AWS re:Invent

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

CPG201

Creating a modern CPG data architecture with a data mesh

Michael Connor
Global Head of Solutions for Consumer Packages, Consumer Packaged Goods
AWS

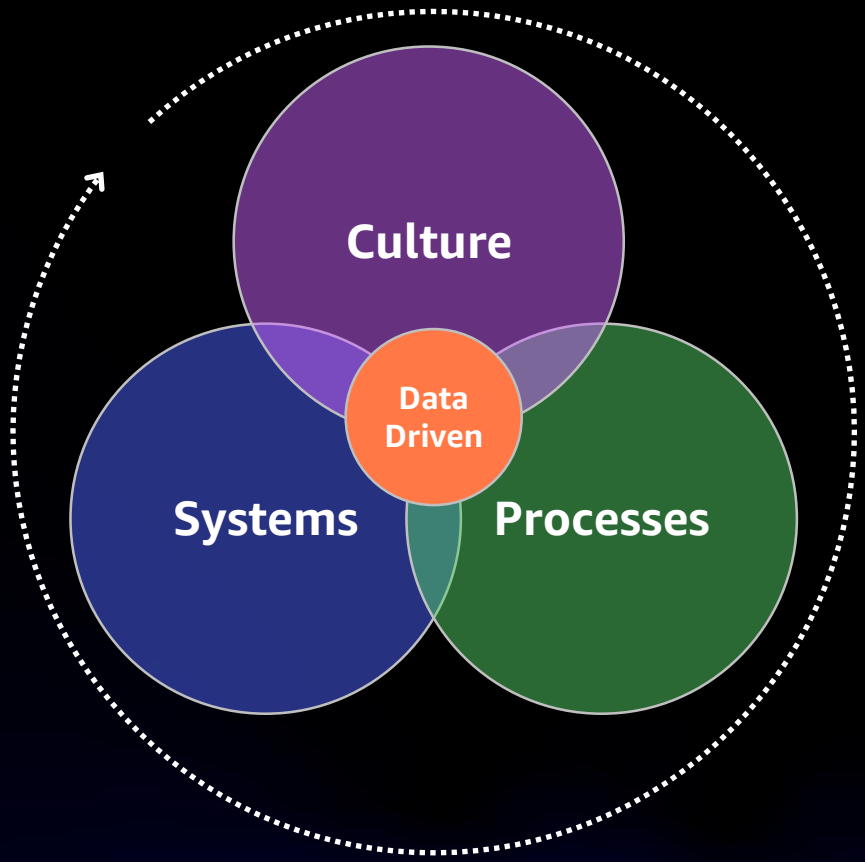
Krithika Ganesamoorthi
Global Retail Partner Technical Lead
AWS

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Data Mesh

Data mesh (as defined by Zhamak Dehghani of ThoughtWorks) is an architectural *and* organizational paradigm shift in how we manage big analytical data. The paradigm is founded on four principles

1. Domain-oriented decentralization of data ownership and architecture
2. Domain-oriented data served as a product
3. Self-serve data infrastructure as a platform to enable autonomous, domain-oriented data teams
4. Federated governance to enable ecosystems and interoperability.



Data should be served and usable at the source

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Top 10 business issues around data/analytics

Despite advances in cloud infrastructure and technology, many CPGs still face the same data failure modes they've suffered from for decades

1. Meetings devolve into whose spreadsheet is right
2. It's like pulling teeth trying to find datasets and get access to them
3. Once we get access to data, it's hard to make sense of what it means
4. We only realize we have a profit/loss problem when we go to close the books
5. We have a lot of data, but it doesn't translate into meaningful actions
6. It takes months to align with IT and get a new report
7. We only find out we've had data loss when we run month/quarter end reports
8. When we have a problem, it takes us a long time to find root cause and take action
9. We don't get value from the investments we've made in data & analytics
10. We don't have well-defined processes for giving people access to specific datasets and revoking access when they no longer need them

aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Key tenants of a successful data science practice



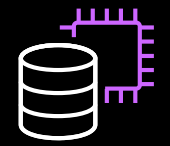
Business Value



Agility



Access & Governance

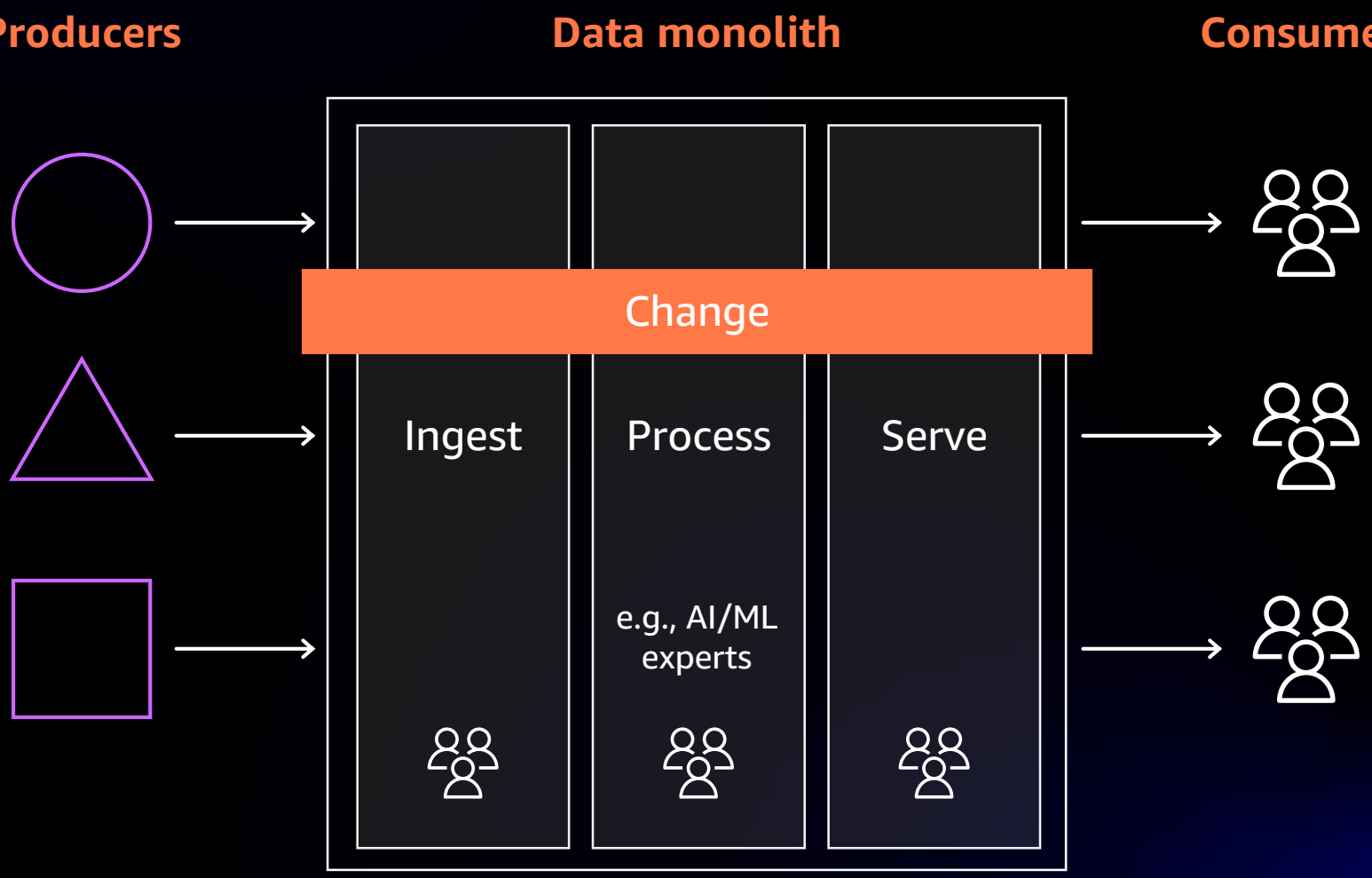


Data Quality

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

The data monolith

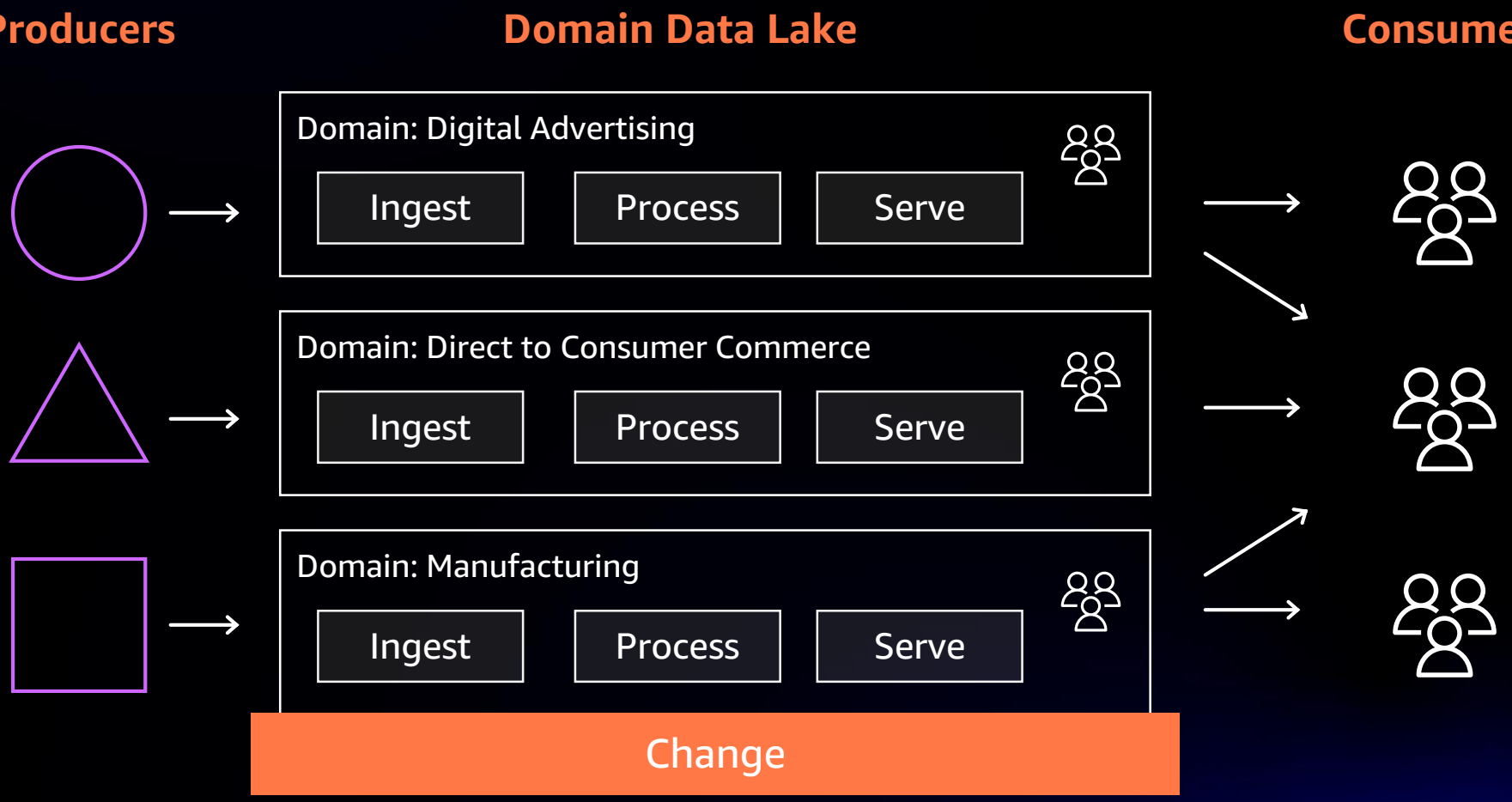
The data monolith starts with the assumption that data must flow elsewhere to be usable. The hadoop monolith started out great, one vendor, no tech debt, but attempts to scale brought familiar failure modes.



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

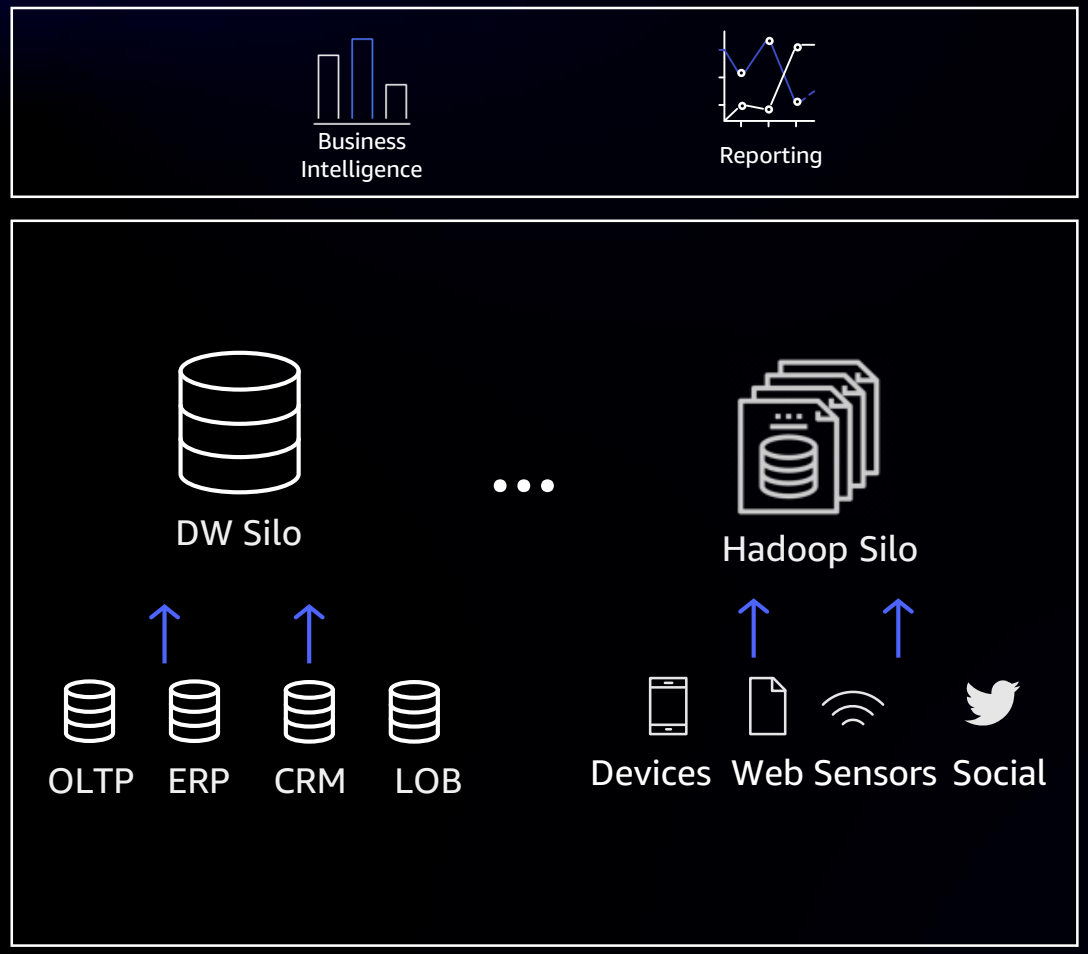
Data mesh

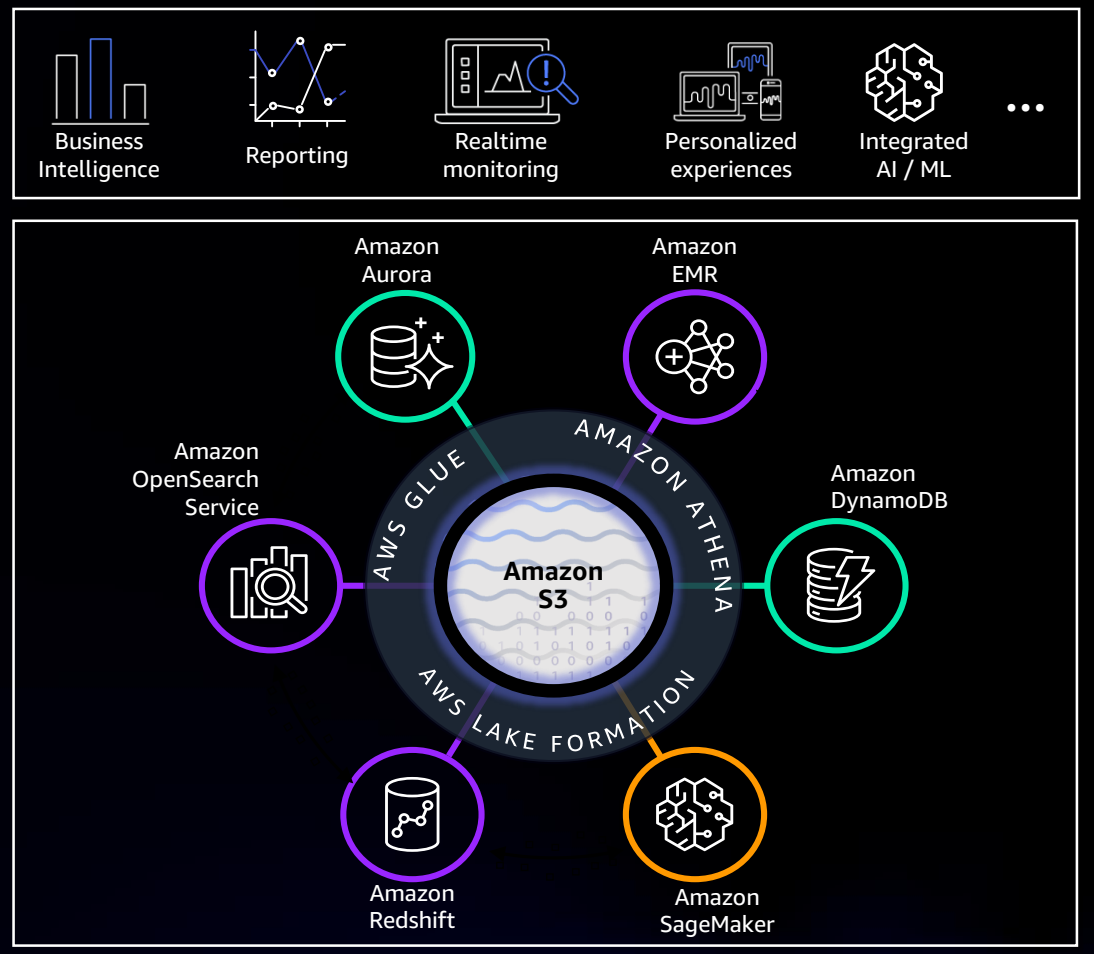
Organizing teams around domains, rather than functions (ingest, process, and serve) removes bottlenecks, and creates business value from data this is more accurate, accessible, and responsive to the business.



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Customers are moving from...



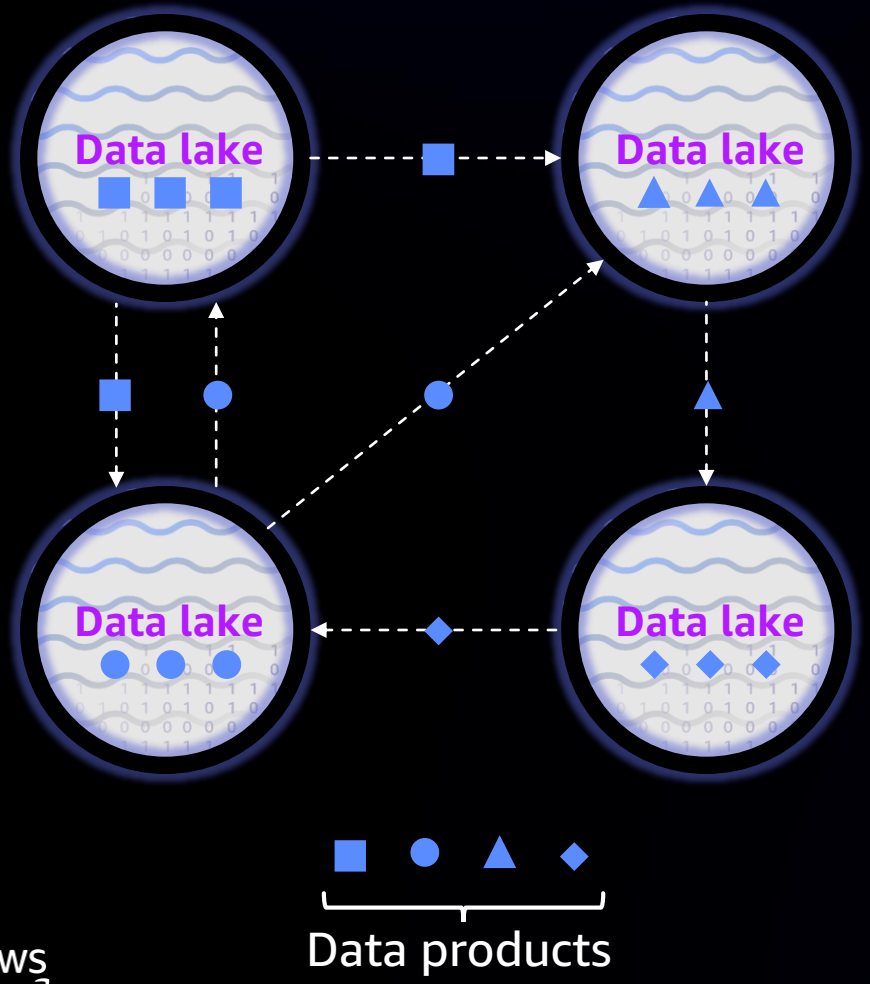


Siloed data

Modern Data Lake

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Data mesh: Ownership and governed sharing

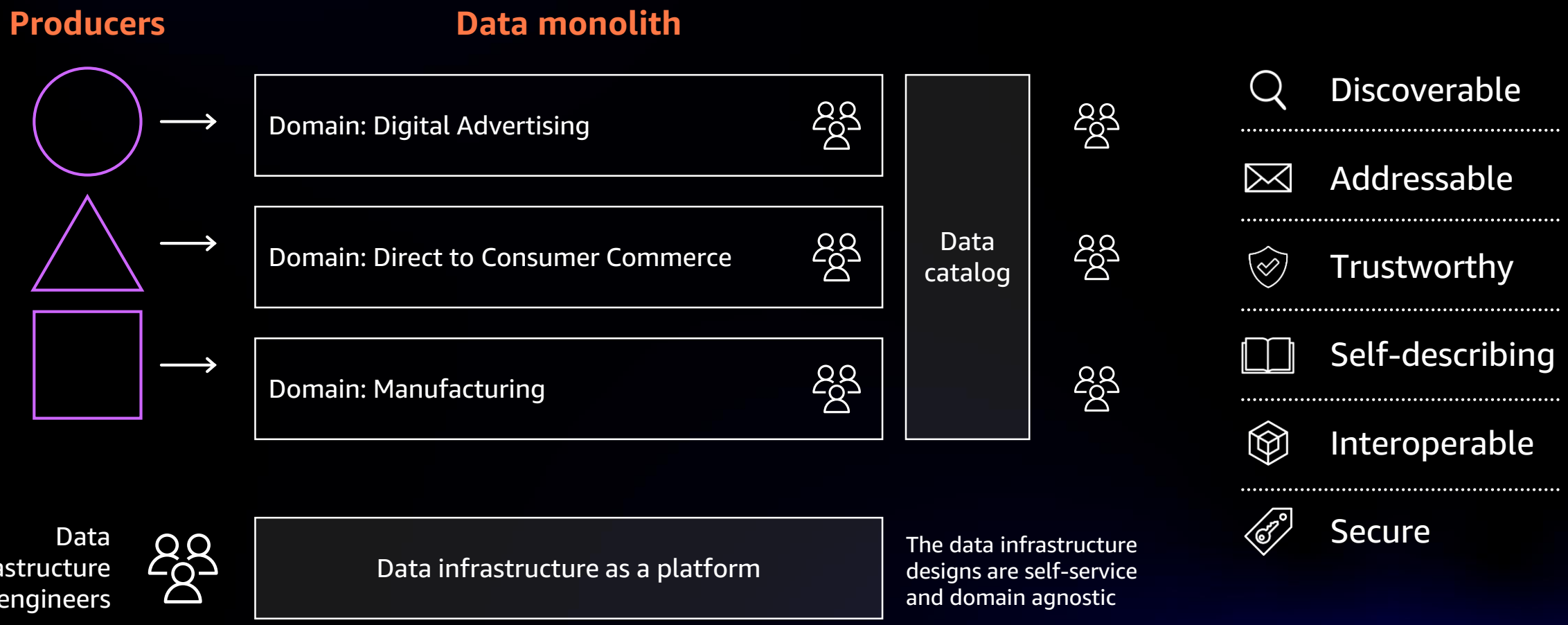


A **decentralized**, **domain-oriented** data architecture to drive **governed sharing** of **data products**.

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

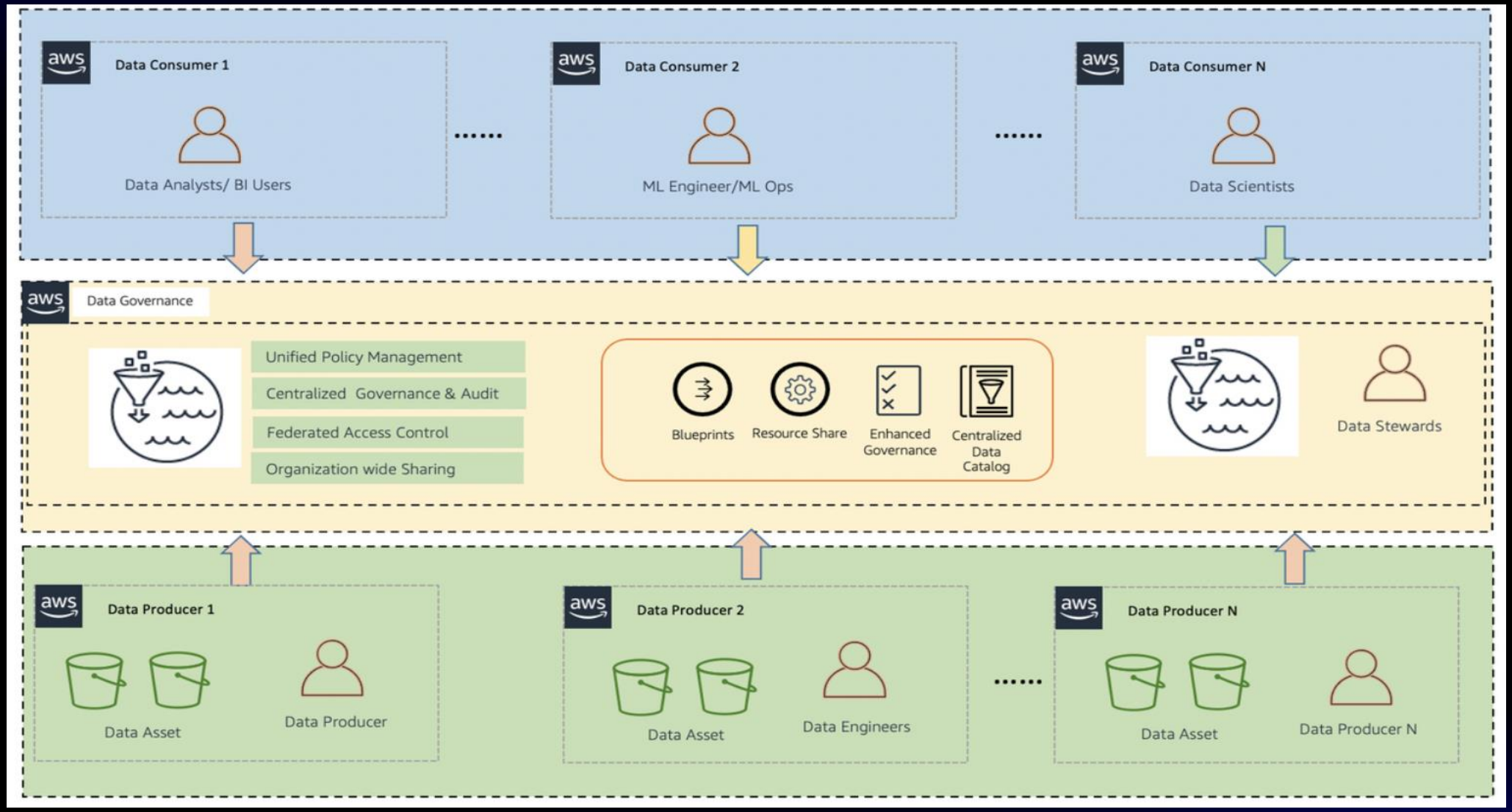
Data mesh

Organizing teams around ingest, process, and serve, instead of domains creates bottlenecks, and these teams don't understand the domain data



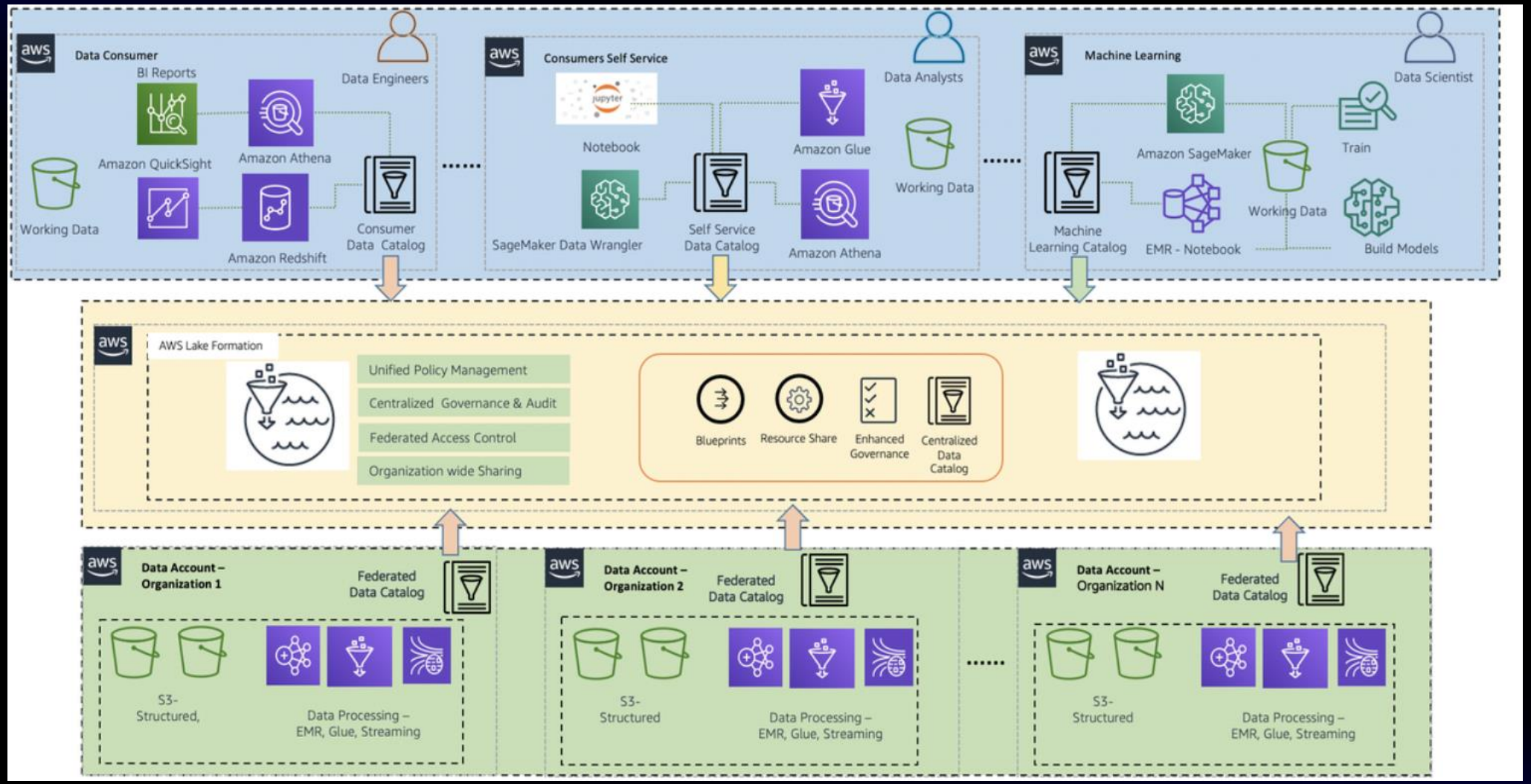
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

High-Level Architecture



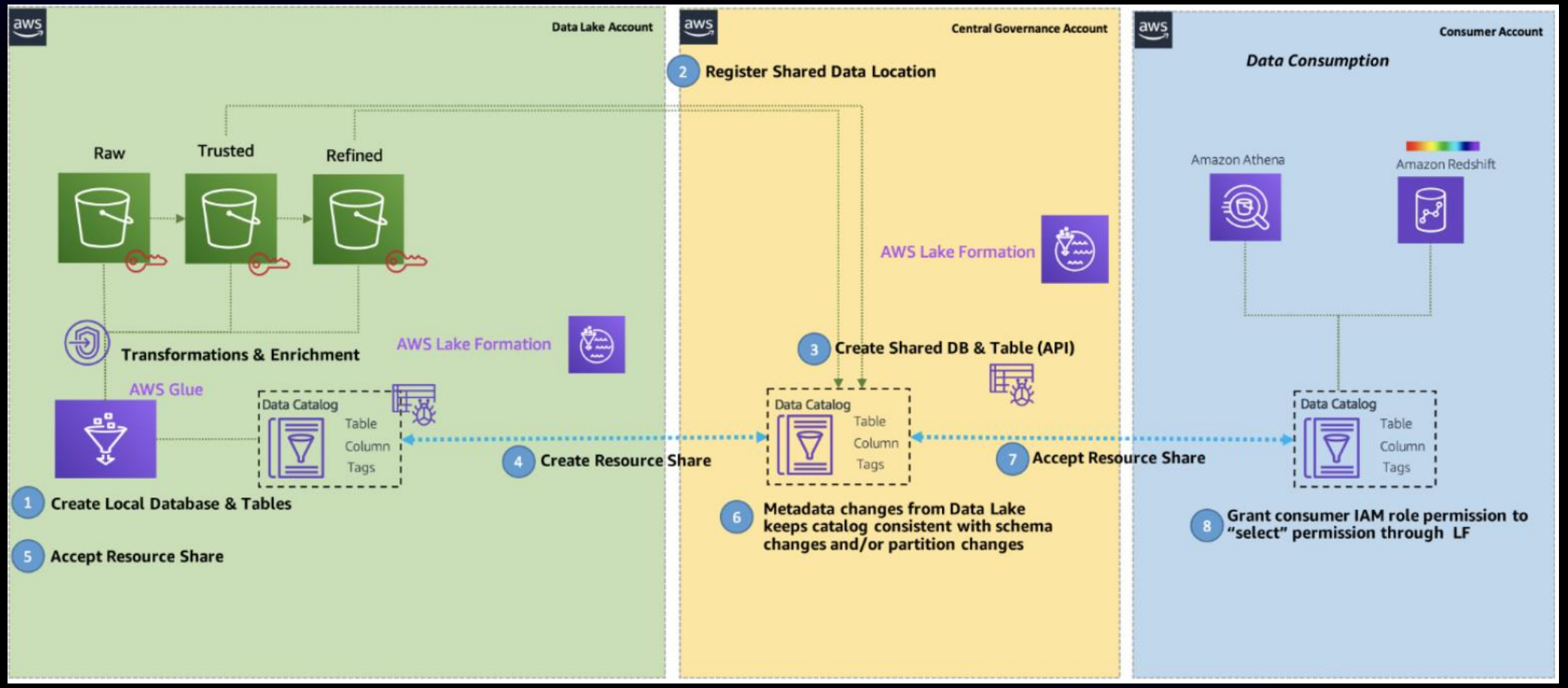
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

AWS Data Mesh Architecture



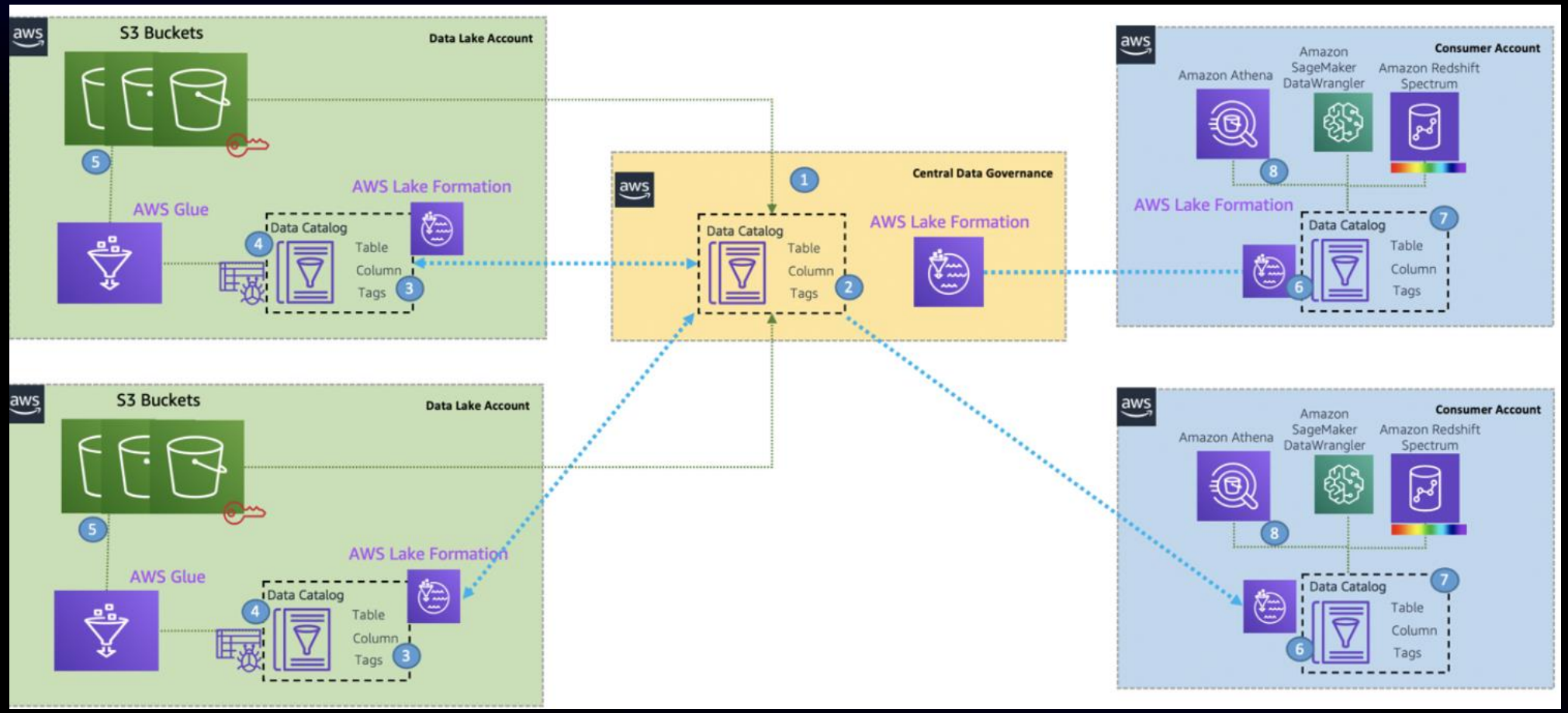
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

End-to-End Workflow



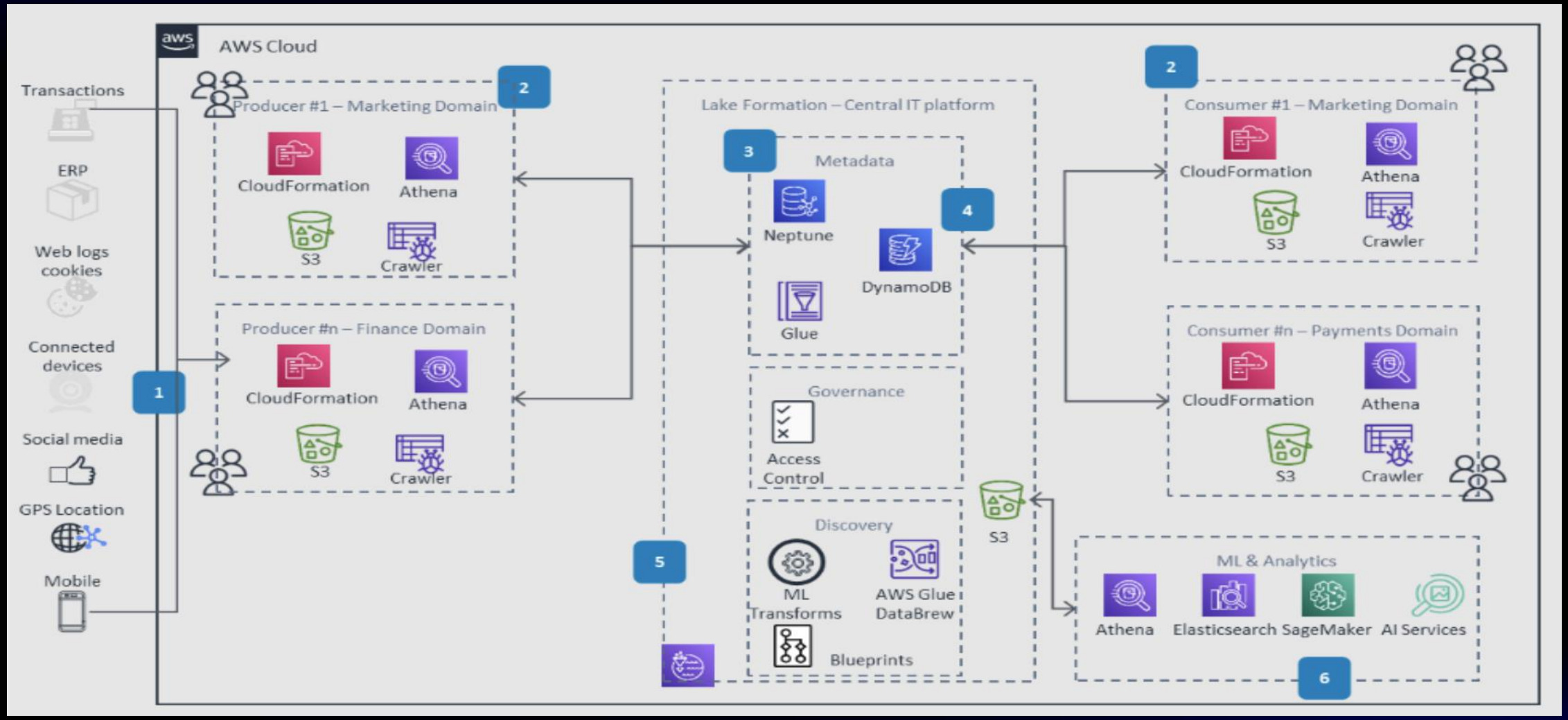
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Cross-Account Data Mesh



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

CPG Data Mesh



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you!

Krithika Ganesamoorthi
kganesam@amazon.com

Michael Connor
mlconnor@amazon.com

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.