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Reinventing data and analytics for media and entertainment with AWS

Christer Whitehorn

Lead Solutions Architect
Media Services, APJC
Amazon Web Services

Sumit Kalia

Storage Specialist
ANZ
Amazon Web Services

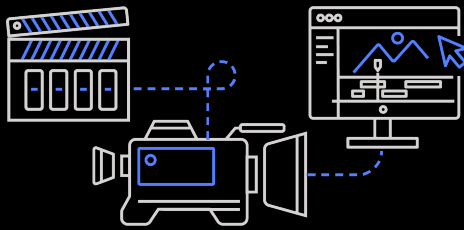


Agenda

- AWS in media & entertainment
- Media enrichment
- Enhancing the viewer experience
- Content volumes and storage considerations
- How to get started

AWS for media and entertainment (M&E)

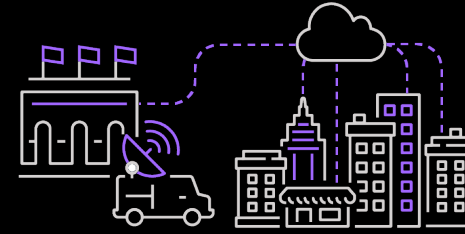
The most purpose-built capabilities and partner solutions for reinventing content production, media supply chain, broadcast, direct-to-consumer & streaming, and analytics



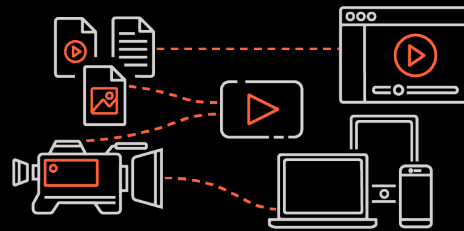
Content production



Media supply chain
& archive



Broadcast



Direct-to-consumer
& streaming



Data science &
analytics for media

AWS for M&E | Data science & analytics



Help consumers easily
and quickly discover
content on platform

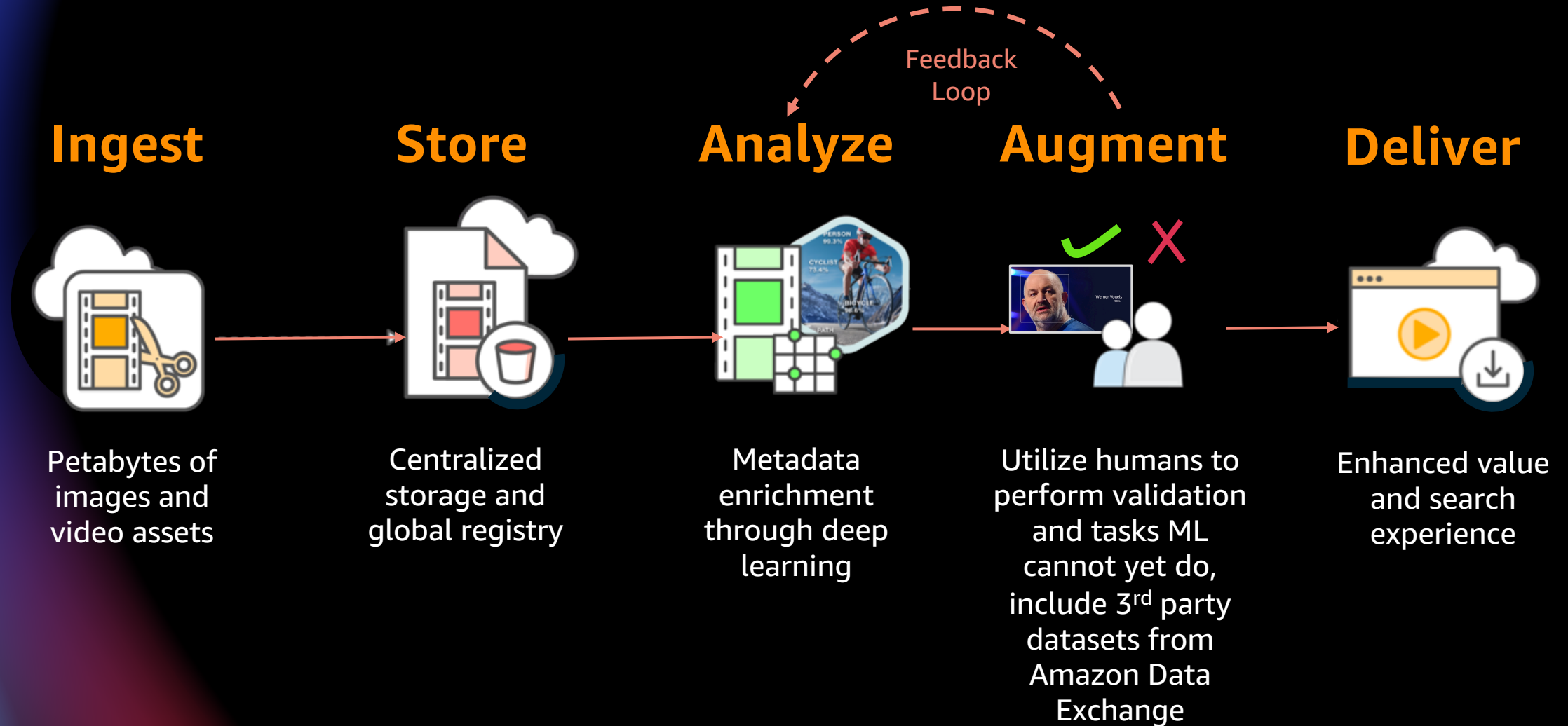


Understand, measure,
and optimize the
consumer experience



Produce and acquire
relevant content to
delight target audiences

Media enrichment



Metadata enrichment



Face detection/matching
Object/scene detection
Content moderation – Visual
Technical cues



Armida Accorsi 75.6%



Content text analysis
Caption analysis & translation
Content moderation – language

Transcription

"That's alot of khaki. I just realized it is actually a very flattering color for most skin tones. I know you're relieved. I just want you to know how much I admire you guys. I could never be brave enough to wear the same outfit every day."

Translation

"Isso é muito cáqui. Acabei de perceber que é realmente uma cor muito lisonjeira para a maioria dos tons de pele. Sei que está aliviado. Só quero que saibam o quanto os admiro. Eu nunca poderia ser corajoso o suficiente para usar a mesma roupa todos

Use cases enabled by metadata extraction

Level of effort

Low

search & discoverability



Automate the creation of rich metadata, extracted from audio visual content, integrated into asset management systems

content moderation



Detect potentially inappropriate content to avoid issues in global markets, and to increase brand safety for advertisers

Can be accomplished fairly easily with AI services

Medium

subtitling & localization



Automate the creation of subtitles, captions, transcription and translations of audio content

compliance & redaction



Detect and pixelate faces captured incidentally to preserve the privacy of non-persons of interest in news feeds and security footage

contextual advertising



Make advertising relevant to the context of the content. Avoid brand damage through unintended associations

content categorization



Categorize media based on the content of the video

Requires additional processing of output of AI services and/or custom model creation

High

highlight generation



Identify actors/ players, detect specific activities (goal, foul, car crash...) and automatically create a clipping around the detected scenes

content summarization

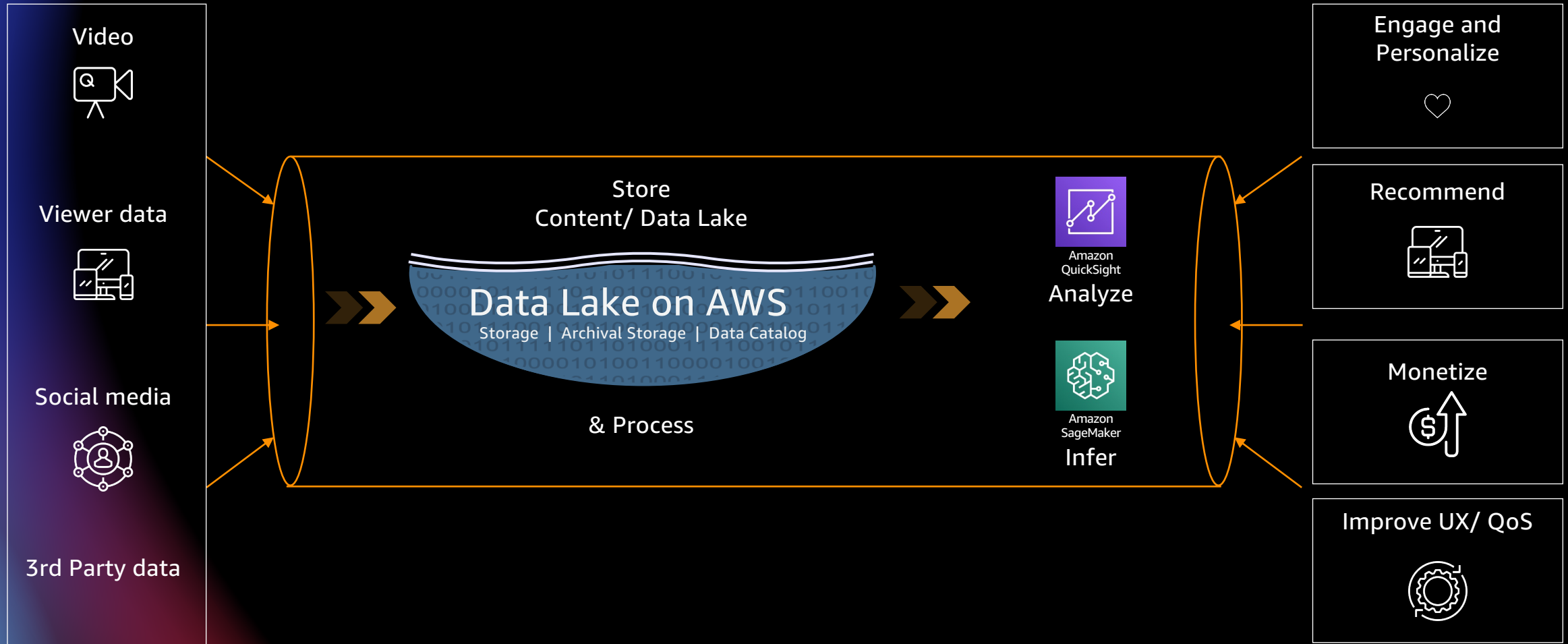


Create descriptions of what is happening in content for descriptive audio, short form summary etc.

Requires advanced ML model creation

Modern data architecture for media enrichment

Insights to enhance viewer engagement, personalization, monetization



More content than ever, and growing

Disintermediation

9:1

Growth of OTT vs. Traditional
Pay TV
through 2022

Exclusive content

85%

Share of Netflix's new
content spend going to
originals

Increased complexity

234x

Versions of each film Disney
makes to accommodate
different aspect ratios,
languages, etc.

Source:

<http://www.mesalliance.org/2018/01/19/avid-ceo-massive-explosion-content-created-new-challenges-media-companies/>
<https://variety.com/2018/digital/news/netflix-original-spending-85-percent-1202809623/>

Current trends



Demand for enhanced customer experiences



Growing need to expand the reach and accessibility of media



Need for novel ways to monetize content efficiently

**Customers
expect more**

**Organizations need to accelerate innovation to
differentiate themselves and maintain profitability**

Demand more from your assets



Contract/Compliance

Many media companies must retain content on behalf of their production and distribution partners. In some cases there are legal requirements to maintain content for a specific period of time.



Data retention

Retain valuable data over the long term for future productions
Conan O'Brien's production company Team Coco is preserving 2,725 episodes of his Late Night Show



Disaster recovery

Meet disaster recovery objectives by replicating critical content to a separate location

Source: <https://aws.amazon.com/solutions/case-studies/team-coco-case-study/>

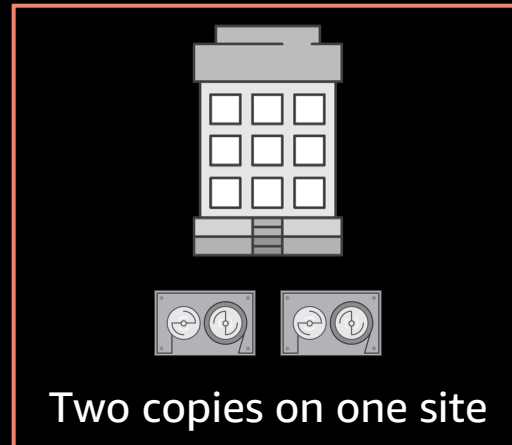
Understanding 99.999999999% of durability

In 10,000,000 Years



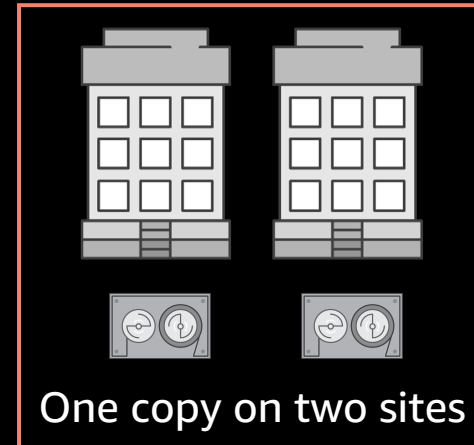
designed for
99.5%
performance & cost

500,000,000
lost hours



designed for
99.99%
performance

10,000,000
lost hours



designed for
99.999%
durability

1,000,000
lost hours



designed for at least
99.999999999%
performance & durability

1
lost hour

Sources <https://aws.amazon.com/s3/reduced-redundancy/>
<https://docs.aws.amazon.com/AmazonS3/latest/userguide/DataDurability.html>

Amazon Simple Storage Service (S3) - Overview

Amazon S3 Batch Operations

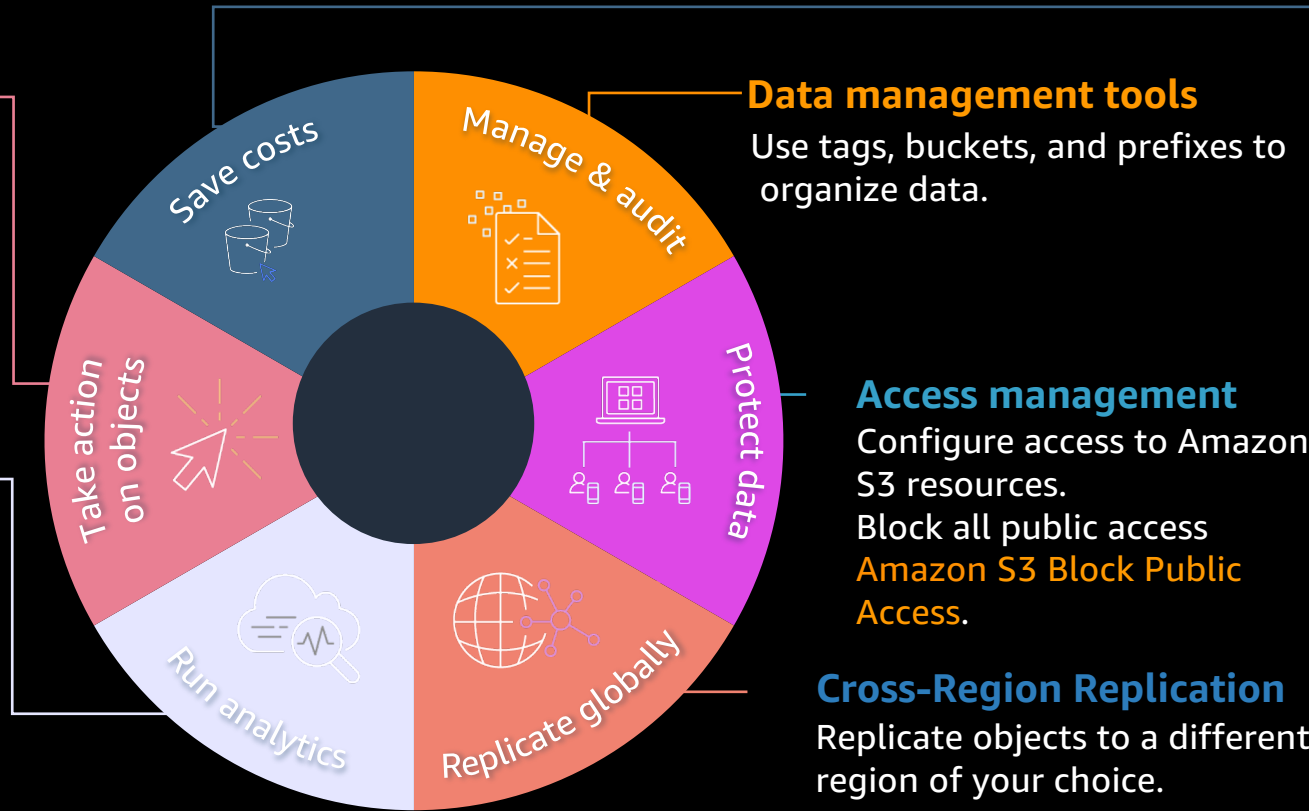
Take actions on objects at scale

Analytics & file system integration

Amazon S3-integrated analytics applications

AWS Lake Formation to stand up a data lake in days

Amazon S3 Select to query data in place
Windows FSx for Lustre for HPC, ML, and media data processing



Amazon S3 Storage Classes



S3 Standard



S3 Standard-IA



S3 Intelligent-Tiering



S3 One Zone-IA



S3 Glacier



S3 Glacier Deep Archive

Security by design

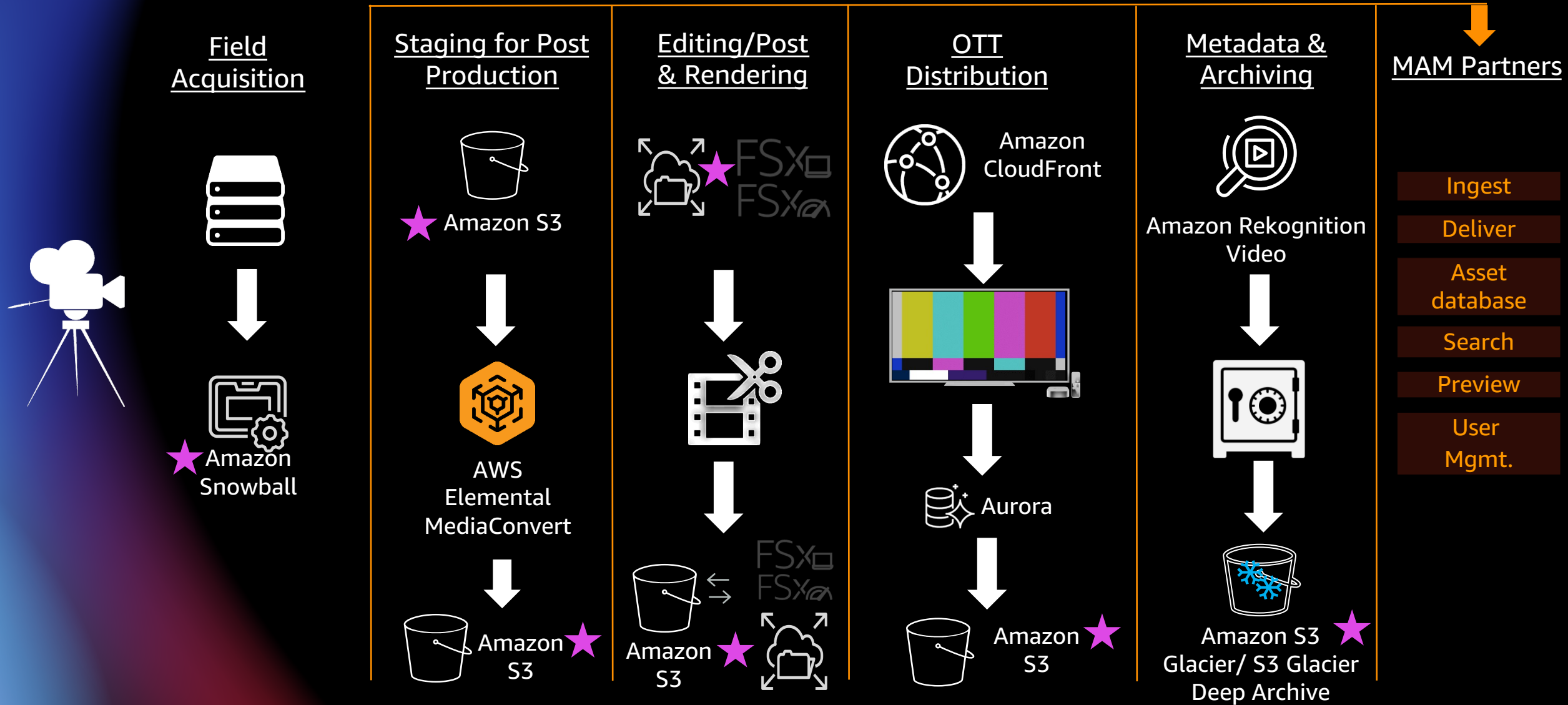
Compliance programs

11 9's of durability

Multi-AZ resiliency

Limitless scalability

Media production storage workflow



Migration to AWS Cloud

Challenge

- Aging tape libraries with 6,500 slots and another 5,000 tapes stored externally.
- Recovery was error prone and a labor intensive process.
- Decommission data centers and unable to move to another on-prem system

Solution

- Workflow automation with Amazon S3 and S3 Glacier.
- Partner TMD built an Amazon S3 Glacier adaptor.
- Transcoding, editing, transcription, and video analytics all moved to the Cloud



Benefit

- 19% cost savings over the prior on-prem solution.
- Eliminated \$800K (USD) annual hardware and software support fees.
- 99.999999999% durability compared to 99.99% on-prem.

Source: <https://aws.amazon.com/solutions/case-studies/astro-technology/>

Cloud-based archives increase asset value



Lower costs

Strategic storage and automating manual processes to lower operational costs and improve productivity



Boost user experience

Internal and external customers find what they are looking for to increase engagement, boost stickiness, and reduce churn



Improve compliance and brand safety

Manage multiple versions of content for different geographies / audiences



Unlock new revenue streams

Identify new avenues to monetize content while improving customer experience

Getting started with metadata extraction

Content Analysis Solution

A serverless application where customers can access AWS-native AI services, select services to apply to their media, and then use insights and metadata to automate manual processes. The solution includes a web-based user interface that customers can use to upload and search their video libraries.

Media2Cloud Solution

Serverless end-to-end ingest workflow to move your video assets and associated metadata to the cloud. During the migration, the solution analyzes and extracts valuable metadata from your video and images using Amazon AI services

Media2Cloud

1. Drain the existing archive

- Migrate content to Amazon S3 and Amazon S3 Glacier storage
- Amazon Snowball
- AWS Direct Connect
- AWS Storage Gateway
- AWS DataSync
- Amazon S3 Transfer Acceleration
- Technology Partner Support. IE: **CloudFirst.io**

2. Generate content value

- Universally unique identifier (UUID)
- MD5 Checksum
- Proxy generation
- Analyze and extract AI/ML metadata
- Amazon DynamoDB and Amazon Elasticsearch services

3. Import into a modern MAM

- Import content
- Import AI/ML metadata to project
- Provide searchability with Amazon Elasticsearch
- Preview with generated proxies and thumbnails
- Technology partner support. IE: Levels Beyond
NEW: Nomad CMS

Media2Cloud demo

Recap

- Unlock valuable data from video (and images)
- Extract data as part of the ingest process
- Use the right storage service and tier at each stage
- Get started quickly using AWS solutions and partners

Additional resources

Visit the AWS Data Science & Analytics for Media page:

<https://aws.amazon.com/media/data-science-analytics>

Checkout Media2Cloud and other AWS Solutions at:

<https://aws.amazon.com/solutions/implementations/media2cloud/>

Learn more about Amazon S3 Glacier:

<https://aws.amazon.com/glacier/>

Amazon Media and Entertainment:

<https://aws.amazon.com/media/>



Visit the AWS Data Resource Hub

Dive deeper with these resources, get inspired and learn how you can use data to make better decisions and innovate faster.

- Building a winning data strategy
- The new leadership mindset for data & analytics
- Harness data to reinvent your organization
- Put your data to work with a modern analytics approach
- Breaking free from on-premises database constraints
- Cloud storage adoption: From cost optimization to agility & innovation
- A strategic playbook for data, analytics, and machine learning
- ... and more!



<https://tinyurl.com/aws-data-resource>


Visit resource hub



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Build data skills to
unlock any insight

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Learn how to harness the world's most valuable resource: data. Access digital and virtual instructor-led courses on data analytics and databases built by the experts at AWS and start your learning journey to become data-driven.

[Take a digital course »](#)



Get certified

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[Learn more »](#)



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Deep dive into new topics and focus on knowledge gaps at your own pace with the *AWS Ramp-Up Guide: Database* and *AWS Ramp-Up Guide: Data Analytics*. With a wide range of whitepapers, blog posts, videos, webinars and peer resources available for data professionals to leverage for independent learning.

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Thank you!