AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

TLC302

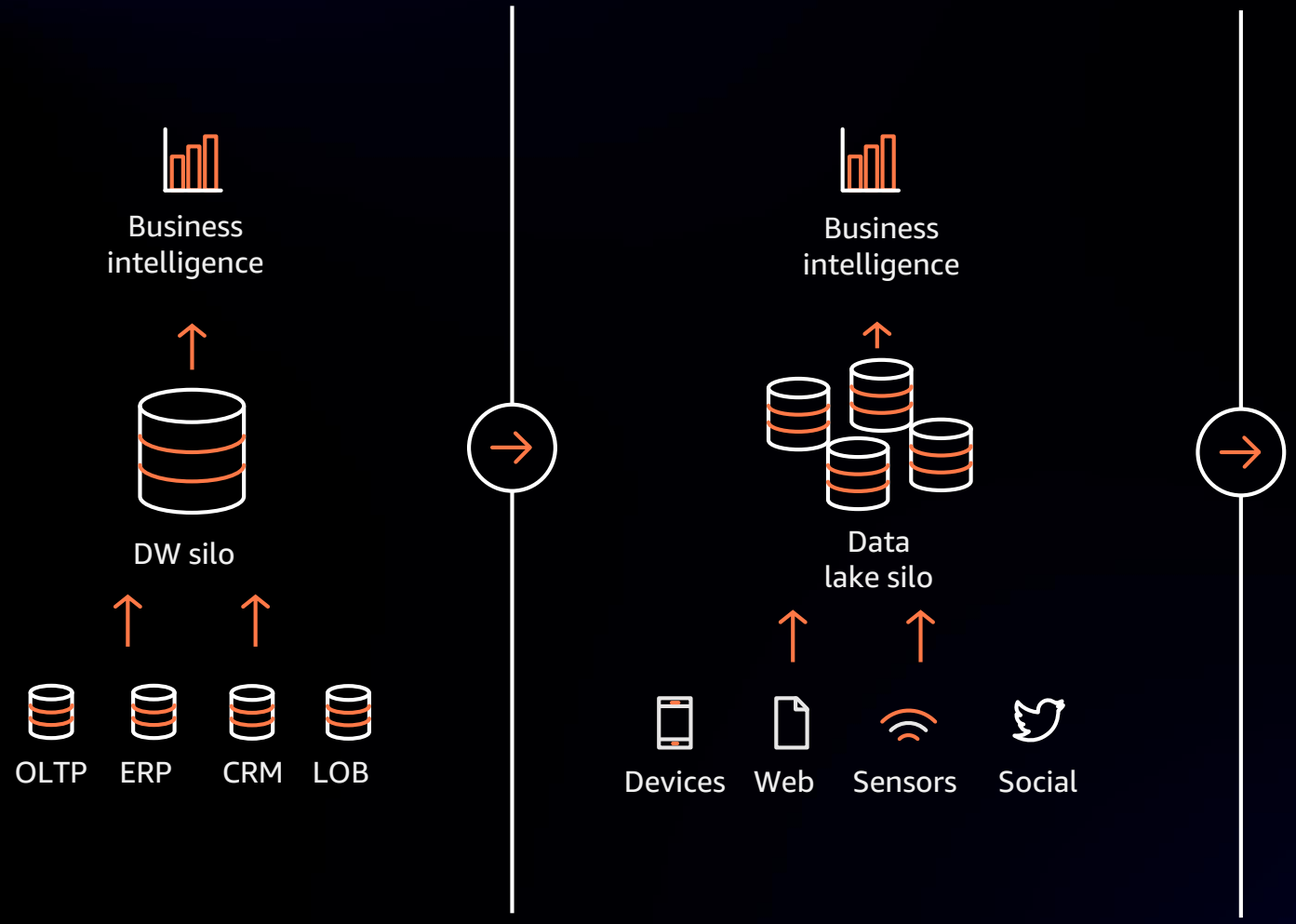
Telecom data lake-enabled AIOps for 5G networks

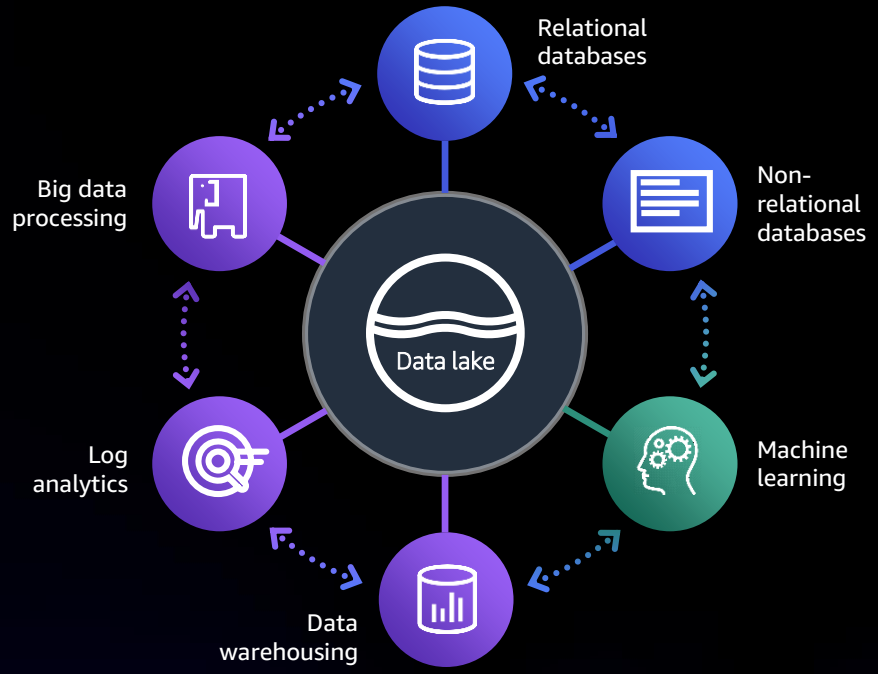
Guy Ben-Baruch
Senior Solution Architect
Telco Data Analytics
AWS

Ahmed ElHaw
Senior Solution Architect
Public Sector
AWS

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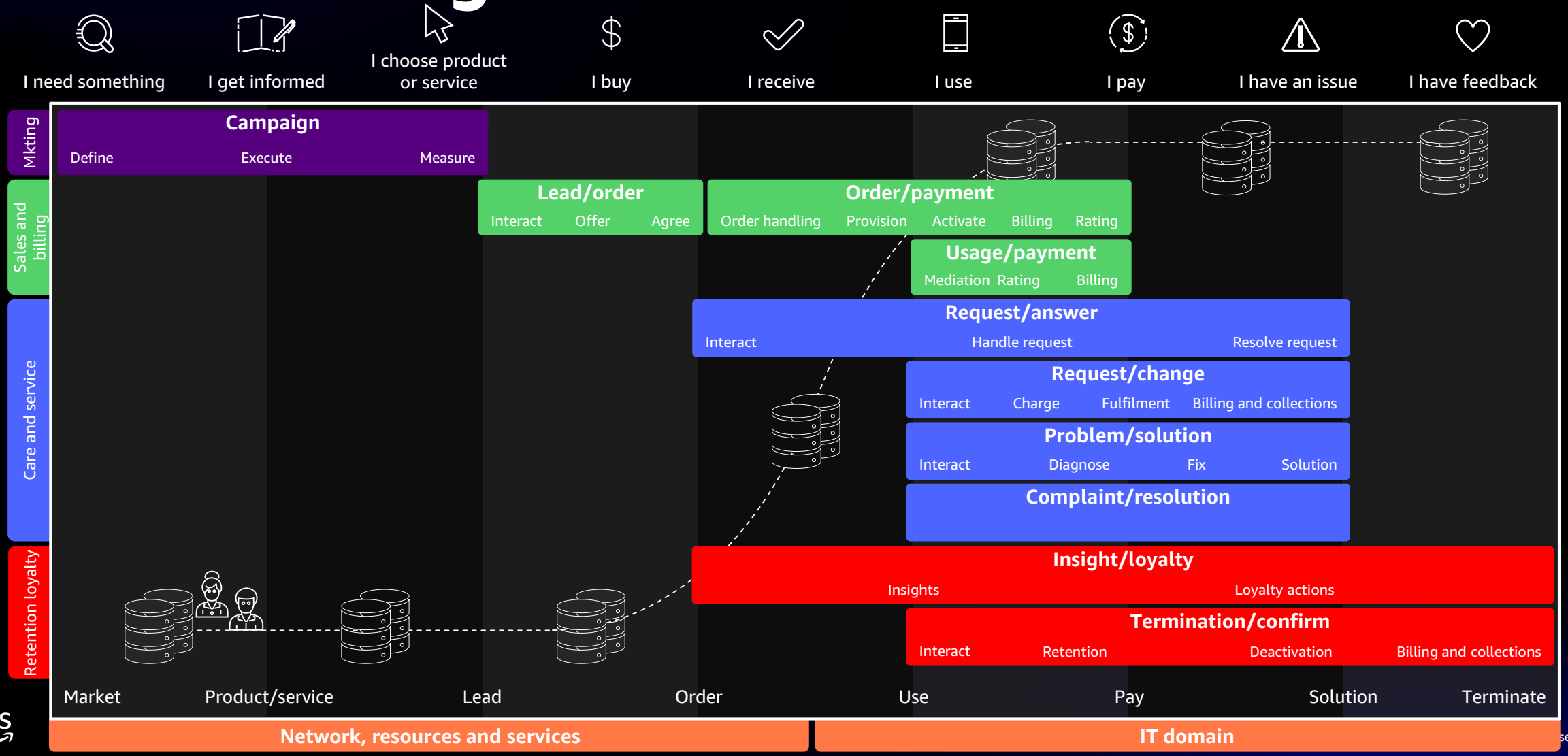
Data management platforms have evolved to consolidate data . . .





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But in CSPs data silos inhibit data-driven digital transformation . . .



served.

But Telco has multiple domains with complex data



Network inventory

- Blue Planet SOM Oracle RDS
- Blue Planet Inventory Postgres Aurora
- Hansen Portfolio Inventory MongoDB
- Hansen Informatics Postgres DB
- Hansen CPQ (MongoDB)
- Hansen COM Oracle RDS
- Hansen Catalog SQL Server RDS
- Hansen Catalog Services



NFVi/infrastructure

- Innoeye cNFs PM/FM data
- Innoeye logs
- CICD Vmware logs
- AWS CICD logs
- AWS infra logs
- CNF config logs



BSS

- Optima Vertex Oracle DB
- Optima Aurora Postgres DB
- Digital route
- Matrixx (MSK topics)
- Call data records



OSS

- DPI (deep packet inspection)
- Probe metrics/logs
- Probe logs
- WMS
- Netcracker

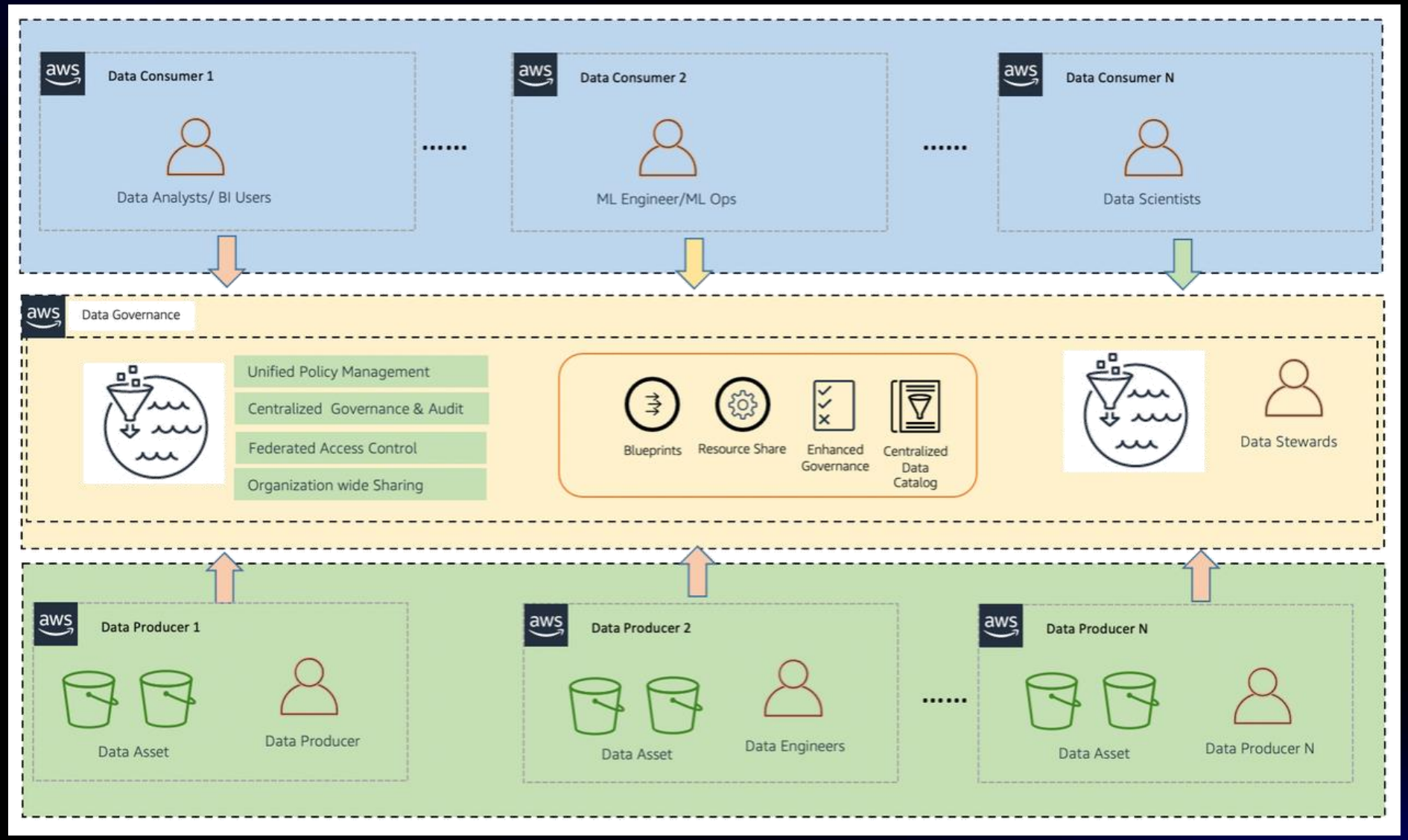


Applications/ISVs

- SaaS Ookla
- SaaS Salesforce
- SaaS APIGEE
- SaaS Logz.io
- SaaS TMS
- SaaS Jira
- SaaS Nexsys1
- SaaS imagery

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Data mesh architecture on AWS



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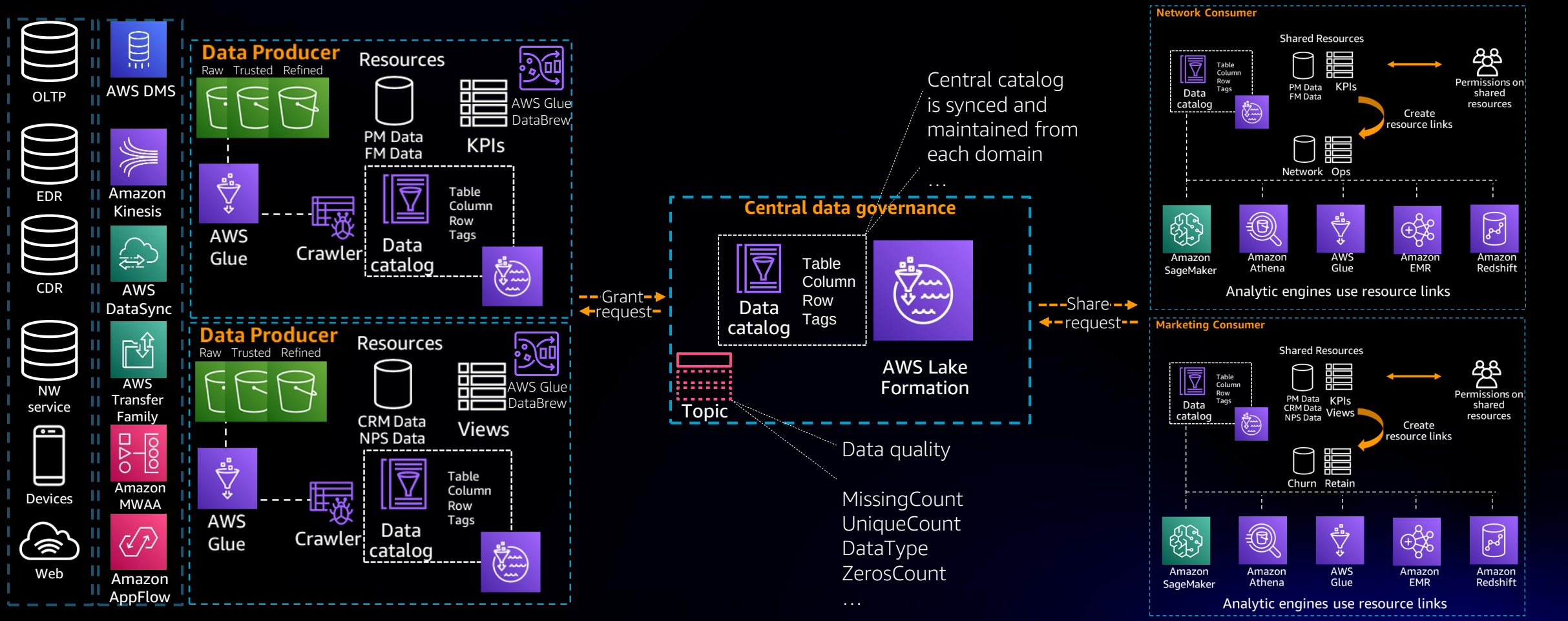
AWS telco take data mesh architecture

BUILT ON AWS LAKE FORMATION

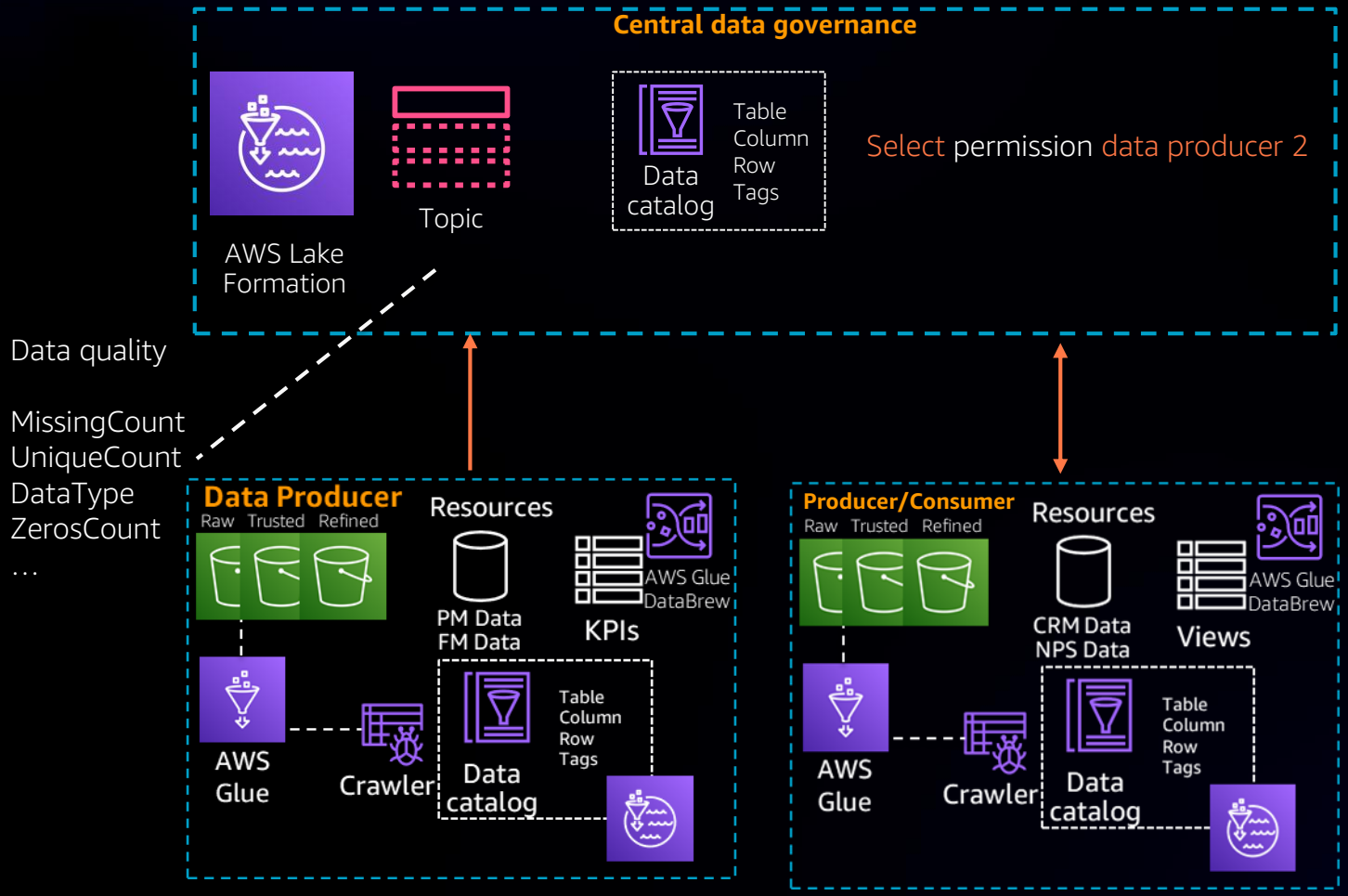
Build data lakes quickly
- Identify, crawl, and catalog sources
- Ingest and clean data
- Transform into optimal formats

Simplify security management
- Enforce encryption
- Define access policies
- Implement audit logging

Enable self-service and combined analytics
- Consumer personas discover all data available for analysis from a single data catalog
- Use multiple analytics tools over the same data



And see how a data producer can seamlessly share data . . .



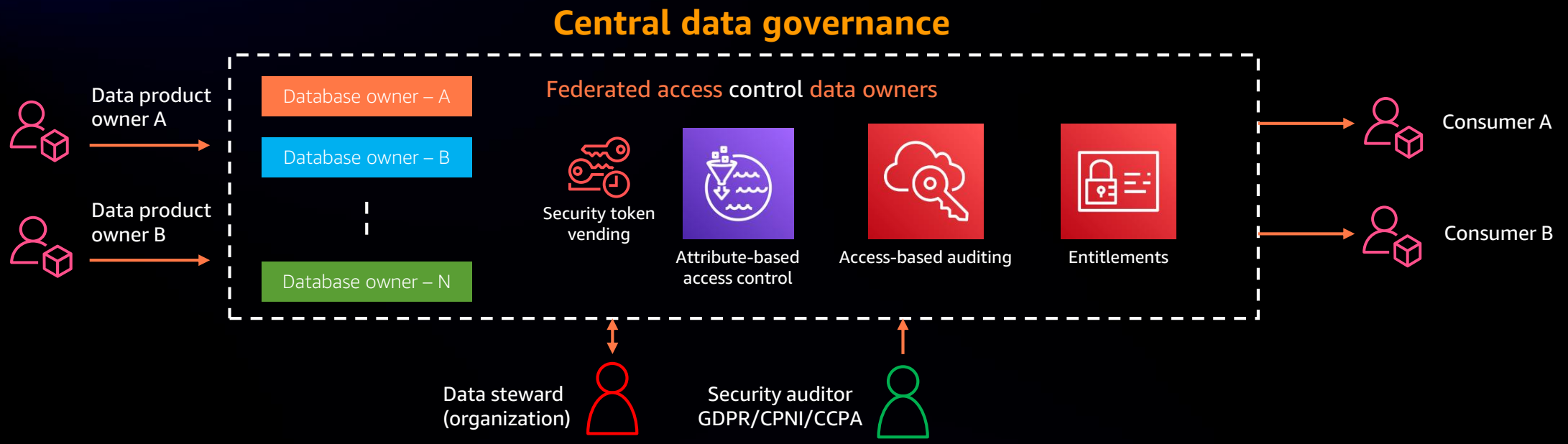
Data producers can be data consumers and producers

Ability to share data without copying

The data producer can read and enrich their data product to produce another data product to meet the needs of a data consumer

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With the security of federated data governance

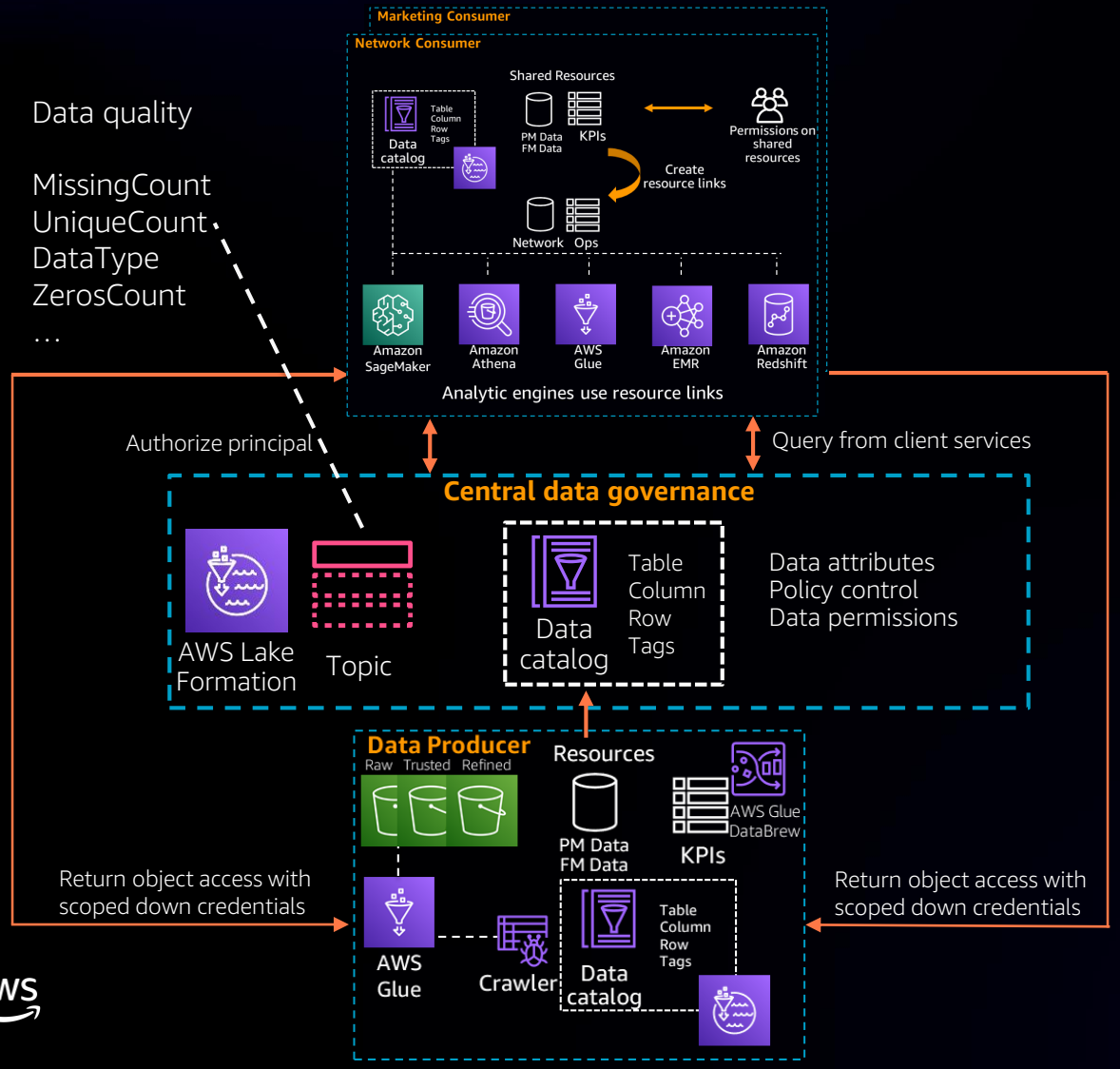


- ✓ Common security features are core to a governed data mesh
- ✓ Common identity provider across producers and consumers
- ✓ Credential vending to simplify service integration
- ✓ Federated catalog and metadata search
- ✓ Fine-grained entitlements and attribute-based access control
- ✓ Central audit and compliance

aws

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And data consumers have simplified consumption and sharing



Data consumer finds and requests access to a data product

Data producer approves request and initiates a resource share with the consumer account

Data producer grants fine-grained permissions to dataset shared with the consumer

Producers control access to data through federated data governance to enforce fine-grained permissions

Data access can be validated and audited through federated data governance to enforce fine-grained permissions

Driven by federated computational governance

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Use case – Producer usage records

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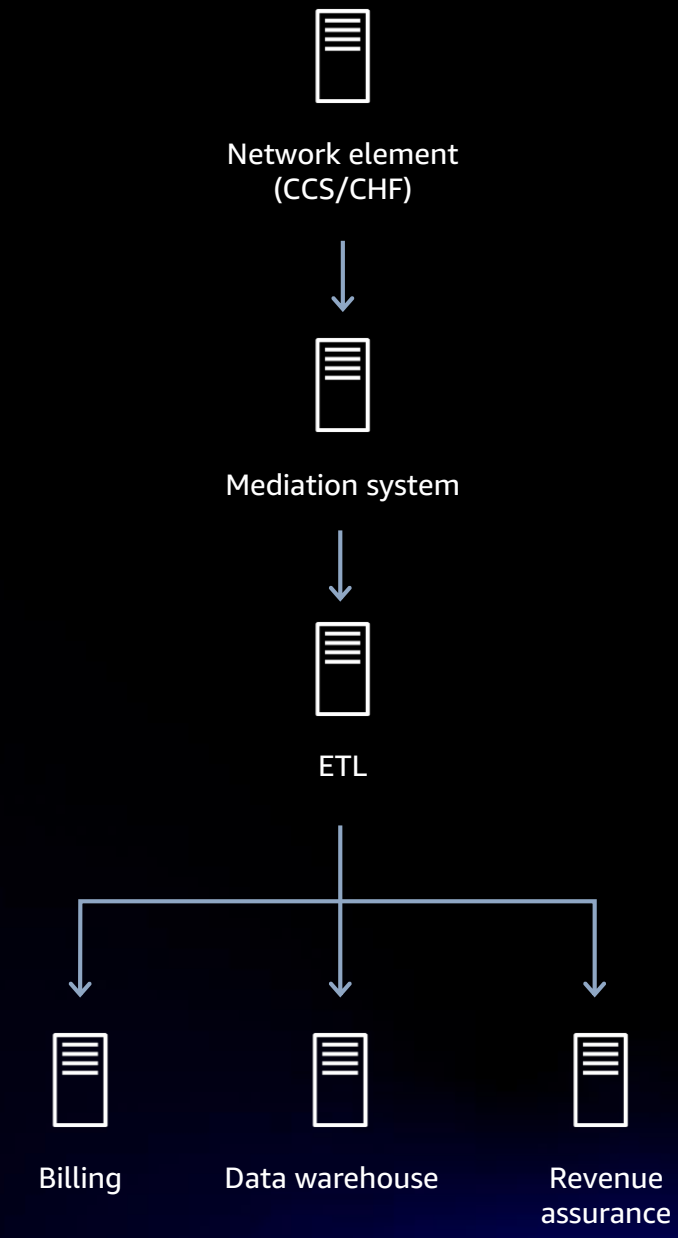
CSP status quo

Complex data processing pipeline

Batch jobs, often nightly

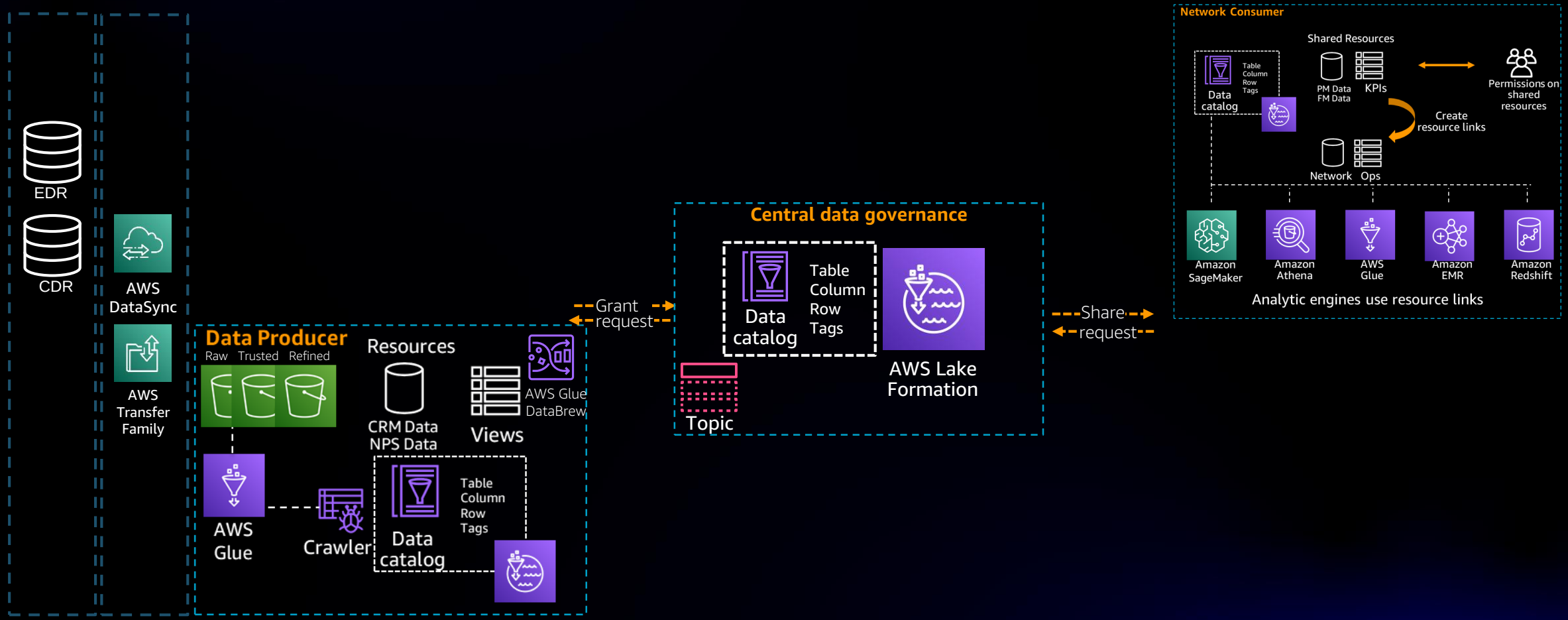
Reports and dashboards are next day

Call data records have complex schemas which require special software and business logic



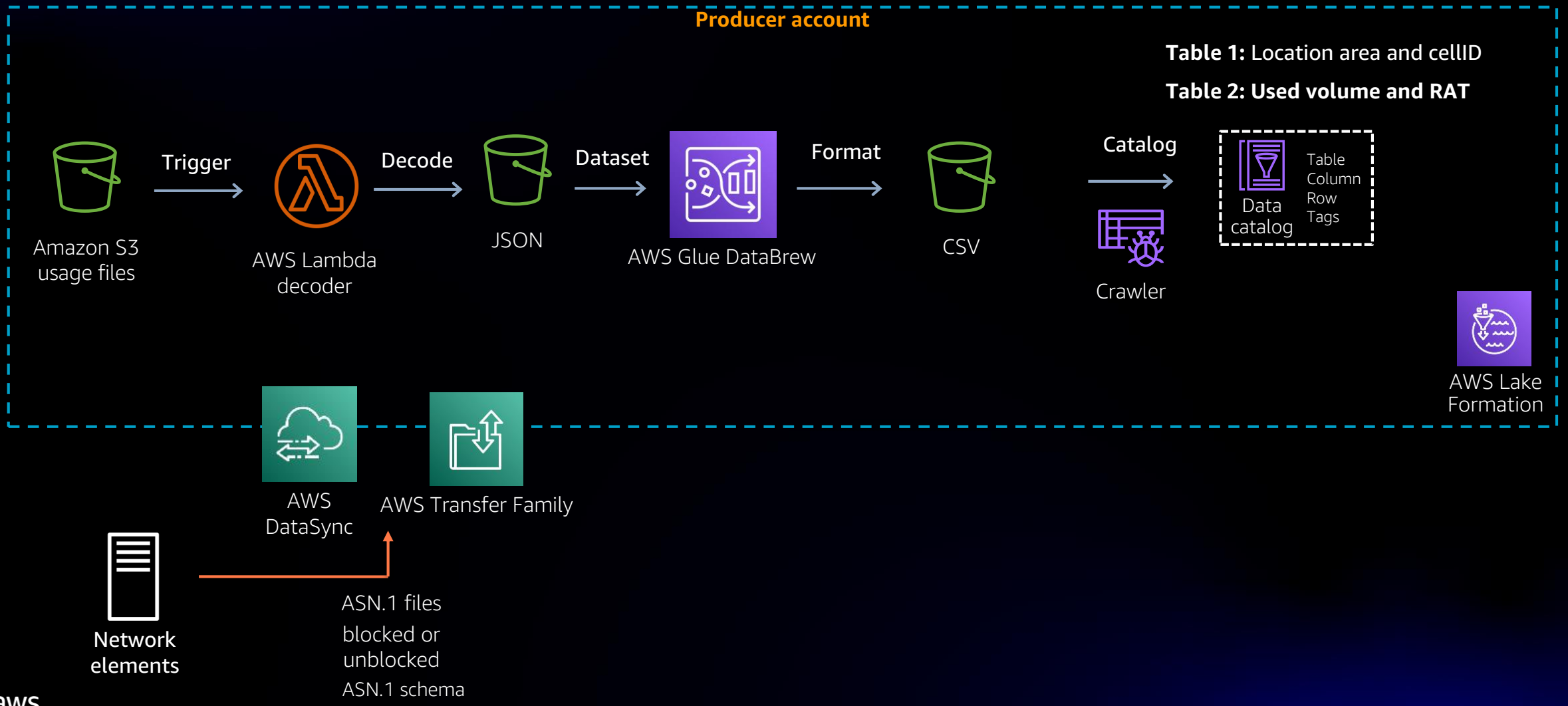
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Data producer example



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Usage producer architecture

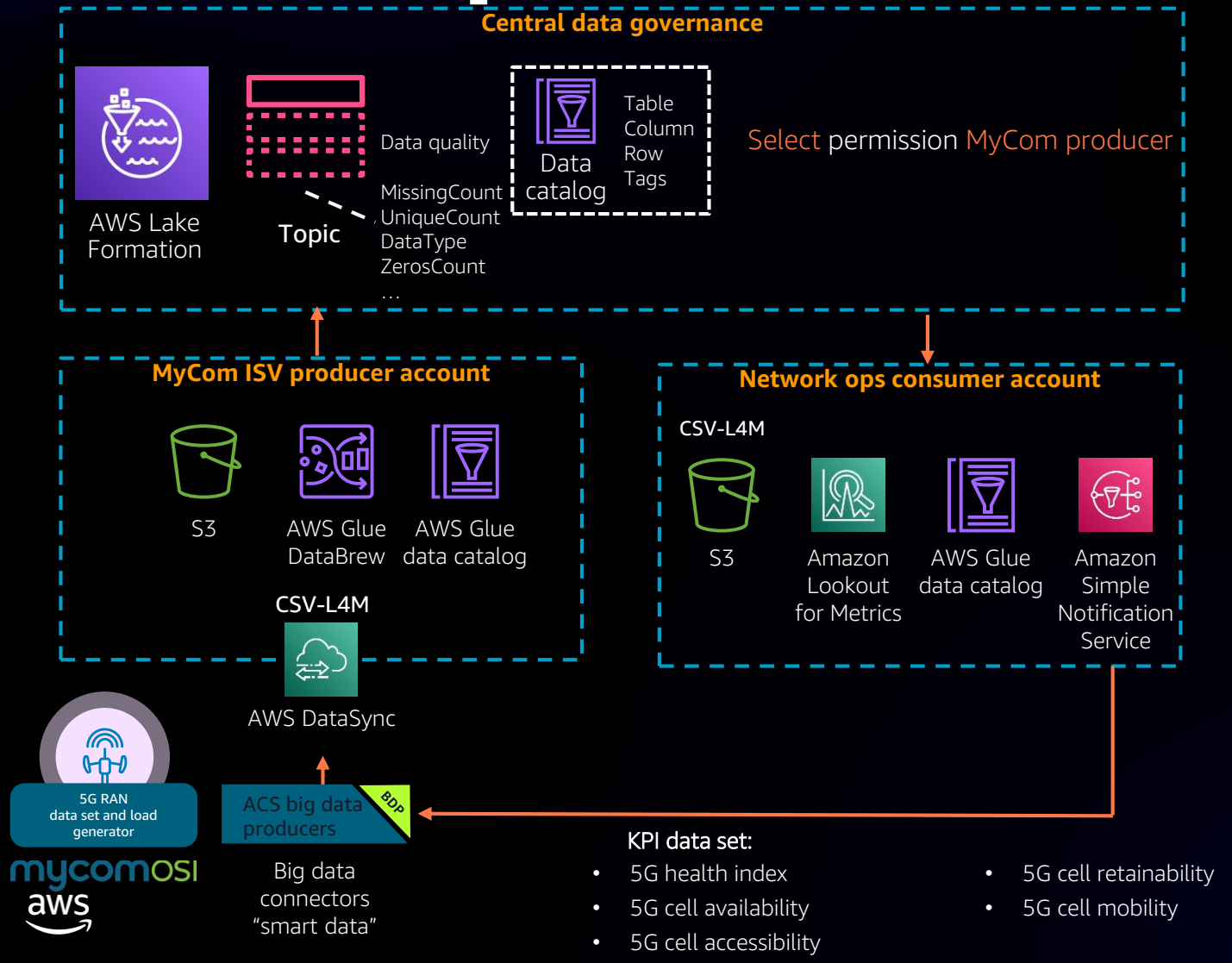


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Use case – MyCom data producer; network ops consumer

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Use case – MyCom data producer; network ops consumer



MyCom are a service assurance SaaS provider in the OSS domain; MyCom are a data producer and ingest 5G data into their respective Amazon S3 buckets through ingest pipelines that they own and operate

MyCom as a data producer owns their data and are responsible for the full lifecycle of their data

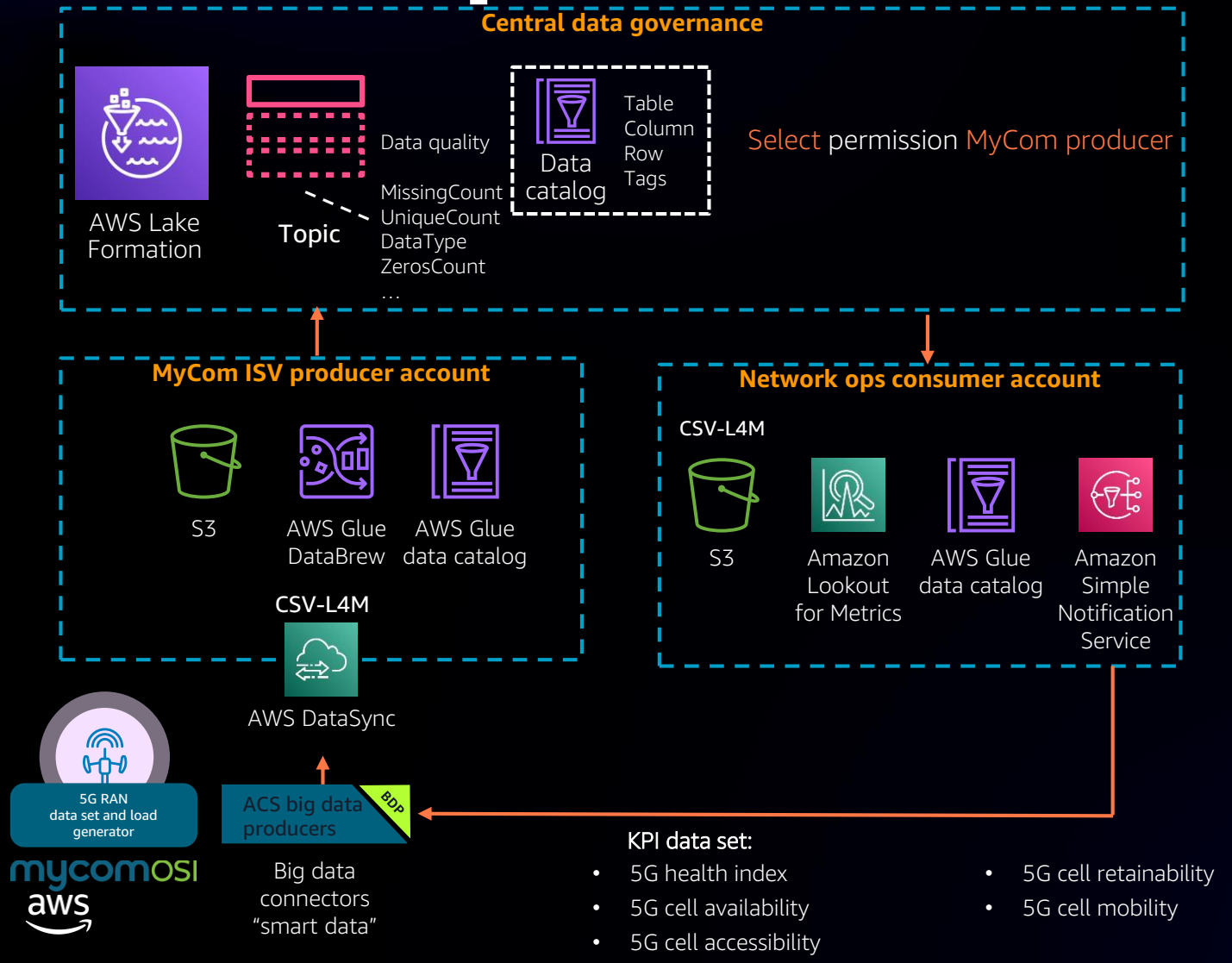
MyCom use Glue Data Brew to cleanse and transform their data; they publish metadata (quality, frequency, etc.) about their data product to a central shared repository

MyCom catalogs their datasets to make them discoverable and accessible by consumers

Network ops are a consumer and process MyCom data to detect anomalies via Amazon Lookout for Metrics; alerts are routed back to MyCom

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Questions

Why data mesh?

How can we build?

How do you handle security/governance control?

How do you handle PII data?

Any customers who implemented this architecture?

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Thank you!

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