



An AWS e-book:

Transforming the media supply chain

Automate asset management and broadcast supply chains, manage media content more efficiently, scale storage and processing to the needs of your business.

September 2019





Introduction

The Media & Entertainment (M&E) industry is not an island. Just like practically every other sector, it has been buffeted, battered, and partially re-shaped by successive waves of digitisation over the past decade and more. And the storm is far from over. This a tremendous challenge – *and a major opportunity* – for every organisation within the sector.

THE CHALLENGE

As viewers have radically changed the ways they consume content in a connected world, some degree of change has been forced on most media providers. But few have embraced digital transformation in a planned and consistent fashion.

THE OPPORTUNITY

To engineer a digital media supply chain strategy that delivers the flexibility and agility to compete in a digital-first world by delivering dramatically improved viewer experiences.



This is one of the most important trends – *and opportunities to change* – that the industry faces right now. The ever-changing environment around the supply chain means our customers need to adapt faster than ever before. It's now crucial to see your production as a supply chain, rather than vertical silos of applications. "



Erik Åhlin
Chief Executive Officer
Vidispine

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This e-book explores that dynamic tension in more detail – and suggests some practical ways forward.

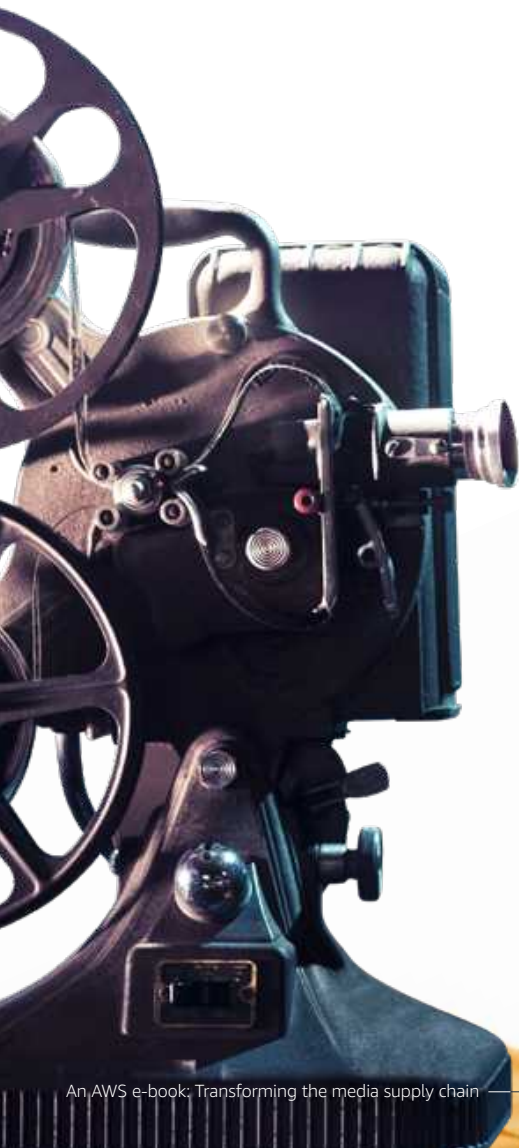
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The challenge

An efficient supply chain is critical to the success of M&E organisations. It is the conduit through which content is created, managed and delivered from the owner, creator or provider to the viewer on the platforms and devices they choose. And as is the case with any physical product, digital content must go through specific stages and workflows in the supply chain process before it becomes a final asset for distribution and consumption. So each of those stages must work with and be optimised by the supply chain too.



Traditionally, these stages would have been completed physically. A movie would be shot on film. Edited in the cutting room. Distributed by delivery vans taking reels to the cinema or VCR tapes to the video store for rental. As digitisation has advanced through phenomena such as digital photography, online post-production, file sharing and more, these traditional models have disintegrated. But not uniformly. And not completely. And of course, real-world supply chains tend to be far more complicated than that with many more stages and elements.

Clean-up efforts have been undertaken where solutions have been retrofitted, essentially plastering over the cracks without fundamentally fixing the structural problems. Different asset management systems running side-by-side have created silos which prevent a holistic view of assets and create storage duplicates.

The result is that today many M&E organisations find themselves with a hybrid supply chain comprising both physical and digital elements, evolved without planning or co-ordination and, therefore, almost inevitably introducing more complexity and inefficiency to already overburdened legacy systems.

The operational implications are that these M&E organisations struggle to be agile and competitive in seizing opportunities to monetise existing content, topical opportunities, new markets and new talent.

The challenge they face is to reclaim their competitive edge as more forward-thinking M&E organisations gain ground through harnessing all the advantages of digitisation in a consistent and timely fashion.



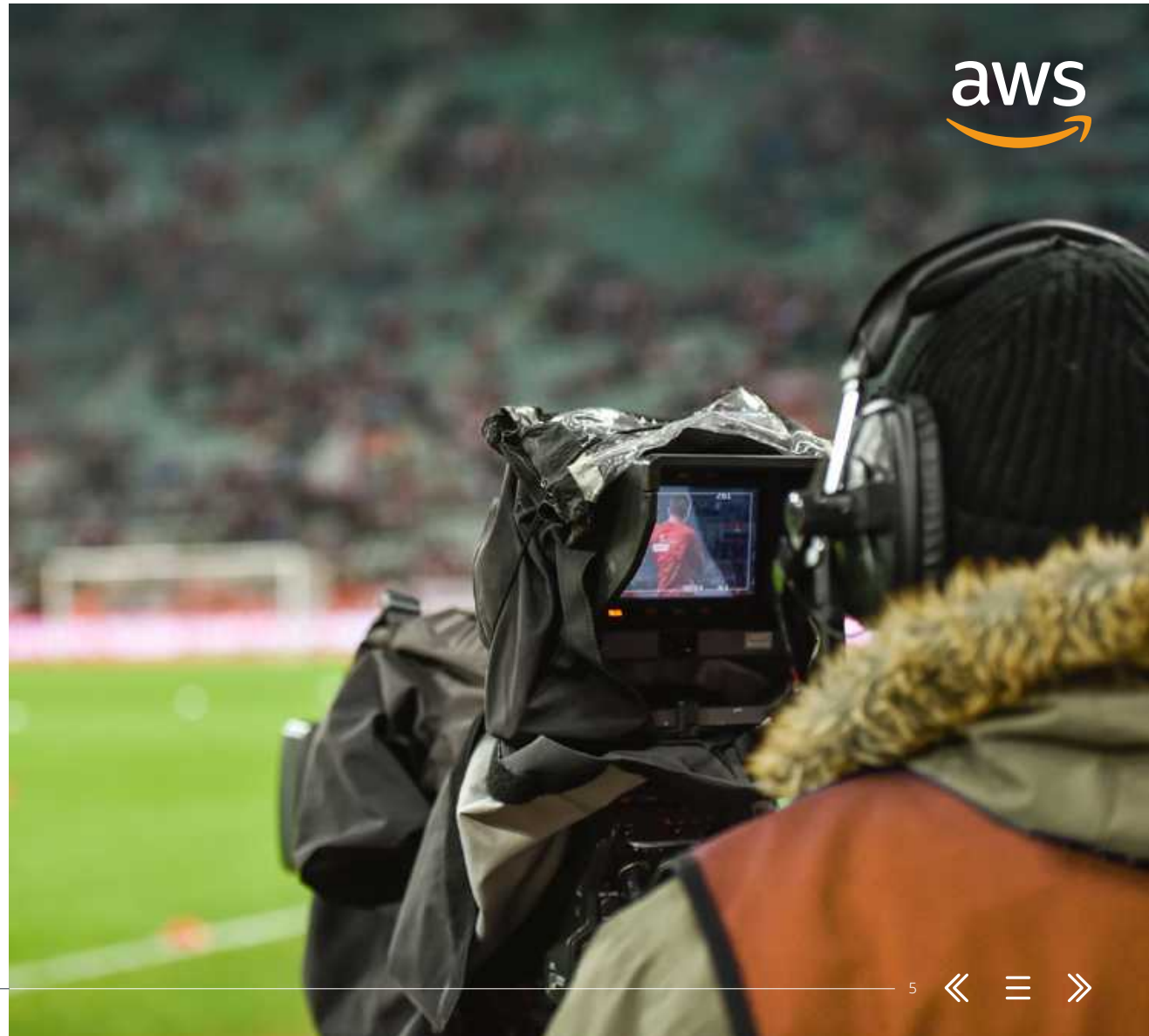
If you take Discovery, originally it was a single channel. Then they got to the point where they were running 20 linear networks... They are now pushing content out directly to hundreds of different platforms. They are linear systems, they're VOD systems, they're catchup systems, they're OTT systems, they're electronic sell-through systems. To be able to scale to that magnitude simply isn't possible in the old way of doing things. //



Simon Eldridge
Chief Product Officer
SDVI Corporation

The goal

Moving beyond this situation requires a clear focus on fundamentally changing the media supply chain. The goal: harnessing the best of digital to more efficiently deliver an increasingly engaging viewing experience.



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There are still plenty of RFPs, RFIs and solution requests focusing on MAM, editing, PAM, and other classical feature-centric procurement and deployment functions. But fresh supply chain thinking and design provides agility and addresses quality, cost and efficiency from A-Z. //



Erik Åhlin
Chief Executive Officer
Vidispine

For media supply chains to deliver in the future:

- Digital assets must become readily discoverable.
- On-premises solutions must be able to scale with business growth.
- Content must be capable of creation and distribution in a timely and relevant fashion.

It's a transformation that goes far beyond technology, extending to business processes and – *fundamentally* – to the way that organisations function.

Organisational parts of the media supply chain must also become more streamlined and efficient.

On-premises solutions must be re-fashioned and integrated for the digital future. And existing licensing models that require capital must be re-imagined so that it becomes easier to understand the cost of asset processing.

In the digital M&E organisation, technology enables every process to operate seamlessly, quickly, and efficiently to meet the high expectations of viewers, and commercial customers, driving competitive advantage.

It's a future in which M&E organisations are proactive and ready for anything – rather than lagging behind and waiting for something to happen as their supply chains struggle to keep up with an accelerating pace of change in a digital-first world.

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...some customers think it's about technology or think it's about Cloud, but what it's really about is business agility. //



Simon Eldridge
Chief Product Officer
SDVI Corporation



Take just **3 steps forward** and you'll never look back

Any initiative for meaningful change must start by analysing the current situation and then planning a series of logical steps for moving forward.

And it doesn't need to be a long journey either. Once the current state of an organisation's supply chain is identified and understood, building a robust digital alternative can take a huge leap forward with just three steps.

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|----------------------|--|
| Step one >> | Adopting serverless workflows |
| Step two >> | Building cloud-based data lakes |
| Step three >> | Switching on to machine learning and analytics |

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Many of our customers start with an investment of less than €30,000 and from that can get something usable, yet bespoke, on cloud. This is a very tangible gain in cost and efficiency when quickly trying out what works. //



Erik Åhlin
Chief Executive Officer
Vidispine

Step one Adopting serverless workflows

Serverless architecture describes a future where users have no need to manage server scaling, and only pay for what is being used. It is a critical link in the new media supply chain.

The advantages are compelling. Because much of M&E work is seasonal or cyclical, there are periods where servers—and human resources—sit idle. The challenge is that these resources must still be maintained and paid for, even when not actively in use.

As the native architecture of the cloud, serverless enables users to shift more of these operational responsibilities to third party vendors, increasing their agility and innovation. Serverless architecture allows media organisations to build and run applications and services without thinking about servers, setting up an end-to-end ingest workflow to move video assets and associated metadata to the cloud using a

simple web interface. They can move more nimbly, continuously integrate and deliver, and realise both agility and speed for testing.

This flexibility also allows for low-risk experimentation. New business models, such as pop-up channels with niche content, can be developed, deployed and taken down much faster, enabling ideas to be validated or abandoned at low cost.

A serverless approach also eliminates infrastructure management tasks such as server or cluster provisioning, patching, operating system maintenance, and capacity provisioning. It can be built for nearly any type of application or backend service, and everything required to run and scale an application with high availability is handled on the user's behalf.

M&E organisations can therefore reclaim time and energy to do what they do best and develop great content which can scale easily and deliver an excellent customer experience.

“
I think customers need to dare to run smaller proofs of concept to get started and learn by doing, rather than waiting. Start small, prepare to grow. **”**



Erik Åhlin
Chief Executive Officer
Vidispine



Step one Adopting serverless workflows

AMAZON ANSWERS:

Media2Cloud solution

To help streamline and automate the digital media supply chain, AWS offers the Media2Cloud solution.

This solution sets up a serverless end-to-end ingest workflow to move your video assets and associated metadata to the cloud.

The solution leverages the [Media Analysis Solution](#) to analyse and extract valuable metadata from your video archives using Amazon Rekognition (image and video recognition), Amazon Transcribe (speech transcription) and Amazon Comprehend (text comprehension).

Media2Cloud includes a simple web interface that enables you to immediately start ingesting your archives and extracting metadata. This also allows customers to upload and search their image, audio and video files.

With no need for machine learning expertise, this solution enables customers to quickly and seamlessly extract key details from their media files. All of which means you can focus on product innovation while enjoying faster time-to-market.

SOLUTIONS IN ACTION:

20th Century Fox

20th Century Fox's archive runs more than eight decades deep. The studio needed to replace aging physical infrastructure with a new system that would be easy to navigate and adaptable to support emerging formats. By applying serverless and cloud-native workflows, 20th Century Fox is now set up to scale and continue to evolve its business in the cloud.

See the full story —————>>

Learn more about Media2Cloud solution —>>

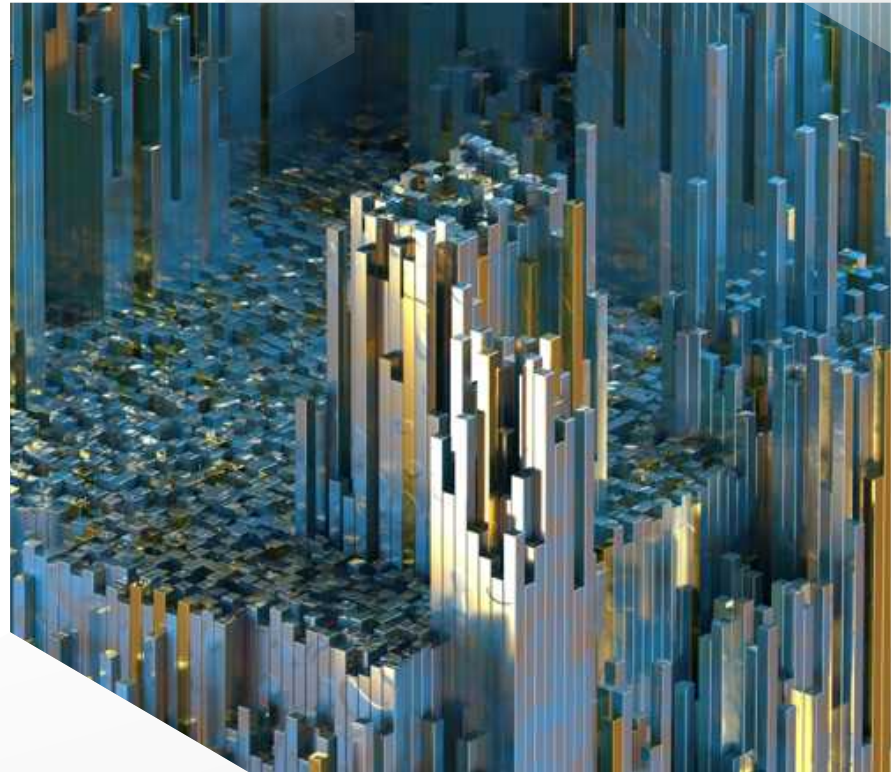
Step two Building cloud-based data lakes

A data lake is a centralised repository for storing structured and unstructured data at any scale. Its defining feature is that the data can be stored in its raw state, without having to be structured.

This solves a number of challenges for M&E organisations. By moving their content to cloud-based data lakes, organisations can adapt the size of storage they need, when they need it. Once gathered, they can enhance their content by integrating analytics to create insights for serving personalised content for viewers.

They can also automatically apply metadata tags to content using machine learning, enabling users to surface what they're looking for almost instantly.

And when archives become more accessible, mining them to create new experiences for your audience becomes easier too—which opens new monetisation opportunities.





Step two Building cloud-based data lakes

AMAZON ANSWERS:

Amazon S3

Amazon Simple Storage Service (S3) is the largest and most performant object storage service for structured and unstructured data and the storage service of choice to build a data lake.

With Amazon S3, users can cost-effectively build and scale a data lake of any size in a secure environment where data is protected by 99.99999999% (11 9s) of durability.

With a [data lake built on Amazon S3](#), you can use native AWS services to run big data analytics, artificial intelligence (AI), machine learning (ML), high-performance computing (HPC) and media data processing applications to gain insights from your unstructured data sets. Using Amazon FSx for Lustre, you can launch file systems for HPC and ML

applications, and process large media workloads directly from your data lake. You also have the flexibility to use your preferred analytics, AI, ML, and HPC applications from the Amazon Partner Network (APN). Because Amazon S3 supports a wide range of features, IT managers, storage administrators, and data scientists are empowered to enforce access policies, manage objects at scale and audit activities across their S3 data lakes.

Intelligent tiering allows more popular assets to be moved to higher tiers while less frequently used assets can be shifted down, increasing cost efficiency.

This solution hosts more than 10,000 data lakes for household brands across many sectors – including M&E customers like Netflix. These organisations use S3 to securely scale with their needs and discover new business insights every minute.

SOLUTIONS IN ACTION:

Universal Music Group (UMG)

Universal Music Group (UMG) UMG produces, distributes, and promotes music on a global scale, creating petabyte-size archives and different workflows, tools, and vendor solutions. UMG adopted an integrated storage plan built on AWS that ensures its archives are now globally accessible by its users. Today, UMG can more easily negotiate new distribution deals, expedite content editing in compressed timelines, and govern the policies of its expanding library of video content.

See the full story —————>>

Learn more about Amazon S3 —————>>

Step three Switching on to machine learning and analytics

M&E organisations are awash in data, yet most companies don't know how to unlock its value.

Machine Learning and Analytics can deliver the intelligence they need to optimise business decisions in this competitive landscape by analysing customer, content, and operational data for actionable insights to create better content, infrastructure, and monetisation strategies.

With data driven insights, they can automate, enrich, and innovate their digital asset management. Value-added outcomes are enabled by automatically generated metadata tags that help to understand the content better. This information helps to optimise processing, converting, encrypting, encoding/transcoding, distributing and archiving their media content.

Marketing can benefit too through initiatives such as automated poster creation freeing up teams for other tasks and monetising content through targeted server-side advertising. And security can be made more robust through the creation and maintenance of best practices and automated tasks to reinforce policies.

Taking steps like these to reimagine the supply chain can deliver truly unprecedented results for forward-thinking M&E organisations.

Proven[†] examples includes a Broadcaster that achieved a 70% improvement in time to market with an 85% cost saving. Another that was able to process content 83% faster at 10% lower cost. And another global media conglomerate increased revenue by 23% while decreasing operating costs by 25%.

[†] Measuring and Optimizing Media Supply Chains, April 4, 2018 <https://bit.ly/2ZfsrRZ>

// Security and governance topics are always part of the discussion. I feel we discuss less about concerns on workflows, user interfaces or latency and more about security, legal aspects and deploying solutions enterprise-wide. //



Erik Åhlin
Chief Executive Officer
Vidispine



Step three Switching on to machine learning and analytics

AMAZON ANSWERS:

AWS Media Analysis solution

This solution enables customers to quickly and seamlessly extract key details from their media files in their AWS accounts without machine learning expertise.

It also includes a web-based user interface that customers can use to upload and search their image, audio, and video files.

The solution combines:

- **Amazon Rekognition:** provides highly accurate object, scene and activity detection facial analysis and recognition, and celebrity detection in videos and images.
- **Amazon Transcribe:** an automatic speech recognition service.
- **Amazon Comprehend:** creates automatic transcription of audio files and extraction of key phrases and entities from transcripts.
- **A web-based user interface:** allows customers to upload and search their media files in their AWS accounts.

SOLUTIONS IN ACTION:

Videofashion

Videofashion holds video footage from four decades of fashion shows yet finding content within that archive was a chore. By metadata tagging its content library, Videofashion created a searchable platform that enabled users to search for clips featuring specific models, designers, and celebrities—and then license directly from the web platform.

See the full story ————— »

Learn more about AWS Media Analysis solution »



In summary

- Successive waves of digitisation have disrupted the traditional M&E supply chain.
- Most M&E organisations have responded in a reactive manner.
- They have ad hoc digital solutions side-by-side with legacy systems.
- The result: hybrid supply chains with silos which prevent a holistic view of assets and create storage duplicates.
- Subsequent piecemeal clean-up efforts have only added to the complexity.

THE CHALLENGE NOW:

Fundamentally changing the media supply chain so that it harnesses the best of cloud scale, automation, insights and agility to deliver a consistently engaging viewer experience and new commercial opportunities.

Taking just three steps can make a huge difference:

1. Adopting serverless workflows
2. Building cloud-based data lakes
3. Switching on to machine learning and analytics

AWS have three solutions and services which can put these steps into action:

1. Media2Cloud solution
2. Amazon Simple Storage Service (S3)
3. Media Analysis solution



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The main thing is getting started. If you're looking for returns – whether they be efficiency gains or increased revenue returns – none of that is going to happen until you make a start. Find that painful use case and imagine the ideal media supply chain to supplant it. Make that the first migration. The returns will be compelling. Then move on from there. //



Simon Eldridge
Chief Product Officer
SDVI Corporation

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Our industry needs a bold vision to overcome the gap from trial stage to default model and scale up. We challenge ourselves and our clients, saying that a bespoke media supply chain should take less than an hour to deploy. No one is there yet, but we're chasing it. //



Erik Åhlin
Chief Executive Officer
Vidispine



Contact AWS today

AWS is the world's most comprehensive and broadly adopted cloud platform, offering over 165 fully featured services from data centres globally.

Millions of customers including the fastest-growing startups, largest enterprises, and leading government agencies trust AWS to power their infrastructure, become more agile, and lower costs. AWS and hundreds of its M&E partners are working to enable M&E organisations to transform their operations and meet the rapidly changing needs of demanding global audiences. Contact AWS to learn more about your media supply chain, or any other media workflow.

Contact AWS to learn more »

AWS is grateful for the contributions from SDVI (sdvi.com) and Vidispine (vidispine.com)

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