

AWS re:Invent

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MNE201

How A+E networks built a cloud-based media supply chain for scale & agility

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Operations and Engineering
A+E Networks

David Klee (he/him)

Vice President of Strategic
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A+E Networks

Tanya McKee

Enterprise Sales Rep
AWS

Brendan Noone

Leader of Leaders, Media and
Entertainment
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Agenda



- **Where we came from**
Research – approval – deployment – pivots
- **Where we are today**
Architecture – workflows – partners
- **Where we are going**
Iterate – enhance – expand
- **Q+A**
Your questions – our answers

2016–

- Research begins
 - AWS for Media & Entertainment Symposium
 - Shared experiences
 - Fox with Chris Blandy
 - Turner with Michael Koetter
 - Discovery with Josh Derby
- Business case?



2017–

- Due diligence continues
- **“Cloud City”** solidifies AWS as preferred cloud provider
- Business case?



2018–

- Business case identified
- Existing infrastructure
 - End of life/end of support
 - Oversubscribed
- Engineering resources added



2018–

- Business case identified
- Existing infrastructure
 - End of life/end of support
 - Oversubscribed
- Engineering resources added
- Financial approval
- RFP issued



2018–

- Business case identified
- Existing infrastructure
 - End of life/end of support
 - Oversubscribed
- Engineering resources added
- Financial approval
- RFP issued
- SDVI on AWS selected solution
- Initial development begins



A+E NETWORKS®



MEDIA+ELEVATE
SUPPLY CHAIN

A+E NETWORKS®

MEDIA+ELEVATE

MEDIA+ENTRY

MEDIA+EDIT

MEDIA+EXIT

MEDIA+EVAL

MEDIA+ENCODE

MEDIA+EXPLORE

META+EXCHANGE

Media supply chain segmentation

Ingest/acquisition

Essence files

- Audio
- Video
- Graphics
- Textless
- Captions
- Artwork

Metadata

- Series
- Season
- Episode
- Segment
- UID

Auto QC

- Auto-reject
- Auto-accept

Proxy creation

2019

Creative transformation

Edit

- Creative
- Format
- S+P
- Versioning
- Promo

Metadata

- Series
- Season
- Episode
- Segment
- Version

Auto QC

- Auto-reject
- Auto-accept

Proxy creation

2021

File transformation

Transcode time compress triggers metadata

- Series
- Season
- Episode
- Segment
- Version

Auto QC

- Auto-reject
- Auto-accept

Proxy creation

2020

Digital distribution

Package

- Show
- Artwork
- Promo
- Commercial

Distribution

- VOD
- SVOD
- AVOD
- DTO
- CableLabs
- International Master

Metadata



























































































































- Series
- Season
- Episode
- Segment
- Air window

Linear distribution

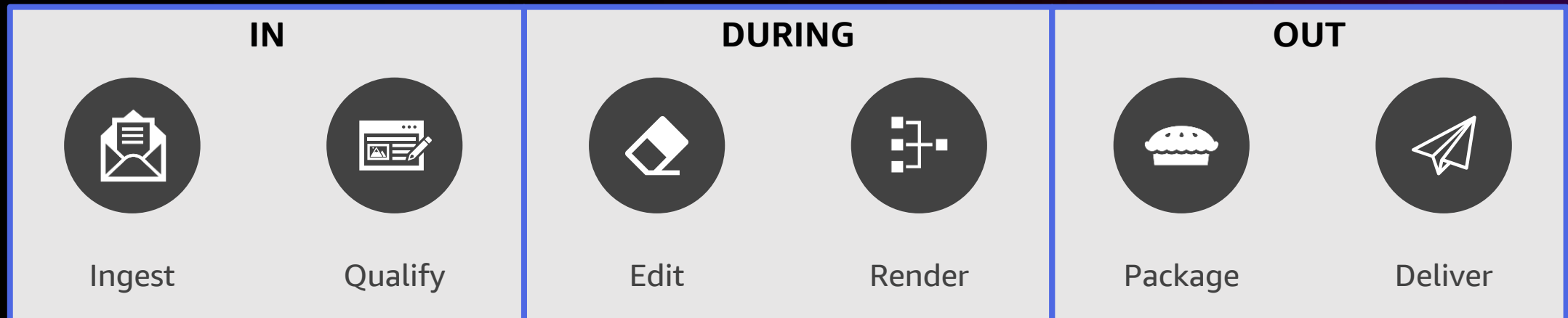
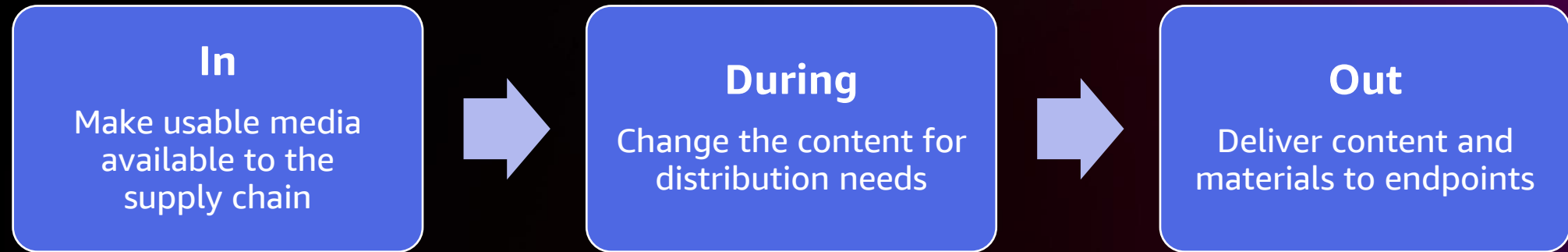
24/7/365 playback
24/7/365 monitoring
Live shows
Affiliate management
Satellite
Terrestrial
Broadband
Regional
Pop-up channel

2022 +

A+E NETWORKS®

Content Types	MEDIA+EXPLORE	MEDIA+ENTRY	MEDIA+EVAL	MEDIA+EDIT	MEDIA+ENCODE	MEDIA+EXIT	META+EXCHANGE
Acquired Long-Form	  	  	  	  	  	  	  
Original Long-Form	  	  	  	  	  	  	  
Int'l Long-Form	  			  	  	  	  
Non-Linear Masters (NLM)	  		 	 	  	  	  
Graphics Packages	  	 			  	  	  
Promos	  	 			  	  	  
Enhanced Content (Raw)	  	 			  		
Short Form		 	 				

Simplified aligned terminology



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2019–

Original use case underway

MULTI-PLATFORM



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Image Source: Pexels

MULTI-PLATFORM

AVOD PARTNERS



SVOD PARTNERS



SCRIPTED STUDIO



UNSCRIPTED STUDIOS



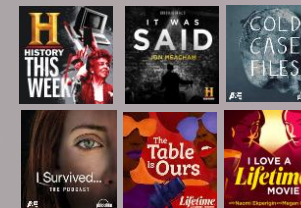
FAST CHANNELS



O&O DTC SVOD



PODCASTS



GLOBAL CO-PROS



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2019–

- Original use case deployed
- Design expanded use case



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2019–

- Original use case deployed
- Design expanded use case
- Library digitization



A+E NETWORKS®

2019–

- Original use case deployed
- Design expanded use case
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2020–

- Continue scaling workflows
- Continue library digitization
- New business cases identified



A+E NETWORKS®

2020–

- Continue scaling workflows
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GLOBAL PANDEMIC



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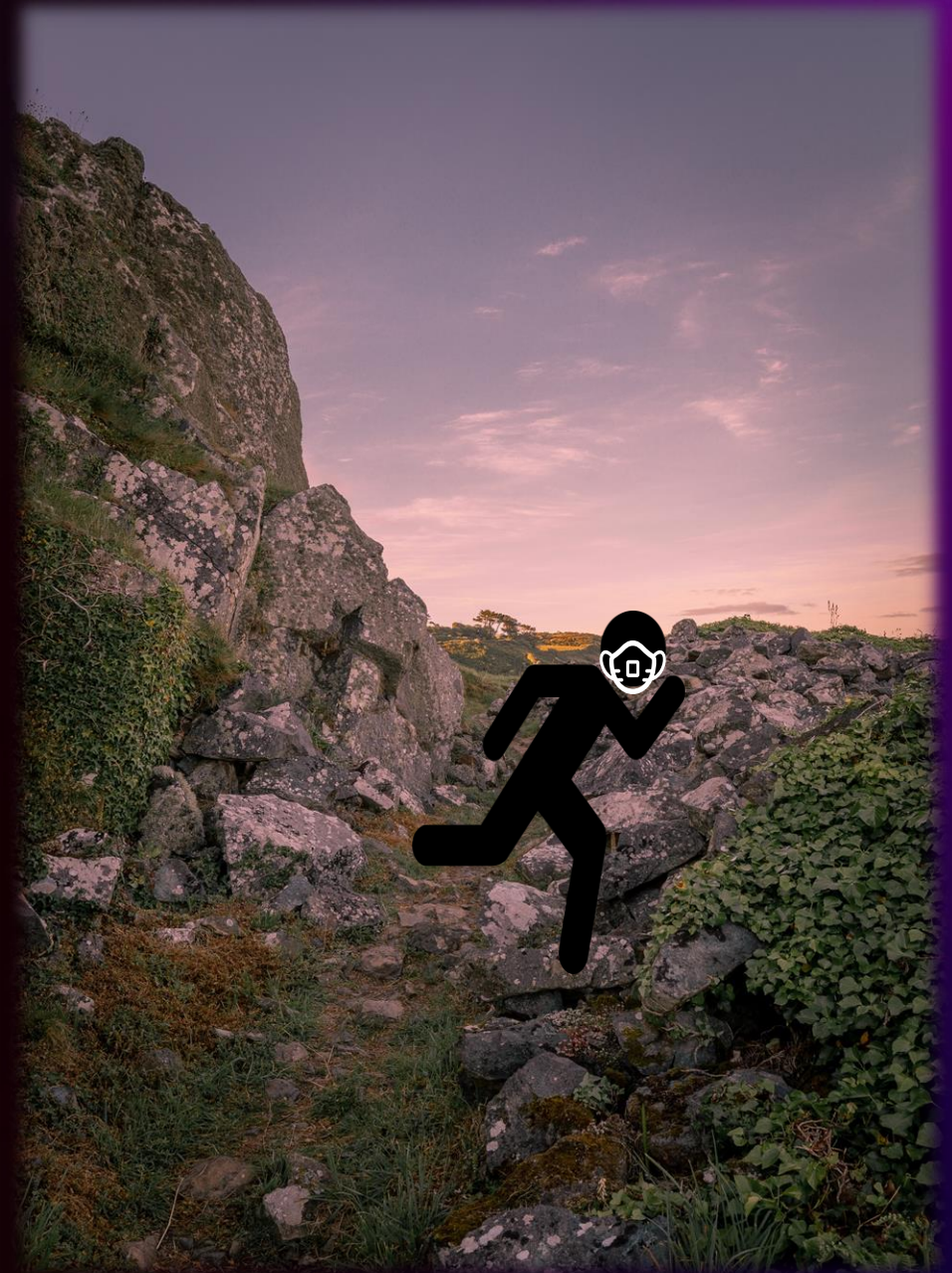


Image Source: Pexels

2020–

Remote work

- Leverage AWS accessibility
- Scale endpoints
- Enable external workforce



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2020–

- Remote work
- Continue scaling workflows
- Continue library digitization
- New business cases identified



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2021–

- “In” workflows are mature
- Amazon S3 library reaches critical mass
- Development on “out” begins
- Bulk delivery



2022–

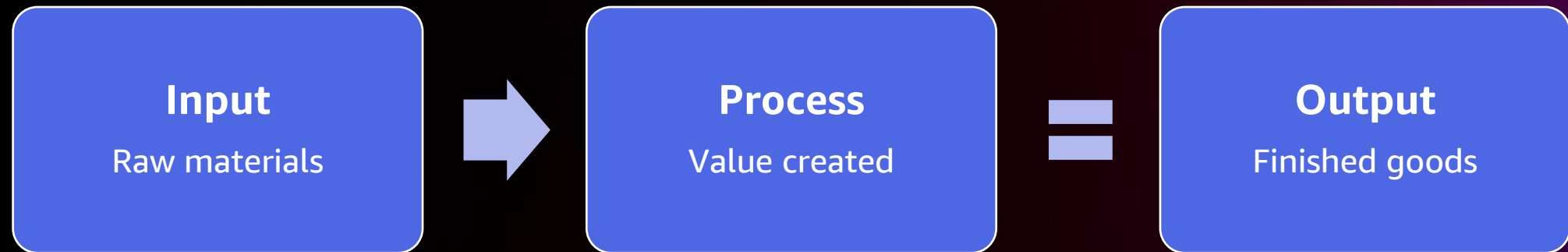
- Iteration of workflows
- Library migration is completed
- Bulk deliveries increase
- Development of “during” workflows



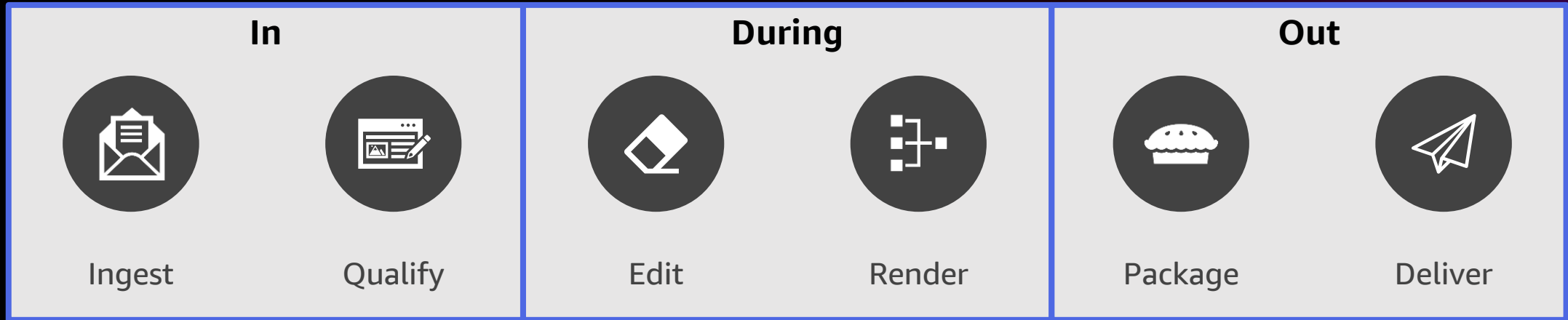
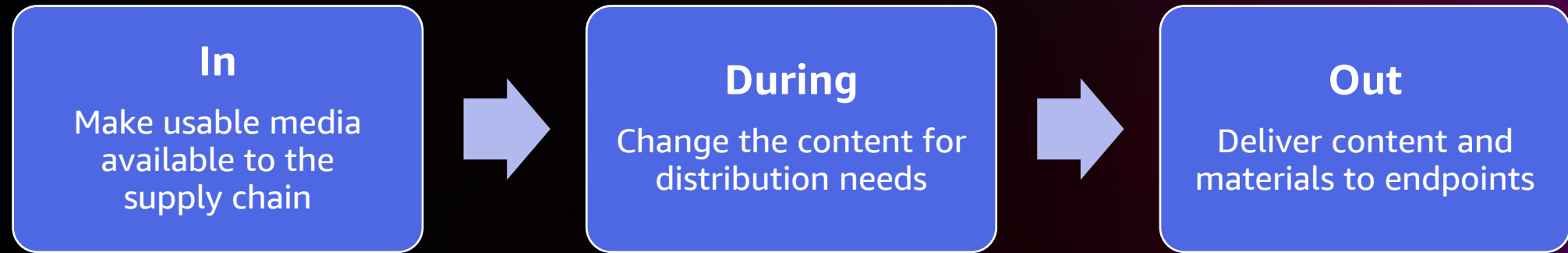
Supply chain build



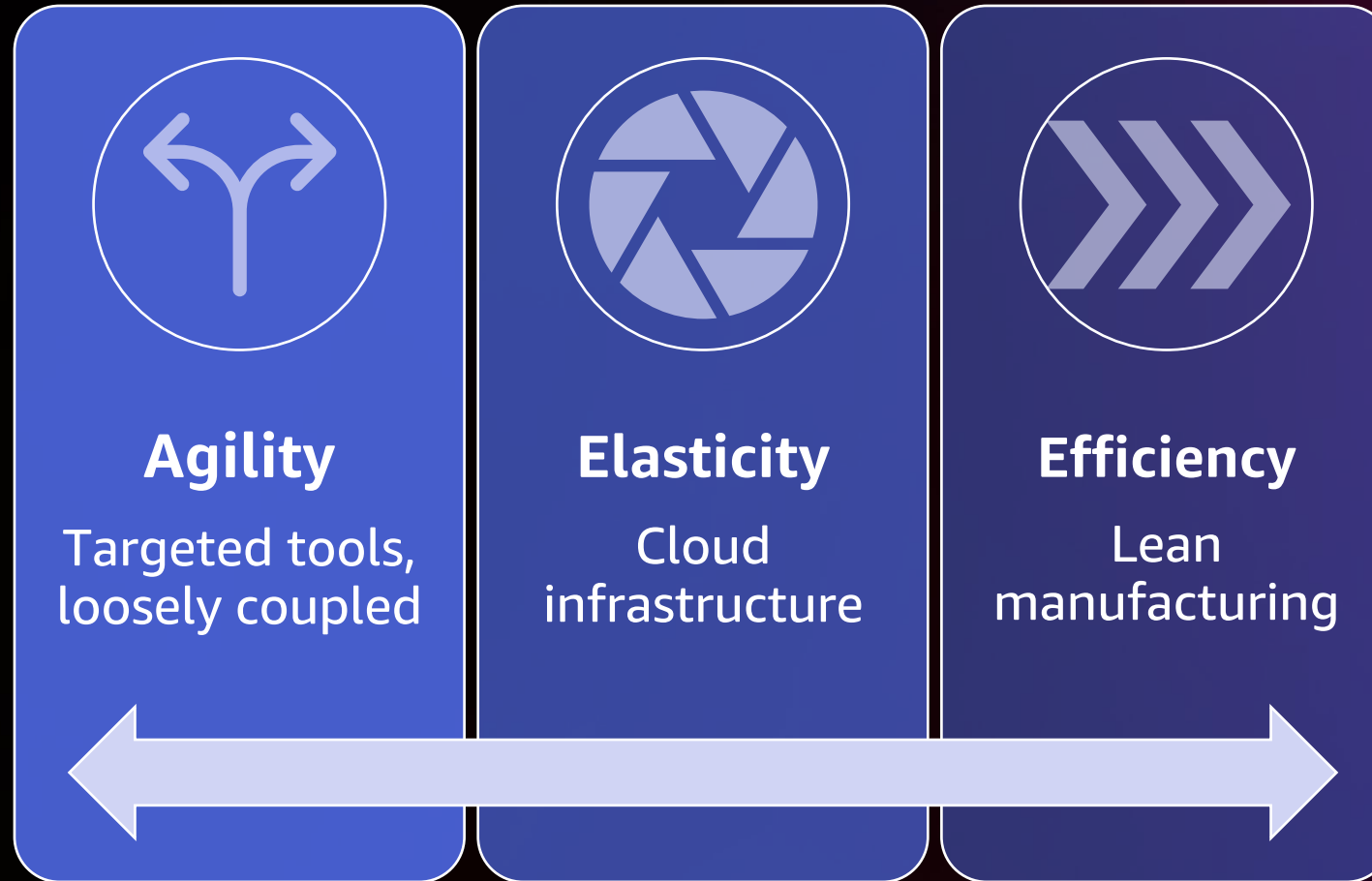
Supply chain



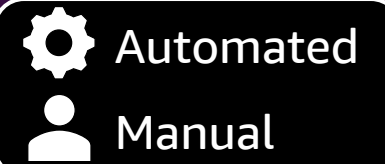
Media as a supply chain



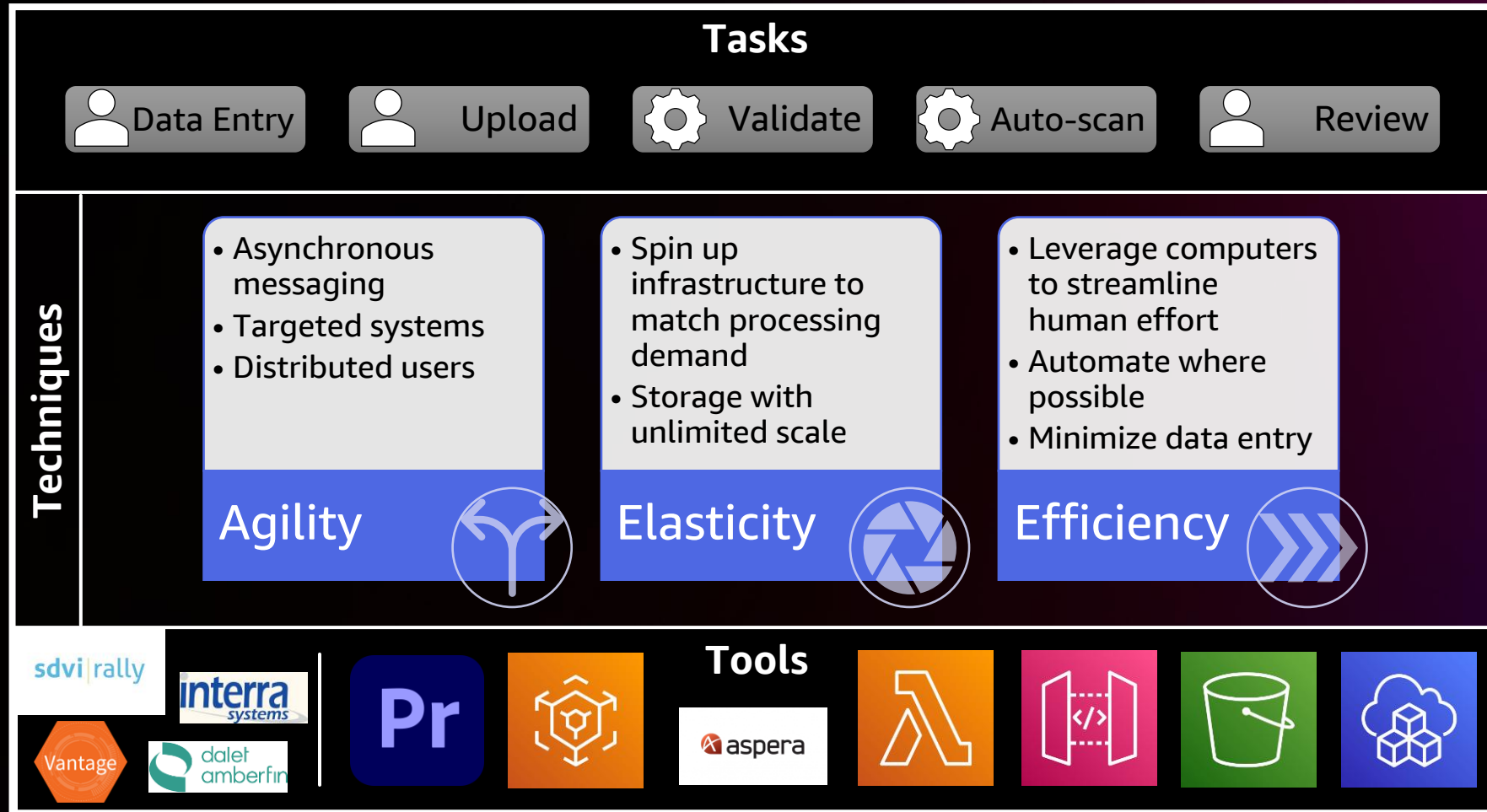
Strategic design principles



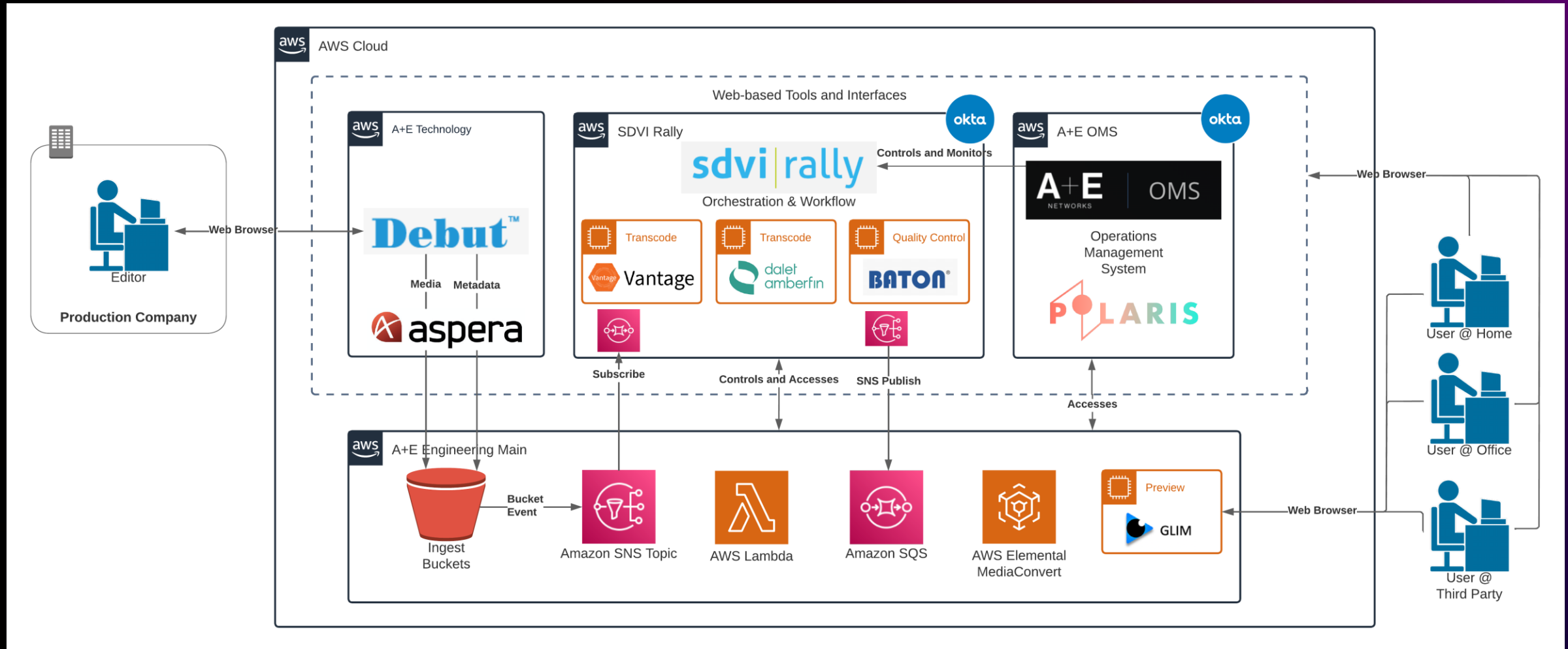
In (Ingest)



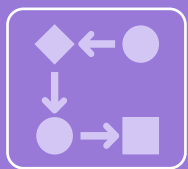
Goal: Make usable media available to the supply chain



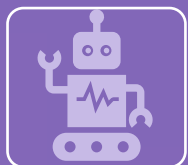
In (Ingest) architecture



SDVI Rally



Workflow engine



Infrastructure automation



Application marketplace



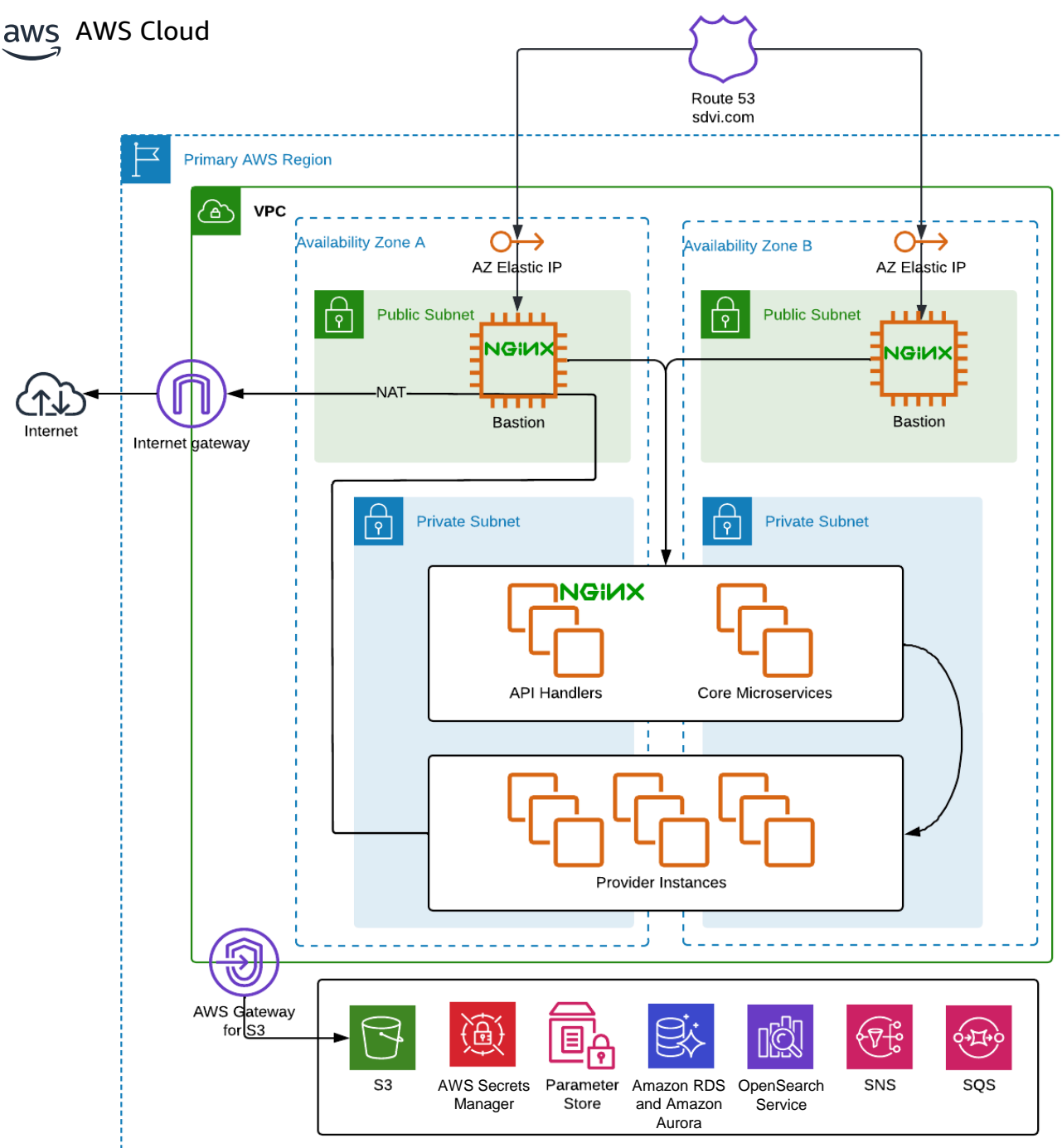
Web interface



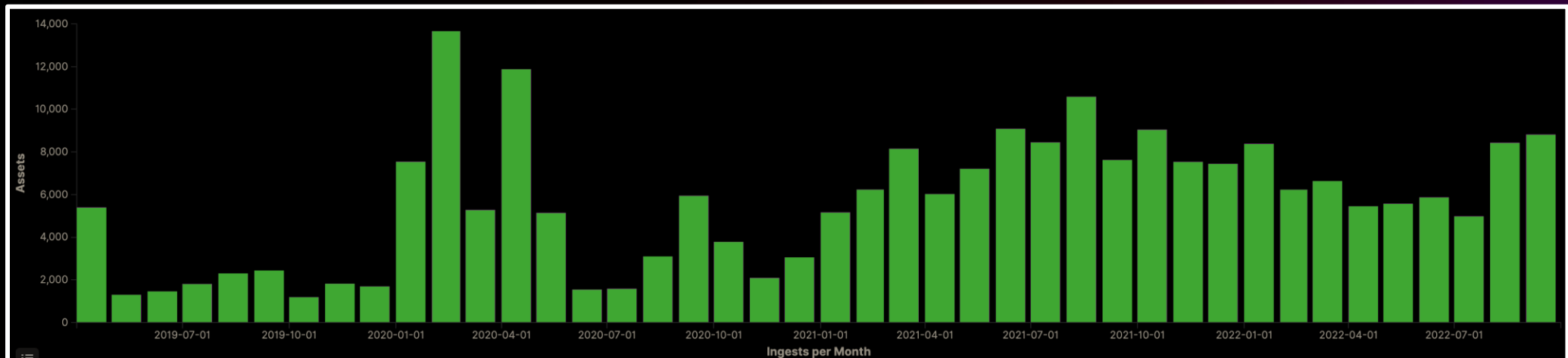
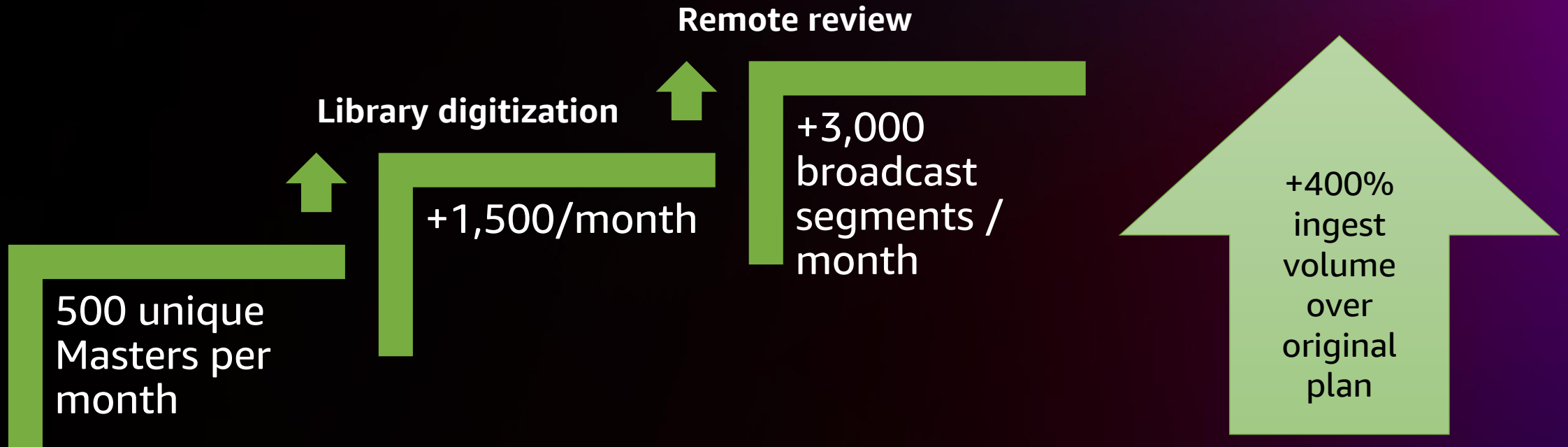
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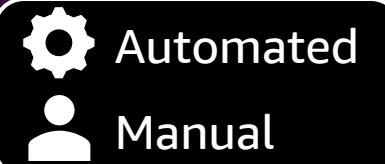
aws AWS Cloud



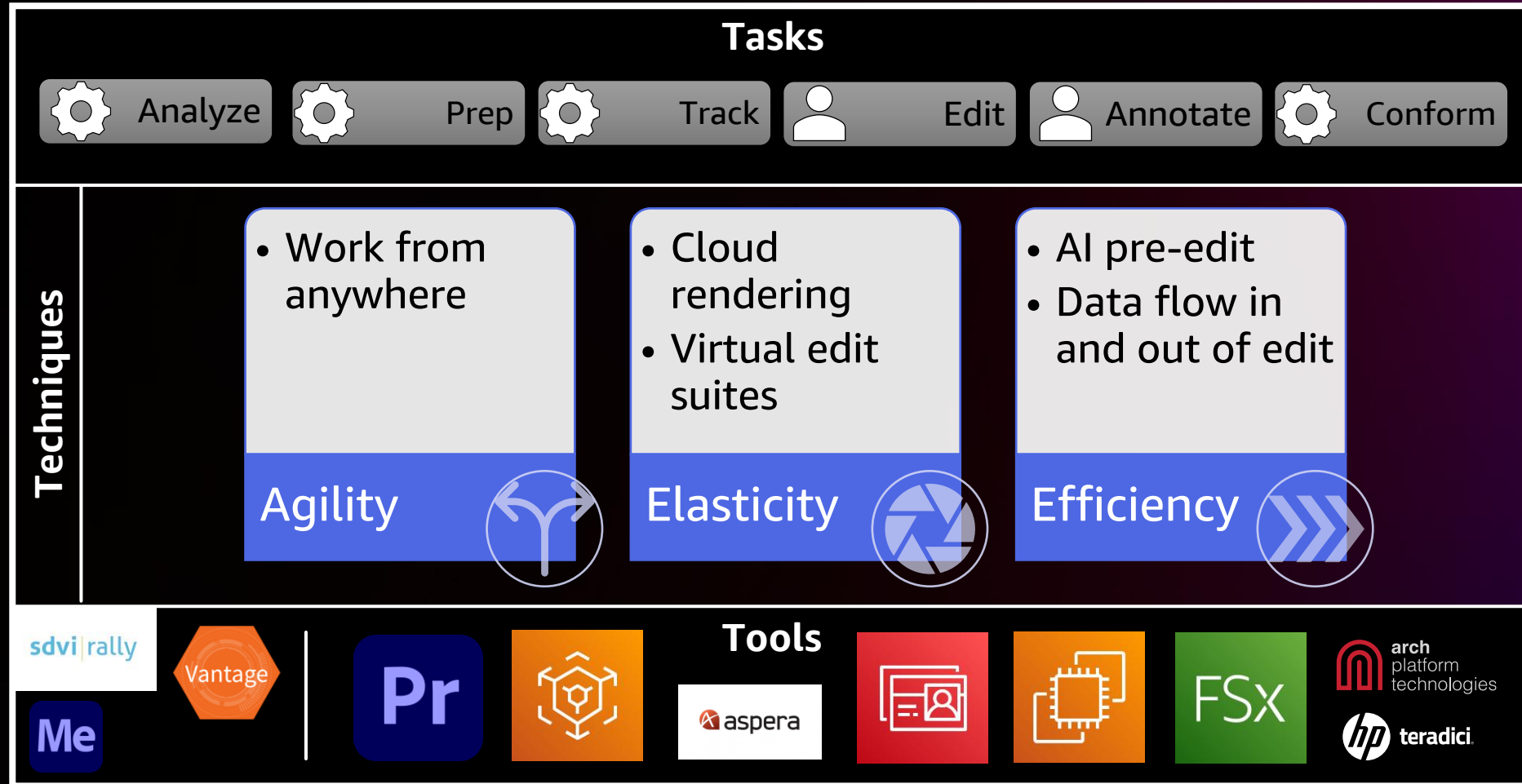
In (Ingest) metrics



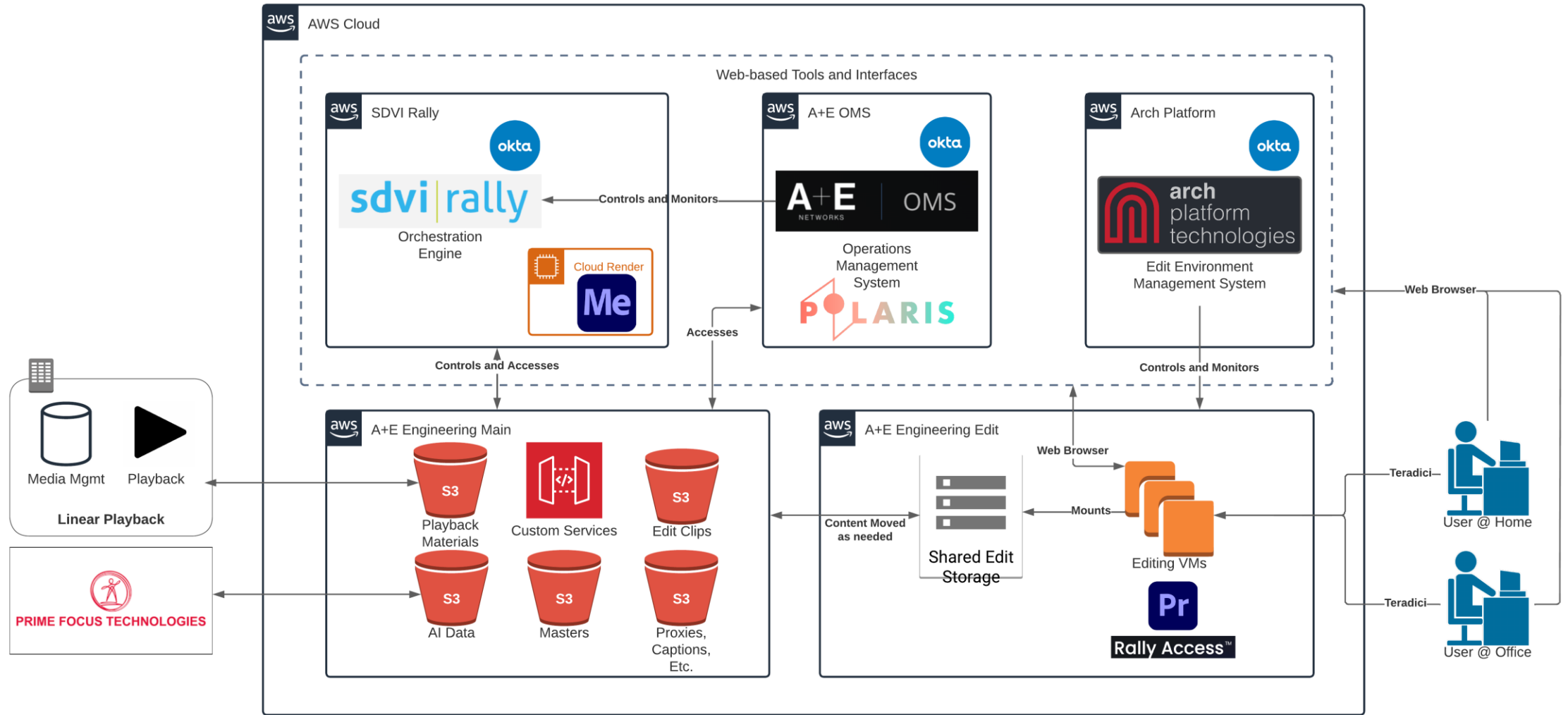
During (Edit)



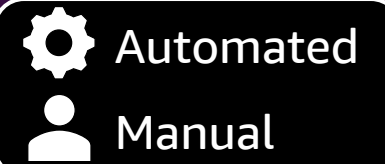
Goal: Make changes to the content for linear and multi-platform distribution



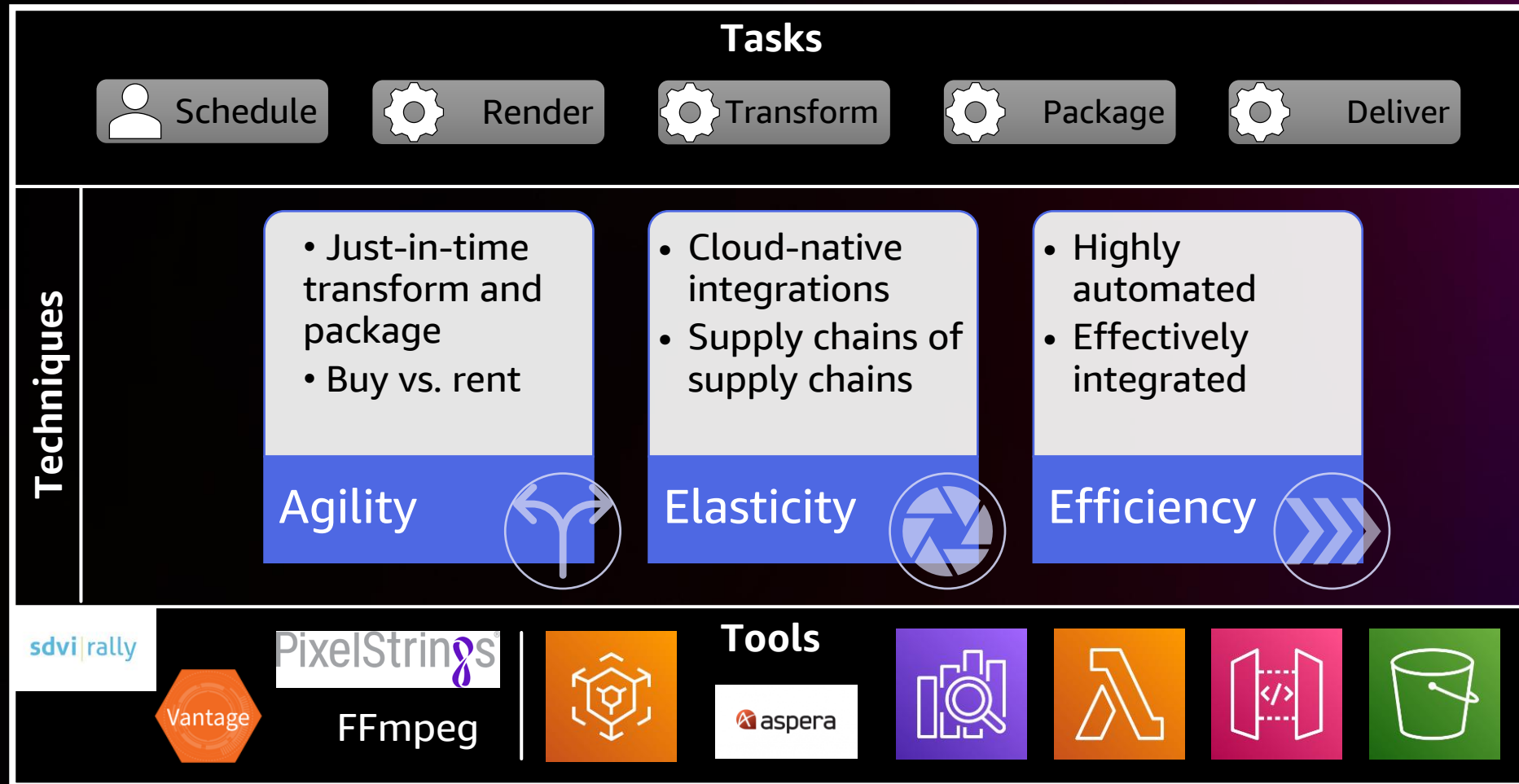
During (Edit) architecture



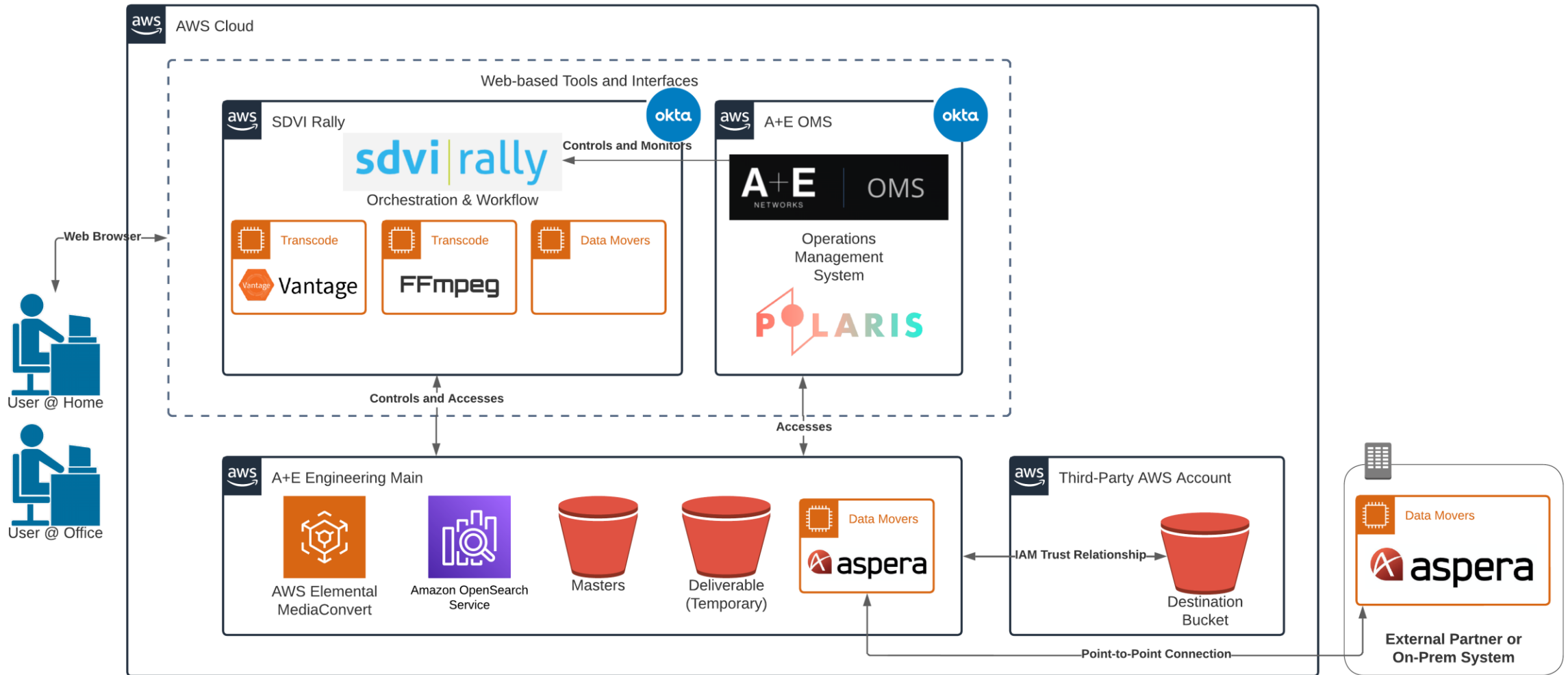
Out (Distribution)



Goal: Deliver content and materials to endpoints



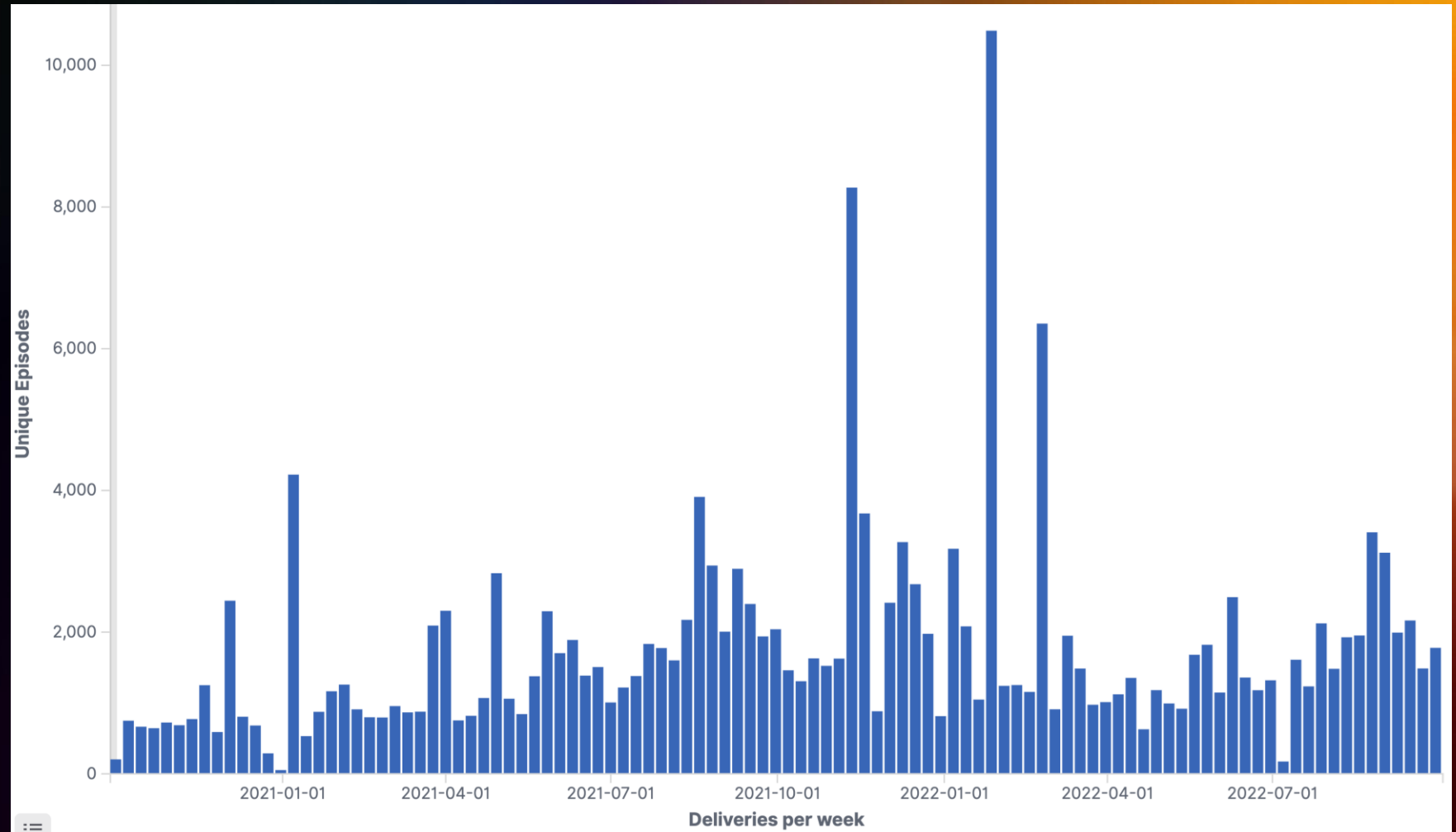
Out (Distribution) architecture



Elastic scale for distribution

Volume

Huge volume increases made possible by elastic infrastructure in the cloud and supply chain techniques



Strategic design principles



Strategic design principles



Key takeaways



Migration is more
than “lift and shift”



Metadata is fuel



Flow over function

Looking forward

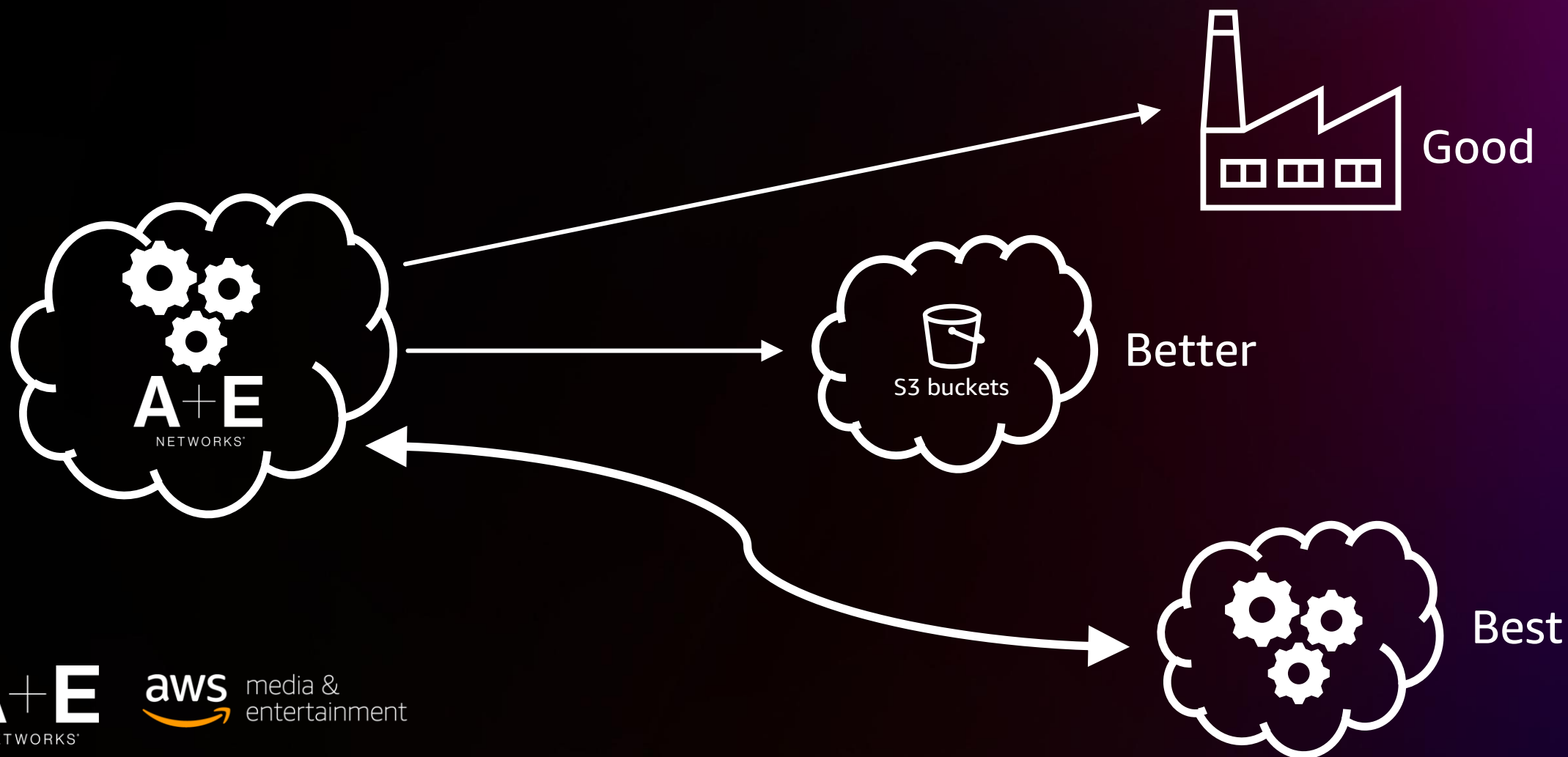


2023–

- Continuous improvement
Workflows/OMS/AI
- Complete “during” migration
- Data analytics – ROI
- Production source material
- Develop interconnections
 - Rights/windowing
 - Asset management systems
- Interconnected supply chains



Interconnected supply chains



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aws media &
entertainment

aws

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Make the complex simple, and the simple automatic

A+E media supply chain engineering team mission statement

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Elena Brodie

Gerard Cummings

Erik Didriksen

Tom Gerke

Arthur Habighorst

Shamir Rivera

David Klee

Don Jarvis



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How A+E networks elevated their media supply chain

Questions and Answers



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