Special Report: Manage – the next move

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IABM

Manage is one of the BaM Content Chain® segments that's seeing the most change and innovation. Content management systems have historically been associated with large, complex and expensive installations, requiring extensive customization and integration work by technology suppliers. But as broadcast and media companies have increasingly required more flexible systems to keep up with the inexorable move of the industry towards multi-platform content delivery, they are shifting away from monolithic solutions towards agile content management systems that are increasingly utilizing microservices.

The importance of data has also risen exponentially –not only with regard to content metadata but also in streamlining workflows using business rules which also rely on data. This has meant that asset management and workflows are increasingly being handled together with overarching workflow orchestration solutions for today's media factories. It's no surprise then that, according the 2019 Global Market Valuation and Strategy Report, with double digit growth in 2018, workflow orchestration is a flourishing business.

For this Special Feature, we have spoken with a number of IABM members with products and services in the Manage segment to discover what is driving change and development of management systems, how they are being applied, and what we can expect next in this vibrant, but highly competitive, segment of the content chain.

Drivers of change

For Veritone's Product Marketing Manager, Media & Entertainment, Ashley Bailey, it's the technology that is enabling much of the transformation of the broadcast and media industry that is driving change.

"One can't talk about change in Manage without talking about the cloud and artificial intelligence. Now these two aspects combined are creating a wave of change for many – and certainly those in the media and entertainment industry. In a multiplatform world, the key priorities to managing content from a technology perspective are open APIs, built-for-the-cloud solutions, cognitive processing (through AI/ML), and supreme metadata."

"The main driver of change is the transition of scheduled programming to an on-demand, direct-to-consumer media strategy," says Frank Wallace, National Accounts Manager-Media & Entertainment, Chetu.

"For the most part, this means leveraging streaming distribution technology to give viewers, listeners and readers direct access to content wherever and whenever they please. This marks a paradigm shift from broadcasters utilizing external channels and scheduled programming."

David Colantuoni, VP Product Management at Avid, sees the explosion of content to serve all these new channels as an additional driver of change in Manage. "The sheer amount of content being created and the multitude of ways that media is being experienced creates production and distribution pressures – from the need for greater production speed and mobility to more intelligent ways of finding and managing assets. Further, media organizations must accommodate international versioning issues, including language captioning.

"To address the challenges of our ubiquitous 'always-on' live environment, media organizations need ecosystems capable of scaling and managing assets logically and flexibly, together with sophisticated, scalable storage technology to enable content production and distribution from anywhere to anywhere, and on virtually any device. Workflows must integrate with web, mobile, and social platforms, while enabling all stakeholders to view footage in a browser, and comment on it or log it as needed," Colantuoni adds.

VSN Marketing Director, Patricia Corral, also sees an integrated approach using best-of-breed components as central to success in Manage – moving towards integrated workflow orchestration. "The main factors of change taking place in the field of media and content management are based on two key concepts: an increasingly advanced automation of all workflows that allows users to perform more tasks investing less time and resources, and of course, a commitment to system integration and adaptability.

"Management systems and tools in the broadcast and media industry are reaching extremely advanced levels of specialization and complexity," Corral adds. "We are on the way to convert technologies such as a Media Asset Management software into the real core of media solutions and facilities. These systems already are in charge of orchestrating and controlling the entire content flow, in order to feed the rest of the technologies and software products that are part of the whole solution.

"That is why we consider it crucial that all software framed within the area of management (either for files, media, workflows, metadata, etc.) is capable of orchestrating the entire media lifecycle without any type of limitation or barrier when it comes to integrate third-party systems," Corral asserts. "Users must have total freedom and flexibility to select the best systems available in the market for their work environments. And technologies such as Media Asset Management software must be there to help them optimize all content transfers and workflows between third-party tools."

Prime Focus Technologies identifies the issue of localization as being central as content volumes and distribution needs rapidly grow. "With the recent explosion in digital platforms, new business opportunities are opening up and premium content creation investments have touched an all-time high," says Vimalesh Melwani, Vice President, Product Engineering at Prime Focus Technologies. "To reach new markets, M&E players are now offering content in additional languages, which is spiking the demand for localization services like dubbing, subtitling etc. The race to deliver high quality content has led content creators to break geographical barriers and work with best-of-breed talent across the globe. These developments have resulted in sprawling supply chains and the increased need for collaboration. With a burgeoning number of content hours and versions to be managed, M&E enterprises are turning towards centralization and end-to-end content management solutions that facilitate seamless operations across the supply chain and help lower cost."

For Piksel, there are two main factors driving change:

"There's a lot of consolidation happening in our industry right now, and that means that we're seeing more companies trying to bring a lot of different systems and infrastructure together. Naturally, that has major implications in the Manage area," says Piksel Managing Director, Kris Brown. "Added to that, you have

the ever-present threat of the FAANG companies to 'traditional' M&E organizations. The opportunity there – or, necessity, perhaps – is to try and add agility and flexibility into the supply chain in order to counter those threats."

Dalet too sees the FAANGs as driving change, alongside other new market entrants. "Companies that have been creating and distributing video content for years now have to compete with technology giants, like the FAANGS, and lean start-ups who target digital-first audiences," says Kevin Savina, Director of Product Strategy at Dalet. "Ultimately, the goal is to deliver more content, to more channels and to targeted audiences quicker and at a lower cost, and automation and efficiency are the keys to success. Streamlining and automating the content supply chain for multi-platform distribution has proven to increase ROI by reducing costs and time-to-market."

How are the new media factories leveraging the new content management and workflow orchestration systems?

So far we've looked at the drivers behind the rapid changes that are ongoing in the Manage segment, but how are broadcast and media companies harnessing these to help them transform into efficient, agile media factories?

Dalet's Kevin Savina gives us a real-world example. "The ability to implement just-in-time, on-demand and at the appropriate budget will facilitate the agility to respond to audiences at their ever-changing platform(s) of choice," he says. "An efficient media factory needs to automatically repurpose content for multiple delivery endpoints without having to repeat processes or involve manual work. The ability to orchestrate content repurposing workflows based on business rules, spanning different formats, metadata needs, timeframes and destinations, can considerably cut down time-to-audience.

"For example, one of our sports clients needs to deliver race highlights to five different destinations (two social media channels, their VOD platform, an affiliate and a broadcaster) within seconds of the highlight taking place," Savina adds. "With the Ooyala Flex Media Platform, the same highlight is automatically re-packaged with the correct graphics, metadata and video format for each deliverable. This task would have previously taken up to 30 minutes of manual work for two operators."
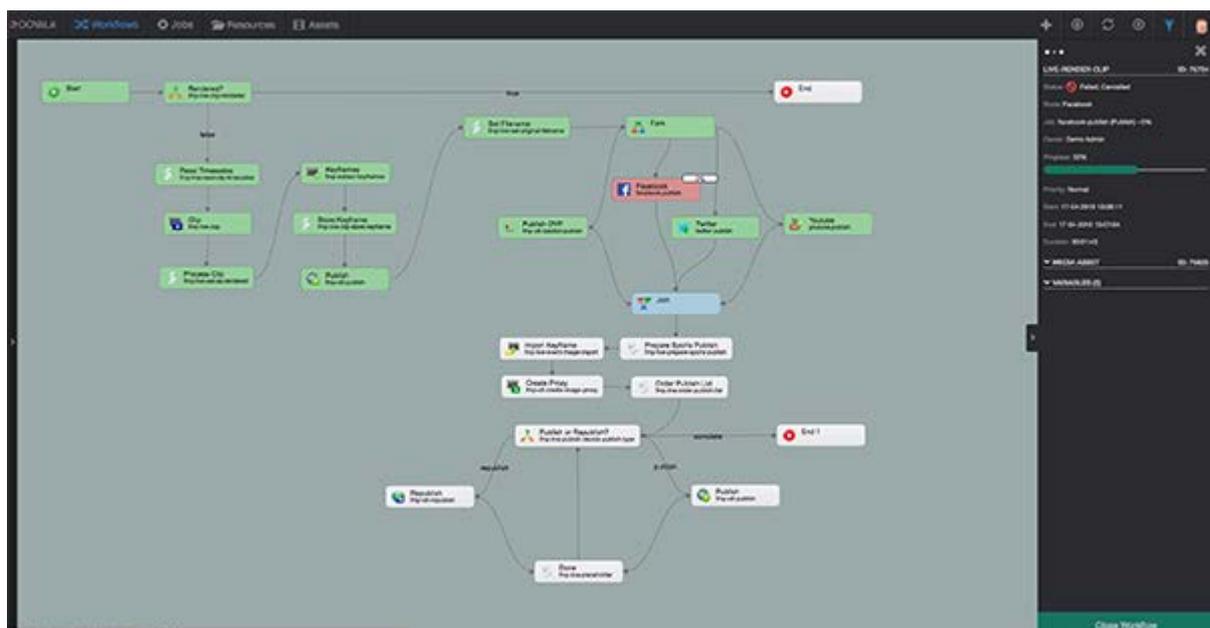
Ooyala Dashboard – orchestrate and monitor packaging

Piksel's Kris Brown sees today's needs as just a continuation of what's always been required, but with a new angle now added: "Really, the priorities are the same as they have always been around content management. Chief amongst them is the age-old issue of cost efficiency; 'how cheap can we make it to manage our content?' The additional consideration now though is 'how cheap can we make it to manage our content while allowing for speed and scalability?'. Viewers want everything everywhere, and that needs to be just as big a priority as keeping costs down."

For Avid's David Colantuoni, accessing content is king for the media factory. "Media companies need to be able to find and retrieve content quickly and easily regardless of its location. The ability to quickly and efficiently search all different storage mechanisms, both in the cloud and in on-premise, archive or nearline storage, is essential to retrieve assets quickly. In the 24/7 news environment, for example, journalists need faster workflows so that they can be more autonomous and productive in the field –able to search, access and create content, send packages where needed, and get video on air and online faster – all from their laptops. Media companies also need functionalities like integrated metadata sharing so that they can leverage content across brands to stay competitive in today's cost-driven broadcast environment."

Avid – NewsroomManagement Laptop

Automation is at the heart of the media factory for Prime Focus Technologies. "Today, broadcasters are following a 'digital first' strategy, rather than focusing only on linear playout," says Vimalesh Melwani. "Adopting automation-led technology is therefore emerging as a major priority, as this enables them to manage digital distribution across the OTT universe with greater ease. Automation helps enhance operational efficiencies, lower Total Cost of Operations (TCOP) and achieve faster time-to-market across the content lifecycle – from creation to delivery. In addition, becoming cloud-ready is topmost priority. M&E enterprises are exploring multi-cloud solutions that help them leverage the elasticity of public cloud infrastructure, while giving them the flexibility to tap on-premise/private cloud infrastructure as needed."

Chetu's Frank Wallace also has a clear recipe for a successful media factory. "Consumers are now demanding more and easily accessible content to satiate their media consumption needs," he says. "This puts a lot of strain on media factories and broadcasters to optimize the entire supply chain from production management, maintaining archives, to distribution.

"Critical components on the production and archiving segments are tools to seamlessly switch between batch scanning, encoding, and other digitizing processing. Additionally, creating a centralized repository with advanced indexing and cataloguing tools. Furthermore, ensuring assets can only be accessed, shared and edited by approved parties with smart permission controls.

"The main priorities in terms of distribution are cross-platform support, multiscreen support, a sleek frontend, and an elastic, load-bearing backend with dedicated endpoints. For broadcasting platforms, the frontend and backend must be equally intelligent boiling down to seamless streaming protocols and intuitive UI/UX," Wallace adds.

VSN's Patricia Corral also has an integrated, efficiency-driven vision of the new media factory. "There are several functionalities and management processes paramount in multi-platform work environments, such as workflow automations, smart cataloguing of content, automatic content production or scheduling based on consumption predictions and analytics, the flexibility to edit files and workflows easily, etc.," she says. "Here is where a good integration with a media management system can help us to stand out, being faster and more efficient in the delivery of content regardless of the final platform of destination.

"For example, our new web-based traffic and scheduling system, VSNCrea, presents at IBC 2019 an advanced integration with VSN's MAM system, in order to offer users total bidirectionality. That is, VSNCrea users can make changes to metadata and files stored in the MAM directly from the VSNCrea itself, without having to access the MAM at all. These changes will be reflected in real time, and the same goes if we perform the editing and changes the other way around (from the MAM to the traffic and scheduling). In the same way, users will be able to access the proxy preview of the assets stored in the MAM directly from the traffic system," Corral explains.

BIY – threat or opportunity?

IABM research shows that an increasing number of broadcasters are investing in in-house development projects in Manage – running at 41% in our most recent survey and principally within the Manage area. We asked our correspondents whether this presented a threat or opportunity for them. All see only opportunities, but each with an interesting individual take.

Chetu's Frank Wallace is very bullish: "It is great to see that broadcasters are recognizing the need for software development to meet their long-term strategies. This allows them to own their software giving them the flexibility to scale and evolve with their business needs by integrating with an expanded set of partner APIs and including all features critical to operations.

"Where Chetu finds the opportunity is augmenting broadcasters' internal development teams with skilled developers that have the domain expertise and know-how within the media and broadcasting industry to offer exceptional software development solutions. As a result, our subject matter experts are equipped to adapt to changing market conditions and provide insight into initiatives that add value to an organization's objectives," Wallace adds.

Vimalesh Melwani at Prime Focus Technologies agrees. "Today, broadcasters are embracing cloud adoption in a big way, which is why some are looking at developing in-house infrastructure to support their content management needs. This is a major opportunity for companies like ours, as we offer holistic SaaS solutions based on multi-cloud and open architecture. This means that customers can continue leveraging their existing investments even if they deploy our solution."

"It's definitely an opportunity to collaborate with our customers," says Veritone's Ashley Bailey. "We live in an integrated world. Organizations, namely high-tech software providers, need to be able to work within a customer's environment; this means thoroughly understanding and adapting to their workflows while improving and creating operational efficiencies."

"Every company is different, and their needs are different as a result," says Piksel's Kris Brown. "In-house builds can be great, but only if you have a very specific idea of what you want to accomplish and the skills to deliver on that vision. Our view has always been that it's better for M&E companies to focus on what they do well and work with the technical partners who can help them with what they don't. Either way, we see this trend as an opportunity. We believe that working side-by-side with in-house developments is the right way forward – for us and our customers – and so we try to combine our strengths with their knowledge and understanding of their organisation and its needs."

For Dalet's Kevin Savina, microservices are the key. "Often we hear media companies say that it's difficult to find a management system that delivers exactly what they need, which is why deploying a platform with a microservices architecture, with open B2B and B2C APIs makes a lot of business sense, since it gives them the best of both worlds: a solid underpinning asset management and workflow orchestration engine, with the ability to build their own integrations and user interfaces on top.

"Both with Dalet Galaxy five and the Ooyala Flex Media platform, we have worked with a number of clients who wanted to give their staff a customized user experience, with only the day-to-day functionality they require, but powered by a productized solution that grows with the industry's demands. A great example is TransPerfect and their technology division, Translations.com, which makes clever use of the Dalet Galaxy five platform, tapping into the web services API for its own development and applying the core component-based workflows and data models to its specific need for translation, localization, versioning and delivery," Savina explains.

Dalet – Ooyala Newer analytics dashboard

"We have integrated our software for media management with customers' in-house developments on several occasions, in order to achieve a solution as complete, optimized and customized as possible," says VSN's Patricia Corral. "We have also found clients who have been working with their own in-house systems for decades, and have finally decided to replace them with solutions from existing vendors, so that they could allocate less internal resources for maintenance and update.

"In the end, the dichotomy that arises here is whether broadcast and media companies can allocate enough resources and investment to keep these solutions up-to-date and always upgraded. But in one case or another, we are lucky to have an open, flexible and easy to integrate technology that allows us to work with clients in both cases," says Corral.

Are workflow orchestration and asset management now happy bedfellows?

This is another question which elicited an almost complete agreement. For Dalet's Kevin Savina, full integration is the future. "The key here is to have a symbiotic relationship and/or a unified offering where orchestration is deeply aware of the content and more importantly, its lifecycle and metadata in order to make precise decisions and predictions. Gone are the days of Input trigger – Process – Output."

So too VSN. "It can't be denied that there is an imperious need to work under one common platform," says Patricia Corral. "It is obvious that the workflows are intrinsically related to media files, so being able to

work with an integrated system, a centralized platform in which both types of operations converge, not only makes life easier for the users, but also allows them to save a lot of time and reduce errors."

For Piksel, it's all about data. "The asset itself, in our eyes, is just one source of metadata in a much bigger sea of information. It's the metadata that we believe is more important, especially when it comes to generating effective rules. We are big advocates of metadata-driven workflows, because better data means smarter processes, full stop," Kris Brown asserts.

"This trend is right on track," says Ashley Bailey.

"While Veritone has never separated the two, it's becoming more and more critical for organizations to tackle all aspects of Manage in order to seize other opportunities in the supply chain such as distribution and monetization."

"We strongly believe in the merits of having a single, centralized system to manage workflow orchestration and media asset management," says Prime Focus Technologies' Vimalesh Melwani. "In this endeavour, we added a powerful work order management functionality to our flagship Media ERP software in 2017. The software now provides end-to-end Work Order Management, pre-integrated with its MAM, workflow engine and video tools. This enables users to manage assets, resources and tasks (human-led and machine-led) along with workflow orchestration across the content supply chain through ONE system. Our customers have already started witnessing powerful business benefits from using this."
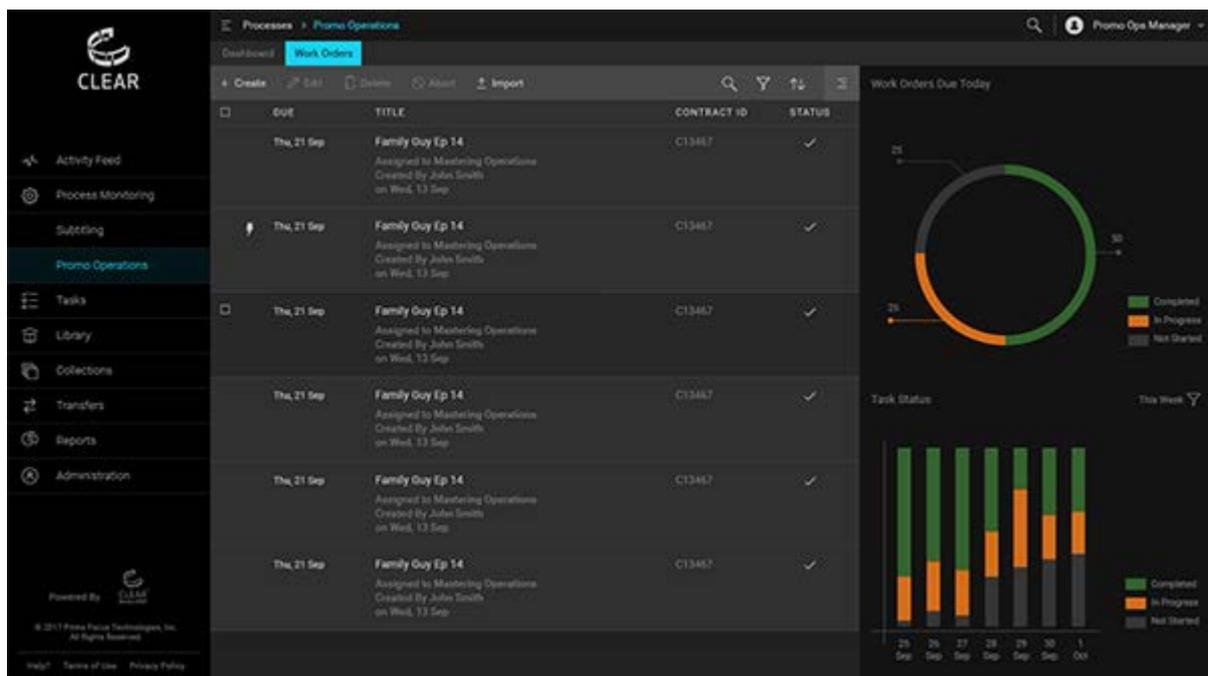
Prime Focus Technologies – Work Order Management Dashboard

"Being able to create a custom application or customize a current platform to optimize workflows through the supply chain is critical to optimizing efficiency," says Frank Wallace of Chetu. "One size does not fit all and technology needs to be leveraged to meet process integration goals through asset creation and versioning, storage and indexing, plus distribution and control."

Cloud – no-brainer in Manage?

We asked our respondents whether the cloud will become the natural home for all operations in Manage. What are the challenges still to be overcome? "The ability to work collaboratively and remotely is becoming critical to today's media workflows," says Avid's David Colantuoni. "Access to cloud-based files accommodates co-located productions. Productions are no longer tied to local talent, preferring the

flexibility and cost benefits of talent that can work from anywhere. Consider many of today's film and TV productions. Production companies have a global talent pool of editors, sound engineers and visual effects experts that are now accessible around the globe. Talent can work remotely and access the same high-resolution files, from anywhere. Likewise, studio and production executives can access content and weigh in on dailies from anywhere. This freedom not only yields higher-quality content but also dramatically lowers production costs.

"Cloud-based, or partially cloud-based, workflows and storage deliver this capability," Colantuoni adds. Yet, as more and more workflows evolve to the cloud and cloud storage is part of the mix at least for some needs, the economics of how it all works together has not been fully resolved. And, as media in the cloud is everywhere, security becomes a greater concern. Content must be secure both from inside and the outside. With cloud solutions, it's possible to control who has access internally while protecting assets from external threats."

"For us, the adoption of the cloud is an inevitable step in this segment," says VSN's Patricia Corral. "In the end, media management systems must be able to be operated by multiple users at the same time, anytime, anywhere. Flexible access to the system – which ultimately acts as the core of the facilities, managing workflows and files at all levels – is essential. Hence, we understand the adoption of cloud almost as a natural step in the evolution of this type of technology.

"We still find some challenges that will need to be overcome to reach its full adoption," Corral continues. Among others, I would point to cloud storage availability and capacity cost; the security of the data and information stored (which seems to be also a growing concern for broadcasters and media companies; the bandwidth capacity, which sometimes it is not ideal yet to move heavy files rapidly; and of course, there are still a few examples of technology for media management available only in desktop versions, so in the end this fact limits remote and multi-site workflows, as well as the adoption of the cloud."
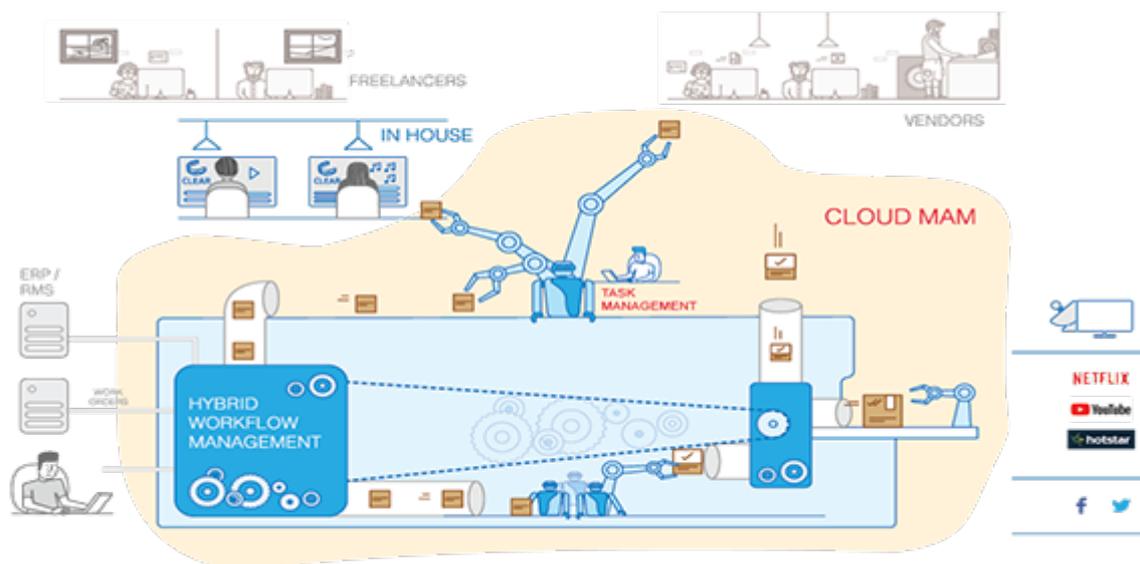
Prime Focus Technologies – Work Order Management with cloud

Vimalesh Melwani of Prime Focus Technologies sees the cloud as the natural choice too. "In order to manage OTT/VoD requirements more effectively, content creators are swiftly moving to the cloud. They now understand the elasticity and cost benefits of the cloud better, and are actively looking to build a connected enterprise that enables seamless collaboration across the supply chain – including customers, vendors and freelancers. Cloud technology is also emerging as a cost-efficient way to leverage AI technology, especially AI-led metadata discoveries like speech to text, content metadata etc. AI requires extensive use of machine resources, and these can be easily managed on the cloud, given its immense scalability and flexibility. This means users need not make CAPEX investments for their AI-led operations, and these cost benefits are further fuelling cloud adoption."

"Cloud technology is being adopted across all industries and media and broadcasting is well poised to take advantage of the cloud's many benefits," says Frank Wallace of Chetu. "Data storage may be on the forefront of cloud-based tech, but accessibility and delivery are a close second. High-quality content, delivered seamlessly, comes at a high data cost – the cost of being successful in the media landscape. End-users demand instant and endless access to a content-rich repository, which is why OTT is a sought-after content delivery model. Just like all other cloud-based systems, SaaS options built on platforms like AWS allows for better user experiences. The biggest hurdle here will be migrating infrastructures and massive amounts of media to cloud environments."

Cost is also the one issue Dalet sees holding up the move to the cloud – but Kevin Savina says the company has answers for this too. "The beauty of cloud deployments are well known: security, availability, scalability, and so on. However, the elasticity of cloud services come at the obvious cost of scaling such services. We see the combination of AI and Machine Learning-augmented orchestration as a means to tap into the above cloud benefits, while nonetheless using predictive analytics combined with job costs and budget in order to assess when to start, based on predicting when it will complete, within the SLA mandates of time and budget."

Both Veritone and Piksel recognise the potential benefits of the cloud, but feel we have some way yet to go. "We definitely see momentum continuing to build around cloud, but it's still a case of positivity on the surface outweighing action behind the scenes. We're seeing pockets of progress rather than widespread adoption," says Piksel's Kris Brown. "I feel like the benefits of cloud are yet to be fully understood within many M&E companies, which is a shame. I think cloud-based vendors need to get better at pushing things like freedom and flexibility, but they also need help from internal evangelists who can pull their organisations in that direction."

"The adoption of the cloud is still maturing, but given where we are in the cloud's evolution and the fact that we now have data to demonstrate the cloud's effectiveness and security, that maturation has accelerated," says Veritone's Ashley Bailey, who also calls for more action from cloud vendors. "Cloud deployment presents more opportunities than challenges, especially when it comes to implementing multi-cloud environments – a proven practice that no longer has the barriers it once did. If there is a challenge, it's that there is not enough clear information on why the cloud is (more often than not) more secure and more stable than on-premises solutions. Cloud vendors must continue developing the research and giving people the information and tools to make informed decisions about the cloud."

AI/ML – key to automation efficiency

In IABM's regular reviews of trends in the industry, the adoption of AI/ML is very much on the increase, particularly in the Manage segment. We asked our correspondents where and how they are deploying AI/ML, and what the benefits are.

"Tapping into both AI and ML in order to learn, for example, how a particular workflow consumes resources and time/costs, helps users predict and make decisions as to when/how to best execute," says Dalet's Kevin Savina. "Additionally, the ability to leverage and orchestrate a number of multimedia indexing tools available in the market for automatic metadata enrichment can save around 70-80% manual work in transcribing video content, captions creation, recognizing objects, faces and emotions and more. This can significantly reduce the time spent looking for content and suggest contextual content recommendations from a large content archive, as well as handle automatic content captioning in multiple languages."

Avid's David Colantuoni sees a major – and value-enhancing – role for AI too. "The most obvious application of AI today is around automated metadata extraction or content 'indexing'. The process of taking content, applying an algorithm to derive time-based metadata that is then registered in an asset management system is greatly enhancing content discoverability. Perhaps even more valuable is the ability to discover valuable content long after it has been archived. Often, we don't know in advance what content will be significant. AI can help uncover valuable assets that are hiding in plain sight within a content library. With enough metadata strata you can triangulate in to find content you may not even know you have.

"Another significant AI use case is automated quality control (QC). AI-driven QC solutions can churn through a library of clips at one keystroke and analyze a broad range of quality parameters. It can show, for example, whether a program master that's targeted for French audiences actually has French language audio tracks, eliminating the need for someone to watch an entire show track by track to know that it's the right version all the way through – a tremendous time and resource saving," Colantuoni adds.

"AI can also be used to ensure the accuracy of closed captions. Without AI, manual caption checks are required. Sometimes captions are wrong in the program master or aren't in sync with the audio. AI quality control can confirm not only that captions are there but also that they're correct. Some QC solutions can even make needed timing corrections," Colantuoni concludes.

Prime Focus Technologies is also betting heavily on AI. "AI can play a major role in helping M&E players streamline content operations and manage their supply chains more efficiently. However, there is a need to distinguish between RPA (Robotic Process Automation) and AI in this context," says Vimalesh Melwani. "While RPA is effective for automating routine workflows, AI can play a far bigger role in the context of analysing different aspects of content (video, audio, on-screen text etc.) and generating deep metadata. AI-generated metadata can be leveraged to drive efficiencies across several core content operations – including cataloguing, compliance editing, subtitling, OTT distribution, sports highlights creation and more. AI is currently a major focus area for us. We recently launched CLEAR Vision Cloud – a media recognition AI engine. Leveraging patent pending Machine Wisdom technology, the engine delivers automation and data that is highly accurate, relevant, contextual and actionable. Vision Cloud powers ready to use AI-led micro services that have been custom made for solving strategic M&E use cases – from content segmentation to thumbnail creation to scene description and play-listing."

"The automation of traditionally time-intensive manual tasks is something that M&E companies should absolutely be looking at," says Kris Brown. "We feel that there is a huge amount of value to be gained by doing so, and many of Piksel's products already have significant machine learning (ML)-powered components. Fuse Metadata Manager, for example, utilises a vast, ML-driven 'content knowledge base' which allows for highly sophisticated ID-matching and the automated enrichment of metadata. And Fuse IQ is a suite of ML applications aimed at simplifying and streamlining real-world supply chain problems."

"Without a doubt, asset management and AI go hand-in-hand," says Veritone's Ashley Bailey, who sees AI unlocking a better, more creative future. "If an organization has the need to manage their assets (and virtually any organization with any amount of assets does), then it has a need for metadata. Because they can use AI to glean this metadata, people can now have the ability to step away from manually logging metadata and instead oversee the workflow, leaving them free for more strategic roles. At Veritone, we refer to this concept as 'in the loop,' 'on the loop' and 'outside of the loop'. In this model, humans no longer need to be in the loop, spending their time completing manual tasks. Instead, they're on the loop, keeping an eye on things but focusing on other critical tasks and initiatives. Eventually, the humans might be out of the loop entirely, so they can focus on other, complementary or even unrelated initiatives."
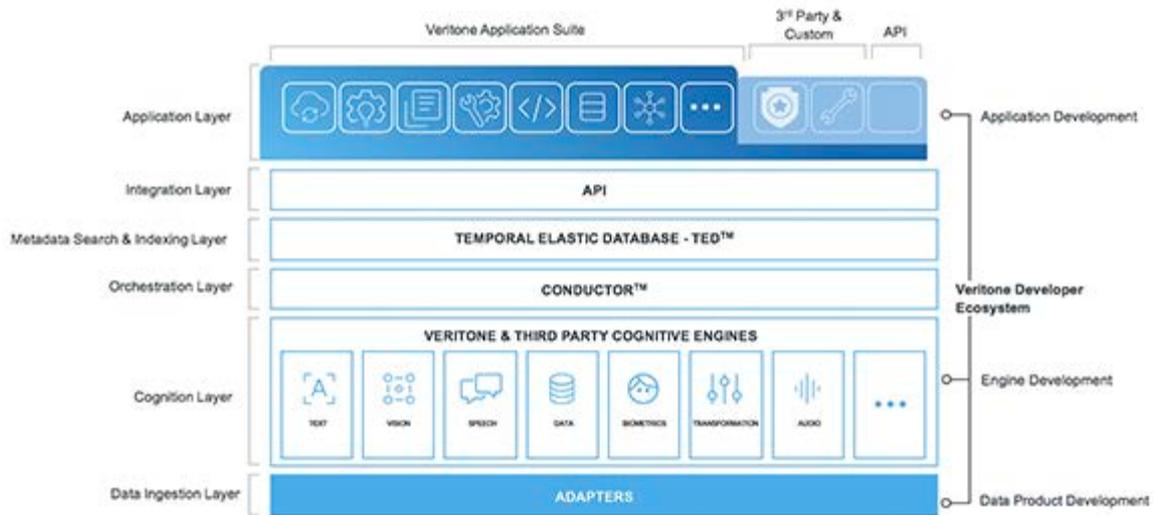
Veritone – aiWARE Platform Architecture

VSN's Patricia Corral's thinking is very much in line with Ashley Bailey's. "Surely, we believe that more automation and specifically, more 'smart' automation is needed to help users concentrate on content creation rather than on repetitive tasks. In the end, a greater automation of tasks lets users become more agile and creative. Thus, companies can be more competitive in the market and stand out. This is why we consider AI a fundamental piece in the development of automation tools and in fact, our latest integrations and features have received a great welcoming, both for automatic cataloguing and advanced search purposes.

"However, our goal does not stop here – at the mere automation of workflows. We are determined to make AI gain a greater relevance in our platform little by little, being able, for instance, to self-segment content or chapters of a program, automatically create video edits for promos and advertising, or to recommend to the user when cuts for advertising should be included in the programming. For sure, there is still a lot of potential in AI to unveil."
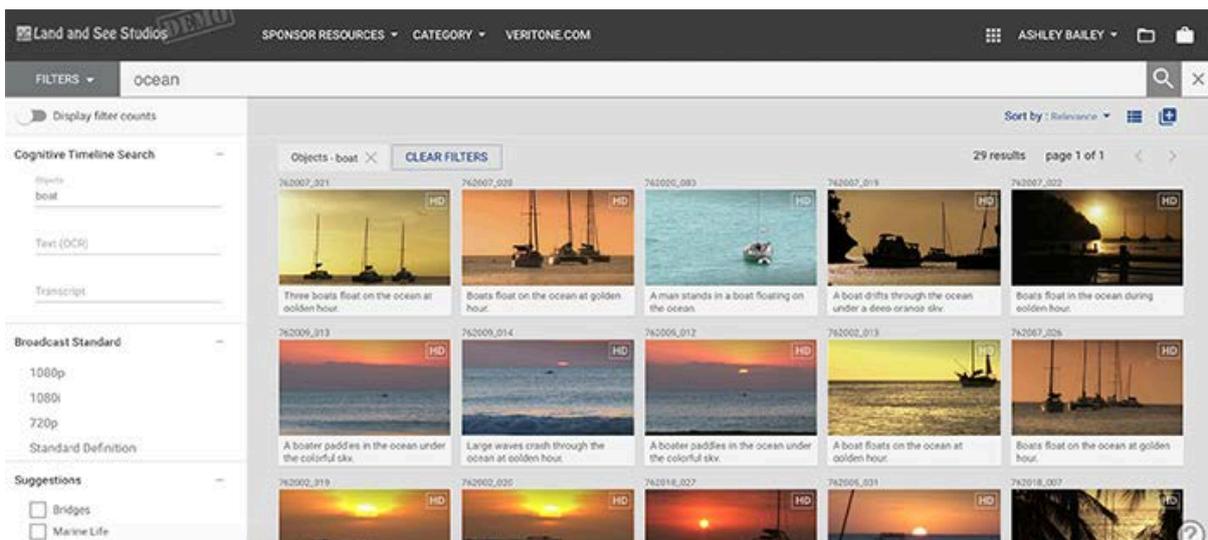
Veritone Digital Media Hub Search and AI capabilities

Last word on AI goes to Chetu's Frank Wallace, who sees great potential for it at the consumer end of the content chain. "Although AI can be used to automate workflows, where Chetu sees the opportunity in Artificial Intelligence is increasing user experiences. Users are now becoming so used to OTT models that they expect personalization and value-based recommendations on media and content. Going above and

beyond user generated ratings to suggest or recommend media, AI has the ability to use complex algorithms to create a recommendation engine based on many meta parameters and user interactions."

What's next in content management technology and workflows?

Finally we asked our correspondents to take a peek into the future of the Manage segment of the BaM Content Chain® – what's coming down the road; what will be writing about next time we take an in-depth look at Manage?

Veritone's Ashley Bailey sees the same opportunity just mentioned by Chetu. "Personal viewing experiences will become more and more prevalent and eventually expected from consumers. While I can't talk about what we are planning, I can say that we are passionate about democratizing AI – and making it so that people don't need to be engineers, or even technical, to use AI technology to improve their workflows and lives." We'll be watching with interest!

"I think that M&E companies need to get ready for a world in which automation is increasingly pervasive, and one in which the idea of needing a physical footprint to deliver is outdated," Piksel's Kris Brown predicts. "Instead, that will become much more closely aligned to the cost of distribution deals or consumer demand. Added to that, we're going to see continuing improvements in targeting via better content discovery. That will be driven mainly by an increasing focus on data quality that enables systems like recommendations engines to perform better than ever."

Piksel – Fuse Metadata Manager

For Avid, it's about enabling efficient, dispersed operations and leveraging AI. "The new version of MediaCentral gives news, sports and post-production operations with dispersed teams the ability and agility to create content faster and deliver it to more outlets and devices. It eliminates geographic and budget constraints, allowing regional broadcasters and sports organizations to produce content more efficiently at better economics," says David Colantuoni.

"Designed for today's mobile journalists and growing social and mobile content consumption, MediaCentral 2019 offers new features like logging for news, sports, and reality TV and multi-site support with more powerful search, enabling media producers to turn content around fast. With MediaCentral 2019, teams of any size – across multiple sites – can quickly ingest, log, search, edit, distribute and publish to multiple platforms all from a unified, scalable platform.

"We've also introduced sophisticated services and workflows like cognitive services. Through services like phonetic indexing – indexing the spoken word of ingested content – you can search on phenomes, or just the voice of what was being said, or use it to complement a metadata search.

"It's now possible to upload content to a cloud computing platform like Microsoft Azure and use AI-driven cognitive service capabilities to create metadata that's searchable within your ecosystem. Functions like speech-to-text, facial recognition and character or image recognition become searchable metadata. More advanced AI-driven metadata search can uncover content media companies might not even know they have, opening up new media and revenue opportunities," Colantuoni concludes.

"We have a deep-rooted desire to solve challenges for our customers, and innovation is a constant in our journey," says Prime Focus Technologies' Vimalesh Melwani. "Our dedicated team of 320+ R&D engineers consistently works on analysing the latest technology trends and augmenting our products' capabilities. Enhancing our AI offerings is currently an important part of our product roadmap. We are in the process of creating innovative AI tools for compliance-driven post production and mastering. These will help content creators cater to different regulatory requirements across geographies with greater ease. Other innovations include AI-led scene boundary detection and the identification of points within content for ad insertion to make OTT distribution more efficient."

"For sure we will keep witnessing how new, innovative technological advances will continue entering and disrupting our sector, as it has recently occurred with AI," says Patricia Corral of VSN. "And the most exciting but also the challenging side of this is that we will be capable of applying all these new – and nowadays inconceivable – technologies to media management in just a matter of months. Thus, we believe that it will be key for broadcasters to strengthen their existing systems and ultimately, invest in new technology for media and business process management that allows them to integrate all these new and disruptive technologies easily without losing any of their systems' potential and usefulness and of course, without affecting users' productivity and daily work."

Dalet – User Interface

Final word goes to Kevin Savina of Dalet, whose recent acquisition of Ooyala is covered elsewhere in this edition of the Journal. "As previously separate companies, both Dalet and Ooyala have kept a close watch on market needs and how the business of managing content from production to distribution is changing dramatically for both media and non-media organizations. Today, the ability to launch new services quickly at reduced operational costs is essential for content owners and distributors to remain competitive,

and as a response, Dalet and Ooyala have been working at launching new SaaS-based content management solutions. This was one of the key drivers behind Dalet's Ooyala Flex Media Platform acquisition, and having combined efforts, Dalet is now working on the launch of a quick-to-deploy, hosted sports distribution solution, designed and pre-configured to import, manage, package and deliver content for sports and eSports leagues, teams, rights holders and broadcasters. Similarly, any company with a video marketing and branding strategy can benefit from Dalet's upcoming hosted and easy-to-use solutions, focused on automated multi-platform distribution for brands.

"Additionally, media organizations seek to easily offer/expose their 'owned' content inventory to external entities for monetization and/or brand recognition. The inventory needs to be integrated with the original source of content (MAM), the user experience must be simple and intuitive, similar to standard online shopping experience and the complexity of the supply chain (including rights-check) must be abstracted from the end-users. Dalet is working on offering subscription-based services to provide users with a simplified view of their asset catalogs and enable external partners/affiliates to access (or request access) to their organization's owned-content inventory. In a nutshell, this will be an easy way for users to monetize their inventory of owned-content managed in their Dalet Galaxy five system. Now under the Dalet umbrella, the Ooyala Flex Media Platform has a solid roadmap, with a number of new features being unveiled at IBC 2019. Increased support for OTT workflows is essential for a solid multi-platform distribution strategy, and this will remain a strong focus for our Product Strategy teams in the next few months," Savina concludes.