

4TH QUARTER 2022

JOURNAL

123

REPRESENTING THE BROADCAST AND MEDIA TECHNOLOGY INDUSTRY WORLDWIDE



Revenue Generation

The changing technologies and business models that underpin our industry

Also Featuring :-

Bam Award[®] Nominees

Monetize and Consume segments of the BaM Content Chain[®]



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Looking forward



Peter White
CEO, IABM

Welcome to the final edition of the IABM Journal in 2022. I am writing this introduction just after our BaM Live™ London event and Awards evening; with over 400 attendees, a content program focused on the burning issues in the industry and a stellar line up of speakers from all walks of Media and Broadcast, we had the right ingredients for a really great event.

To maximize value for delegates, we purposely designed it to be a lean-forward and get-engaged experience for all attendees, and I think this worked extremely well and provides a new model for how such events should be run in future: we are certainly working on further developing interactivity for forthcoming BaM Live™ events. For those unable to attend in person, we will shortly be posting catch-up content of all the major sessions on the IABM website.

The Awards evening was also superbly supported and a great celebration of the incredible innovation our industry keeps delivering. As our CTO Stan Moote, who chaired the Awards judging panel said: "It's incredible how the pace of innovation just seems to get ever faster, with more and more barriers that seemed insurmountable even a few years ago now not just broken down but mere footnotes in history. This year has been no exception – our winners are the very best of the very best. It's also gratifying to see how our industry continues to embrace wider concerns, including leadership, sustainability, fostering new talent and making a difference on the world stage in the IABM Annual Awards." As a further celebration of that innovative spirit, this edition of the IABM Journal includes summaries of many of the shortlisted products and services – you can therefore judge for yourself the superb quality of the entries.

For 2023, we will be highlighting innovation in broadcast and media technology even more heavily: the BaM Awards® will return to being a three-times-a-year celebration, with awards presented at NAB Show, IBC and our end of year BaM Live™ event – maximizing opportunity for

members to expose their creativity to the widest possible audience.

Our other major themes for this edition of Journal are Revenue Generation and the Monetize and Consume segments of the BaM Content Chain®. Also recognizing the critical state of the planet and the ever-growing importance of environmental considerations in everything our industry makes and does, we have made Sustainability a regular feature in Journal. In addition we have articles on Business Resilience, and a thought-provoking Opinion piece on how local VOD services can compete successfully against the global players.

I hope you enjoy reading it all and are inspired by what our great industry continues to deliver in the face of difficult economic and trading conditions. I am sure I am not alone in hoping that 2023 will see a turn for the better in our world, beginning with the end of unwarranted aggression and underpinned by a continuing commitment to environmental sustainability and making people's lives better. As an industry we may not be able to directly affect the first of these, but we most certainly can the second and third.

Wishing you all the compliments of the season, and I look forward to seeing you in person again at the many international events which IABM will be supporting members in 2023.

A handwritten signature in dark ink, appearing to read 'Peter White'.

Peter White
CEO, IABM

Object Matrix

Content Choice and Sustainability

In recent years, the choice of video services has multiplied, as large media organisations add a plus symbol to their established brands and roll out new platforms. In addition, many incumbents in the VOD space are now supplementing their main subscription models with AVOD options.



Jonathan Morgan
CEO,
Object Matrix

The accessibility of media content has also had an impact. The option to consume content anywhere and at any time, makes it easier for viewers to watch more than ever. If media and entertainment companies want to compete, they need to ensure their content travels with the consumer. This in-turn drives up demand as viewing becomes a constant companion to daily life. Whether audiences are in the kitchen watching a cookery show, escaping with a movie on a long train journey, or second screening in the lounge while the football is on – entertainment can now follow them wherever they go.

Companies are upping their game with good reason. [The Deloitte 2022 Digital media trends](#) report pointed out that “as Gen Z and Millennial entertainment choices gain favour across the globe, social and gaming experiences compete head-to-head with video for consumers’ attention.” But however and wherever consumers are watching content, media assets need to be housed securely. This endless choice for audiences has an impact, not only on financial resources but also on environmental ones.

Getting your house in order

As industry requirements have evolved over time, media storage has changed too. Content owners need to be able to search and locate assets quickly, often using remote or hybrid processing workflows. The global nature of the industry means that its content supply chains are complex, with lots of different teams needing

By sharing information and collaborating across the vendor and customer ecosystem, we can start to address the environmental considerations for the media storage sector.

access. Not too long ago engineers were managing LTOs. So, the transition to file-based workflows and the rapid increase in media asset volume means that, in many cases, storage has become siloed and unstructured. Any duplication of assets, or duplication of effort to find assets, will result in wasted resources.

Content storage should therefore help media companies to improve efficiencies. But as file formats have changed to provide higher quality video, file sizes have also increased. This is only set to become more of a concern as we move towards media created for the metaverse and more immersive content experiences. Consumer expectations for the highest quality on all devices will naturally impact storage requirements. With large volumes of data moving in and out of storage, it is vital to optimise workflows. This will become even more important as media file sizes increase to 4k and 8k.

Some of the biggest errors made by media companies are the result of a lack of integration and automation. Disconnected storage silos might use anything from scalable on-prem NAS or USB drives, through to content stored in the public cloud that incurs huge egress fees. Ineffective storage practices drive up costs, making sustainable choices unachievable. But by ensuring content is consolidated, structured, and tagged with the right metadata, you can weed out a lot of the inefficiencies.

Managing resources effectively

It can be tempting to only focus on the headline-grabbing initiatives around sustainability. But what often gets overlooked are the daily practices that ensure you are using the space you have to its best advantage. Incurring egress costs to move data around inefficiently is a pointless waste of resources – it means you are hurting both your pocket and the planet. Working with data in a more strategic way, means that media organisations can meet the requirements of on-demand

At our inhouse data centre in Cardiff we have successfully reduced our energy usage by 80%, using a combination of newer hardware, VM solutions and better infrastructure management

workflows, while utilising storage space optimally.

By consolidating media and protecting the metadata along with it, content owners can better understand the ways their content can work for them. This not only ensures the industry can respond to consumer demand, but it also means it can do so as efficiently as possible. By tiering storage according to individual requirements, assets are kept in the most sensible place for their use-case. That way, companies can differentiate between content which needs to be frequently accessed, and assets that are not likely to be used again.

Content should be easy to find to avoid unnecessary information requests. To protect the accessibility of files over the long-term, metadata should be stored in open formats. That way content owners are not forced into restrictive or proprietary agreements, that will make it difficult to transition files to more efficient storage further down the line. Using APIs also means that content can be found even if media asset management is not available. It is possible to automate the extraction and indexing of embedded metadata, which will future proof content and make it much easier to locate.

An industry working collectively

Whether working locally or working in the cloud, data centres have a carbon, water, and land footprint. The servers contained within them all consume a huge amount of energy, whether that is from spinning disks or tape robot

machines. We cannot escape the reality that storage and access to storage requires energy. But much can be done to optimise these workflows and to minimise the environmental overheads.

Working with well-positioned data centres that use green energy supplies will become increasingly important.

There are strategies that represent a foundation for a more sustainable approach to storage. Large arrays of high-density disks are significantly more efficient, than using many servers holding lower density drives. Working with well-positioned data centres that use green energy supplies will become increasingly important. Performing data migration-in-place, will help to roll out far more efficient new hardware. And ensuring that data and metadata is properly organised so that it can be kept on the appropriate tier of storage is another key consideration.

There can be a tendency to keep some data in the cloud even when it is surplus to requirements, especially if storage costs are low. But we need to change this mindset. With efficient asset management processes in place, we can ensure files are not duplicated and then stored unnecessarily. It is these smaller considerations which can have a significant collective effect, when multiplied across thousands of hours of media files. For the

industry to move into a sustainable future, we need to have an open dialogue about the ramifications of content volume. It is important we all work together and change the attitude to our collective 'content footprint'.

By sharing information and collaborating across the vendor and customer ecosystem, we can start to address the environmental considerations for the media storage sector. Decisions need to be made, both in terms of our individual and our collective responsibilities. I am currently exploring the initiatives our company can commit to and taking the first steps on a sustainability journey. For instance, at our inhouse data centre in Cardiff we have successfully reduced our energy usage by 80%, using a combination of newer hardware, VM solutions and better infrastructure management. We plan to continue this energy saving drive into 2023 to achieve even greater efficiencies.

Sustainability should never be used as a commercial differentiator or a marketing gimmick. It is something that we plan to work on over the long-term, and hopefully as an industry-wide collaboration. In recent years, the volume of content that viewers are watching has increased exponentially, and the methods for its consumption continue to evolve. Let's make sure we are evolving alongside it, to help build a sustainable future for our industry.







Blue Lucy Insights From Next-Gen Tech Leaders



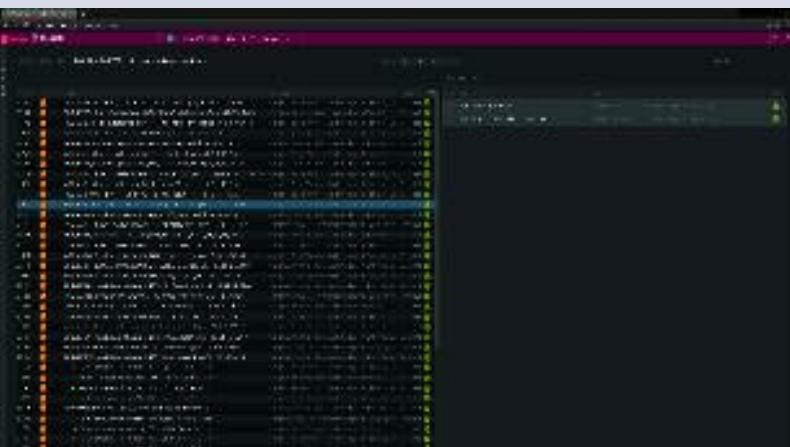
Richard Clarke
Banijay Rights,
head of content operations

As head of content operations at global distributor Banijay Rights, Richard Clarke knows the importance of effective media operations management and the challenges arising from the industry's ongoing migration to the cloud.

Banijay Rights is a company that requires little in the way of introduction. One of the leaders in international digital distribution, the company's catalogue of more than 146,000 hours includes a host of top titles from Banijay's 120+ in-house labels as well as third-party producers, encompassing drama, comedy, entertainment, factual, reality and more.

Overseeing content operations for the entire Banijay Rights business is Richard Clarke and, as Clarke indicates, it's a remit that has become increasingly challenging in light of both business-oriented changes – notably the incorporation of Endemol Shine International in 2020 – and the need for optimum flexibility of content delivery.

"As a distribution company, we need to ensure that the asset can be repurposed to service any deal," he says. "That means it needs to be the best version and of the highest quality, which inevitably results in large file sizes as well as significant storage requirements and transfer costs. How to do that efficiently and cost-effectively is always at the top of our list of priorities."



Content transfer challenges

Like any distribution operation, the operational model has inevitably evolved dramatically during the past decade. When Clarke came into the business, "we were still making and sending out DVDs for localisation services." At Banijay, one of the next major steps comprised "starting to use a transfer software like Aspera, buying a Gigabit internet line, and starting to accept delivery from production departments into storage." From that point onwards, "we started getting more and more into digital content and the development of processes" to enable and support it.

But it soon became apparent that a major obstacle was looming – the lack of standardisation in content transfer and management. "So, we made a few steps along the way with different formats, and we also kept on buying more storage, which proved expensive," recalls Clarke. "Finally, with the huge growth in metadata requirements, we started to think about consolidating everything into a central asset management and archiving system."

With Banijay also growing rapidly, and around 415,000 assets in total, the choice of system could hardly be more critical. Clarke elected to invest in Blue Lucy's BLAM system, which combined media management, workflow orchestration and task management arranged

as a hybrid on-premise/cloud operation. "We are now firmly planted in a hybrid approach," confirms Clarke. "With the first iteration of BLAM, we were very much working on-premise for all of our operations. The latest version is cloud-oriented, and consequently our backup and disaster recovery functions are now based in the cloud. We have also evolved to the point where our distribution and serving of content to other vendors is largely cloud-based, too."

But there is one primary area of workload where Banijay Rights has yet to move away from an on-premise ethos – editing. It is here, implies Clarke, that the drawbacks of cloud are most clearly observed. "The problem with cloud is that we were all sold the dream that it's cheaper – and the fact is that it's not cheaper, whichever way you look at it. In particular, it's really easy to lose control of how much you are paying for egress fees. Having a degree in maths is certainly an advantage in terms of how to plan for, and allocate, egress costs on a granular level!"


So, whilst cloud-based editing is "one of the big issues we are still grappling with", Banijay has managed to curb these expenses for backup and DR by using cheap cloud storage for related workflows. "If we egress, we do it only once and we don't incur repeat fees," explains Clarke.

SaaS and the need for 'ease of integration'

Clarke does not hide his reservations about the industry's steady march away from software licensing towards the SaaS (Software as a Service) model. "It can be a real pain," he admits. "There is a business sense to buying software and owning it, then finding the most cost-effective solution at that point. Now there has to be a much greater focus on adapting and budgeting for what you might require in the future."

Consequently, media companies must ensure that they invest in solutions which offer ease of integration on a continual basis. "It's definitely advantageous to us that Blue Lucy has ongoing conversations with all of the software vendors we are using," says Clarke. In Banijay Rights' case, the company benefits from the integration of Blue Lucy with Signiant and Aspera, which they use for file transfer, with Amazon Web Services.

"Historically, when implementing asset management and storage, we have tended to spend the most time on integrating different bits of software to make our lives easier," says Clarke. "The biggest one for us is our

A woman with long, braided brown hair, wearing a teal historical dress with lace and a necklace, stands in an arched window. She is looking out with a thoughtful expression. To her left is a large, ornate mirror with a gold frame.

The company's catalogue of more than 146,000 hours includes a host of top titles from Banijay's 120+ in-house labels as well as third-party producers, encompassing drama, comedy, entertainment, factual, reality and more.

rights management system, and whether you are talking about metadata or coding, you need to have one source of truth where content can be recognised. With our evolving use of BLAM, we have been able to ensure that our hierarchy in asset management is the same as our rights management system, which is also our billing system. If you can have all of that working seamlessly together, then you are going to have a much more efficient and effective workflow experience."

'Trickled up into the cloud'

With BLAM 3 as the foundation of its ever-growing content asset management infrastructure, Clarke is able to look ahead with confidence – including to the probable migration of more workflows, including editing, to the cloud. "It is very difficult to pick up everything and put it in the cloud, so the approach we've taken is that we have trickled up into the cloud," he says, with a chuckle. "I would imagine the next step will be editing. We have already implemented PC over IP at the office, and I suspect that if we replaced on-premise with cloud editing our editors wouldn't actually notice."

A pragmatic philosophy of incremental change shaped by doing what is right for Banijay and its clients has served the company well to date. The sheer volume of data that Banijay is managing – and "the bandwidth and time involved in getting that to and from the cloud" – will inevitably determine the nature of its future cloud migration. Moreover, the adoption of any new technologies has "to be in line with our policies regarding sustainability and support. It can't be emphasised enough that decisions about software are always informed heavily by the availability of support."

More generally, Clarke has plenty to occupy his thoughts – from "new formats" to the possibilities for dubbing and localisation heralded by AI and ML. "Because of the way that we operate, it's essential that I keep up to date with new technologies and consider how these can be applied to our business," he says. And whilst he is yet to be fully converted to SaaS, he does admit that "the ongoing relationship it brings with vendors means that we can develop things more closely as partners moving forward."

Revenue Generation

According to Statista, AVOD spending in the U.S. is set to surge in the next few years, and surpass \$24.2 billion by 2025, as new services are launched domestically and internationally.

Anda Tanchuma
Viaccess-Orca



According to eMarketer, spending on streaming services and smart TV advertising in the U.S. grew by 40.6% from 2019 to 2020, surpassing \$9 billion. This figure is expected to more than double by 2025.

Ivan Dulguerian
Broadpeak

Synamedia

Eyeing up new revenues with addressable advertising

With recessions taking their toll and subscription income flatlining, scouting out new monetisation options to boost balance sheets has never been more critical for the media and entertainment industry.

And with an ever-increasing amount of data available to publishers, addressable advertising is in vogue. In the same way that the internet opened up advertising to even the smallest businesses, the days 'spray and pray' one-size-fits-all are over, meaning anyone wanting to reach specific audiences through video services can do so. Advertisers – from big brands to small local businesses – can now target specific profiles, inventory, and content regardless of what device or app viewers are using.



Daniel Wohlfart
*Principal Product
Manager,
Advanced Advertising,
Synamedia*

Video service providers in both developed and emerging markets stand to make substantial revenue gains by lighting up their inventory across their linear, on-demand, and catch-up services so advertisers can tailor-make campaigns to reach specific audience segments across all screens. For example, if you run an upmarket furniture company, you can now easily target high income households watching design programmes.

A digital make-over

As audiences continue to turn to streaming as their primary method of viewing, connected TV advertising is projected to grow significantly. FAST business models are growing in popularity, and streaming icons such as Netflix and Disney+ have launched ad-based tiers to broaden their revenue streams, with others expected to follow suit.

At the same time, the traditional TV advertising market – which was worth £5.46 billion in 2021 according to Nielsen Ad Intel – is becoming increasingly outmoded as eyeballs and ad spend look to online platforms.

Thanks to increased broadband connectivity and with the right technology in place, there is an opportunity to revamp the existing TV ecosystem, win back old brands and attract new advertisers.

Streaming and TV providers have a brand building power and audience reach that online alternatives can only dream of. Combining that reach with the same data richness of online advertising allows TV and video advertising to not just keep pace with online, particularly with the pinpoint targeting accuracy of who is consuming content and when, but to offer something significantly better: it has the benefit of offering an eye-catching ad that can fill even the largest HD screen.

A new mode of addressability

Video service providers have had some success to date with piecemeal targeted ad solutions but these have been disjointed approaches resulting in inconsistent reporting, unpredictable execution, and unnecessary overheads.

The missing element has been a unified, single platform for an integrated campaign enabling providers to monetise addressability on every screen, even those with limited resources.

By expanding targeted inventory across all screens and services, Synamedia Iris allows customers to run a single campaign which is optimised to reduce wastage and improve campaign performance.



Providers can boost ad revenue by expanding their addressable footprint, allowing advertisers of all shapes and sizes to target ads precisely and on more than just mobile and web applications. Individual spots can be seamlessly replaced using scalable, real-time server-side ad insertion.

New industry collaborations

Maximising this opportunity requires a new model of collaboration in the industry. Every part of the value chain becomes more valuable as reach increases, targeting gets more precise, and reporting is more accurate.

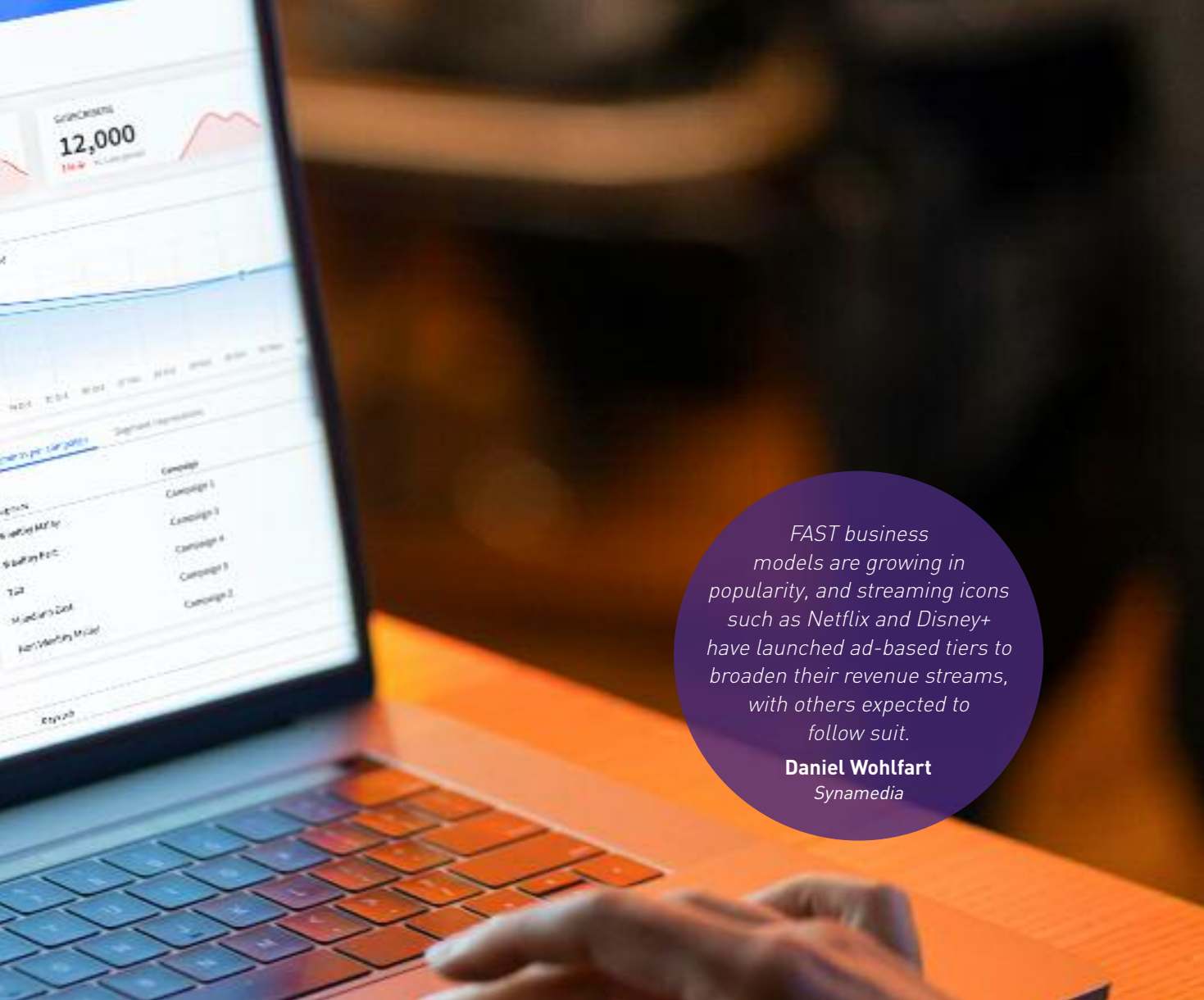
With a unified targeting solution, providers can turn their greater reach and expanded addressable inventory into a compelling proposition for brands big and small. The benefit is that these targeted advertising slots will command higher CPMs (cost per 1000 impressions).

Sizing up quality vs quantity

For addressability to shape up into actual revenue, it's essential to provide accurate measurements that allow advertisers to validate ad impressions and improve future marketing campaigns. To achieve this – and compete against online advertising – robust reporting and forecasting tools are critical to optimise campaigns.

Addressable advertising's model depends on audience quality rather than the audience volumes associated with traditional advertising. To get the necessary insights, providers can use new analytics technologies to identify audience profiles and viewing patterns.

This is where our Synamedia Clarissa business insights solution pairs with Synamedia Iris. By casting an expert eye across all video services and stitching all the relevant data together,



FAST business models are growing in popularity, and streaming icons such as Netflix and Disney+ have launched ad-based tiers to broaden their revenue streams, with others expected to follow suit.

Daniel Wohlfart
Synamedia

Synamedia Clarissa reveals insights into how viewing behaviour can help identify audience segments that advertisers are interested in.

For example, Clarissa can help you target households that are likely to have kids, even when they aren't watching 'kids' content, and tell you not only what else they watch, but also what device and service they prefer to watch it on.

And if you have additional audience data from third-party sources or panels, Iris can incorporate this information to further enhance your targeting capabilities.

SaaS hits the mark

With a unified targeted advertising solution, the industry can finally combat the erosion of ad revenues to digital platforms and generate new income by offering established and new advertisers an

alternative to the crazy furore of online advertising. And where a targeted advertising solution would previously require years of expensive bespoke development, Synamedia Iris's SaaS model and standard interfaces deliver onboarding in weeks with a fraction of the spend. Video service providers can add capabilities – such as creating ad inventory or managing audience segments, campaigns and measurement – as their needs evolve.

An insight-driven solution means providers can deliver a better, less disruptive experience and monetise addressability on every screen – even those with limited or outmoded resources. And advertisers can run more efficient, successful campaigns, delivering the right ad to the right viewers at the right time. Keeping all customers happy while keeping the balance sheet in good shape: that's the win-win business scenario that will always be in style.

Accedo Social Experiences – Covid and Beyond

Most of us are social creatures and even when apart, we strive to be together. The bond that we create from shared activity, such as watching movies together, runs deeper than one might think. Research published in a [scientific journal](#) which involved chimpanzees watching a video in pairs, showed how they became more sociable with each other after the viewing session ended. This indicates that the bond we form from activities such as watching video content together has deep evolutionary roots.



Manish Nath
Solutions Manager,
Global, Accedo

This desire to connect is at the heart of Social Experiences a.k.a SocialX functionalities. It became an important feature for many video consumers during the covid-19 pandemic, enabling them to watch together when stay-at-home directives forced them to be apart. A [survey](#) carried out last year found that co-watching was more popular with Generation Z than other demographic groups. 41% of respondents aged 16-34 said that they have used a co-viewing app, compared with 23% of those 35-54 and only 3% of those 55+.

Now that life has pretty much returned to normal, does social watching still have an important role to play? If so, how critical will it be for service providers and what type of content will lend itself best to a shared viewing environment?

Meeting consumer demand

Many of the big players were quick to launch some kind of co-watching feature during the pandemic to meet this sudden spike in consumer demand. Fast forward to 2022 and from the continued improvement of the social features available on most OTT services, along with the launch of some new services, it looks like these types of functionalities are here to stay.

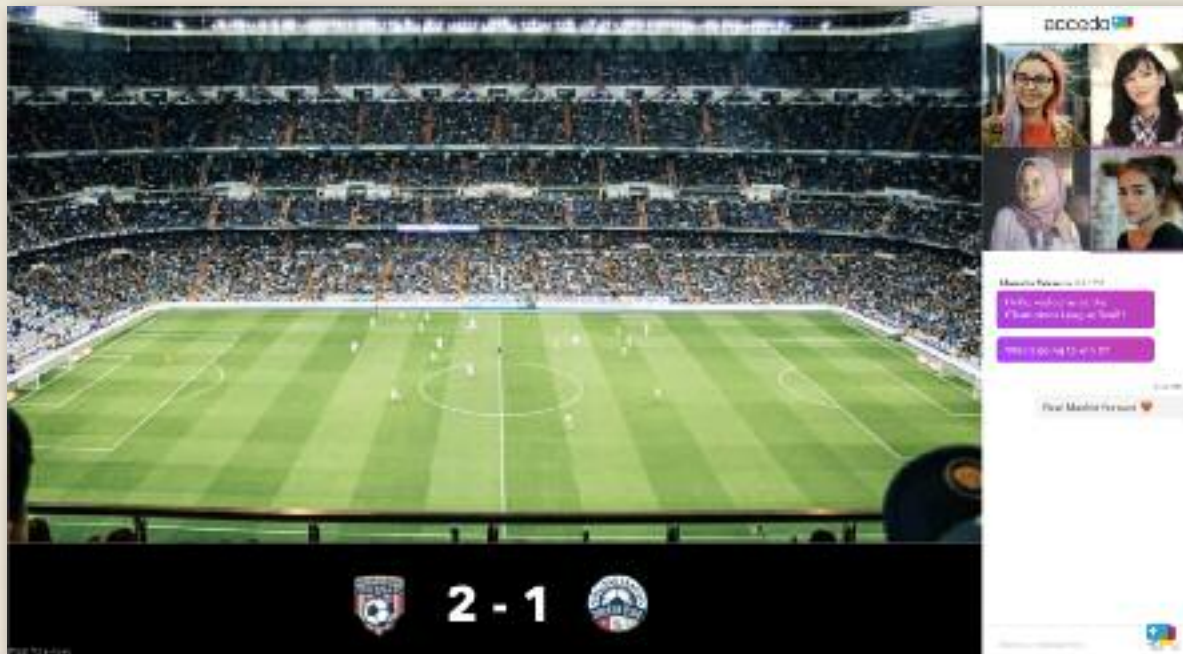
A quick review of co-watching services available at the moment shows that most, if not all, of the mainstream offerings provide some kind of social watching feature. Netflix Teleparty allows consumers to choose a film from Netflix, Disney+, Hulu, HBO Max or Amazon Prime then share the link with friends so that everyone can watch together. Both Amazon Prime Video and Hulu enables customers to watch movies in sync using the services' watch party features. In a similar way, Disney+ users can use the services GroupWatch functionality and other services, such as Scener and twoseven, allow consumers to co-watch content from a range of video providers.



More than just movies and TV

It is not just movies and TV series that people want to watch with others. Live sports content, live events, fitness and even educational streams can all be accessed via different kinds of watch together services.

Sports content in particular seems to have a lot of potential for shared viewing, perhaps because, by its very nature, watching sports is a highly sociable pastime. During the pandemic, many sports events responded to lock down circumstances by introducing social watching experiences as a means of giving fans access to the live sports action that they were still craving. For the first time, fans could enjoy watching live matches from home, at the same time as interacting with friends and family. Although sporting events are once again operating as usual, there appears to still be a demand for these watch together environments. Earlier this year, Disney rolled out its first shared watching experience for live



sports viewers by making Apple's Shareplay co-viewing experience for FaceTime available for its ESPN app users. The feature makes it possible for sports fans to watch live sports together using the ESPN+ streaming service while on a FaceTime call.

Other kinds of live events are also taking advantage of the feature in a bid to increase viewer engagement. For example, NASA had planned to broadcast the postponed Artemis-1 launch on a zoom watch party, with live content and discussions featuring space experts. In a similar way, many fitness brands are using co-viewing features to their advantage, allowing friends to take part in instructor-led virtual classes together. One example is fitness streaming platform Krew that released a social watching feature to its app earlier this year.

Group Video calling lies at the heart of industries like EduTech and Telemedicine. Easily explained, a lecture is recorded in a way where both teachers and students are able to watch the video back from any location in the world, allowing for a level of interactivity and engagement that doesn't easily happen in physical lecture halls. The ability to have remote sessions allows teachers to be able to host classes remotely. This has led to many universities coming up with Hybrid or remote course programs as technology is now bridging the gap between remote and in person classrooms. In fact, a recent report by the [Open University](#) has identified watch parties as being one of the top ten new innovative forms of teaching methods likely to result in major shifts in educational practice. Additionally for telemedicine, it is projected that the North America Telehealth market worth \$9,496.6 million by 2024, at a CAGR of 24.3% from 2018 as per a report by [Meticulous Research](#).

Role in video provision post Covid

As video providers compete for users in an increasingly competitive market, there is a constant need to innovate and improve engagement. Social watching has the potential to unlock new opportunities for engaging viewers but is also a route to unlocking new revenue streams. In the live sports vertical, for example, sponsors and rights owners can create exclusive shared experiences for fans to join where they can engage with teams and players. Similarly, in entertainment, viewers could join watch parties to engage personally with their favorite stars. As we move forward towards a time where extended reality and the metaverse becomes part of our everyday existence, we may well see these social watching experiences take on a much more immersive form than simply watching the events on a screen while talking to friends and family over voice call or messaging.

It would seem that social watching does still have a role to play in the post Covid world although it is not yet a critical 'must have' feature for all streaming services. Social watching does not only meet the deep-rooted human need to engage with others, but it also provides a different way for consumers to interact with content, whether that be for entertainment, work, learning, fitness, or perhaps something entirely different.

Viaccess-Orca

Monetization Strategies for Targeted TV Advertising

As pay-TV operators and service providers look to boost their monetization, targeted TV advertising is gaining significant traction. Even Netflix has surrendered to the trend, joining the rest of the other streaming giants in the AVOD world by launching its own advertising tier.

AI-driven targeted advertising, in particular, is an effective way to improve TV monetization for operators and service providers, while alleviating reliance on legacy, controversial, and third-party data-based targeting techniques. By leveraging an AI/ML-based approach to targeted advertising, and by monitoring the TV user experience, operators can tap into new revenue streams.



Anda Tanchuma
Senior Product
Manager,
Viaccess-Orca

The Case for Targeted TV Advertising

Recent research shows substantial growth in the SVOD market. Global SVOD subscriptions will increase from 1.21 billion in 2021 to reach 1.68 billion by 2027, an impressive growth of 39%. Global revenues, meanwhile, will reach \$132 billion.

While global consumption of SVOD services rises, growth is even higher in the AVOD space. According to Statista, AVOD spending in the U.S. is set to surge in the next few years, and surpass \$24.2 billion by 2025, as new services are launched domestically and internationally. The pivot toward AVOD will have a significant impact around the world, opening up additional monetization avenues for operators and service providers.

Must-Have Targeted TV Advertising Features

Targeted TV advertising provides operators with a foundation for content monetization, but its success relies on attaining valuable, in-depth insights into viewers' behaviors and preferences.

Using AI/ML-based targeted TV advertising techniques, pay-TV operators and service providers can accurately segment audiences based on viewing interests, household composition, life moment events, demographics, and more, to drive higher engagement, increase viewing time, and maximize revenues.

So, what key features should operators look for in a targeted TV advertising solution?

It is imperative that the solution supports all platforms, devices, operating systems, content forms (i.e., VOD,

linear, time-shift TV), viewer touchpoints, delivery methods (i.e., IPTV, OTT, cable, DTH, DVB), and a diverse range of ad types. This will ensure that operators and service providers can reach as many viewers as possible and, in turn, effectively increase their revenues.

Leveraging advanced data analytics is also key to the success of targeted TV advertising (see Fig. 1). By leveraging usage data, operators and service providers can create personalized recommendations to drive higher engagement and increase viewing time. Data analytics facilitates far more opportunities to display ads and a higher revenue potential. In addition, the same usage data can be leveraged to make a unique set of profiles and household segmentations, improving campaign targeting by matching every ad with the desired audience.

Another important aspect of targeted TV advertising is maintaining compliance with regulations and keeping operators' data safe. For instance, in many European countries General Data Protection Regulation (GDPR) must be considered. By putting into place a consent management system operators can ensure that only the users who have given their consent will receive targeted ads. This doesn't mean that other users don't get ads. They will still receive ads aimed at general audiences or contextual targeting ads, targeting the content they are consuming while the ads are being displayed. However, their personal data and viewing habits cannot be used to associate them to viewer segments.

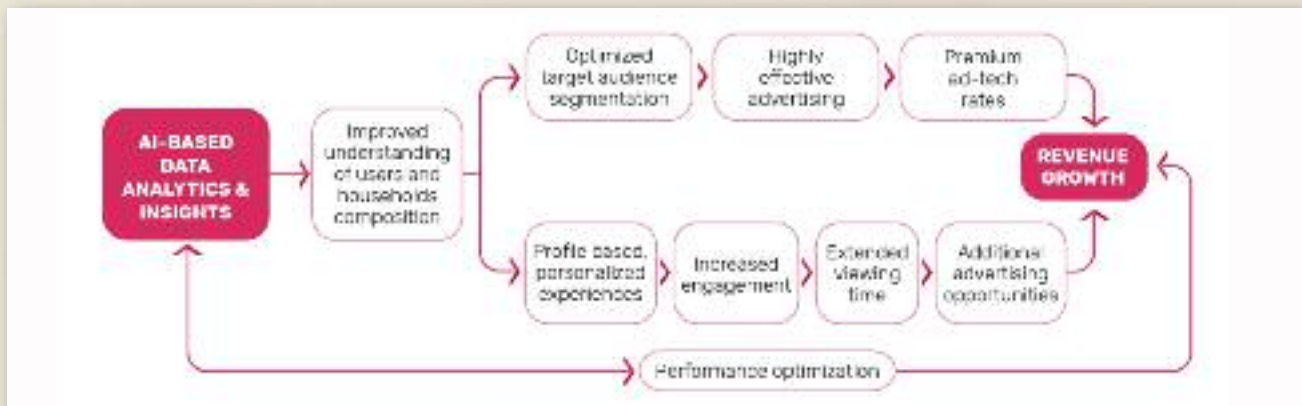


Figure 1: Operators can better understand the composition of households with AI-based data analytics and insights.

When it comes to data privacy, it is vital for operators to keep their data in a walled garden. This will ensure that operators' segments cannot be targeted by third-party vendors. Data is valuable, and only operators should benefit from it.

Implementing AI/ML-Based Targeted TV Advertising

Utilizing AI/ML for audience segmentation is a multi-phased process. Operators can start small and then expand as required. For instance, operators and service providers can begin serving ads based on geolocation. With this approach, AI and ML techniques are utilized to accurately extract data from viewers watching content on the go, sharing credentials, and moving between addresses.

The next step might involve offering usage-based targeted advertising based on viewers' specific viewing history. This approach allows advertisers to either target or exclude certain individuals, based on their prior exposure to a certain campaign.

Eventually, operators can build up to granular segmentation. With this method of targeted TV advertising, operators use ML to establish viewer segments with exceptional granularity. Granular segmentation empowers advertisers to deliver a different targeted ad to a highly relevant audience that has been segmented by viewing history. A simple way for operators and service providers to adopt granular segmentation is through banner ads and animated gifs that are inexpensive to produce but highly effective thanks to the use of AI and ML.

Improving Monetization With User Experience Monitoring

When implementing targeted TV advertising, it is imperative that service providers ensure and maintain an outstanding quality. A poor-quality ad will create viewer dissatisfaction, churn, and a decrease in the ARPU.

However, delivering high-quality targeted TV advertising can be challenging given the complexity of the technical architecture for video streaming. There are many different software and network components involved in video streaming, making it difficult for operators and service providers to understand where quality of experience and quality of service issues are happening.

By monitoring the TV user experience on subscribers' connected devices – including smartphones, tablets, PCs, set-top boxes, and smart TVs – operators and service providers can gain insights into how end users are experiencing playback on their video streaming services, including targeted TV ads. Having real-time access to critical data allows operators to see video streaming issues from the subscribers' perspective and, in turn, make appropriate UX improvements.

Some of the critical data points that need to be collected include video start failure, time taken to start the playback, rebuffering, playback error, stream quality, what version of the application viewers are running, the CDN being used, video resolution, zapping time, network bandwidth compared with player bandwidth, and more. Once the data is collected, comprehension is essential; operators must be able to rapidly interpret data. Moreover, most operators today are delivering video streaming services to a massive volume of viewers and devices, meaning scalability can become an issue as they are accumulating a significant amount of data. However, with a cloud SaaS solution, operators can effectively scale up their service to address surges in demand.

Conclusion

With billions of potential revenues available, now is the time to embrace targeted TV advertising. Leveraging the latest AI-based data analytics and UX monitoring techniques, operators can deliver targeted TV ads that improve viewer engagement, reduce churn, extend subscriber viewing times, and boost monetization.

VisualOn

An Optimized Playback Experience is Crucial to Viewers

"The player is the most important contact point for viewing experience, and is also integral to effective monetization and other commercial factors." – Dr. Yang Cai, CEO VisualOn

The rapid development of streaming services worldwide tends to be dominated by discussions around content. Asking questions such as, who is producing it and how it's being consumed. But in the understandable excitement around these new platforms and services, it's clear that some key technical issues have been overlooked – none more so than the role of video players.

The current generation of streaming services is often being undermined by poorly performing video players. But luckily, more and more streaming service providers are realizing the importance of optimizing the performance and capabilities of the video player. "There has been a tendency towards de-valuing the role of the video player with commoditized options and vendors that throw in players as a value-add," says Cai. "This short-sighted perspective on the impact of the player can have a negative impact on the cross-platform functionality and viewing experience for advanced and growing services."

As streaming has developed, so has the company's portfolio of solutions geared towards optimizing the impact of the video player across all devices. Cai notes: "The most immediate and tangible way for a service to make an impression on subscribers is through the playback experience. Instead of being an afterthought, the playback experience must be optimally designed to match the goals for consumer usage. So what we have focused on doing is creating an unparalleled portfolio of playback solutions able to play any content reliably on any device."

Support New Ways to Engage with Video Content

MultiStream Sync, with features to allow viewers to select multiple camera angles, has been quickly deployed in the past three years. It has been devised to optimize the experience regardless of device or platform: as well as adjusting to various conditions – including network speed or device capability – to deliver low latency streams, it provides frame-accurate video and audio synchronization across devices. The solution provides a revolutionized viewer experience and helps clearly articulate the value of premium services.

To date, the enhanced volumetric video solution applies multistream to three-dimensional space. The solution enables viewers to switch between camera angles while the video is playing with no delay and buffering. It brings a new level of interactivity to the viewer, meaning viewers can decide when and what to watch, and it is evident that this has great potential to increase engagement among users.

More streaming solutions are designed to change the way viewers engage with video content. And co-watching is one of them. It allows viewers to enjoy real-time text, audio and video chat while watching live and VoD with friends and family. Although the pandemic accelerated the use of co-watching applications due to restrictions on gatherings, co-watching will remain a part of viewing behavior after the pandemic.

Cai suggests that co-watching will become even more mainstream as the number of innovative use-cases for the technology continues to proliferate. He gives several examples: "The technology could be used for sports or esports events, musical, or cultural events. You could watch a movie with the director, and while you're watching they can make comments and tell stories about shooting the movie."

Bandwidth Saving While Maintaining the Video Quality

5G will ultimately have a transformative effect on the quality and capability of video services, which means increased bandwidth and very low latency, and that means operators have the opportunity to support ultra-high resolutions, high frame-rates, immersiveness and interactivity.



Improving the quality of the viewing experience (QoE) is very important for operators, such as OTT video service providers. QoE is related to the quality of the video and smooth playback. While the video quality is increasing with the adoption of high-resolution videos such as high definition (HD) and ultra-high definition/4K, the volume of video data is also growing, and the cost of bandwidth and CDN transfers associated with video consumption is increasing every year.

However, the headwinds are making it difficult to grow in 2023 and operators are looking for ways to save streaming costs. Thus, for video delivery service providers, reducing the cost of bandwidth and CDN transfer, while maintaining or improving the quality of the viewing

experience is a critical issue that must be addressed in order to maximize profits.

Nowadays, Artificial Intelligence (AI) and Machine Learning (ML) are increasingly being applied to perfect the streaming service and increase the delivery efficiency. Video compression software leverages AI and ML to automate video compression. An ML-based algorithm that efficiently, automatically and optimally configures the encoder to achieve best results based on the input contents.

Deploying and maintaining high-quality video services can be frustrating and cumbersome. It requires significant testing and troubleshooting to discover what is

causing playback issues before you can even start to debug and qualify devices and streams. ML-powered automation tools can be used to pinpoint the exact moment when an issue occurs, and flag potential problems before they happen. It analyzes where rebuffering, frame drops or other errors occurred and marks those events for analysis and testing.

We are still at the early stage applying AI and ML to video streaming, especially live video streaming. Classifying, recognizing objects, and recognizing faces are tasks that AI and ML should manage in the future, which can help solve problems, from protecting privacy to improving the quality of user experience.



VisualOn WatchParty empowers viewers to interact in real-time with celebs, musicians, commentators, etc.

Broadpeak Monetizing OTT Services Through Targeted Advertising in ABR Streaming

Video streaming is growing at a rapid pace, gaining more and more viewers from legacy broadcast. To keep up with their growing investment in content, video service providers need to find effective methods to boost content monetization, and targeted advertising is one way to do that. Enabled by ABR streaming, targeted advertising allows service providers to seamlessly deliver video ads into streamed content to create additional revenues.



Ivan Dulguerian
*Business Development
Director, Broadpeak*

Targeted advertising makes ads more relevant for viewers, which helps increase viewer engagement and raises the value of ads placed by the video service providers. What's more, targeted ads enable advertisers to reach audiences more effectively and improve their return on investment.

This article discusses the evolution of video advertising, the relationship between targeted advertising and ABR streaming, and the different methods for delivering targeted ads. To conclude, the article highlights how video service providers can manage scalability issues that go hand-in-hand with large audiences.

The Evolution of Video Advertising and Different Targeted Ad Delivery Methods

Video advertising has changed significantly over the past few years: starting with a growing number of devices used to consume content and display ads, the rise of adaptive bit rate (ABR) formats, and an increase in VOD and nonlinear TV consumption. As advertising shifts toward streaming and away from broadcast, video service providers are rethinking their content distribution and ad insertion strategies. Increasingly, they are embracing streaming and targeted advertising.

Targeted advertising and ABR streaming technology are complementary to one another. While broadcast distribution sends one video or ad to all viewers, video streaming delivers a specific stream to each individual viewer using unicast technology (i.e., 1,000 streams for 1,000 viewers). Targeted advertising follows a similar approach, delivering a personalized ad to each viewer or group of viewers based on their individual viewing habits, tastes, and more.

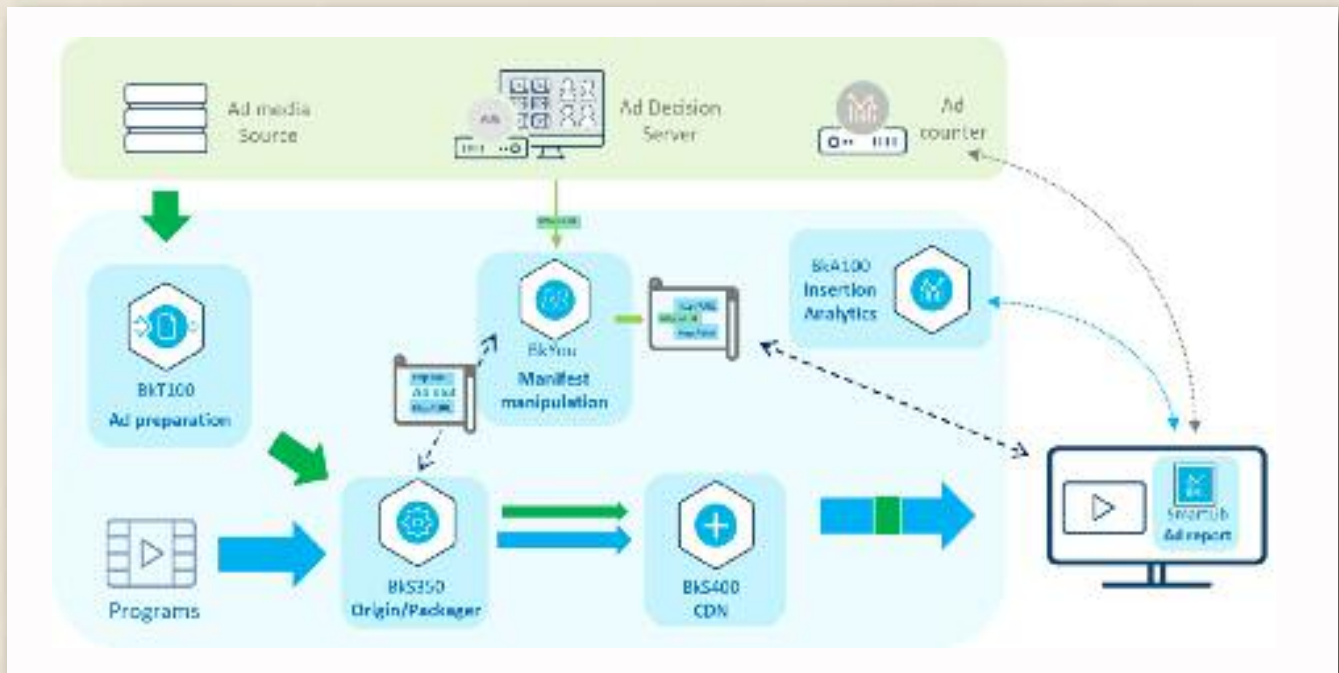
There are two main delivery methods for targeted advertising. Client-side ad insertion (CSAI) is the traditional technique, where ad insertion is managed on the player side. However, CSAI can cause rebuffering between the ad and the content, which can negatively impact the user experience. In addition, since the ad can be identified, it also runs the risk of being blocked by an ad blocker.

The newer and more popular approach to targeted ad delivery is server-side ad insertion (SSAI). With this approach, ad insertion is more efficient since the ad is directly stitched into the viewing session from the server side. With SSAI, buffering is unlikely and ad blocking becomes impossible. SSAI is skyrocketing in use because of the smoother overall viewing experience it provides. With SSAI, video service providers can use a single advertising system to address all playback devices. By adopting a SSAI solution that's cloud-based, video service providers can deliver addressable TV at scale, which is especially critical for live events.

Addressing Scalability Issues

Scalability remains a major challenge in the video streaming environment, not only for the video content but also for the targeted ads. Scalability issues can be caused by a number of potential choke points in the video delivery chain. Often, these problems happen at the point of distribution when the demand exceeds the CDN or the network capacity.

So, how can video service providers resolve scalability issues? When scalability issues are related to distribution, multicast ABR technology offers an effective solution. Multicast ABR enables the delivery of one stream over the network to address millions of viewers compared with one



Functional blocks for a SSAI solution

stream per viewer in a traditional ABR delivery scenario. With this technology, video service providers can address all of the connected devices in the home and reach a massive audience without continuously increasing their CDN costs.

Multicast ABR requires a managed network, and this is where video service providers can work closely with internet service providers (ISPs) to deliver their content using multicast ABR infrastructure inside of the ISP networks. Global CDNs alone cannot deal with the challenge that larger audiences pose in streaming, and ISPs are an essential link in the distribution of video content. This approach allows video service providers to leverage the ISPs' networks, decreasing the need for new infrastructure and moving delivery closer to end users, which improves QoE.

Collaboration between ISPs and video service providers benefits all parties. By collaborating with ISPs, video service providers can tackle scalability issues – ensuring outstanding quality for targeted ads and increasing monetization by selling ads at a higher price. Advertisers can reach the audience they want, and ISPs are empowered to monetize their network and infrastructure.

The French video market is an excellent example of collaboration between video service providers and ISPs. In France, all of the main TV channels have joined forces to implement a fully addressable TV solution on the ISP's set-top boxes. Today, there are around 7 million set-top

boxes that support targeted advertising in the country, and the number of targeted ad impressions delivered on linear channels via ISP set-top boxes is expected to grow to more than 600 million in 2022, according to AF2M.

Conclusion

As video streaming becomes more and more mainstream, targeted advertising represents an outstanding opportunity for video service providers to boost content monetization. According to eMarketer, spending on streaming services and smart TV advertising in the U.S. grew by 40.6% from 2019 to 2020, surpassing \$9 billion. This figure is expected to more than double by 2025.

Yet, to successfully deliver targeted ads, video service providers need a solution that is simple to use, supports a range of devices, prevents the use of ad blockers, and ensures a smooth streaming experience for viewers. Targeted advertising and multicast ABR are two evolutions changing the media industry. When combined, they will enable SSAI to be used to address large audiences and become the de-facto advertising solution.

In the end, service providers must overcome scalability issues that are prevalent during peak viewing. Broadpeak is leading the charge for targeted advertising innovation with its cloud-based SSAI solution, multicast ABR technology, and expertise in helping foster partnerships between video service providers and ISPs – enabling true monetization for video streaming.

New Regions = New Revenue for Sports

Some sports are undoubtedly global leaders, with an audience to match. Then there are others, which enjoy immense popularity in certain markets but are less well known elsewhere. Ice Hockey, for instance, is a national obsession in Canada but is still relatively niche in the UK. Rugby has an estimated global following of 475 million people, but its popularity tends to be concentrated in specific regions. When it comes to building up a dedicated audience in new markets, there are several challenges that need to be overcome.



Chris Clarke
CEO, Cerberus Tech



Popularity with viewers is often tied to circumstances beyond the individual dynamics of the game. It can be impacted by both cultural and historical factors, as well as the level of investment in youth teams, and the ongoing commitment from broadcasters in that market. Often clubs and federations have a hard time securing buy-in from broadcasters, so a 'chicken and egg' scenario ensues. How can you prove the potential of a sport if you can't reach your audience in the first place?

Until recently, broadcasters had their hands tied by the prohibitive cost of experimenting with sports that were less familiar locally. The financial resources required for traditional delivery methods meant only offering content which had been historically popular in that region. But without experimentation and fresh formats, live sport is at risk of falling into a stagnating business model. A recent [Altman Solon](#) study found that "UK sports fans are watching more sports since the pandemic" but highlighted an increase in demand for women's sport, and that audiences are opting for highlights over full

matches. To stay ahead, broadcasters need to match their strategies to content consumption preferences and engage a sports fanbase that is constantly evolving.

Optimising Contribution and Distribution

Historically, broadcasting live sports events has been extremely costly, particularly if distributing feeds to multiple regions. It is generally straightforward for takers in the same region to pick-up feeds, but when distributing further afield, additional costs can make exploring new markets prohibitive. If satellite is the only method of delivery, it limits the content owner's ability to expand and the broadcaster's ability to experiment.

Traditional transport of live sports requires significant physical resources and infrastructure. Tower access, satellite uplinks and downlinks, or fibre circuit charges all fall under a downstream cost profile that negatively impacts the taker. In some instances, this can overtake the cost of securing the broadcast rights in the first place. Generally, only tier-one sports offer the



guaranteed ROI for expansion into a new market, and it has been difficult for lower tier or niche sports to deliver to new audiences and increase revenue. Of course this varies by region: what is tier one content in one territory, won't necessarily be considered high-value in another.

However, in recent years, technological developments in sports content delivery have made it easier for rights owners to reach takers in new markets. Using broadcast-grade IP tools for content delivery combines the protection of encoded feeds with the flexibility of the cloud. Broadcast IP can adapt to a variety of use cases, from an extremely cost-effective back-up feed, to improving the ability to localise content with multiple feeds tailored to a specific market. This helps takers move beyond a generic world feed, towards a content delivery model that adapts and scales to the needs of the audience within their region. It also brings with it the ability to make changes at the eleventh hour without incurring huge costs. This, alongside the option to respond quickly to unforeseen circumstances such as unexpected last-minute rights acquisitions, makes for a strong business case.

Freedom to diversify and expand

The fact that transporting content to regions where a sport has a relatively small following is cost prohibitive, makes it really difficult to reach new

audiences – hence, the chicken and egg scenario. Equally, delivering any content that is supplementary to the main sporting fixture is also not worthwhile, because the relatively low value of the content does not justify the associated high transport costs. This means that audiences who prefer more short form content are not being catered for, so they are not engaging when perhaps they would otherwise. If distribution costs are a barrier to growing the popularity of smaller and more niche sports and expanding popular sports in new regions, it makes sense to complement traditional distribution with additional lower-cost methods.

If it is possible to reduce the costs associated with content distribution, then many more opportunities arise for diversifying sport. This applies to the types of sports being covered around the globe and also to the type of content being distributed. Reducing the cost of transporting content makes it possible to package up and deliver supplementary content, such as content captured before, after and around the main event. Having additional content that can be broadcast in different formats, such as in bite size chunks, as opposed to long-form, can also help appeal to a wider audience.

Content owners need to have both the flexibility and freedom to choose the most appropriate distribution method for a particular set of

circumstances. In a situation where popular sports are picked up by multiple takers in the same region, then it makes sense to use satellite. However, to deliver that same content to a region where that sport has yet to grow a solid following, it makes sense to use broadcast-grade IP. Supplementary content around the main event can then also be delivered in both cases using broadcast-grade IP. This would enable takers in the two regions to distribute the content that they think would appeal most to local audiences.

Adding broadcast-grade IP workflows complements satellite and creates opportunities for distributing more varied content to a wider audience. Having this added flexibility also gives content owners the

chance to adapt quickly, as business needs require. A wider variety of professional sports are broadcast today, but there is still more to do. As the types of sports that people are engaging with continue to grow and diversify, content owners and broadcasters need to ensure they are delivering the content that piques their interest. This enables rights holders to increase the exposure and visibility of sports, which in turn improves engagement with global audiences.

The future of sport is diverse, global, and focused on revenue growth. Cloud-based delivery will help facilitate a new sports renaissance, meaning more content variety can be distributed without compromise.



Ad Insertion Platform Loosening the Ad Tech Bottleneck

The two basic premises of broadcasting haven't changed for the last 100 years or so. One, give viewers compelling programming and they'll watch. Two, effective monetisation is critical for supporting all that programming.

However, the methods for creating, distributing, and consuming all that content have undergone a dramatic transformation, especially in the past few years. Yes, viewers can still see content on a traditional tuner-based television set, but that's now only one viewing option and quickly becoming the minority when we see that for some TV set manufacturers, roughly half of their buyers are now consuming content only using online applications.

Streaming services and over-the-top (OTT) platforms have emerged far beyond being niche technologies to become mainstream content superpowers. Connected TV (CTV), which enables video content to be delivered and viewed through internet connectivity, is booming. New streaming content delivery models like Free Ad-Supported TV (FAST) channels or Advertising Video on Demand (AVOD) have emerged in the last year to become prevalent in the U.S. market. They are also popping up rapidly in other territories, combining a more and more quality content experience without the need for a subscription and supported by scheduled ad breaks inserted for live programming or Per/Mid/Post roll for VOD.

The good news is this plethora of streaming content options has given consumers more choices for viewing. It's also opened up new monetisation opportunities, enabling broadcasters and content owners to provide personalised and targeted advertising experiences to their audiences rather than using Gross

Rating Point (GRP), the standard measure of media delivery in advertising.

Server-side Ad Insertion is critical for keeping audiences engaged and advertisers happy, but it requires a delicate – and evolving – technology balance

There are two primary options for monetising the content experience. One is to make the viewer pay directly for the content, the second is to sell advertising to propose the content "for free" to viewers. Interestingly, some broadcasters or OTT providers use models that combine both these options like the new entry level Netflix or Disney+ offer.

But we noticed that the OTT world has taken a renewed interest in the free ad supported model perhaps due to a "subscription fatigue" from users at the same time as streaming services costs are increasing.

The challenge is that not all these delivery and advertising technologies are evolving at the same pace.

Monetisation was historically managed by Client-Side Ad Insertion but is now often managed by Server-side Ad Insertion (SSAI) for video which enables the seamless delivery of video ads into content streamed on internet-enabled devices and a much better viewer experience avoiding buffering.

Despite this technology becoming more powerful and flexible, there is an immediate need for more advanced SSAI features beyond the simple and accurate insertion of ads. The growing complexity of content providers delivery strategy, OTT platforms requirements and contractual agreements, advertising countries regulations, and privacy laws are highlighting a need to have enhanced Dynamic Ad Insertion (DAI) solutions able to manage insertion workflows and rules and not just a "simple" manifest manipulating technical component.

But there are some roadblocks including lack of diverse feature sets and platform visibility.



New Ad Tech Solutions for a New Market

With the rapid growth of FAST channels and delivery of OTT services for CTV, SSAI customers need advanced digital ad tech solutions customizable to their individual workflows to move to an enhanced DAI world fitting their needs. An example is volume split, where you want to split the inventory in percentages with each split following their own workflow (like a volume split between the TV set manufacturer and the publisher inventory). This can be advantageous to have it in your SSAI solution. It is certainly strategic to maintain a separation between your video delivery process and your ad tech stack but also to keep additional data on what is happening on the delivery platform.

Another example is device split, where you want to define which ad, promo or content will be inserted for mobile devices and which will be inserted for CTV users for example. These functionalities are sometimes provided by the ad server or header-bidding solution, but these are additional services incurring incremental costs, the implementation can be complex and very few options exist on the market. Customers benefit by separating video delivery from their ad stack while still being able to manage their providers separately without being forced to change video delivery components each

time they want to change their header-bidding or ad server solution or do A/B testing to compare solutions or even work with multiple of them at the same time depending of countries / OTT Platforms or their own rules.

Blackbox versus Transparency

One downside of the Adtech world is the common tendency to create wall gardens when the right course is to follow the path of Open Internet. Many advertisers want transparency to understand where their ads are played and from which path. But this transparency must also work the other way for publishers to better understand why sometimes high-quality content, fully compliant with privacy laws and providing a brand with safe ad inventories, is not targeted by the programmatic stack or monetisation partners.

Having an independent provider at the SSAI level in the video delivery chain will enable data collection that gives visibility into video delivery, deeper audience information and transparency about fill rates, ad performance, and missed opportunities from all partners.

SSAI at a Crossroads

Server-Side Ad Insertion is at the crossroads of the video and the ad-serving industries. Most existing SSAI products and solutions are mainly only manifest manipulators.

The role of the manifest manipulator is to retrieve the manifest from the original stream, obtain a list of video or ads from the ad pod, mainly created by a call from an ad server to insert when detecting a specific marker, stitch them in the manifest of the stream, user by user to provide targeted stream to each of them by returning this updated manifest to the video player.

The additional features that some SSAI solutions are providing are adding bumpers or a simple fill slate at the beginning or at the end of the ad break.

Another valuable features supporting ad break scheduling is pre-fetching, which allows SSAI systems to "look ahead" to an upcoming ad break. Even if the exact start time and duration of the break is dependent on in-play decisions, a theoretical target break length can still be determined in advance with sufficient time allowed for calls to be made to the ad servers especially when using programmatic or open programmatic.

If needed, the SSAI platform can then dynamically adjust the break length based on the real duration retrieved from the original manifest when appearing, delivering a correct, personalized, and true "TV experience" while maximising the monetisation opportunity.

Go Beyond Manifest Manipulation with SSAI Ad Break Management

In the television and streaming ecosystem, ad breaks or ad pods are tightly controlled when it comes to scheduling or exact durations. When you're calling your ad server to fill a specific ad pod duration, if you request 120 seconds of ads, you don't always get the entire duration filled with ads. Sometimes you get only one or two ads. Most of the current SSAI platforms use a simple slate to fill this gap, hardly the greatest user experience. This solution wasn't of course accepted in traditional TV where there is no way to have a static slate shown for up to three minutes on a live TV channel. It is from our point of view the same for OTT as we distribute potentially on Connected TV where the same level of quality and viewer experience is expected from viewers and publishers

Instead, you can highly enhance the quality of your service to viewers by managing these potential gaps with a dynamic content and promotion management solution. Now, you can automatically select different promotions or auto-promotion of your service or even content for a specific period of time, depending on the delivery platform or device. For example, go even deeper with rules by deciding to use the longer one to avoid chaining 15 promotions of five seconds each in length in succession.

Scaling

There is a direct link between ad revenues and the ability of the SSAI and the ad break management to scale. High-volume, event-based live content like sports generates a high volume of concurrent streams to manage. There is usually a very high ramp-up rate on a service as viewers frequently join a stream at the last minute before it starts.

The manifest manipulation must be able to manage these two constraints, but also the ad break component. Most users will join a streaming event before it starts but during an ad break, creating a great opportunity to generate ad revenues.

Multiple Streaming Formats

While many configurations are currently compatible with standardized protocols like HLS or MPEG Dash, some SSAI providers cannot manage specific configurations like mono period as an entry on MPEG-DASH. This means sometimes having to re-adapt or even replace your packaging solution. There are also many encoders/packagegers on the market so it's important to check that your SSAI solution can handle multiple streams in varying formats.

Simplifying the SSAI Complexity

An effective new-generation SSAI platform bridges traditional linear video delivery infrastructures with the digital ad tech world. But the solution must manage huge volumes in parallel, understanding the ecosystem and the different bricks in the complete chain.

It may seem attractive to put all your eggs in one long-term basket, especially as ad technology keeps evolving. But it makes more sense to opt for an agnostic, independent, dedicated vendor for SSAI acting as an abstraction layer to manage the entire ad insertion process, hide its complexity to clients but also provide a real web user interface that is not merely a technical component for developers using API.

Creating a layer of abstraction between your video delivery environment (transcoding, packaging, DRM, CDN, video players) and your ad tech environment with an easy

visual interface that ad ops and technical teams can use gives your company flexibility and nimbleness while signaling your willingness to work with everyone.

Publishers today need a scalable platform that not only interacts and manages the increasingly complex ad insertion process but also provides a tool that makes the insertion workflow management easiest even for complex environments and requirements. Simply, the complexity for user must be the goal of a new-gen SSAI platform.

New-gen SSAI solutions also need to view and extract data on everything that is happening on the video delivery process and on the Adtech components. Finally, the new-gen SSAI must also provide monitoring features to be integrated in an overall technical supervision ecosystem.

New technologies are reaching the market to help streaming services overcome the current challenges of ad-blocking, latency, transparency, multi-platforms distributions, and device fragmentation. The right solution, such as Ad Insertion Platform's Server-Side Ad Insertion technology and its Ad Break Composer can enable streaming platforms to explore new revenue streams by maximising their premium OTT ad inventory value but also by viewing and deeply understanding how their OTT platform is performing.

The ultimate benefit for broadcasters, publishers, rightsholders and content-owners is a comprehensive, transparent, monetisation solution seamlessly delivering ad-supported video content to multiple platforms – while enhancing, not detracting from, the viewer experience.

Spicy Mango

24 Hour Party People

John Griffiths explains why revenue generation for OTT services all hinges on the experience. So how do you make sure people keep coming to the party?

Jeff Bezos once compared Amazon's approach to customer experience to hosting a party 24/7. "We see our customers as invited guests to a party, and we are the hosts. It's our job, every day, to make every important aspect of the customer experience a little bit better." Bezos' comments came way back in 2004. But they could just as easily be describing the challenges facing broadcast media today as brands look for growth in the OTT market.

Confused? Let's explore the metaphor further.

Imagine you're throwing an exclusive party; it's ticket-only and premium-priced. You've spent big on an awesome venue and a world-famous DJ to bring in the crowds. And you've doubled down with a free bar and a legendary mixologist to tantalise tastebuds. All the ingredients are in place: it's going to be a humdinger. But, as the masses arrive, you suddenly realise your ticketing system has misfired, front of house is overwhelmed, and long queues of disgruntled punters are sprawling round the block. Guests slowly trickle through, but – just as the party gets going – the power fails, the lights go out and the dance floor empties. The crowd wants its money back.

This nightmare scenario is a relatable parallel for OTT brands as they battle to build audiences and bolster revenues. The message is clear: you can bet the farm on big names and great programming, but if you don't take care of what goes on in the background, your party will fall flat. It doesn't matter how good your content is or how well you price it, if the user experience doesn't stack up, your brand will end up feeling like the spotty adolescent at the school disco that nobody wants to dance with.

The party theme is a useful jumping-off point for discussion of the biggest challenge facing streaming businesses: revenue generation. However, the metaphor isn't perfect. Whilst most shindigs are constrained by

fixed timelines and venue capacity, OTT is the party where everyone's invited and guests can turn up whenever they like; all day, any day. There are obvious exceptions – like live pay-per-view sports and special events – but, generally speaking, OTT is a 24/7 party, 365 days of the year. The music never stops.

Talking 'bout my generation

Revenue generation is a hot topic for broadcast media as the OTT market continues to expand. It's front of mind for established players looking for new ways to stimulate growth. And it's top priority for new entrants who are late to the party and three drinks behind. Everyone, it seems, is talking about revenue generation.

There are three fundamentals to optimizing revenues. The first is obvious: content is King. Cliché or otherwise, the importance of great content is unarguable. If you haven't got content that people want to watch, you might as well go home. The second fundamental, intrinsically linked to the allure of your content, is an audience. A sustainable audience is the foundation of your business model, whether that's through paid subscriptions, advertising or sponsorship. Again, if you haven't got an audience that's either willing to pay you money or an attractive demographic for advertisers, you haven't got a business.

The final component – often overlooked – is the user



experience (UX). In my opinion, UX is the key to revenue generation. Modern audiences, increasingly spoilt for choice for streaming services, are quick to unsubscribe if an experience doesn't meet their high expectations. UX encompasses everything from the user interface and ease of use to how quickly a viewer can get from sign-in to streaming. Every element of friction that obstructs that process threatens your ability to generate revenues.

There are, of course, exceptions. If the content you're offering is exclusive and valued – live sport being a good example – viewers will likely tolerate a degree of poor experience. However, if it's available elsewhere, they absolutely won't. And even if they do, their patience won't last long.

UX is the glue that binds your content with your audience, the music that keeps the dancefloor crowded. It's fundamental to revenue generation.

Churn baby churn (disco inferno)

Some organisations make the mistake of defining 'revenue-boosting activity' as the development of new features. It's much bigger than that. Ultimately, everything about your OTT service is linked to revenue; whether it's on-screen or behind the scenes, every tiny detail should be generating revenues or driving cost savings, with the sole objective of reducing

churn. However, if a glitch in your infrastructure damages the experience, it will cost you subscribers and nullify revenue gains. Ultimately, nothing burns profits more than poor UX.

So how do you ensure that your OTT service is the 24/7 party that never skips a beat? The answer primarily lies in optimizing a goldmine of data that's too often squandered.

OTT services generate a colossal amount of data from multiple sources across the supply chain. That data spans everything from video performance to ad serving technology and everything in between. It's complex – but understanding it is key to delivering a quality experience. Therein lies the problem. In the transition to OTT services, broadcast media has struggled to make the most of its data assets.

Perhaps the biggest challenge is data aggregation and visualisation. Many businesses are obsessed with capturing data but are unable to leverage it to improve the experience. Building big data sets is all very well, but if you can't understand what that data is telling you – or identify the actionable insights that could fine-tune your UX – you're missing a trick.

Data can give you an accurate picture of the factors driving customer churn. Moreover, it can give you the evidence you need to build a business case to invest in new features, new

functionality or new markets. These opportunities can help you generate new revenues to invest in quality content, which in turn will have a domino-effect on growth. However, success hinges on deep understanding of how diverse data interact. That requires a holistic approach.

Many businesses still work in functional silos and struggle to connect the dots. For example, it's not uncommon to see product managers whose sole concern is how their product is performing, while marketers in the same organisation are only interested in measuring conversions – they don't care about churn further down the line due to poor UX. But these two activities don't exist in isolation; if you're converting 1000 people a month but losing 500 due to suboptimal experience, half those conversions are wasted. You need to connect the dots to understand what's causing the churn. Getting there requires developing a 360° picture that gives management – at a strategic level – a clear view of all the working parts. That's not just about capturing data, it's about aggregating it, interpreting it, visualizing it and acting upon it.

It isn't easy. When a user logs into a service to search for content, their journey passes through countless split-second checkpoints – sign-in, catalogue systems, entitlements, subscriptions, etc. At the same time, the content delivery network is pulsing data. One seemingly simple request to browse content and press play generates hundreds of interactions, all data points that contain vital information. The question for the brand is always: is that user experience smooth? Can we reduce the number of clicks and make it a more efficient process? Or can we eliminate some friction that's delaying the journey? To answer those questions requires aggregating data across tens of thousands of users and looking for trends that tell you the story.

Help!

Such is the complexity of data aggregation that it's unlikely you can do it on your own. An external partner is often a useful addition to the team, bringing domain expertise, independence and perspective to the table. A good partner will establish your most salient KPIs and develop a process to map them across multiple data sources. They will customize systems that collect diverse datasets – such as log files from niche services or quality of service data from larger platforms – and be able to aggregate and visualize it to show you the end-to-end picture. And they'll use that visibility as the foundation for Quality of Experience audits that help you diagnose problems and engineer solutions.

Fundamentally, it's only by having a holistic view of your entire business that you'll be able to spot opportunities for revenue generation. Getting there is all about making the most of your data and empowering teams to make evidence-based decisions. If you can do that – through purposeful data aggregation and meaningful visualization – you'll be well on your way to optimizing UX and maximizing revenues.


Then it really will be time to party.

About Spicy Mango

Spicy Mango is an expert media technology consulting and software delivery organisation. The company has been building service provider grade video platforms, media technology solutions, and delivering high quality consulting services since 2015. Our customers include RTL, NBC Universal, Discovery, Two Circles, Eurosport and Vodafone.

To find out more:

www.spicymango.co.uk



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John Griffiths
Spicy Mango

Revenue Generation

The OTT market is changing to put local content providers in the driving seat

Previously, specialist, regional and niche content providers had very few options when it came to monetizing their content. Try and deliver it themselves, and the results would often mean spiraling costs and limited functionality for their audience. Buddy up with a big player who'll do the heavy lifting, but realize there is a limit to the rewards they would reap.



Romain Rossi
Senior Vice President
Commercial, Video
Experience at Deltatre

But, with the advent of quick-to-launch, cost-effective, end-to-end over-the-top (OTT) platforms, the game has changed. These platforms put content providers and rights holders in the driving seat, able to access data and use it to improve services – without spending a fortune. Most importantly, they're able to unlock a host of monetization opportunities.

OTT streaming has exploded in recent years. In 2020, the total market was valued at \$38.7bn, with projections to reach a staggering \$139bn by 2028*. This rapid growth has been driven by several factors, not least including COVID, the acceleration of cord-cutting, growing smart device penetration, and continued investment in 5G. One thing that can't be ignored is the introduction of new OTT products that make investing in and launching a streaming platform far more accessible than ever before.

Success is no longer tied up with the big players – niche or localized services that cater to a particular audience demographic are becoming prolific, as these players bypass the traditional cable and satellite model and take the direct-to-consumer (D2C) route.

Niche OTT players have much smaller budgets than the likes of international leagues and federations. However, evolutions in OTT technology mean the opportunities for local content providers and niche rights holders to monetize their content are greater than ever before.

It's got to be D2C

It might be more of a long-term bet, but the road to financial independence for many niche content providers lies in D2C content.

While a big payday from a streaming giant might tempt many local or niche content providers, it's important to acknowledge that rights owners don't need to rely on big tech to move into the OTT space. D2C platforms offer leagues and federations a big opportunity to monetize their own content.

Live footage is a given, but where D2C really comes into its own is the ability to fill the gaps around live matches with original, engaging, and exclusive footage. More than a third** of global sports fans watch non-live content, and programming in the way of player interviews, docuseries, and webinars is the perfect way to give it to them.

Furthermore, selling rights to the likes of Amazon, Apple or tomorrow, Netflix, means giving up some ability to better understand users and maintain an active dialogue with them. As well as the monetization aspect of a D2C platform, the data and insights that can be gained from a content provider's own customers are second to none when it comes to evolving and improving their offering.



Technology is leveling the playing field in OTT

Traditionally, end-to-end streaming platforms can take a significant period to launch from start to finish – from 6 to 18 months – and their high price tag can mean that niche OTT players are priced out of the D2C game.

Thankfully for content providers, the tide is beginning to turn. The OTT boom in recent years has seen the advent of several solutions that remove many of the hurdles that have been in place for new players.

Solutions like Deltatre's new out-of-the-box OTT platform mean that niche OTT players can launch in a matter of weeks as opposed to months. Deltatre's product has a launch time of just 90 days. And, although the customization element in these new technologies isn't as extensive as a full end-to-end build, they still allow rights holders and content providers to build first-class streaming platforms to monetize their own content.

The out-of-the-box nature of these solutions (which gives much better value for niche OTT platforms) enables experimentation with different types of content that previously would have required significant investment. Where there is content, there is opportunity, and these advances in technology are breaking down the barriers for entry into the OTT market.

There is a large market of specialist, regional, and niche content players that technology vendors have traditionally underserved, and now is the perfect time to utilize new technology to deliver first-class streaming services, drive revenue, and accelerate growth.



* www.fortunebusinessinsights.com/industry-reports/over-the-top-services-market-100506

** www.sportico.com/business/commerce/2022/fan-demand-drives-the-change-in-sports-media-consumption-1234669318/



Dejero

The changing face of Business Resilience



Cameron Smith
CTO, Dejero

It's almost a cliché to talk about how the last few years have changed live broadcasting. Broadcasters kept going even though events were canceled, and companies like Dejero kept them on air producing great content. The need to shift working practices to distributed models where people could work from home came almost overnight.



Kevin Fernandes
CRO, Dejero

We heard from many of our customers that they already had the capacity to handle remote workflows and connectivity with their existing Dejero solutions, but hadn't had a reason to harness its full power until the pandemic.

From an overall business resilience perspective, we found these new ways of working provided new challenges and created a level of vigilance that we have never seen before. Resilience has always been a primary focus for broadcasters who demanded increasingly robust forms of business continuity to ensure they stay on air – or risk the loss of advertisers, audiences and, ultimately, revenue.

We can categorize these challenges into three main areas:

- 1. Digital Transformation:** there has been a huge shift in broadcasters and media companies looking to leverage cloud and IP connectivity to reduce costs and reliance on on-prem hardware.
When planning for disaster recovery and/or

business continuity, it's important to ensure the platform or combination of platforms allows for flexibility. Having multiple forms of connectivity available, at a time when it's needed most, gives the flexibility to carry on business as usual from any location and best possible chance to stay on-air.

- 2. Efficiency and the desire to do more for less:** how to recreate the same levels of reliability and continuity that we previously took for granted, with less budget. This has its own challenges, especially when you factor in the decentralization of content, where marketing dollars are spread over a larger base.
- 3. Distributed Production:** remote production and remote working stretches business resilience, regardless of the content being produced. It is no longer reasonable to assume people can just drive to a back-up center should any technical issues arise. We need to approach these workflows in a completely new way.



Dejero is supporting Quality at the XII South American Games in Asunción as they make television history with the first ever all-remote multi-sport production

Is there a quick fix?

The drivers for remote production workflows are compelling. They simplify working practices, reduce cost and provide opportunities to cover a wider variety of live content. By encouraging geographic flexibility, they even have a more positive effect on the environment; as less equipment and less staff are required on site resulting in a reduced carbon footprint.

We're seeing broadcasters use Dejero solutions to *accelerate* their digital transformation with mobile and cloud technologies. Some of these use cases didn't even exist a few years ago, but our *Resilient Wireless Technology* and *Smart Blending Technology* are providing reliable connectivity anywhere and opening up new, untethered horizons for broadcasters.

Leading production company, Quality, made television history this past October, by achieving the first all-remote multi-sport production at the XII South American Games. It relied upon 100+ EnGo mobile transmitters and 30+ WayPoint receivers, which contributed to a production cost saving of USD \$2.5million.

Being able to equip remote broadcast teams with resilient live video and internet access across a combination of platforms provides the resilience broadcasters require, with the flexibility of using multiple forms of connectivity simultaneously, driving new workflows, and improved efficiency.



Directors at Quality's remote hub can communicate with camera operators at each sport venue using the EnGo IFB voice communication feature



Each of Quality's 90+ cameras use a Dejero EnGo to transport live feeds from sports venues across Asunción to WayPoint receivers at the IBC and Quality's Buenos Aires hub

If you take Quality's all-remote workflow compared to a traditional multi-OB (Outside Broadcast) truck setup for a large-scale sports production like the XII South American Games, the movement of around six tons of extra material and 40 people has been curtailed – not to mention the installation of hundreds of kilometers of cable that would usually be required. The time and cost saved on logistics, resources and time is monumental,

Dejero's latest mobile transmitters, the EnGo 265, EnGo 3 and EnGo 3x, represent a huge breakthrough in terms of what a single unit can do for operators on the go. Providing not only reliable transmission but also reliable Internet. It's especially useful to those who find themselves reporting from locations with challenging network conditions (i.e. mountain sides, deserts, or in places that are crowded and congested like major events).

Continuity checklist – what should we be planning for?

So, what questions do broadcasters need to ask when planning business continuity models?



Dejero connectivity solutions are a key contributor to Quality's all-remote workflow that is said to have saved USD \$2.5million in production costs

Reliability

This is key. People talk about robust failover systems, but that's not the best way to think about reliability. Failover implies something stops working for something else to take over. It's better to implement a robust system that uses multiple simultaneous connections to deliver enhanced reliability and continuous connectivity. This is the Dejero approach.

We're dealing with real-time video signals, with new pictures (frames) being generated fifty to sixty times a second, without exception. If a frame drops on live television, everyone sees it. Broadcasters need to rely on a seamless service where failovers are not required.

Dejero's *Resilient Wireless Technology, Smart Blending Technology and Hybrid Encoding Technology* ensure ultra-reliable transmission. These technologies blend together wired (broadband, fiber) and wireless (3G/4G/5G, Wi-Fi, satellite) IP connections from multiple providers to form a virtual 'network of networks' to provide robust connectivity even in the most challenging of environments.

Ease of use

With multiple networks available and a wide range of variables to contend with, connectivity to multiple platforms should be easy to set up and require minimum intervention – just set and forget.

Flexibility

A benefit of decentralized production is broadcasters can supply a wider range of content, such as lower tier or niche sporting events. Knowing that you have access to a combination of mobile platforms, devices and networks that guarantee the level of certainty you need gives you the best chance of staying on air and the confidence to be able to do your job properly.

A great example of how flexibility played a key part in business resilience during the height of the pandemic was when Dejero made it possible for NBC San Diego, KNSD-TV/ KUAN- LD, to turn its new mobile broadcast truck into a self-contained, end-to-end mobile TV studio. That was accomplished by providing enough bandwidth to work fully independently in the field, processing, editing, and distributing live raw video without reliance on teams and equipment located at the broadcast facility.

Security

Broadcast resilience should include protection against events such as hacking and the security of content and editorial. They need fundamentals like security governance and the ability to implement specific controls to minimize risk.

Dejero uses a security-hardened Linux OS and offers end-to-end AES 256-bit encryption to ensure a secure video signal. It also offers HMAC packet signing and support for a wide-range of third-party VPNs.



Standards

Modern broadcast infrastructures require vendors to talk to each other in the same language and standards provide the ability to do so. Dejero supports EBU standards, and we're completely open and transparent about where we are within all broadcast standards. We are also FirstNet® Ready.

FirstNet is built with AT&T in a public-private partnership with the First Responder Network Authority (FirstNet Authority) – an independent agency within the U.S. federal government. It's designed with and for first responders, public safety agencies and extended community that could be called on to support them. The capabilities we offer further cements our commitment to their 'always on, always available' critical connectivity needs in the field.

Cost

Having a reliable system that scales in terms of cost is important. One consequence of broadcasters broadening their range of content is it isn't all of equal value. Having the flexibility to use a combination of devices to create an appropriate workflow for any budget is a valuable consideration.

Unbridled broadcasting, wherever you are

Broadcasters should be confident that their remote connections are as stable as a wired connection.

Factor in regular software updates, as well as support and dedicated customer care, and your system will always be in step with the latest technological developments and, most importantly, it will serve and scale to your specific business needs.

By aggregating multiple networks into a single service, Dejero's patented *Smart Blending Technology* delivers the critical connectivity to go live or transport video in real-time. Providing reliable and continuous connectivity over simultaneous broadband, cell and satellite links means significantly enhanced uptime for users wherever they are – whether that's at the studio, at home, at a remote venue or in the middle of a field. That's powerful.

Shortlisted entries for 2022 BaM Awards®

This year we had **over 170 entries** for the BaM Awards® – a reflection of the immense value that technology developers place on the recognition they confer because of the complete independence of the judging process. The BaM Awards® recognize innovation in each the nine BaM Content Chain® categories, together with a tenth award recognizing an outstanding project, event or collaboration.

We offered all shortlisted companies the opportunity to highlight their innovative product/service with a summary of its key benefits in this edition of the IABM Journal, and many of them have grasped this – you can read about them on the following pages. Opposite is a full list of the shortlisted companies and products / services from which the 40+ BaM Award® judges chose the ultimate winners.

As IABM CTO, Stan Moote, said,
“We have again seen fantastic innovations right across the BaM Content Chain® and the eventual winners will be exceptional indeed.”



Annual **IABM**
Awards 2022



The shortlisted BaM Awards® entries are:

CREATE

CEDAR Audio – CEDAR DNS 4 dialogue noise suppressor
Grass Valley – LiveTouch X
Mo-Sys Engineering – Mo-Sys bMR: a flexible route to LED content studios
Shure – AD600 Axient Digital Spectrum Manager
Sony – FR7 Cinema Line Full-Frame PTZ camera

PRODUCE

Avid – Edit On Demand over-the-shoulder collaboration
EditShare – Universal Projects
Hawk-Eye Innovations – World-first semi-automatic offside technology
Pixotope – Graphics XR Edition democratizes Extended Reality
Red Bee Media – Red Bee Arc

MANAGE

Comcast Technology Solutions – VideoAI
Eon Media Corp.
Hammerspace – Hammerspace Global Data Environment
Tedial – smartWork NoCode media integration platform
Vubiquity – MetaVU

PUBLISH

Ateme – 5G for high-quality, low-latency streaming to any device
ATSC 3.0 Framework Authority LLC – Nextgen TV Web TV Platform RUN3TV
GatesAir – PMTX-1 Outdoor Transmitter Series

PUBLISH (continued)

Rohde & Schwarz – TH1: sustainability and connectivity for current and future services
Tata Elxsi – Content sharing, monetization and incentivization Dapp

MONETIZE

Accedo – Accedo One
Adthos – Adthos Creative Studio
FilmTrack – FilmTrack rights management software
Imagine Communications – Imagine Aviator
Simplestream – Channel Studio: monetizing your VOD content library

CONNECT

Apantac – Apantac 'Smart' SDM Interfaces
Lawo – Hyper-Density SDI/IP Conversion and Routing Platform
Net Insight – Nimbra Media Pro App family with IP Media Trust Boundary
Techex – MWEge: reliability and robustness for live cloud workflows
Vislink – Vislink 5G 4Live Event Production Solution

SUPPORT

Ability Post Production Academy – Online Avid and Adobe Premiere Training
Black Box Corporation – Emerald DESKVUE
EVS – EVS Shield
Phabrix – QxP
Telestream – ARGUS

STORE

ATTO Technology – ExpressNVM Host Adapter
Imagine Products – ShotPut for CinemaStation
Object Matrix – MatrixStore
Spectra Logic – Spectra Vail Distributed Multi-Cloud Data Management Software
Symply – SymplyTRANSPORTER

CONSUME

24i – 24iQ Advanced and fully managed personalization service
Accedo – Tata Play Binge Mobile App
Dizplai & Sky Sports – Sky Sports Boxing Viewers' Verdict
Media Distillery
Synamedia – Synamedia Go

PROJECT, EVENT OR COLLABORATION

BT Media and Broadcast – 5G production: an innovative approach to live sports broadcasting
dB Broadcast – ITN Technical Refresh
Eluvio and Warner Bros. Home Entertainment – First 4K UHD Digital Movie NFT
Imaginary Pictures – Markerless motion capture from live events
University of Texas at Austin – Perceptual picture quality algorithms and databases for streaming and social Media

BaM Award® Nominee – Create **CEDAR Audio – The CEDAR DNS 4 dialogue noise suppressor**

There are many occasions when it's expensive or even impossible to go back and 'do it all again'. By providing the ability to suppress noise with minimal effort, near-zero latency and no unpleasant artefacts, the DNS 4 can be more than just a noise reduction unit; it speeds workflow and can save on costs.

Its original specification was born out of our customers' requests for a dialogue noise suppressor that could receive two channels of audio and output the processed and original 'iso' sound of each. It was then just a short hop to make it a genuine 4-channel unit capable of receiving four audio channels and processing all four simultaneously. We also retained the DNS 2's dual, ultra-low noise mic preamps, (which help to make the DNS 4 an 'all in one' box to sit between your microphones and your mixer/recorder or broadcast equipment), and designed a new front panel to provide the clearest and simplest readouts and controls that we could devise.

At just 185 x 130 x 45mm and weighing in at a very manageable 750g, the DNS 4 will drop into a kit bag just as easily as its predecessor. In addition, some units are already finding homes with broadcasters and smaller studios that benefit from the flexibility of a hardware unit that can be used in-house as well as in the field.

Operating it couldn't be simpler because the DNS 4 incorporates CEDAR's unique 'Learn' function. This machine learning algorithm determines the



noise content of the audio in each channel from moment to moment, so there's no need to capture fingerprints or set thresholds... or anything else. In most cases, all you need to do is adjust the amount of attenuation required to obtain optimal results.

As for the processing itself, the DNS 4 takes advantage of the latest developments in CEDAR's Academy Award® and Emmy® winning DNS technology. This allows users to remove more noise than ever before without introducing the artefacts associated with traditional dehisers and denoisers. Consequently, voices retain their quality while the noise is pushed back to a degree that would have been unthinkable a few years ago. And all of this happens in a box that you drop into your pocket and power from a battery.



BaM Award® Nominee – Create Grass Valley – LiveTouch X

LiveTouch X provides the professional replay performance required for live events with ultra-low latency from anywhere on the planet. Clips can be marked from live feeds and sent to production or playout in under a second! Industry standard highlights organization by Page, Bank, and Slot with clip numbering makes UI simple to navigate, with highlights and playlists available at a single button press.

Whether the system is in the public cloud or on-prem, its performance remains the same. LiveTouch X supports multiple ingest and playout channels in any format: 2110, 2022-6, SDI, RTMP, NDI, and SRT. Operators can sign in from any internet browser or easily connect existing LiveTouch panels to the system. Grass Valley's AMPP platform enables a familiar work environment with multi-viewers, flow monitors, and access to any input or output.

LiveTouch X helps operators stay on top of the action. Since it is Always in Record (AiR), it's easy to quickly scrub back to the exact moment for mark in. Integration with **Framelight X** also makes it easy to automate clip delivery to other production team members for editing and re-use so replay can stay focused on the game.

Deploying LiveTouch X is simple. No large CAPEX investment is required – in fact, its base package is free – and system owners pay only for what they use, spinning up operators and custom feature sets as required for a specific production.





BaM Award® Nominee – Create **Mo-Sys Engineering –** **Mo-Sys bMR: a flexible route to LED content studios**

Mo-Sys partnered with on-air graphics specialist Erizos Studios to develop bMR (broadcast mixed reality). This solution uniquely combines Erizos' expertise in broadcast graphics and MOS based news/sports workflows, with Mo-Sys' innovation in LED virtual studios and precision camera tracking.

Equipped with virtual studio software licenses for green screen, Mo-Sys bMR makes it straightforward for broadcasters to migrate from their current green screen virtual studio and incumbent on-air graphics solutions to a futureproof alternative. With bMR, the process can take place in two stages where either the virtual studio or the on-air graphics are upgraded first. In new studio build scenarios, both on-air graphics system and a LED virtual studio are installed at the same time.

Mo-Sys bMR's on-air graphics system offers three ways of displaying templated data-fed graphics; standard 2D keyed graphics, keyed 3D graphics, or 3D 'in-scene' Unreal element graphics. The system conforms to MOS protocol and can be controlled by commonly available newsroom computer systems (NRCS) such as Octopus, ENPS, or other popular NRCS solutions. Based on web browser technology, bMR uses a fully redundant server/client architecture and is deployed as an on-premise rather than a cloud-based solution.

bMR's LED content server can drive any size/shape/pixel pitch LED virtual studio – so long as it is equipped with sufficient render nodes – with the base system able to drive an LED studio with up to 8million pixels. The system provides multi-camera switching capability up to UHD4K resolution, enabling multiple cameras to be used with an LED volume, where switching between cameras is orchestrated with the LED wall updating correctly. Set extensions with simultaneous augmented reality (AR) are also possible, with the lowest delay on the market between the Unreal graphics perspective displayed on the LED wall, and the camera's actual position.

www.mo-sys.com/product/camera-tracking/virtual-production/bmr-broadcast-mixed-reality/



BaM Award® Nominee – Produce

Pixotope –

XR Edition: democratizing virtual production

Pixotope is at the forefront of democratizing virtual production and empowering content creators with accessible solutions for boundary-pushing immersive storytelling. Our XR Edition, based on our award-winning virtual production graphics software, was developed in response to the growing use of LED volumes in virtual production and the resulting need for hardware optimization as well as simplified, efficient, and resilient workflows.

XR Edition removes the need for bespoke set ups and proprietary hardware to power extended reality (XR) workflows and environments. The result is an off-the-shelf software solution featuring a range of purpose-built tools that simplify setup and operation.

Optimized Hardware Usage

Multi-input switching ensures that the images on your LED volume and your AR rendering synchronously change perspective when switching between cameras in a single frame without the need for additional hardware. With multi-output support, Pixotope can also drive several large LED volumes from a single server/workstation, reducing the amount of hardware needed. It also mitigates many common issues such as output synchronization and sharing of assets over multiple machines. With shipping/manufacturing delays causing problems across all industries, reducing the need for multiple hardware devices results in less of a reliance on a currently unreliable supply chain.

Simplified Set Up

A simplified set-up ultimately provides greater accessibility to virtual production and the use of

LED volumes, as well as saving time, resources and costs. Users can quickly and easily match the colors of ICVFX and those appearing through the LED volume for seamless AR/XR workflows and effects with Pixotope Color Match. This is useful when AR is used alongside XR for set extension or when adding virtual elements to a scene as color reproduction is affected by both the camera and LED volume, making it difficult to accurately color match. Furthermore, by combining procedural geometry creation tools and tracking technology through the LED mesh import and automatic alignment tools, users have an automated method for converting CAD and geometry representations of LED volumes to virtual LED projection surfaces. These will be further refined using computer vision to ensure perfect registrations for XR and AR set extension, significantly reducing set-up time.

Resilience & Redundancy

Finally, clear and comprehensive health and diagnostics monitoring enables users to proactively address any issues that might arise and quickly troubleshoot and, in the case of a system failure, seamlessly failover to a back up machine.



BaM Award® Nominee – Manage **Tedial** – smartWork NoCode Media Integration Platform

Drawing on its long-standing IT innovation heritage, Tedial's empowering non-technical users by delivering an easy-to-use toolset that distills complex workflows into simplified processes. Built with microservices and Kubernetes, Tedial's award-winning, unique smartWork NoCode Media Integration Platform provides future-proofing and scalability and is designed with the NoCode paradigm to enhance flexibility and minimise risk in operations. Following Infrastructure as Code (IaC) it can be deployed on-premises, on any cloud or in a hybrid architecture for incredible flexibility.

Aligned with Movielabs' 2030 Vision for Media Creation, smartWork removes time-consuming and complex configurations via a common UI that guarantees an optimal experience and easy access to applications, external systems (including legacy MAMs, PAMs and DAMs ensuring business continuity), and features self-validation. smartWork speeds up the digital transformation with benefits that include unprecedented flexibility, seamless and effortless integrations, reduced costs, enhanced team collaboration, improved profitability, greater agility, accelerated growth and dramatically shorter delivery times.

Built upon a common interface and a common data model, applications and systems are integrated within the platform as opposed to the platform integrated into the applications. This major change simplifies workflow design, as the workflows needn't be aware of the specific APIs and the data models of each component, making it simple to swap integrations within an existing workflow. Also, a common workspace allows the applications to go to the media and not the media delivered to the applications.

Users without coding or deep technical knowledge (citizen developers) can easily build and manage content supply chains, which can include integrations of external third-party systems without vendor or specialist intervention. At IBC 2022, visitors to the Tedial stand said they were impressed by smartWork's concept, particularly how the technology manages integrations and how one can be swapped for another in just a few clicks. They were also interested in how the media location is abstracted.

smartWork allows business continuity, which is extremely important, as broadcasters can keep their current systems in operation and migrate when required. They can also deploy

content to multiple cloud services as well as on-prems to enable a real hybrid cloud to allow business continuity and business scale-up at their own pace, minimizing risk, maximizing ROI and reducing the total cost of ownership. Other companies in this space can deploy to the cloud (in some instances only one cloud service) or on-prems, but not in the same containerized way as smartWork.



BaM Award® Nominee – Manage Comcast Technology Solutions – Video Artificial Intelligence (VideoAI)

Video Artificial Intelligence (VideoAI) is a new software-as-a-service (SaaS) from Comcast Technology Solutions that can help companies (i.e. content providers, operators and advertisers) understand and analyze video (live and on-demand), audio, and closed captions to create actionable metadata around content assets, generate and manage new content, improve advertising efficiency, and streamline operations. It is based on commercial-scale implementations developed and deployed by some of the largest media and technology companies in the world (Comcast, NBCUniversal, and Sky).

VideoAI can help content providers, operators and advertisers understand and analyze video (live and on-demand), audio, and closed captions to create actionable metadata around content assets, generate and manage new content, improve advertising efficiency, and streamline operations. Customers can use VideoAI to automatically analyze video assets to identify and tag key onscreen moments (hard cuts, black frames, transitions); audio events (silence, specific sounds), and much more, to support enhanced understanding of video content.

The underlying technology for VideoAI has been applied across millions of video assets to create features such as metadata segmentation for dynamic ad insertion; segmentation detection, such as detecting intros, credit rolls, auto-chaptering; and creating automated on-screen highlight reels during live sporting events. With VideoAI, content owners, operators, and advertisers can now work with Comcast Technology Solutions to develop their own business use cases and deploy them using a secure, flexible, and ready-to-use 24x7 service.

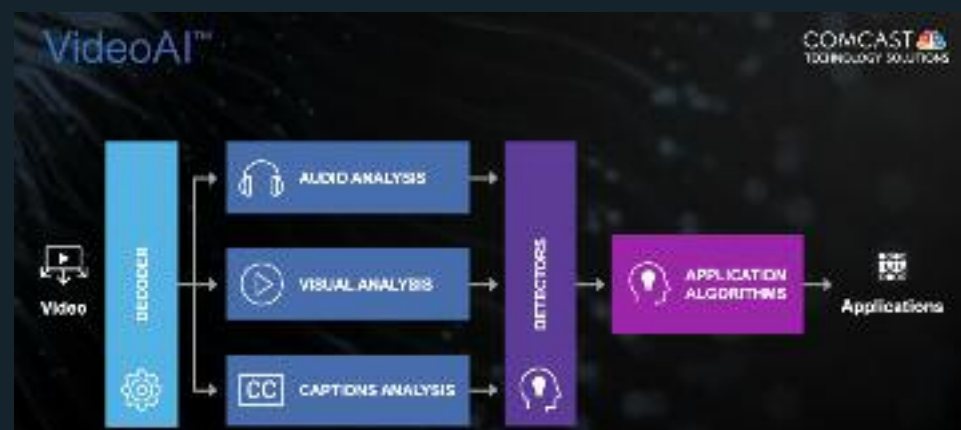
VideoAI can be used to automatically generate rich metadata of video content segmentation, which helps remove a lot of the manual metadata coding that takes place today. This is helpful in both creating more actionable information about video, but also enabling scale through

automation for things like chaptering with automated titles and summaries, and smart thumbnails.

It can also be used to generate new content, particularly around automated playlists, clips, or highlights that can then be leveraged for additional monetization. Think about going from live to VOD: Providers can prepare live events for VOD – creating on-the-fly assets as soon as a live event has aired.

Additionally, VideoAI can be used to support contextual advertising. It can be used to help improve ad efficacy by automatically detecting ad breaks and informing ad decision systems by leveraging this richer metadata.

Historically, customers rely on Comcast Technology Solutions to help remove complexity, better understand, and deliver their content in new ways, improve workflow efficiency, and drive automation. VideoAI is a technological advancement on all those fronts.



BaM Award® Nominee – Manage

Adthos – Changing the face of audio advertising

A multi award-winning platform that is revolutionizing the audio advertising industry, the Adthos Ad Platform provides the opportunity – for the first time anywhere – to create broadcast-quality, targeted audio advertising on-the-go.

Generate high quality creatives in no time

The platform features a browser-based multitrack editor that allows broadcasters and advertisers to collaborate online, combining music, human and synthetic voice to produce real-time audio advertising. It includes a voice library of 52 US – English voices, including broadcast professionals and Emmy-award winners (with the ability to add more), which are brought to life by controlling intonation, speed and applying reading rules for content such as phone numbers or emails. It also offers features commonly found in Digital Audio Workstations: equalisers, compressors, limiters, with an option to use professional plugins.

Unleash creative ways to reach your audience

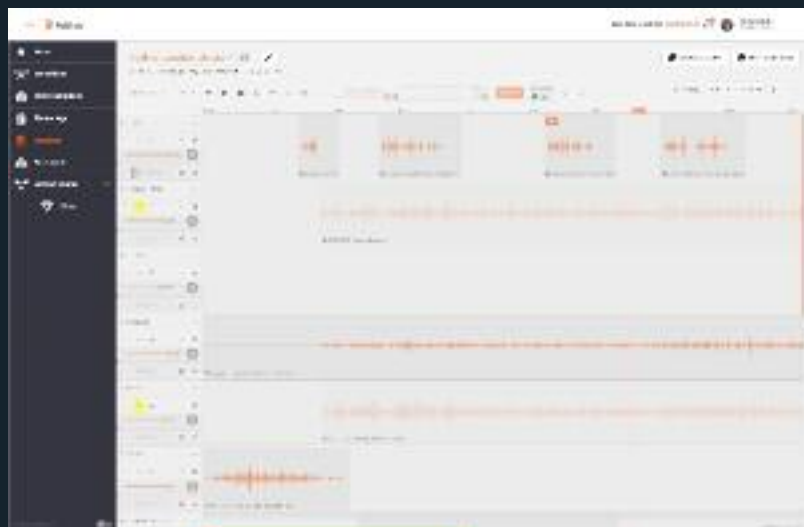
The Adthos Platform allows on-the-go spot creation and offers powerful targeting possibilities: dynamically using any webservice to insert content based on different datasets to produce timely, relevant advertising. From web-based information such as weather services, sports and news, to using geo-targeting for location-based advertising, or even Excel files to generate content based on pricing catalogues for retail promotions. We are adding new features and opportunities to utilize data all the time – the only limit to the possibilities is your imagination.

Adthos Ad Server levels the playing field for broadcasting

Integrated into the platform, the Adthos Ad Server offers first of its kind ad-serving technology built specifically for radio, and is available for free to download

and use – because it's our belief that everyone should have access to the technology. This lightweight yet powerful addition to any existing traffic or playout system can be installed without multiple integrations and zero downtime. Radio stations gain the ability to easily sell, schedule and execute multi-platform campaigns with minimal intervention and many tasks completely automated. With instant reconciliation and intuitive customer interfaces providing campaign updates and insights at a moment's notice, and the ability to replace spots in real time delivering incredible responsiveness.

Built to answer today's most pressing challenges – changing consumer behavior, data utilization and pace of development in the digital space – Adthos is in constant development. But our aim will always stay the same: to democratize the audio advertising industry. Go to www.adthos.com to sign up for a free trial and experience the possibilities for yourself.



BaM Award® Nominee – Manage

Vubiquity – MetaVU: a cloud-based metadata platform

With growing consumer demand for content across an increasing array of platforms, territories and languages, suppliers are creating and localizing massive amounts of new content and resurfacing existing libraries. This immense content volume requires high-quality metadata for accurate and compelling content description to power search, discovery and recommendation.

Vubiquity's MetaVU, a cloud-based metadata platform, enables clients to adapt, create and aggregate their metadata using our innovative application. It provides a single point of integration, a significant database of existing metadata, and integration into other leading metadata enrichment sources.

MetaVU is primarily built around two key elements:

1. Metadata PaaS Management Module

Leveraging the powerful toolset we have built to solve ingest and normalization of metadata, from the diverse Content Suppliers we support, along with flexible hierarchical metadata management, and an industry-leading metadata distribution engine.

2. Metadata Enrichment Module

Enabling access to numerous third-party enrichment sources, inclusive of audience and critics ratings, robust parental guidance ratings and advisories, social data, tags to power recommendations and marketing, originated metadata, access to localized metadata and machine-learning derived tags to power search.

The key differentiator of MetaVU is that it can deliver to many different endpoints, supporting thousands of unique business rules for targeted transformations for clients to ingest. This in turn supports the eyeballs of nearly 1 billion aggregated customers.



MetaVU solves four industry metadata pain points...the NEED to:

1. Increase efficiency

MetaVU improves metadata delivery efficiency by reducing duplication of data entry from different entities, saving time and labor, and creates alternate versions for targeted exports to any destination in any format.

2. Improve User Experience

MetaVU eliminates data gaps through business rules and by reverting to various data sources and using automated field prioritization. MetaVU also originates metadata via the Vubiquity editorial team, or via a vast data enrichment partner network.

3. Ease Marketing Burden

MetaVU provides deeper insights through machine-learning derived tags, which enable markets to perform deeper searches to create more relevant promotions. MetaVU also accesses 3rd-party sources, such as parental control, box office and review data.

4. Enable Seamless Migration

MetaVU enables a hassle-free co-existence with existing toolsets and creates value to have title metadata in the MetaVU ecosystem. It eases metadata management, especially with bulk imports and updates via XLS, and provides access via UI and API.

The possibilities are endless, and this is just the beginning of MetaVU's capacity to manage, aggregate and enrich metadata.

BaM Award® Nominee – Publish

Ateme – 5G streaming solution

Ateme's 5G streaming solution can take the video experience to a new level, by leveraging the high bandwidth, low latency, Mobile-access Edge Computing and programmability of the 5G network.

Its super-high efficiency, coupled with the increased bandwidth and Mobile-access Edge Computing architecture of 5G, makes it possible to offer UHD-quality experiences at extremely low latency, with reduced cost and carbon footprint, opening up a whole new world of possibilities.

For example, sports fans in stadiums can view the same game live from multiple angles – which is especially useful in the case of car races, where what is happening elsewhere on the track might not be visible to certain viewers – or re-watch the most important actions on near-live channels.

Sport lovers, news addicts, and TV show song contest enthusiasts can enjoy unique video experiences in flawless UHD quality, whether live or on-demand from home, from their car passenger seats, or from public transportation, thanks to Ateme's 5G streaming solution.

"With Ateme's 5G streaming solution, network operators' CDN and content providers' headends and CDN can interoperate seamlessly and in an optimized manner to create immersive experiences and attract the highly connected younger generations (millennials and generation Z) with video services and experiences that will increase viewers' engagement and loyalty, translating into revenue growth.

Unlocking the potential of 5G for high-quality, low-latency streaming to any device, Ateme's powerful streaming solution has already been proven in major live sports and entertainment projects in Europe, as well as by the UK



government-backed 5G Vista consortium for an in-stadium project.

Mobile network operators (MNOs) have already invested heavily to build their 5G network and are looking for ways to monetize it. Ateme's 5G Streaming Solution uniquely enables them to leverage the investment they have already made and stand out in a crowded market with unique and engaging experiences.

Ateme's 5G technology is the only solution extending the Quality of Service policy from the 5G network slice associated with the video flow to the entire streaming video delivery chain: starting at the headend and through the origin/packager and CDN. Ateme's 5G solution supports audience-aware encoding, CDN elasticity, and Multicast/Broadcast – all driven by 5G and CDN analytics, effectively adapting the video services to the best quality with the lowest resource footprint.

BaM Award® Nominee – Publish

Rohde & Schwarz –

TH1: high-power transmitters

TH1 from Rohde & Schwarz takes a radical approach to high-power transmitters, reducing energy consumption, increasing resilience and unlocking new revenues.

Featuring an internal architecture that is designed for high resilience, the TH1 can continue to transmit even in the event of circuitry failure through self-diagnosis and repair, minimising the need for preventative and emergency maintenance. With this innovative design, R&S has ensured that remote transmitter locations are able to operate without staff on site. Status and data from the transmitter is available as an HTML5 feed and as standard monitoring formats like SNMP allowing supervision and management of the complete system from any location.

The power amplification stage of a transmitter is traditionally seen as a high consumer of energy. Taking every aspect of the transmitter into consideration, with this new design R&S has increased the power efficiency of the transmitter by at least 15% over even the most efficient of current designs, significantly reducing energy consumption for the same output power.

The TH1 features a liquid-cooled design, which makes a major contribution to reducing energy consumption. In an air-cooled transmitter, heat generated by the power amplifier stage goes into the building atmosphere, calling for large air conditioning plant to keep the systems within tolerances.

In a liquid-cooled transmitter, the heat exchangers are outside the building where natural convection carries it away. The reduced or eliminated need for specialist air conditioning reduces the initial cost of installation, and further slashes operating expenditure and energy demand. Eliminating the reliance on air conditioning also removes another critical point of failure and requirement for continuing maintenance.

The TH1 delivers sustainable broadcasting in the connected world, empowering broadcast network

operators to serve their existing market and develop new revenue opportunities with greater cost-efficiency, reduced maintenance costs, higher resilience, and a lower environmental impact.



BaM Award® Nominee – Monetize Accedo One – Hybrid Monetization for Video

Hybrid monetization has become a particularly hot topic as of late, fuelled primarily by macroeconomic uncertainty caused by major global events. Some of the big players, such as Netflix and Disney, have already announced the introduction of ad-funded tiers to supplement their existing subscription offerings. At the same time, [reports](#) show that an increasing number of users are willing to accept some advertising in return for lower subscription fees.

In light of this rapidly evolving landscape, and recognizing the need of its customers to explore new ways of monetizing video content, Accedo announced hybrid business model support for its award winning SaaS platform, Accedo One.

The Accedo One platform enables global companies to deliver impactful video experiences across multiple devices. It provides all the tools needed to easily design and manage a uniquely branded video business across all leading consumer platforms, empowering video service providers to get their offering to market fast by reducing the complexities of execution. Accedo One also enables video businesses to expand and monetize their services by integrating new features based on what its customers want and need.

Accedo One features:

- **User-Friendly Editor** – a visual, easy-to-use editor for frictionless content curation and UI management, helping get content to market faster.
- **Service Analytics** – an aggregated display of business intelligence and user insight that enables companies to make better decisions, faster.
- **Partner Marketplace** – an extensive marketplace ecosystem of specialist streaming vendors that can be easily integrated as a service evolves.

From early 2023, Accedo One will enable [support for multiple levels of monetization](#), enabling any video service provider to launch effective hybrid business models, supporting both subscription and advertising in one video service. This is important as it introduces the ability to offer not just separate AVOD or SVOD services, but also to combine both into a single service with multiple tiered payment options. This makes it possible



to personalize payment models for different consumer segments (i.e., students, families, etc.) so consumers can pay a higher subscription for fewer advertisements and pay a lower fee for the opposite set-up.

There is typically a level of added complexity that comes with offering multiple tiers within one video service. The new offering from Accedo One will simplify this, making it possible for video providers to substantially increase monetization methods within a single video service and create compelling new ROI options for video providers.



BaM Award® Nominee – Monetize **FilmTrack** – Comprehensive rights management software

FilmTrack is a comprehensive rights management software that makes it easy for content producers and distributors of all sizes to track, monetize, and analyze their content library – getting to market quicker, highlighting available titles, and preventing overlap and risk.



lifecycles from end-to-end. This includes templates to communicate exclusivity, options, holdbacks, expirations, restrictions, and exclusions, as well as managing relationships and contact information for all the involved parties. It also includes an instant conflict checker, and more. The system is overlaid with a best-in-

FilmTrack includes multiple key rights management features, including:

- **Contracts and availabilities manager** – Manage your library while identifying potential sources of revenue or overlap risk – what is available to sell, what is not available, and when it will become available.
- **Financials manager** – Sophisticated calculations engines calculate your Royalties In/Out and Multiple Participant Agreements. It integrates with your ERP or system of record as a subledger to your general ledger to save time and provide the right information to the right systems.
- **Robust business intelligence** – Overview and drill into the details of your contract or library performance, combined with data from other systems in your ecosystem for a single view of pertinent data sources.

FilmTrack's Contracts and Availabilities Manager creates a smooth workflow to manage contract

lifecycles from end-to-end. This includes templates to communicate exclusivity, options, holdbacks, expirations, restrictions, and exclusions, as well as managing relationships and contact information for all the involved parties. It also includes an instant conflict checker, and more. The system is overlaid with a best-in-

class search engine to make it easy to find the title, person, or other item you need. Adding FilmTrack's Financials Manager takes the solution to the next level. You may need to manage complex calculations for royalty payments, consumption rates, currencies, and more. Most commercial ERPs and financial softwares don't manage these industry-specific measures very well, but FilmTrack is purpose-built for this requirement.

FilmTrack's Financials Manager allows you to ingest needed data from your financial systems, combine it with FilmTrack specific data and internal sub-ledger, and provide the corporate financial system back with the needed data for the enterprise. This leaves the detailed data with the team that needs it, instead of spending a fortune customizing your ERP.

Want to learn more about FilmTrack? Visit us at [FilmTrack.com](https://www.filmtrack.com).

BaM Award® Nominee – Monetize

Imagine Communications – Imagine Aviator

Aviator is a cloud-native platform that enables broadcasters, MVPDs and digital-first providers to plan, make and monetize premium-quality, ad-supported linear and Connected TV (CTV) content from a single, unified platform. This ground-breaking platform draws on Imagine's broad experience in ad tech, video infrastructure and playout automation to create an entirely new approach to setting up, running and monetizing channels simply, quickly and cost-effectively.

Developed using the latest cloud technology, Aviator binds together the critical capabilities of scheduling, rights management, playout, live events, VOD, ad sales, ad placement, ad serving, campaign management and more into a single cloud platform. It guarantees high audio and video quality on all outlets and supports a diverse range of linear channel origination options – from the simplest, thematic-style channels to the most sophisticated demands of premium services.

There are three broad elements to the Aviator offering: plan, make and monetize.

Plan supports all the stages of scheduling, including rights management and content acquisition, enabling media companies to manage linear and on-demand rights and scheduling from a single, unified system. It features a comprehensive scheduling engine that provides the tools to create single or multichannel schedules, combining program content and advertisements into a single, frame-accurate playlist.

Make oversees the media supply chain and secure content storage, as well as providing premium playout. That naturally includes high-quality graphics generation and insertion in real time and seamless playout on all outputs of a multichannel, multiplatform operation. For each channel, there is the possibility to have multiple variants, for different broadcast and streamed platforms, each with unique commercials and trailers either inserted as part of Aviator or signaled via SCTE 35 for downstream dynamic ad insertion.

Monetize supports the commercial aspects of advertising, from sales through ad decisioning and traffic to billing and reconciliation. Automated tools for ratings prediction, spot booking, copy allocation, sequencing and as-run reconciliation enhance

operational efficiency and optimize ad placement. By taking a common view of advertising across linear channels and streaming services, Aviator ensures optimum use of the inventory, while providing advertisers with proven audience reach.

Architected for an uncertain future, Aviator provides a transformative approach that adapts quickly to change – enabling media companies to efficiently launch new linear channels, achieve faster time to revenue for emerging services such as FAST channels, and continue delivering and monetizing content no matter how consumer viewing habits evolve.



BaM Award® Nominee – Monetize Hammerspace

Hammerspace is a software-defined data solution providing unified file access and automated data orchestration spanning otherwise incompatible storage silos from any vendor, across one or multiple locations, clouds, and cloud regions.

Running on commodity servers, VMs, or cloud instances, Hammerspace enables users the experience of high-performance local NAS access to global data stored on any storage anywhere.

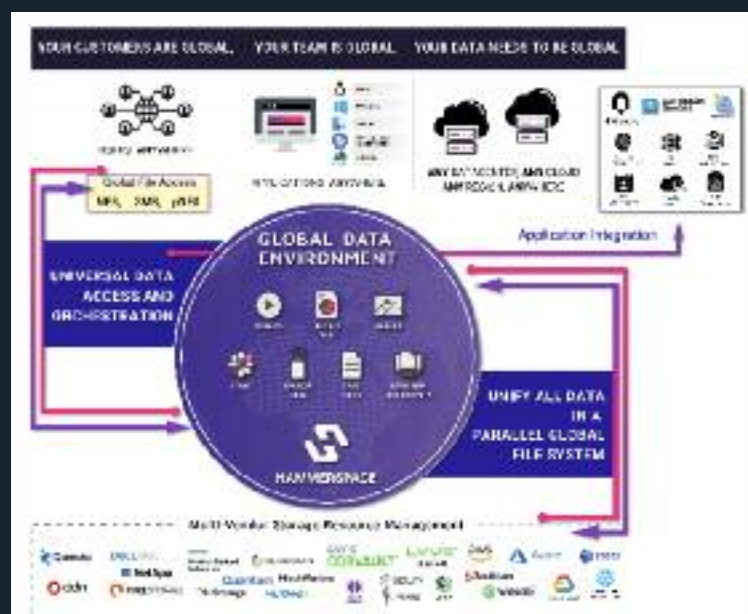
Unlike other solutions that shuffle file copies around, Hammerspace creates a high-performance Parallel Global File System from data-in-place on existing storage so all users everywhere are working with the same files globally, not copies.

In this way, Hammerspace customers leverage remote talent without needing to migrate entire datasets to remote locations. Remote users and their applications are rapidly provisioned, enabling immediate access to their files in a true global namespace as if they were local to the primary datacenter.

M&E customers use this capability to unify content access across on-premises storage/compute resources and multiple cloud regions, providing unprecedented flexibility to cut costs and expand production capacity. For example, Jellyfish Pictures, a UK-based VFX company, leverages Hammerspace to enable local access to artists all around the world. Before selecting Hammerspace, Jellyfish struggled to recruit and bring remote artists online to meet spiking production demand.

The problem was that traditional file movement methods (FTP, rSync, shipping physical media) were too complex and inefficient. Even using the cloud to copy data around the world was manual, slow, and expensive.

To fix this, Jellyfish selected Hammerspace to unify access to on-premises and cloud compute/storage resources so remote artists could enjoy high-performance local file access as though they were at the primary datacenter.



This enabled Jellyfish to take on new projects for Netflix and Disney by rapidly bringing new teams online in Australia, India, and South Africa, who now had the same user experience local artists in London enjoy. A related issue is the high cost of render workloads in expensive cloud regions. Rendering in London or Los Angeles is significantly more expensive than in cloud regions located in more remote areas.

With Hammerspace's data orchestration capabilities integrated with Autodesk ShotGrid, Jellyfish could achieve significant cost savings for cloud rendering by automatically routing jobs to lower-cost cloud regions without creating multiple copies of data.

In these ways, Hammerspace has revolutionized the way broadcast, film and other industries can manage distributed workflows and data across one or more on-premises and cloud compute and storage.

BaM Award® Nominee – Monetize – Simplestream

Simplestream's Channel Studio lets OTT and streaming operators repurpose existing backlog of video-on-demand (VOD) assets and create virtual 'live' channels with optional server-side ad insertion, and/or on-screen graphic overlays. A seamless playback experience sits at the core of new opportunities for monetisation, with increased audience engagement and higher live viewing figures as a result. Channel Studio allows operators to distribute content anywhere, including leading FAST platforms.

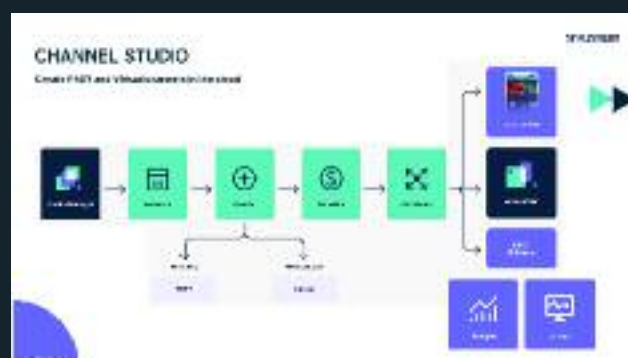
Channel Studio is the easiest gateway to the creation of new channels, avoiding traditional scheduling software's complexity. A simple drag & drop, cloud-based interface simplifies channel creation workflows through building playlists. Operators can choose between creating single playlists, for each day, or creating sub-playlists, transforming short-form clips into longer programmes. Both can be edited and used numerous times to create 24/7 schedules. These playlists can be made up of videos and slates, displaying vital information and allowing users to create the perfect 1-hour programme.

Simplestream's VOD2Live technology underpins Channel Studio, making it easy to encode and package the schedule in real-time. Channel Studio allows for video ingestion and validation from any third-party provider. Broadcasters, content owners, and media brands will be able to retain their existing OVP and avoid the migration of large backlogs of VOD content.

Operators can choose the most profitable advertising and promotion models. Pre-roll, mid-roll, or ad pods are all available with choices between server-side (SSAI) or client-side (CSAI) ad insertion. The product is pre-integrated with ad servers like Google Ad Manager, SpringServe, FreeWheel, SuperAwesome, and more. Custom tags can pass user and content metadata to the ad server for advanced targeting. Virtual channels can be configured to include only the markers, making them compatible with a variety of FAST platforms and business models.

On-screen, dynamic graphic overlays are leveraged by Virtual channels – powered by Channel Studio – to provide sales opportunities. Supporting operators in the teleshopping, sport, and news sectors, dynamic overlays create customised experiences by placing data-driven graphics on top of clean feeds, with various branding themes, animations, stock levels, tickers, and other content such as QR codes to increase sales opportunities.

Channel Studio can seamlessly distribute content to owned and operated sets of applications; Simplestream's App Platform; or a growing collection of FAST platforms.



BaM Award® Nominee – Connect

Vislink – Vislink 5G 4Live

Vislink 5G 4Live functions as a combined 5G network solution that integrates roaming camera 5G transmitters with a hybrid portable/private 5G network infrastructure. This provides production teams with a complete 5G private network deployment that is tailored to deliver high up-link bandwidth, low latency and uncontended connectivity at the edge.

The Vislink 5G 4Live solution was engineered for use at major events where live production organizations have traditionally deployed COFDM systems. It enables live production with full support for wireless cameras – providing complete freedom to roam and capture engagement-building footage – and the deployment of an onsite bi-directional all-IP 5G gateway at the event.

Vislink 5G 4Live incorporates a number of best-of-breed technologies in a completely integrated ecosystem, including:

- The Vislink HCAM Module 5 is a 5G edge device that allows users of Vislink HCAM OFDM systems to migrate to 5G technology for deployments where 5G can enable new creativity and operational flexibility – while allowing a transition of service offerings at the pace that is right for them. It also maintains their ability to provide highest quality video, lowest latency and guaranteed RF robustness.
- The LinkMatrix system and device management control application enables full management from remote locations using simple drag-and-drop operations, enabling greater working efficiencies for technical staff.
- Mobile Viewpoint UltraLink-Air 5G encoders allow complete roaming camera flexibility to achieve real-time content capture while moving between globally available public cellular networks and private 5G networks, for low latency and guaranteed uncontended connectivity – even in high population density events.

Both Vislink and Mobile Viewpoint 5G wireless camera systems can simultaneously operate over the same 5G network to enable complete creativity for event production teams.

With the private 5G network smoothly bridging the gap between the camera and the production center, the Vislink 5G 4Live end-to-end system enables a step-change in remote production architectures. Content from both roaming and fixed cameras can be transported directly to the production center – whether an on-premise facility or as part of a migration to true cloud production architectures.

Link to our 5G4Live video:

www.youtube.com/watch?v=5pvhPMcH39Q



BaM Award® Nominee – Connect Net Insight – Nimbra Media Pro App family with IP Media Trust Boundary

The Nimbra Media Pro App family is a new solution suite for safe, reliable and flexible IP media workflows. Purpose-built for professional media workflows, the app family uniquely combines networking and media processing in one, granting significant operational and cost benefits. Including our award-winning IP Media Trust Boundary, the new solutions also provide protected data services, video compression and interface conversion.

The Nimbra Media Pro App family with IP Media Trust Boundary allows media companies and service providers to build distributed IP media workflows that are class-leading in terms of safe and reliable operations. Without wasting resources like bandwidth, CPU and power consumption, all Media Pro Apps can always guarantee that every trusted media flow has the exact networking and media processing resources it needs.

Building upon this reliability principal, the Media Pro App family dramatically reduces the hazards with interconnecting IP equipment. The IP Media Trust Boundary guarantees a 100% strictly controlled boundary between different IP media and networking equipment whether that is in the studio LAN, the long-distance IP WAN or ground-to-cloud/cloud-to-ground interconnect.

Extending the Media Pro App's core functionality is easy. Based on virtual function technology, the 'personality' of the media workflow can be easily changed at any time, whether that requires integrating ST2110 and SDI equipment, reducing resource consumption with JPEG XS or protecting data-oriented workflows.

As a product line, the Nimbra Media Pro App family is a suite of software applications for the Nimbra 600 and Nimbra 1000 virtual function capable platforms. At present, ten Media Pro App options are available with core networking and Trust Boundary functionalities extended by additional processing options, including NMOS control. No other media or networking solutions combine the ability to perform networking and media processing in the same application. The applications are highly scalable and future proof, supporting media flows up to 100 Gbps with processing capacity scaling up to 1:200 Gbps.



BaM Award® Nominee – Connect

Techex – MWEdge

MWEdge is a uniquely positioned software gateway product that brings reliable-transport protocols like SMPTE ST 2022-7, SRT, RIST and Zixi together with a broadcast toolset focused on tier 1 broadcasters who need to move live media with absolute reliability.

Already seeing wide adoption within multi-national broadcasters, MWEdge is used for workflows into, out of and within the cloud as part of on-air broadcast chains, as a firewall to traverse from one network to another and as a protocol gateway with advanced monitoring, service redundancy, and RTP passthrough.

One major new feature from 2022 is native NDI transport. This means absolutely transcoding-free movement of NDI streams into and out of the cloud but, crucially, while also protecting them with a combination of technologies to ensure delivery. MWEdge is able to combine RIST or SRT with SMPTE ST 2022-7. ST 2022-7 delivers two copies of the stream to the receiver to deal with path failure and RIST/SRT will fix any errors on one individual path. Naturally, MWEdge provides failover switching between feeds based on priority and configurable fault conditions which NDI streams also benefit from along with encryption for safe transport.

Telemetry is of major importance to top broadcasters who need real-time monitoring of feeds and who demand root cause analysis of significant events. MWEdge continuously takes a complete set of ETR 290 measurements from all inputs, logs these and also makes them available to Grafana, Dataminer, Splunk and other databases. MWEdge also analyses inter-packet arrival time (rolling average, max and min) which is a vital statistic for understanding problems within IP environments but which is missing from many products. Uniquely, MWEdge uses a web socket to push data to Dataminer to maximise efficiency, minimise latency and to allow for high volumes of data.

At Techex, we've been working with our customers for years to bring a remarkable breadth and depth of features which we feel set MWEdge apart during the current commoditisation of IP gateways. Increasingly,

Techex is seeing major broadcasters working at scale with full API integration for Infrastructure as Code deployments, who need software on-premise as well as in the cloud with detailed monitoring at both ends of the link. It's our customers we work with daily that demand absolutely robust, multi-path delivery of NDI, and high-security software with enterprise-level user management who have made the product what it is today.



BaM Award® Nominee – Support Ability Post Production Academy – The first Online Video and Film Editing Academy

Ability Post Production Academy is the first Online Video and Film Editing Academy that is affordable, inclusive and accessible; all our courses can be delivered live online with an Experienced Tutor / Film / TV Editor.

We are able to deliver training to both our corporate clients such as BBC, NFTS, Northern Film School, XJTLU University China, ITV and Netflix as well as direct to our students (Please [contact us](#) to see if you are able to get our discounted price).

We keep our classes small, so that you get plenty of hands-on training. Unlike many colleges and universities, the trainers are not just lecturers /teachers but are leading film and TV industry professionals with over 25 years' experience in Post Production in both Film and TV, with credits at BAFTA, Cannes, Raindance and Edinburgh International Film Festivals.

Official Avid Online Learning Partner

Also we are an Official Avid Online Learning Partner able to deliver the Accredited Avid Media Composer 101, 110 or Combined MC101 and MC110 courses, allowing you to get Avid Certified User Certificate which is recognised within the TV and Film Industry.



We continue to develop new courses in Adobe Premiere and Black Magic Resolve 17 so keep coming back to see the New and Exciting Video and Film Editing Training Courses.

We are passionate about Inclusion and Disability. Ability: taking the 'Dis' out of DisAbility in Film and TV Post Training.

Courses Include

- Avid Media Composer (2018) Legacy (On Request)
- Avid Media Composer 2020./2021 (New Vsn with Bin Containers) both AVID 101 and 110 Courses
- Adobe Premiere 101 – 2022 Vsn
- Intro to Blackmagic 17/18 Editing Course

For more information, please [contact us](#) or book a 15 minute telephone meeting with Nigel Honey using the Calendly Meeting Scheduler [here](#).

Nigel G Honey is a film editor and founder and CEO at Ability Post Production Academy Ltd. He's a Film / TV Editor with 25 years' experience, and an invisible disability. He was told he'd never be a film editor because of his disability – but went on to edit feature films for Cannes, Edinburgh International and BAFTA film festivals, and is now the Only AVID Certified and Resolve Instructor in Scotland.

BaM Award® Nominee – Support

PHABRIX – QxP 400

PHABRIX is pleased to present its first example of a traditional 'Waveform Monitor' – but with a twist. Inheriting all the class leading features and flexibility of the QxL Rasterizer, the QxP additionally features an integral 3U multi-touch 1920x1200 LCD screen, speaker, integral V-Mount (or G-Mount) battery plate, integral mains PSU and 12v external DC input. You now have 12G SDI and 25G ST 2110 compliance monitoring in a portable form factor using industry standard Camera Batteries.

With its new class-leading Waveforms, the QxP is equally at home on-set in SDR or HDR Productions, Grading, Shading, or QC, MCR, Engineering and R&D environments. The user is free to use the integral screen, or external HDMI monitor, and use the flexible tool layout to view up to 16 instruments simultaneously. A rich set of remote access options including NoVNC and uniquely the UI as 2110-20 (video) and 2110-30/31 (audio) flows provides all the 'headless' operational flexibility of a conventional Rasterizer and more.

The QxP includes SMPTE ST 2110, 2022-6 and a wide range of formats as standard. In-field upgrades are available for a rich set of options: UHD/4K, IP-MEAS, HDR, Dolby E decode, PCAP capture, EUHD and extensive AV-ANC test signal generation. Factory-fitted options provide 12G-SDI interfaces and RTE™ real-time SDI eye and jitter analysis, with an engineering grade data view and an optional, unique advanced SDI-STRESS toolset.

For real-time IP workflows the QxP supports simultaneous Generation and Analysis of SD/HD/3G/UHD/EUHD 2110 payloads on generic SFP28/25 GbE interfaces, with ST 2022-7 Seamless IP Protection Switching (SIPS) and independent PTP followers on both media ports for fully-redundant media network operation – all with AMWA NMOS IS-04 and IS-05.

Whether working in SD, HD, UHD, SDR, HDR, SDI or IP, conventional or remote production, the QxP combines the user-configurability and advanced tools required for full operational flexibility when transitioning to next generation workflows.





BaM Award® Nominee – Support **Telestream – ARGUS** the next step in centralized video monitoring management

ARGUS is a new product from Telestream that represents the next step in centralized video monitoring management. It was developed in response to the needs of OTT service providers who require large scale comprehensive monitoring of their entire distribution network.

ARGUS enables automated surveillance of each video transition point with data aggregation from monitoring probes across the video delivery chain and provides deep dive analytics data that enables service providers to quickly identify the source of video quality issues and their root causes. Without a system like ARGUS, service providers are effectively blind when locating problems across the delivery chain.

With its true consolidated management and analytics, ARGUS introduces a new distributed system architecture that enables scaling the number of monitoring points from small to large. This enables probes to be deployed across various regions or countries while still being connected to the same centralized management system. Service provider no longer need to manage monitoring points from different regions and territories separately. They can aggregate all the data from hundreds to thousands of different probing points into a single unified interface.

ARGUS also takes advantage of a new microservices architecture optimized for virtual and cloud deployments, targeting the needs of larger media companies who demand solutions be cloud friendly while fitting into their automated and orchestrated deployment workflow. ARGUS's ability to scale at a global level enables large media companies to deploy the monitoring in container and Kubernetes cloud-native environments along with automation and orchestration needed to instantly report on the health of the system in real time.

ARGUS allows users to monitor by exception with multiple alarm levels and thresholds that ensure engineers can find and fix problems fast. It provides



alert visualization of active alarms in a single pane of glass. Plus, in-depth troubleshooting to pinpoint the root cause of issues such as compression artifacts, transport stream impairments, and network delivery issues.

Any migration to the next generation video distribution drives a lot of complexity and new requirements for visibility of the Quality of Experience (QoE) and Quality of Service (QoS). ARGUS alerts if the DAI infrastructure is broken for ads by reporting on accurate execution of placements conveyed by SCTE-35 markers and maintaining the requisite AV quality of ads that match core content parameters. Identifying instances where the marking process fails is an effective way to track fill rates and identify why they may be underperforming.

ARGUS is a critical part of reducing subscriber churn and ensures successful monetization for streaming service providers.

BaM Award® Nominee – Store

ATTO – ATTO ExpressNVM™ NVMe switched host adapters

ATTO ExpressNVM™ NVMe switched host adapters offer the scalability, flexibility and management capabilities that broadcast and post production enterprises need to create next-generation NVMe storage.

The emergence of NVMe technology has opened up new opportunities for low latency, high-performance storage connectivity for data-hungry applications. NVMe drives outperform traditional HDD and SSD storage in almost every way. However, NVMe storage is often difficult to aggregate into larger pools, and management capabilities are significantly less than that of traditional SAS and Ethernet technology.

ATTO ExpressNVM host bus adapters offer a unique solution to create shareable NVMe storage pools with unparalleled performance – all while delivering enterprise-level management and configuration capabilities. Using ExpressNVM HBAs, integrators are able to create scalable high-capacity, dense storage that can be shared and managed across distributed storage networks.

ATTO ExpressNVM HBAs provide connections for up to sixteen NVMe drives in a single PCIe Gen4 slot. These groups scale linearly and form the building blocks for high-capacity, low-latency storage arrays, particularly when used in conjunction with software NVMe RAID packages.

ATTO ExpressNVM host bus controllers solve all of the key integration challenges for NVMe storage – scalability, flexibility and management. Achieving more capacity and more performance is as simple as adding more ExpressNVM adapter storage groups. And because this solution is switch-based, the HBA provides drive isolation, preventing misbehaving drives from impacting performance and potentially pulling down other devices on the PCIe bus, or even the entire server.



Perhaps most impressively, ExpressNVM HBAs provide a full-suite of out-of-band management tools that allows logging and data collection without impacting performance or latency. Accelerated by an onboard microprocessor, these HBAs offer full device control via high-performance SMBus connections. Base management features include device inventory, VPD, device configuration, monitoring, OS integration and firmware upgrades. Enhanced management includes device isolation and faulty device containment, health & reliability monitoring (i.e. thermals, capacity utilization, wear leveling, etc.), predictive failure analysis, extensive telemetry and logging, a gateway to other management protocols (i.e. Redfish, SNMP), as well as a platform for OEM-specific integration.

ATTO (www.atto.com) has been a trusted developer of storage connectivity solutions for more than 30 years. Our latest innovation, ExpressNVM HBAs, are currently shipping and ATTO offers a full complement of support services for integrators interested in incorporating this technology into their storage solutions.

BaM Award® Nominee – Store Object Matrix – MatrixStore

It is essential in any media workflow that assets are kept safe, yet accessible, at every step of the process. MatrixStore is a media-focused private and hybrid cloud-based solution, built on digital content governance and object storage, that enables media companies to better organise and share their archives.

MatrixStore offers smooth and seamless integration with existing workflows as it is designed to work with multiple widely used third party solutions. This integration combined with the user-friendly interface means that users can find and access their content quickly, anytime, anywhere, helping to use their time to the greatest effect, getting their content delivered more quickly and maximising monetisation opportunities.

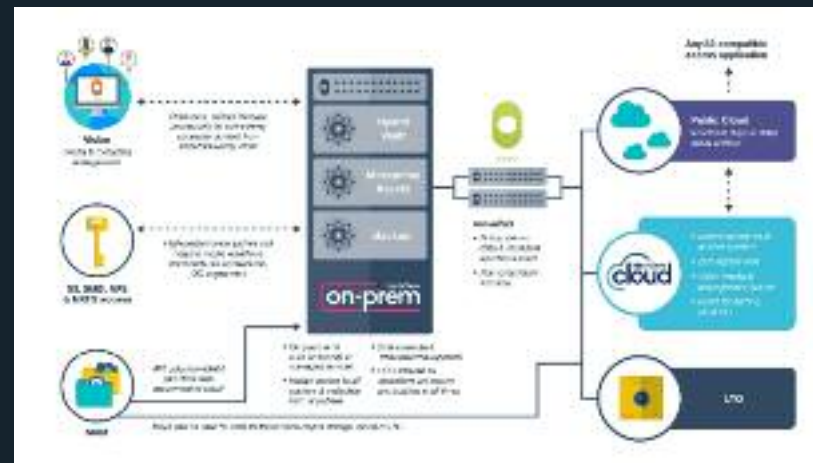
MatrixStore includes integrated disaster recovery (DR) and business continuity provision, seamless access to deep archive content, as well as ensuring future proof access to assets with automatic migration to the latest hardware platforms.

Cybersecurity is an important point of concern for media storage. If there is potential for an operating system to be hacked, then the owner's data will be compromised, regardless of how immutable it is. As such, Object Matrix has created MatrixStore to be a key defence against ransomware attacks. It is a highly firewalled solution, that provides a range of additional defences against hackers trying to encrypt data. This is key in preventing disruption across the media chain, where stored data can be compromised.

MatrixStore allows organisations to choose a coherent mix of platforms to create a perfectly integrated, bespoke storage platform for their business. Not only does this mean you can effortlessly move between on-prem, private and public clouds, but you can also enjoy the benefits of high-speed workflows, enhanced security and seamless synchronisation of your content and metadata. The ability to choose, ensures organisations can create the most efficient combination of storage platforms to suit their needs. For larger archive deployments, MatrixStore S3connect can be load balanced, providing improved performance and redundancy.

MatrixStore also offers enhanced auditing capabilities, allowing administrators to track which users have accessed specific files. This includes file names and information about the parent and hierarchy when audits are enabled and exported from a content vault.

From making media fully searchable and accelerating access, to adding an extra layer of protection for content and understanding the actions made to assets. Object Matrix is committed to delivering the enhancements and integrations that help bridge the gap between creatives and content, something MatrixStore excels at.





BaM Award® Nominee – Store

Spectra – Spectra Vail®

Spectra Vail® is a distributed multi-cloud data management software that unifies and simplifies data access, usage and protection across on-premises storage, multiple clouds and storage platforms. For media organizations managing digital assets in a distributed workflow, Spectra Vail software allows users to leverage on-premises applications and native cloud services no matter where content is created or stored, fostering collaboration by providing universal access to data in a single namespace and automating digital asset placement across multiple clouds and sites.

The first of its kind, Spectra Vail software fosters collaboration by streamlining the creation of a common platform where any asset is available from anywhere to anyone. The software helps organizations optimize fast access and cloud egress costs, while providing a secure, central repository for long-term preservation and disaster recovery. Spectra Vail disrupts the industry by delivering the flexibility to balance location, performance and storage costs of digital assets in a single managed, unified cloud-operating environment, which ultimately accelerates the accessing, sharing and archiving of digital content for long-term media monetization.

Vail Benefits

Vail accommodates unlimited capacity, object count, sites and users. Users benefit from cloud transcode, edit, playout and metadata strip capabilities from various cloud vendors without the need to manually manage each data set and inherently know each cloud's interface. The software facilitates the orchestration of digital assets to ensure that content resides in the location where it brings the most value and at optimal cost. The data is available from one or multiple locations, allowing on-prem and cloud applications to use the same data without negatively impacting performance.

Customer-defined policies automate the placement of digital assets while assigning the retention policies that best meet corporate service levels. Vail provides multi-directional data synchronization across clouds and on-

premises storage so that when content is changed in one location, it automatically changes at other locations. By easily moving assets to the cloud provider that best meets data needs at a given time, Vail helps organizations avoid cloud lock-in. Furthermore, by integrating on-prem media storage with cloud services, Spectra Vail optimizes data egress for lowest cost and fastest access, ultimately allowing organizations to right-size their cloud storage footprint. Vail manages the synchronization of cloud and on-premises storage repositories so that users and applications can be directed to either type of storage based on locality and performance requirements.



BaM Award® Nominee – Consume

Accedo – Tata Play Binge Mobile App

Amidst India's rapidly evolving video landscape it is becoming increasingly difficult for consumers to discover the content of their choice. Currently, in India there are many OTT apps, each with vast content libraries consumers have to download, register, subscribe, use and renew separately. Key features like content recommendations based on watching history, resume watching incomplete content etc are also specific to each app.

The Tata Play Binge Mobile App aggregates movies, web series, tv shows, live sports and other genres from 14+ OTT apps in a single mobile app; with a single login, subscription and interface. The Tata Play Binge App offers mass appeal with content available, whilst maintaining nuances for regional audiences.

Users can access a wide range of content including 20,000+ movies, 8000+ web series Live sports, Documentaries, Kids shows, and more, from the 14+ partner OTT apps. Content is available in over 10+ genres and 14+ languages, with regional being one of the key pillars for the India market.

Designed to maximize consumer convenience, the Binge app eliminates the need to download and subscribe to multiple OTT apps, offering everything in a single login, subscription, and interface with content from most apps opening inside the app, meaning users don't have to download any other partner OTT apps. Users are offered further convenience with the ability to browse by apps, genres, languages, trending and continue watching rails. Furthermore, the app was designed to get the consumers to video playback in the fewest steps possible, keeping it simple to discover and navigate, whilst still showcasing the depth and breadth of content. It has a seamless UI which takes a content-first approach and enables customers to focus on what to watch rather than where. It eases discovery further with a single universal voice-enabled search, which searches for content across all the partner apps and gives real-time results to the users.

Accedo was tasked with developing a highly customized user experience for the Binge app providing an end-to-end solution and acting as the prime system integrator.

Accedo's extensive front-end experience meant it was able to quickly develop an offering to realize Tata Play's objectives.

Along with a wide range of free content, premium content watching starts at as low as Rs. 59. The intuitive pack selection journey clearly compares the various plans as well as bringing out the USP of each and gives the users flexibility to choose their preferred apps.



BaM Award® Nominee – Project, event & collaboration

Eluvio – First 4K UHD Digital Movie NFT: *The Lord of the Rings: The Fellowship of the Ring* (Extended Version) Web3 Movie Experience

Marking a ground-breaking, first-of-its-kind Web3 entertainment offering, *The Lord of the Rings: The Fellowship of the Ring* (Extended Edition) Web3 Movie Experience from Warner Bros. Home Entertainment and Eluvio is the first major studio film released as a multimedia living NFT, an exciting new way for fans to engage with the film through two dynamic menu experience options – The Mystery Edition and The Epic Edition. Both allow owners to watch the extended version of the film in 4K UHD, access more than 8 hours of special features, view image galleries, discover hidden AR collectibles, and explore themed navigation menus based on iconic locations from the film, as well as own and trade the experience in a community marketplace.

The Lord of the Rings: The Fellowship of the Ring (Extended Edition) Web3 Movie Experience is powered by [Eluvio](#), pioneers of the [Content Blockchain](#) and Web3 innovation throughout the media and entertainment industry

The Eluvio Content Blockchain provides a high-performance, simple-to-use, and cost-effective Web3 platform built for content. It enables Web3 native media experiences, allowing publishers and fans to directly enjoy and monetize shows, films, concerts, digital albums, digital collectibles, interactive and metaverse experiences, and more. Content creators, and their communities, benefit from a significantly more carbon-efficient alternative to traditional platforms for digital asset management, 4K streaming, ticketing, NFT minting, and trading of premium content. Notably, in this experience, the core digital assets along with derivative NFTs are all on the blockchain, not just the token (NFT) itself. Warner Bros. Home Entertainment and fans enjoy blockchain-backed access control and content rights enforcement, scalable attestation of ownership, smart contracts that enable distributed royalties, and content experiences that can even evolve over time.

Eluvio's Content Blockchain also provides a breakthrough in carbon-footprint efficiency in the ways it manages media and uses blockchain technology, and on-chain content ownership. Through a novel compositional and just-in-time protocol, the Eluvio Content Blockchain does not make digital file copies and significantly reduces the network storage and usage requirements as compared to traditional streaming and content distribution systems. It also uses an eco-friendly 'proof-of-authority' consensus, which avoids the high energy consumption used in computational 'proof-of-work' blockchains.

The Lord of the Rings: The Fellowship of the Ring (Extended Edition) Web3 Movie Experience sets a new bar for innovation in the distribution of home movies by demonstrating the potential of Web3 for consumer engagement, digital supply chain transformation, and new business opportunities.



BaM Award® Nominee – Project, event & collaboration

The University of Texas at Austin (UT-Austin)

Al Bovik, Director

Researchers in UT-Austin's LIVE (UT-LIVE), Directed by Professor Al Bovik, have singularly pioneered the use of visual neuroscience to create picture and video quality measurement and monitoring tools that control the quality and bandwidths of a large percentage of all streaming videos, television, and social media.

Their breakthrough inventions include the iconic Structural Similarity (SSIM), Multi-scale SSIM (MS-SSIM), and Visual Information Fidelity (VIF) 'reference' visual quality tools, which delivered dramatic leaps in performance when introduced, and are still dominant today. These tools are used today to control the quality of most streaming and social media pictures and videos in the US and beyond. Bovik and his team also disrupted the field by inventing the first accurate and practical "blind" visual quality models (BRISQUE and NIQE), using models of neuro-statistical distances, at the neural level, between distorted and distortion-free visual signals. These tools are also globally marketed and used in numerous industry applications, including inspection of streaming and social video uploads, control of cameras, and remote video transcoding in the Cloud.

As examples of the impact of their inventions, UT-LIVE's VIF is the core of the VMAF system controlling the quality of every video streamed by Netflix globally (as much as 35% of downstream US bandwidth), affecting tens of millions of viewers daily and >200 million worldwide. VIF/VMAF has been adopted by most of the video industry (e.g., Apple iTunes / AppleTV, Meta, etc). Likewise, SSIM and MS-SSIM are used in the workflows of the entire media industry, including controlling the compressed quality of dozens of British Telecom HD video streams for real-time streaming/broadcast. These algorithms, along with BRISQUE/NIQE, are marketed worldwide Video Clarity, The Mathworks, Elecard, MSU, FFMPEG, etc.

The experimental science work at UT-LIVE creating perceptual quality databases is just as significant. These huge data resources underlie all advances in the field: for decades UT-LIVE has conducted the most widely

used, essential, large-scale psychometric studies of perceptual quality, collecting millions of judgments from tens of thousands of human subjects. These databases are required, de facto global standard tools supporting all quality-related work in streaming and social media, encompassing every aspect of picture and video quality (both cinematic and 'user-generated', including 3D, variable and high frame rate, high dynamic range (HDR), audio-video combinations, and virtual reality.

All the algorithms and databases created by UT-LIVE are immediately available free to the world towards elevating the media industry, and always have been.



IABM members have access to a wide range of benefits



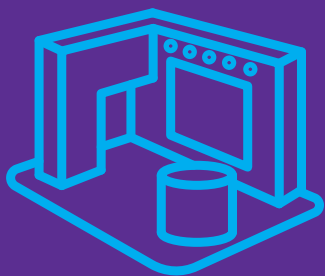
MEDIA TECH
INTELLIGENCE



KNOWLEDGE
AND INSIGHT



COLLABORATION



EVENTS &
TRADE SUPPORT



SKILLS &
EDUCATION



BRAND
ENHANCEMENT



Sustainability

Rohde & Schwarz **Sustainable broadcast transmission**

Despite the continuing growth in audiences for streaming content, the established broadcasters remain popular. Indeed, market predictions are that, while streaming services will gain viewers and revenue, traditional linear television will remain stable; Statista even suggests a slight rise in daily viewing hours.

Is terrestrial transmission the best way to deliver television channels? In purely practical terms, yes it is. It ensures everyone in the audience views at exactly the same time, with the minimum of latency. Transmitter networks are well-established, and the technology is mature and extremely reliable.

But today we have to consider sustainability. Television transmitters are noted for being heavy users of power, and not particularly efficient in operation. How does the environmental impact of broadcast television stack up against streaming?

There have been some wildly varying estimates of the carbon cost of streaming recently and it is not easy to identify reliable data. Two promising sources put the CO₂ equivalent of an hour of streaming Netflix at 36g (The Shift Project) or 55g (Carbon Trust).

A legacy television transmitter with a 10kW emitted power and 20% efficiency consumes 50kWh. Our World in Data has a useful chart of the carbon intensity of electricity by country (<https://ourworldindata.org/grapher/carbon-intensity-electricity>). In 2021, it showed wide variations, from 9g CO₂ equivalent per kWh in Sweden to 428g in the UAE; 402g in Germany

*A legacy
television transmitter
with a 10kW emitted
power and 20%
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50kWh*

and 380g in the USA; 265g in the UK and just 67g in nuclear-reliant France.

If we take the UK figure as a rough mean, our transmitter site would produce 13.25kg CO₂ equivalent. Compared to, say, 50g for the streaming service, that is a seemingly disastrous ratio of 265:1. But, of course, streaming video is a one-to-one connection. If the house next door is watching the same streamed programme at the same time, they are responsible for their own 50g CO₂ equivalent. And a television transmitter is capable of reaching very many more than 265 households – potentially millions – with precisely the same energy consumption.

The first takeaway, then, is that terrestrial television is a very efficient way of delivering content to substantial audiences.

But the legacy transmitter site quoted earlier has an efficiency – the ratio of AC in to radiated power out – of 20%. That really is not very impressive, and it is time to make serious changes to improve the conversion factor.

The next generation of transmitters must focus on optimisation of energy efficiency. There is obviously a direct and significant operational saving if you can reduce the power consumption for the same output quality and coverage, as well as the contribution to sustainability that makes.

New power amplification architectures are now delivering significant improvements in efficiency. These architectures also contribute significantly to resilience, meaning that a transmitter can continue to provide an acceptable output even in the case of partial failure. That means you may not need hot or warm standby electronics, which consume power even though they are not on air.

There is another sustainability issue here, too. New electronic architectures,

combined with excellence in physical design to maximise cooling flows and eliminate thermal stress, are more reliable and resilient, which means less emergency maintenance. Add an intelligent control layer which is capable of self-repair and clearly reporting potential problem areas, and there is less need for every transmitter site to be permanently manned, and fewer road journeys with urgent spares are required. The efficiency of the transmitter site is measured in terms of the ratio of the incoming AC power to the radiated output. That includes all the services of the building as well as the transmitter electronics themselves.

Air conditioning is a significant power consumer, and air-cooled transmitters will always need powerful HVAC to take the heat away from the electronics.

Liquid cooling can take the heat not just out of the racks but out of the building where it can be dissipated into the outside environment. This saves an enormous amount of energy for air conditioning, and with that it significantly reduces the carbon footprint of the complete transmitter site.

All of these considerations have led to the TH1 transmitter family from Rohde & Schwarz. The environmental performance will be dependent upon the format and frequency of transmission, but on average it provides 44% energy efficiency (and in some cases as much as 47%).

Going back to our notional 10kW transmitter, it now only needs around 23kW of AC input, so energy costs and carbon outputs are 50% or better than the installed base of transmitters. If we say that the transmitter reaches a million households, then the carbon footprint of each one is a mere 0.006g CO₂ – a very significant boost to environmental performance.

The TH1 transmitter family from Rohde & Schwarz on average provides 44% energy efficiency (and in some cases as much as 47%).

Monetize and Consume

In this issue of Journal we are featuring articles from IABM members who operate in the Monetize and Consume segments of the BaM Content Chain®, covering the latest developments in preparing and managing completed content and its publication, including playout of linear and non-linear content, and orchestrating the workflow and resources required.



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



24i

Staking your fortune on FAST? Don't neglect the data!

Linear TV isn't dead, but the internet has changed it forever. At a time of global downturn, an increasing number of content owners are pinning their growth hopes on ad-funded live or VOD-to-live FAST channels. But drawing eyeballs and maximising ad revenues in this increasingly crowded marketplace will rely on more than just an EPG and good promos.



Damien Read
SVP Data
Products, 24i

VOD personalization is now increasingly popular and as users we're familiar with data-driven concepts like "recommended for you," "trending for you," "because you watched The Crown..." and "more like this". At 24i, we've been working with a number of clients to translate these concepts into recommendations for what's on LIVE now in linear and FAST channels. Here are three key lessons we've learned, along with a reminder that the data that's already held in every streaming service can be put to better use with contextual advertising and win a higher CPM on FAST channels.

Data can turbo-charge content discovery for FAST

Content discovery has long been one of streaming's toughest challenges. Personalised recommendations short-cut the search for something interesting to watch in a world of ballooning choice. They represent a great user experience and consequently help to drive user satisfaction. Some of our customers have seen recommendations drive VOD engagement by as much as 133%.

As the range of FAST channels grows, the data available in streaming services about user behaviour and personal preferences make it easier to enhance the traditional multi-channel electronic programme guide (EPG). Personalisation models can put together the content a viewer is most likely to watch and the content that is live right now and displays them in real-time in a prominent "On Now for You" rail where it's most likely to catch their eye.

Push notifications, emails or in-app banners can also be sent (subject to relevant permissions) to remind users that shows they're likely to be interested in are starting, or will be live in a few minutes. For example, if data shows you're a fan of a particular series, you'll get a gentle hint in the UI at 7.55pm that an episode starts live at 8pm.

Live recommendations depend on different modelling

The secret to successful recommendations is getting the right mix of algorithmic models to pick the content you're suggesting. With VOD recommendations we weight our models towards content matching, helping to connect users with more content that's thematically linked to the programmes they've already viewed. We've found that for live recommendations, it's effective to lean more heavily on neural networks and pattern recognition when building your algorithm.

Neural networks aim to find underlying relationships in a set of data. So they'll see that a user, I'll call him Jim, watched three episodes of a comedy TV series and then watched a dating reality TV show. At the simplest level (and obviously with algorithms it's never simple) we can determine that it's worth recommending an upcoming live stream of the same dating show to a similar user who also watched the same three comedy shows as Jim.

The addition of pattern recognition compares Jim to other users – much like the classic phrase we've all seen while online shopping "people who bought this

also bought...” in order to find the programmes that are on live right now which are most likely to be attractive to a specific user.

User experience can be tricky

Although personalisation can be subtle and invisible to the average user, this poses a challenge for services that offer a combination of VOD and live content and want to start recommending both. How do you differentiate between them to avoid user confusion?

Imagine the classic ‘recommended for you’ rail in a streaming service. If you don’t clearly signpost that some of these items are live, you run the risk of annoying users who click on an item and find they’ve missed the first 10 minutes of the show. Most EPGs show you how much of the current programme has already been shown so you’re aware of what you’re getting into. Live recommendations need a way to do the same.

Then comes the question of timing around live recommendations. Should you promote content that’s on live NOW or on live in the next 5 minutes? At what point does it become too late to promote something that’s live because the user has already missed so much of the programme that they’re better off catching it as VOD later on? Our customers are experimenting with various UX options – from a simple ‘LIVE’ icon alongside the relevant items, to a form of countdown clock. The perfect UX will depend on your mix of VOD and live and the volume of live channels you have to offer.

The metadata challenge hasn’t gone away

For every single streaming service we talk to about personalisation, the main challenge is metadata; getting it, cleaning it, matching it. Live TV recommendations can complicate this even further, as one of our customers recently found out. Their VOD library and their Live playout system were using completely different asset IDs for the same series and episodes. This kind of mis-match makes it much harder to connect the dots between a user’s VOD viewing habits and the content that’s on live now.

The metadata used for VOD and catch-up is typically much richer – with keywords and categories – than the simple title and synopsis

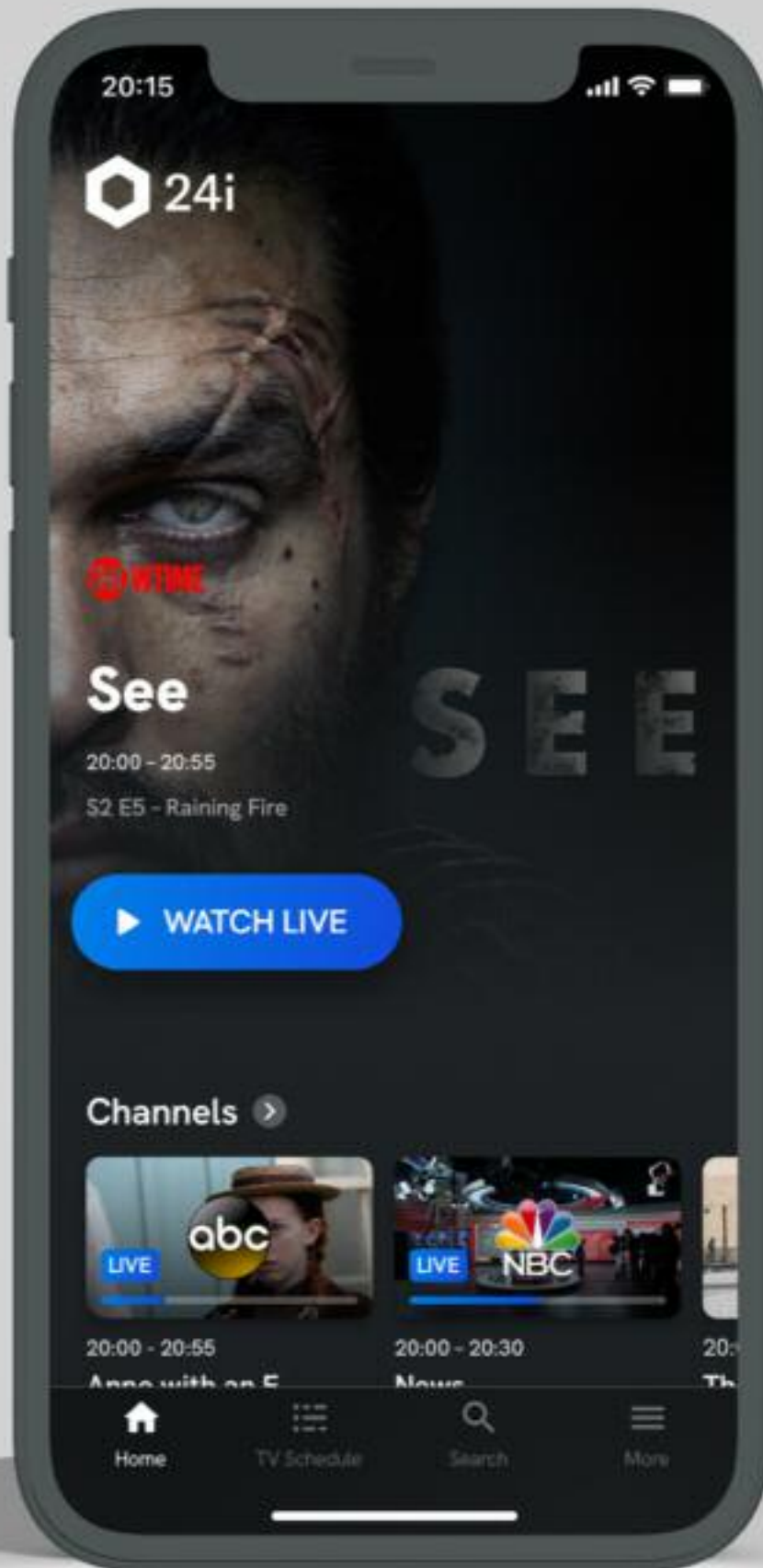
that comes with most Live TV EPGs. In many cases this richness has only come about at great cost of time and effort in enhancing the metadata for search and recommendations. While this shouldn’t be a problem in a VOD-to-live scenario, broadcasters may need to shift their metadata enhancement processes further up the content value chain if they want to surface the best of their live content to individual users.

Data could help fast-track higher CPMs for FAST channels

Every streaming service should be looking to make the most of the data that’s already being collected by their platforms. It’s a top priority for most of the companies we speak to about personalisation. In the world of FAST, that should include providing more of that data to advertising networks. The ‘context’ in contextual advertising shouldn’t just mean data about what’s being shown on the screen at a particular point in the show. Alongside the demographic information that we’re passing about an individual viewer, services should also be looking to supply (anonymised) information about their viewing history.

If we know that Jim has watched 12 home improvement shows in the past few weeks, that demonstrates a potential intent-to-buy for homewares that makes him far more valuable to certain advertisers than a random male FAST viewer of his age and geographic location. Data on whether a household is watching lots of kids TV could also help determine their value to advertisers, even when the kids are safely in bed and the adults aren’t watching kids content. Streaming services need to harness the data available and find new ways to supply it in real-time to their ad networks to get the most value out of programmatic advertising.

At 24i, we’re working with a wide range of video service providers who are keen to make the very best of the data in their streaming platforms to maximise engagement and drive revenue. [Contact us](#) for more insights into the main considerations when offering your users a choice of models for accessing content, including AVOD, FAST, SVOD and TVOD.



Codemill

Optimising Edits with Metadata

Few industries are as fast paced and highly pressurised as the media industry. What was already a competitive field has become even more so, as the demand for content has increased in-line with the explosion of OTT services. To manage this high volume of throughput, content supply chains have become more complex, with multiple teams all contributing towards content preparation.



Simon Bergmark
Chief Product Officer,
Codemill

There is a lack of consistency and uniformity across the industry, and this results in the need to manage a wide variety of formats and metadata standards. This only serves to add to the already complex nature of the modern content supply chain. Naturally, when producing and preparing media assets in such a competitive environment, it is critical that the content's value is maximised.

Managing Content at Scale

To keep up with demand, a typical media organisation will see large numbers of assets continually moving through its content supply chain to facilitate consumer demand. Content is being produced and managed at a scale never seen before. If content supply chains are not optimised, it is harder to monetise content and maximise its value. If media costs more to produce than it needs to, profit margins are quickly going to be affected and this will significantly impact the ability of a business to operate, particularly given the current global circumstances. As the volume of content being produced grows, this issue becomes magnified and bottlenecks can occur.

Media organisations are adapting their workflows to better manage content at scale and are doing this while maintaining their focus on quality. To process all this content, companies need to ensure workflows are streamlined, automated where it makes sense, and operating as efficiently as they can be. This applies to all stages of the media workflow and is particularly important with

those stages that involve a lot of manual, labour intensive tasks, such as essential editing tasks around QC and compliance.

Optimisation Needs Time-based Metadata

Managing content at scale is impossible without leveraging time-based metadata. Scrubbing through literally thousands of hours of content to find errors or complete validation checks is impractical. Take advert markers for example: without time-based metadata, media operators would have the painstaking process of having to manually locate black frames for inserting advert markers. This may need to be done not just once, but multiple times and in different ways for versions of the same content, as media operators prepare it for distribution in regions that have differing ad requirements.

It's easy to see why this process is such a drain on resources. But if time-based metadata is used to identify exactly where the black frames are, rather than operators spending time manually searching through content, they are guided straight to the correct position. Operators can then set a start and an end point for the content, find the optimum position for ad-breaks and move on to the next task. This is where time-based metadata can make a huge difference to the efficiency of a content supply chain.

The same applies when it comes to the QC and localisation process. Let's say an operator has to remove frames showing restricted content such as firearms. Without time-based metadata, this



could involve trawling through masses of content to find all problematic frames. In addition, if operators have to manually search each frame, there is always the possibility of overlooking the inclusion of a firearm, where it is not immediately obvious. An error of this nature would understandably have quite significant repercussions.

With time-based metadata, operators are guided to the frames where essential actions are required. This means they can quickly manage, edit, and remove errors or restricted content. Operators are empowered to work efficiently and focus their time and energy where it is needed most. By letting the metadata guide them, an operator's workflow becomes more targeted. Individual actions are made more efficient and then multiplied across thousands of hours of content processing, so companies can optimise the monetisation of both archive content and acquisitions.

Simplifying essential editing

Media operators are under enormous pressure to perform the necessary actions around QC, compliance and localisation, quickly and efficiently. Failure to do so can create a backlog in the system which can be catastrophic for media businesses. Many of the tasks involved in essential edits are repetitive and time consuming. Let's say a media operator is responsible for locating and removing errors such as bars, black frames, or slates and tones, from 100 hours of content for a particular show. What if an operator can access the content straight in the browser and easily locate, edit, and fix any errors? This is a much more efficient way of working than having to open and use more complex video editing solutions not designed specifically for essential edits.

The localisation element of the process can be optimised in the same way. Media operators need to be able to remove frames that show content which is prohibited in certain regions - such as violence, explicit content, or drugs. Being able to do this quickly and easily in a browser from anywhere, will speed up the supply chain and save costs.

Automation also has the power to speed up the editing process, and at the same time allows operators to apply their skills in other areas. Automating repetitive and onerous editing tasks wherever possible, will save operators huge amounts of time and help to optimise an asset's value. Automation is not only a critical

requirement when improving efficiency, it also plays an important role in minimising human error.

Maximising Value

In this era of expansive content consumption, the value of media assets must be maximised. The complexity of content supply chain workflows has a huge impact on how organisations can effectively monetise a large volume of media. By radically simplifying the editing process that accompanies QC and compliance, actions can be performed quickly and efficiently.

Modern cloud-based, content processing allows media companies to optimise asset preparation and streamline workflows. This provides operators with much faster and more efficient methods for segmenting content and carrying out essential edits. By using both automation and time-based metadata effectively, media companies can monetise and truly maximise the value of their media assets.





MetaBroadcast

Convergence Forcing a Focus on Data

FAST. AVOD. SVOD. MVPD. vMVPD. OTA. These services represent the options available to content owners or aggregators to deliver entertainment, sports and news content from centralized hubs to individual consumers. Their goal is simple – expose and monetize their content libraries to as many consumers as possible. However, that doesn't mean the consumer is top of mind when it comes to facilitating their journey to their content of choice.

There is nothing innovative when it comes to revenue models. While the technology continues to evolve, enabling a plethora of service models, business models reflect a simple choice between subscriptions and ads. And, as much as the delivery technology advances, the user interface remains relatively constant. Consumers continue to navigate familiar grids and rails to select their desired content. However, a recent VideoNet webinar, "Winning the Aggregation Battle", shared survey results indicating that 58% of respondents indicated that Content Discovery is the most valuable value add beyond actual carriage for content aggregators.

This reinforces the importance of the technology and data that enable the grids and rails that consumers see upon arrival in their video service of choice. Ongoing innovation and adoption of technologies such as Clouds, Data Lakes, Artificial Intelligence and Machine Learning are critical to presenting the right data at the right time – and for addressing the elusive nature of consumer intent. Just as streaming is displacing linear broadcast, gaming, social networks and the evolving metaverse will gain bigger shares of the consumer's available entertainment time.

User Interfaces will evolve to reflect a convergence of multiple types of services – all available from one service provider. This requires content management systems to aggregate data from more sources. It will not be enough to present textual data. Metadata must include visual images and deep links to more detailed

data. It will not be enough to only present data about video content as service aggregation expands beyond audio and video to include gaming, social video and augmented reality.

The path to successfully delivering converged services will be dependent upon metadata. Metadata is already the source for guides designed to help viewers find something to watch every day. It is also the foundation for content discovery. Recommendations reveal content that is new or aligned to a subscriber's past viewing history. The metadata challenge is to provide a contextual perspective of available content.

Whether service providers are aggregating, curating or recommending content, they and their subscribers require metadata providing synopses, cast & crew details, visual images, ratings, reviews, language spoken, deep links and more. Unfortunately, this level of detail is not all available from one source – especially when local content is included in the service. Additional challenges arise when popular programs are made available internationally, in different languages or called by a different name to appeal to local audiences.

MetaBroadcast helps video service providers overcome these hurdles. We aggregate and normalise metadata from multiple sources for your VOD, broadcast, FAST or pop-up media platforms. With over 50 existing integrations to popular data sources, we are familiar with the challenges of consolidating, organising and delivering data to service providers in the format



and character sets they require. If we aren't already ingesting data from the source required, we have the tools and processes required to acquire, transform, enrich and deliver it, with monitoring and reporting to de-risk any issues that often occur when provisioning a data pipeline.

With 15 years of experience Atlas our SaaS active data platform, provides rich tools, a data lake, and a mature ETL process for metadata that has been developed based on the requirements of some of the biggest broadcasters in the world. Yet our platform also serves the needs of smaller organisations and those expanding their content libraries. With over 99% of UK media asset metadata collected into Atlas' data lake we meet some of the most demanding SLAs in the industry. This has all been built natively in the industry's number one cloud provider, since day one.

MetaBroadcast provides more than just a metadata pipeline. Atlas is designed to achieve operational efficiencies via automated processes. Effective metadata workflow orchestration combined with metadata expertise allows MetaBroadcast to help customers expedite service launch or expansion by providing knowledge on how to scale metadata acquisition to align with customer growth and content delivery strategies.

As broadcasters, streaming services, Pay TV providers and other service providers capitalise on the consumer's appetite for converged entertainment services, metadata will be critical for optimising the consumer experience, simplifying navigation of increasingly complex service offerings and achieving monetisation goals.

VisualOn has a motivated, experienced worldwide team of multimedia experts located in US, France, Spain, Finland, Serbia, Malta and major cities in Asia – Shanghai, Tokyo and Seoul

Member Speak: **VisualOn**

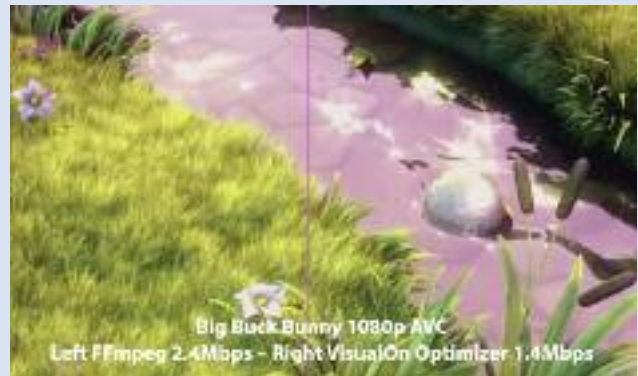
VisualOn was founded in 2003 by Dr. Yang Cai and Dr. Bill Lin in Silicon Valley to bring low-cost, high-quality, multimedia experience to more consumer devices through supporting the new video compression standard H.264 in software. It has since become the leading streaming media player solution provider most trusted by the top service providers in the world.

Fill us in with how the company has developed and grown to the present day

VisualOn has grown from a software codec developer, to a multimedia software stack provider for the world's major OEMs, to a cross-platform media player solution provider to leading streaming services companies in 6 continents, including many of the world's top mobile carriers.

VisualOn has both a fully customizable proprietary player that delivers consistent user experience across different platform as well as fully compatible native players with advanced features and backed by our dedicated support. Our players enable real-time applications, content protection (DRM, Watermarking, etc.), monetization through advanced AdFlow functionalities. Our players deliver content seamlessly across multiple platforms, including Android (mobile, Android TV, Chromecast), iOS, tvOS, Windows (PC, Xbox) and MacOS, Linux, etc. To improve video playback experience, our analytic tool, the VisualOn User Experience Monitor, provides timely in-depth player information and insight for customer service and troubleshooting to reduce churn. Together with our real-time, full frame-rate Remote Lab debugging tool, our customers have an effective set of tools for ensuring the quality of their services.

Going back to our codec root, we have recently announce our Optimizer product in this year's IBC. VisualOn Optimizer offers a server-side software solution to optimize the bitrate of Live and VOD video content, without reducing video quality. In performance tests, the solution enabled more than 30% bitrate reduction on average while maintaining the quality of H.265/HEVC and H.264/AVC media for video delivery. VisualOn Optimizer efficiently analyzes the content and to determine the best transcoder settings for achieving the target quality. VisualOn Optimizer can be integrated with existing delivery systems in a matter of days without the need to change transcoders or delivery workflows.



Today, VisualOn has a motivate, experienced worldwide team of multimedia experts located in US, France, Spain, Finland, Serbia, Malta and major cities in Asia – Shanghai, Tokyo and Seoul. The many years of experience accumulated over many years through working closely with our customer enable us to provide the best customer support and service in the industry. To our many happy customers, we are not just a software provider, we are also a partner and trusted advisor in helping them bring their services with shortest time-to-market and widest possible reach to different devices without compatibility issues, as well as continue optimizing their services.

What are the challenges service providers face with using native players alone?

Native players support basic playback on their target platforms. The most common OTT native video players today are AVPlayer for iOS and ExoPlayer for Android on mobile devices, and open-source HTML5 players for a browsers. Native players generally lack cross-platform functionalities and are not able to support advanced viewing features, analytics, ad tracking and insertion. They are controlled by the platform owners with arbitrary constrained placed with their own interest in mind. They leave little room for differentiation and are not future proof. And their lack of



guaranteed support prevent customers from ensuring the quality of their services or achieving their business objectives in a timely manner.

VisualOn's solution provide compelling benefits over native players in all of the following 5 aspects: Customer Experience, Customization and Cost, Control, Customer Service, Easy to Migrate.

What are the key factors that affect the viewing experience from the video player perspective? And are there any challenges based on your experiences helping build streaming services?

With streaming video becoming mainstream and overtaking broadcast TV, consumers have raised their expectation of viewing experience and quick to jump ship in this hypercompetitive market. Playback should be reliable – consistent starts without failure with low latency, stable – without errors and with minimal buffering and smooth transitions to accommodate changing network status through ABR technology, uniform and synchronized across different devices, and of course with high-quality audio / video and offer immersive experiences through VR/AR.

It is also important to keep viewers engaged through ease of finding contents, relevant recommendation, incorporation of social interaction through WatchParty, second screen applications and interactivities such as allowing viewers to select what they want to see through synchronized multi-stream, multi-camera angle playback.

It's very challenging to offer a consistent, scalable high-quality viewing experience on all different platforms, supporting all types of contents through varying network conditions while supporting effective monetization mechanism with reliable content protection. The player plays a key role in managing the conflicting priorities such as high-quality, low-latency and reducing buffering, as well as improving user experience under different viewing environments.

What are the major trends and disruptors in video that you see coming?

Nowadays, the way viewer engage with content has changed and operators are looking for new ways to increase the viewers' interactivities with video content. Solutions such as MultiStream Sync, WatchParty, fast channel switching, Adaptive Nightvision, etc., are designed to match the demands.

Monetization through advertising is becoming more and more important. Our Advanced AdFlow product provides a smooth playback experience for transition between content and advertisement, support cutting-edge technology such as Open Measurement, reports accurate tracking information and enforce versatile business logics.

Delivering immersive video experience requires high-resolution, high-framerate that consume a lot of bandwidth, storage and energy. Our Optimizer product effectively address this challenge by significantly reducing video bitrate without sacrificing quality and without a revamping the existing workflow.

Deutsche Welle DW Innovation – Towards Trustworthy AI in Media Tools

Broadcasters and media companies are implementing technologies powered by Artificial Intelligence (AI) and Machine Learning (ML) across the value chain. We see countless use cases for AI based automation or support and new opportunities keep emerging. So far, the focus has been on the usefulness of AI systems in terms of accuracy and performance in relation to a specific task. This is now changing with a wider uptake of AI, new capabilities for ML and public debates on this technology.

Birgit Gray from DW Innovation provides insight into Responsible AI and shares her activities in the AI4Media project related to making AI components in media tools more trustworthy.



Birgit Gray
Innovation
Manager

Moving from AI to Responsible AI

Many media organisations now look at AI related risks, concerns of staff, acceptance levels and the degree of trust into outcomes or predictions. As in other industries, they might publish corporate AI guidelines or ethical principles for the use of AI in their organisation. Globally, there is dynamic development in the field of Responsible and Trustworthy AI, going beyond accuracy with dimensions such as Fairness, Privacy, Explainability, Robustness, Security, Transparency and Governance. In addition, specific AI regulation is emerging, for example the planned AI Act by the European Commission. While the principles of responsible AI seem to be well established, their implementation in AI systems and services remains complex and challenging.

External AI Components

Media companies can be both: AI system developer and user of AI systems from third parties. When creating their own AI systems, they are in control of implementing aspects of responsible and trustworthy AI as required. This is different when deploying AI-powered media systems, content support tools or services that are provided and/or operated by external technology providers. AI related documentation may not be sufficient to judge if and to what extent the dimensions of trustworthy AI have been considered. This can leave AI related managers with a set of unanswered questions, for example, in relation to compliance with their corporate AI guidelines. Further, end users of AI driven support tools, such as journalists, might not easily trust the outcomes of an AI service or functionality.

Exploring Trustworthy AI Components in the AI4Media Project

With 30 European partners from the media industry, research institutes, academia, and a growing network of stakeholders, the EU co-funded [AI4Media](#) research project has several dimensions: it conducts advanced research into AI technologies related to the media industry, develops Trustworthy AI tools, integrates research outcomes in seven media related use cases, analyses the social and legal aspects of AI in Media, runs a funding programme for applied AI initiatives and establishes the AI Doctoral Academy [AIDA](#).

[Deutsche Welle](#) (DW) runs one of the practical use cases in this project together with [ATC iLab](#). Based on our requirements, we received a set of advanced AI functionalities from two of the project's research partners: The [MeVer](#) Group at

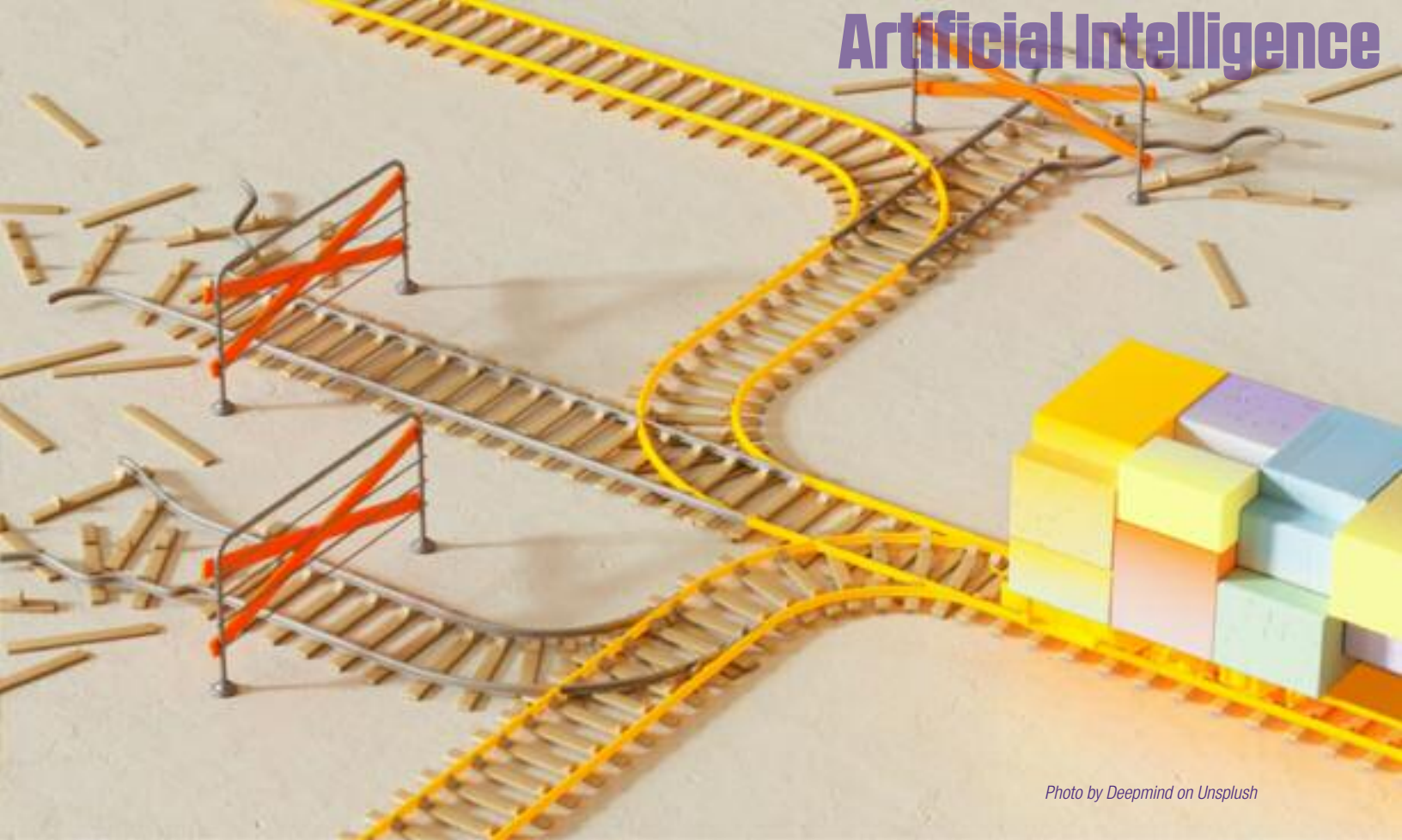


Photo by Deepmind on Unsplash

CERTH-ITI and [Fraunhofer IDMT](#). These were integrated for testing and refinement into our [Truly Media](#) platform for content verification, which has been jointly developed by DW and ATC iLab and is operated by [ATC](#).

These new AI components are designed to support users of the tool, journalists, and verification experts, with specific workflow tasks such as detecting deepfakes, synthetic audio, manipulation in photos or copy-move forgery in audio files. The AI services can help users in this complex, manual process by giving predictions or pointing to areas on which to focus human analysis. The final decision, whether a content item is synthetically generated or manipulated, remains with the human analyst.

For this reason, it is important that the end user of the media tool understands and trusts the outcome/prediction of an AI service that has been integrated into our tool. In addition, managers are interested in evaluating aspects of responsible AI, also in the context of organisational strategic AI guidelines (*Governance*). For one of the new AI services, the Deepfake Detection Service from CERTH-ITI, DW developed specific requirements for Trustworthy AI to address the above issues. Firstly, to obtain *Transparency* information for the AI component, e.g., related to the AI model, intended use or datasets. Secondly, to gain an

understanding of the *Robustness* of the function in the event of any malicious adversarial attack performed on the machine learning model. Further, we needed information to what extent general responsible AI issues had been considered by the creators of the component.

How we Enhanced the Transparency of an AI Component

Transparency of an AI component can be achieved with the provision of a Model Card, a Fact Sheet or similar detailed documentation that is not always available for AI services. This gives descriptive transparency information and is not to be mixed up with the algorithmic improvement of the *Explainability* of an underlying Neural Network.

For the Deepfake Detection Service, DW opted for the Model Card approach, which was originally proposed in a [paper](#) by Margaret Mitchell and has since gained popularity in the AI community. It follows a structured approach to transparency information provision, including Model Details, Intended Use, Relevant Factors, Metrics, Evaluation/Training Data, Quantitative Analyses, Ethical Considerations and Caveats/Recommendations. Following the request from DW, the creator of the Deepfake Detection Service, CERTH-ITI, developed a two-page Model Card containing the above information.

This document gives AI technology managers a much better understanding of the component developer, the intended purpose of the function, the scope and limitations, the types of datasets involved and its performance level. Such knowledge is relevant for a functional review as well as for assessing compliance with Responsible AI guidelines.

How we Evaluated the Robustness of an AI Component

The evaluation of *Robustness* relates to the overall resilience of an AI model against various forms of attacks. For example, an adversary could obtain access to the deployed model of the component and perform very minor imperceptible alterations to the input data to significantly reduce the accuracy of such a model.

While requested by DW as the user of the Deepfake Detection component, the algorithmic evaluation of its robustness was achieved through close cooperation between the component provider (CERTH-ITI) and the expert partner in AI4Media for algorithmic robustness technologies (IBM Research Europe – Dublin). Using the open source [Adversarial Robustness Toolbox \(ART\)](#), CERTH-ITI and IBM evaluated the performance of the Deepfake Detection service by deliberately applying adversarial attacks on the Deepfake Detection component's AI model.

Resulting changes in the performance level of the ML model have been made transparent with a description in the Model Card. This enables comparison to the original performance evaluation results, which were also provided in the Model Card. From a business point of view, this approach allows for an assessment of how secure (and reliable) this AI model is in the context of possible attacks.

Accessible Transparency Information for Different Target Groups

An evaluation of the Model Card revealed that the technical language and AI jargon used are not easily understood by all target groups in a media organisation that require this information. Consequently, DW developed a business-oriented user guide that follows a Q&A format and uses non-technical language. The development of this document required further explanation and input

from the AI component provider to achieve a version of the Model Card that is 'understandable' by managerial target groups. In cooperation, DW and CERTH-ITI also added further information related to legal, privacy, fairness, explainability, security and sustainability aspects, as well as other social/ethical issues. The aim was to raise awareness for these issues in the context of this functionality and to point out open issues that have recently emerged where the research community is still exploring solutions.

Based on this user guide, DW plans to explore further tailored versions, also for end users of the Truly Media tool for integration into the Truly Media user interface.

Lessons Learned

While responsible AI principles and guidelines are now commonplace, the provision of trustworthy AI systems is at the beginning. Our exploration of trustworthy AI in media tools has shown that giving information about the AI related managerial and user context in a media organisation to AI technology providers is a good starting point. Generally, it may be easier to commence with descriptive transparency information and then move towards more complex algorithmic trustworthy AI improvement if and where required for a given use case (*e.g., Fairness, Privacy, Robustness or Explainability*). Although instruments like the Model Card provide an essential basis, further effort needs to be made for making trustworthy AI information accessible to different target groups as well as end users of an AI driven tool.

With a view to scaling our explorative work, several questions remain: Which party should provide what kind of responsible AI input, how to organise the process of cooperation between users in a media organisation and external AI component providers, and what is the role of upcoming regulation and certification approaches?

For resources from the AI4Media project, visit the results section on the project's [website](#), containing White Papers from the use cases, an in-depth report on AI & Media, as well as specific reports on legal, social, and trustworthy AI aspects. The project also provides open data sets and AI components via Europe's [AI-On-Demand Platform](#).

IABM PLATINUM MEMBERS



"We wanted to feed the operational requirements that the industry was lacking as quickly and efficiently as possible, and also give opportunities to junior talent"

Jigsaw24

P.O.S.T Scheme Case Study

From famine to feast: How accelerated training is helping to alleviate the shortage of post-production talent.

Fernanda graduated in 2020 with a degree in Film Production. She spent the next year producing social media content for her mum's small business. James studied film and media at college but ended up working in kitchens while trying to break into audio editing.

Stories like these are common as during the pandemic the development of junior entrants in the post-production industry practically ceased altogether. So, when the sector bounced back and the volume of post-production work increased, the absence of junior talent moving up through the ranks over the last two years contributed to an industry skills shortage, with post houses left scrambling for staff.

With junior tech ops in particularly short supply, Chris Spearman, Head of Operations at Picture Shop in the UK (previously The Farm) recognised the need to develop their own talent at an accelerated pace. "We wanted to feed the operational requirements that the industry was lacking as quickly and efficiently as possible, and also give opportunities to junior talent," he explains. "We wanted to put people into positions where they could quickly become operators and help with the backlog."

Discussions with professional partners and friends at Jigsaw24 Media revealed a shared industry interest and the organisations joined forces to develop a training programme to fast-track the development of future post-production talent – and so the P.O.S.T scheme was launched.

The P.O.S.T scheme

The Post Operators Skills Training scheme is an intensive two-week course designed to give junior operators a comprehensive understanding of the technologies typically used in collaborative post-production workflows. The course is hosted at Jigsaw24 Media's London premises, presented by

their industry-leading instructors, and includes both theoretical and practical elements.

One of the key elements for the hands-on modules was to emulate a real-life working machine room in a post-production facility, without the risk of deleting real, vital pieces of media – so Jigsaw24 Media's solution architect and lead technical trainer, Neal Kemsley, used the company's Nutanix platform to set up a training room with virtualised instances of software including Avid Media Composer, NEXIS, Davinci Resolve, Avid Pro Tools and Flame. Strategy director, David Skeggs, describes the setup as "a modern classroom that offers speed to deploy a single desktop with multiple configurations and different versions of software – so one minute trainees could be creating an Adobe workflow and the next they could be working in Media Composer."

A unique aspect of the training is that a technical supervisor from Picture Shop is present throughout, to provide a common thread and contextualise the theory into real world practice. "Having someone in the room to explain how things are relevant in Picture Shop's post-production environment was really helpful because abstract things are immediately made concrete," recalls Patrick who took part in the second scheme in September 2022. But while the course was designed to meet Picture Shop's needs, Kemsley explains that it is 'not about Picture Shop's processes' and that the aim is to give junior staff an understanding of the full post-production process. Spearman concurs adding, "We're working on genres that span the industry and the skills are ultimately transferrable."



The third element of the scheme is all about providing the context of the tech ops' role in broader post-production workflows – and exposing the different pathways their careers could take. Trainees spend time with key professionals in different areas of Picture Shop, from producers to quality control, mastering, vfx and colour grading. *"Learning about workflows and meeting everyone who works on different sections of the pipeline to see how it comes together has been extremely useful,"* says Fernanda. *"You need to take all that theory and put it into context – then you start to understand how the industry as a whole functions."*

The proof is in the pudding

The P.O.S.T scheme may have been born out of necessity, but Spearman notes *"Like all things with the pandemic, it was an opportunity to review how things were done. While it solves a problem for now, ultimately it's about arming people with skills they can build on and grow with."*

Since taking part in the P.O.S.T scheme, both Will and Anthony have been promoted to positions as Edit Assistants at Picture Shop. For Anthony, the course gave him the confidence and speed he needed to progress, while Will says it gave him a deeper understanding of Avid technologies and processes. But perhaps this feedback from Sonia best sums up the value of the training: *"It was a great experience that enforced my passion for post-production, giving me an opportunity to learn more and pursue my goals. After the scheme, I was offered a position of Trainee Edit Assistant at Picture Shop and that was the best news ever!"*



New Member **Red Hat**

Red Hat began by providing software to run on Linux about 30 years ago. As the largest open-source company in the world, we believe using an open source development model helps create more stable, secure, and innovative technologies. Our portfolio is broader, including hybrid cloud infrastructure, middleware, agile integration, cloud-native development, and management and automation solutions for service providers.

The industry is evolving, and that means new opportunities like expanding use cases that create new revenue streams. Emerging technology solutions offer advantages like building more agile networks, improving customer experiences, and finding innovative ways to deploy content. Here's the hard part, in a fiercely competitive market, where non-traditional players are taking market share: how do you transition to a cloud-native strategy and forward-looking edge computing model supported by automated, software-defined networking? That is not a simple undertaking; it requires innovation and transformation at a pace that works for the entire enterprise.

Red Hat has worked with CableLabs to implement the CableLabs 10G Lab, facilitating the service provider's relentless 'innovation journey' and conquering technical and logistical challenges while leading the industry forward. Additionally, it embraces open and co-compatible configurations to provide a successful proof of concept (POC) and vendor collaboration.

Participants have the ability to deploy instances of 5G, DOCSIS, and other applications at the edge, with vendors configuring their cloud-native 5G network stacks into a multi-tenant, converged, private cloud setting. These initial steps serve as both the catalyst – and the realization – towards the end goal of enabling any workload to be co-located on an infrastructure serving the application in the optimal way. In addition, 5G and hybrid fiber-coax (HFC) are co-located and running as containers on shared infrastructure managed by a common management layer, resulting in benefits including:

- Reducing operating expenses, including power consumption and capital expenses
- Eliminating over-provisioned environments,

matching resources to demand and scaling to optimize the network

- Automating service deployment, faster provisioning, and reducing errors
- Creating dynamic, customized network topologies, multiple geographies, reducing latency

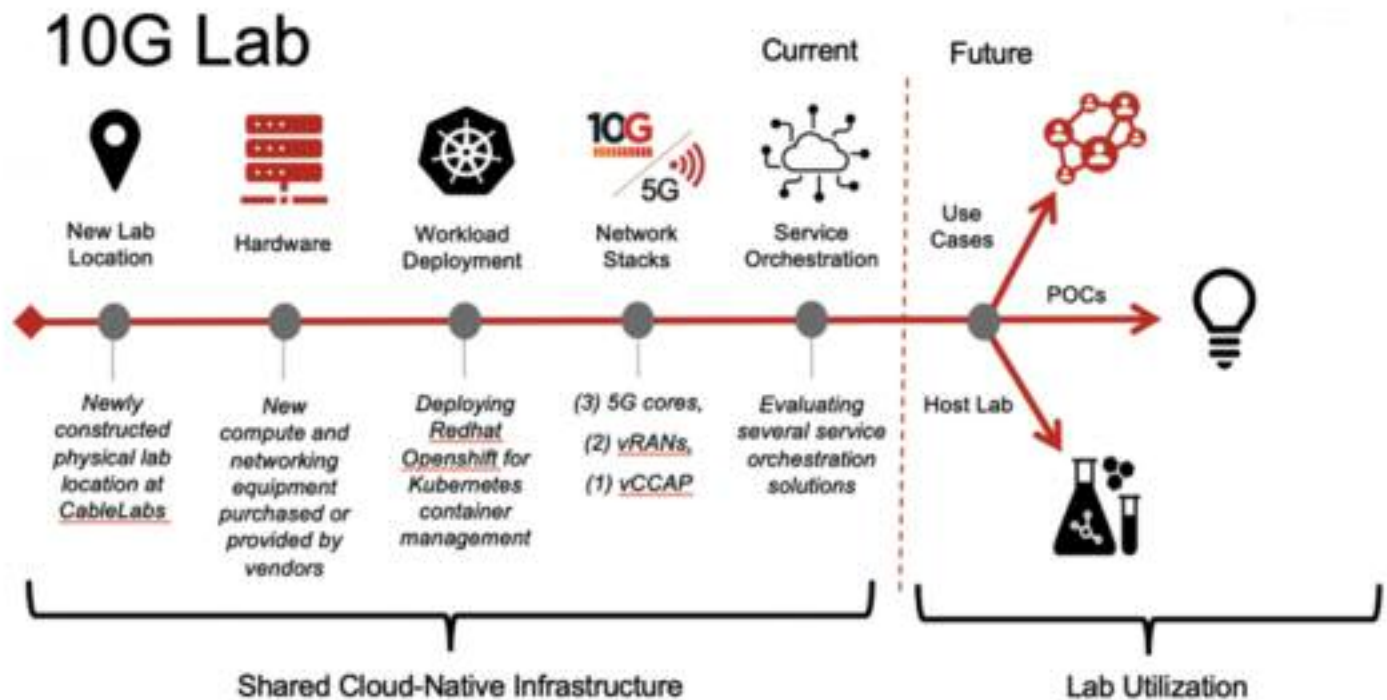
Contributing is the deployment of Red Hat OpenShift, the industry's leading enterprise Kubernetes platform, which allows a high degree of flexibility and functionality without the underlying limitations associated with vendor lock-in. Decoupling the network software from proprietary hardware increases the cadence of system upgrades, reducing the time to market for new capabilities and optimizations.

The 10G Lab is intended to align with the following goals:

- Provide a foundation for convergence-related activities, including executing use cases
- Provide an environment for hosting the **5G challenge** and other interoperability events
- Leverage the POC demonstrations as part of CableLabs' innovation initiatives

Other goals include using learnings to enhance security, optimizing network configurations, balancing resource allocations, enabling performance settings, and easing the management of multiple applications on shared infrastructure. Looking ahead, CableLabs plans to expand the capabilities of the 10G Lab with open source 5G cores and vRAN solutions, as well as a virtual converged cable access platform (vCCAP).

The management of separate wireline/wireless access networks with overlapping capabilities are inefficient and costly, and limits the types of services that operators will be able to provide in the future.



Source: CableLabs: Driving 5G and HFC Convergence with Multi-Tenancy at the Edge May 5, 2022
www.cablelabs.com/blog/multi-tenancy-at-the-edge

The desire to deploy systems into shared infrastructure has been answered within the CableLabs 10G Lab.

For a successful 'innovation journey,' Red Hat's partner ecosystem is an integral part of how Red Hat develops and delivers business and technical value to customers. Our extensive ecosystem of certified partners offers solutions for data over cable service interface specifications (DOCSIS) and cable modem termination system (CMTS) providing choice, flexibility, and agility. The community can help solve customer challenges, build integrated solutions, and establish/grow relationships all built around Red Hat's world-leading enterprise open-source solutions. Red Hat works together with industry groups like CableLabs and The Society of Cable Telecommunications Engineers

(SCTE) to push the boundaries of technology in cable and media. Ongoing contributions in upstream open-source communities, including Kubernetes, OpenStack, and Fedora, and the experience of working with hardware acceleration partners positions Red Hat to identify how open source solutions can be applied to industry challenges, laying the foundation for further innovation.

We invite you to [learn more about the CableLabs 10G Lab and multi-tenancy at the edge](#), in the recently published whitepaper, 'Best Practices for Deploying 5G into a Shared Environment'.

Learn more about its [telecom/media/entertainment \(TME\)](#) solutions, [OpenShift](#) and [Red Hat OpenShift Container Platform](#).

Together, we boast more than 50 years
of combined experience in the media
and entertainment industry

New Member **Take 1**

Greater than the sum of our parts

Almost six months after Take 1's acquisition by Unicorn company, Verbit, Take 1 CEO, Louise Tapia, provides an insight into how the team is collaborating with their fellow media and entertainment sector specialists at sister company, VITAC, to provide end-to-end accessibility services.



Louise Tapia
CEO, Take 1

Verbit acquired Take 1 in July 2022 as part of their strategy to become a world leader in transcription and captioning solutions. But Verbit was not originally a media company. Although they had made significant inroads in the legal and educational sectors, up until a couple of years ago, Verbit was relatively unknown in the media and entertainment industry. That changed when they acquired VITAC in 2021 and Take 1 just over a year later. Despite having spent less than six months as sibling companies, we're quickly discovering that we are greater than the sum of our parts.

Like Take 1, VITAC was originally established as a family business and was started by current general manager Doug Karlovits' father in 1986. Now, VITAC is the largest provider of closed captioning and accessible communications in North America, responsible for captioning approximately 582,000 live program hours per year, and creating verbatim, precisely timed captions for 57,000 pre-recorded programs annually. Their customers include every major broadcast network, most cable channels, streaming platforms, program producers, and production companies, among others. Similarly, Take 1 was founded in Dom Bourne's bedroom in 1998 and has grown into a leading provider of transcription, access, and localization services to the media and entertainment industry. We specialize in start-to-finish transcription and captioning services for video content, from the time the first scene is filmed to the final release on air and Take 1's more than 2,000 customers include national and international broadcasters, cable networks, and streaming platforms, production houses, and social media outlets.

From the outset, there was a really obvious fit between the two companies in terms of the services we provide and the markets we serve, and it made complete sense to join forces. Within a month of Take 1's acquisition we co-exhibited with VITAC at IBC Show in Amsterdam to showcase our joint capabilities and to introduce our



respective customers to our new group partners. The response has been fantastic as both company's clients discover the considerable benefits that this partnership provides.

For Take 1, being part of the Verbit group provides access to their world-leading technologies and innovations, and our association with VITAC firmly establishes our geographic footprint in North America. It also allows us to enhance and expand our service offering – working with VITAC has allowed Take 1 to now offer our clients world-class live captioning which we previously didn't provide. For VITAC, partnering with Take 1 provides access to markets in the UK and Europe and gives the captioning company broader participation in the entire production process, from filming to international delivery. It also provides them with access to our Liberty platform and the capability to leverage metadata to create workflow efficiencies.

Together, we boast more than 50 years of combined experience in the media and entertainment industry and provide a true one-stop shop for accessibility services including live and offline captioning, transcription, subtitling, audio description, translation and dubbing services.

Combining our capabilities to provide an end-to-end service means that our clients will also benefit from workflow efficiencies, faster turnaround times and world-class platforms for uploading media and managing projects. Importantly, the companies also share the same values and ethos around quality, speed of delivery, security and client relationships.

But, while we're integrating many of our processes and working together to create efficiencies, each company has retained our own brand and teams. So, our customers have all the benefit of a global group and expanded services while retaining our personal relationships and the comfort of familiarity. For Take 1, VITAC and our customers, it really is a case of 2+2=5.

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