhibitions when it's safe to hold them again?

Exhibitions used to be mainstay across many industries and it will definitely take a while for people to have confidence to attend large-scale gatherings in the near future. While nothing quite replaces a face-to-face interaction, often the initial point of interaction between a company and its customers is not all that defines a customer journey. The customer journey in the broadcast and media industry as well as many B2B industries is not an immediate gratification but it is a prolonged but fulfilling one. At Etere, we place importance on understanding the customer's story and how to provide the best solutions to his or her problems. In this aspect, technological tools help us to bridge the geographical gaps we face in the pandemic and even beyond that. Even though face-to-face interactions will never go away, we think that digital marketing will reduce the importance of exhibitions in the future.

What benefits do you get from IABM membership and what are the most valuable IABM resources in conducting your business?

IABM helps us to connect and engage with like-minded professionals, it is an invaluable platform that brings the industry together. Some of the resources that we regularly access include the IABM journal and knowledge hub for the latest news and developments in the industry as well as the IABM future trends theatre to share insights and analysis with our industry's partners and peers.



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