AWS re:Invent

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

TLC303

Telecom data lake and analytics

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Agenda

Intro to TelcoLake

Workshop

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Data driven means . . .

Enabling CSPs to reinvent their customer experience based on data; using that data for hyper-personalization, reducing operational costs, increasing automation and building new revenue streams; giving employees across all functions super powers with AIML and business intelligence

Ultimately in the “new normal” CSPs need to be agile, data-driven organizations that can see around corners in order to avoid disruption . . .

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And current big data architectures have multiple failure modes



- Centralized and monolithic
- There is an expectation that **all** data sources are consumed across all domains (network, network IT, IT)



- Data pipeline fragmentation
- The data processing stages (ingest, process, serve) have fragmented ownership that causes friction/impacts agility



- Siloed and specialized data ownership
- Data engineers are grouped by tooling expertise with no business or domain knowledge

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These failure modes result in a lot of challenges for CSPs

There is no longer a technology challenge to becoming data driven; Forbes validates this in their 2021 survey – 92% state the principal challenges to becoming data driven are people, business process and culture

Data is the lifeblood of AI and ML; there is a need to democratize this data and remove friction in getting to the data; if you wonder how Amazon innovates so quickly, it is an approach to business that institutionalizes the finding, questioning and testing of data; experiment, fail fast and learn

CSP challenges:

1. How do we handle PII, GDPR, CCPA data? How do we isolate it or process it?
2. With so many technologies, vendors and sources how can we manage and understand what this data means?
3. Our data is in the wrong format; it's in the wrong aggregation
4. It's another team that owns that data; that will take months to get
5. We don't have that data
6. Our team doesn't have the tools to do that
7. We are not data scientists

Being data driven requires that everyone, regardless of seniority, has access to data and tools to test their ideas and intuitions; with the established primacy of data, and broad empowerment to test early and often, rapid innovation and huge gains become possible at scale

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Introducing the data mesh paradigm

- ". . . A decentralized architecture where your units of architecture are a domain-driven data sets that are treated as a product owned by domains or teams that most intimately know that data. Either they're creating it or they're consuming and re-sharing it. We allocated specific roles that have the accountability and the responsibility to provide that data as a product, abstracting away complexity into the infrastructure layer; a self serve infrastructure layer so that we can create these products much more easily."

Zhamak Dehghani
Thoughtworks

- ✓ Domain oriented, decentralized ownership and architecture
- ✓ Data products and owners
- ✓ Self-service data infrastructure platform
- ✓ Federated computational governance

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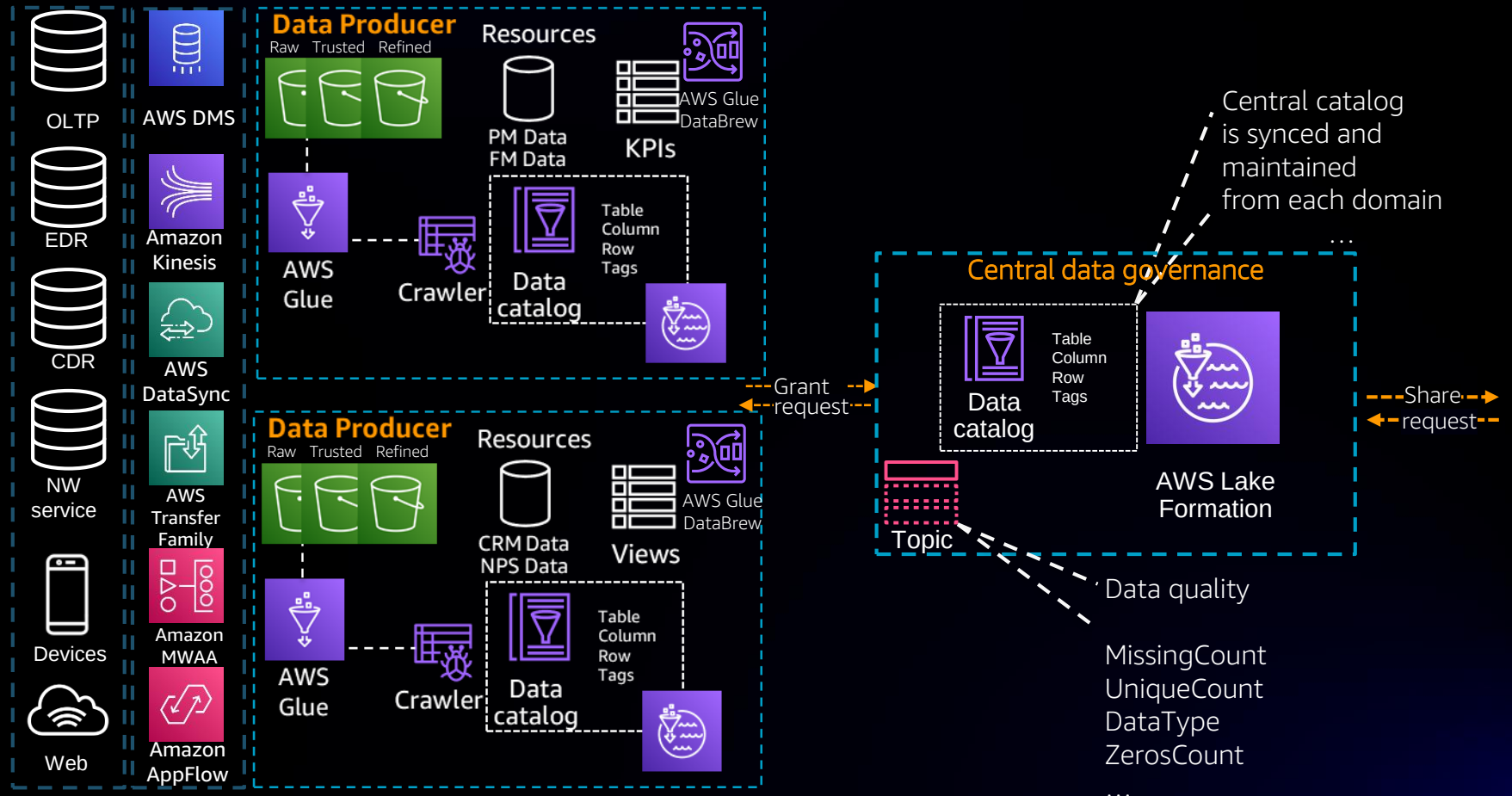
AWS telco take data mesh architecture

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



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Workflow

- Create a datamesh account architecture
- Implement three consumer use cases
  - Use case 1: Throughput forecasting using QuickSight ML Insights
  - Use case 2: Anomaly detection using QuickSight ML Insights
  - Use case 3: Customer churn prediction using network and consumer data with Amazon SageMaker

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Workshop GitHub

https://github.com/gubaruch/TLC303reinvent2021

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Meet and greet

Telecom Lounge

Venetian, Level 3
East Alcove

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Thank you!

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