



AWS State, Local, and Education Learning Days

Building a modern data strategy

Jason Moldan (he/him)

Principal Solutions Architect
Amazon Web Services

Agenda

- What is driving data strategy change?
- What is a data driven organization and a modern data strategy?
- How to build a modern data strategy?
- How can AWS help you get started?



What road do I take?

Well, where are you going?

I don't know.

**Then it doesn't matter.
If you don't know where
you are going, any road
will get you there.**

What is driving change in data strategies?



Challenges we are hearing from policy makers and leaders



Demand for services is rising while resources and capacity to deliver them **aren't keeping pace**



Constituents increasingly expect government to **provide modern digital experiences** for conducting online transactions



Aging infrastructure for data capture, storage, and management **creates friction** for leveraging data for analytics and machine learning



Complex security, privacy, and compliance requirements create barriers to change and block adoption of many SaaS solutions



Risk averse culture and institutional inertia, slow innovation

...and more challenges



BUSINESS CHALLENGES: Struggle to answer important Qs timely, limited transparency and auditability erodes trust, limited analytics capacity and capabilities to data share



DATA CHALLENGES: No defined governance models, poor data quality, no metadata for audit/compliance/provenance, no data cataloguing



OPERATIONAL CHALLENGES: Manual/ad hoc processes consume resources, inconsistent data manipulation, no 2-way pipelines, variation in data extraction and identity resolution, PII and PHI protection untraceable and vulnerable



FUNCTIONAL CHALLENGES: Roles and responsibilities not codified, not scalable

Culture is the biggest impediment

92% of companies cite culture – **people, process, organization, and change management** - as the biggest impediment.

New Vantage Partners. Data and AI Leadership Executive Survey 2024



What is a data driven organization and a modern data strategy?



The Data Driven Organization



“An organization that harnesses data as an **asset**, to **drive sustained innovation** and create **actionable insights** to **improve policy making decisions** – **student outcomes** that reflect what constituents care about and build **trust**.”

Key Characteristics



Set 'Think Big' goals



Focus on delivering business (policy) priorities



Shared leadership conviction and Business-IT alignment on data ownership



Strong collaboration and agility concerning data products across data producers and consumers



Upskilled and empowered producers and consumers who self-serve



Build trust and confidence in data with privacy, security, compliance and federated governance

Strategic Pillars of a Modern Data Strategy



Mindset

Beliefs, values, and behaviors that create a data-driven culture with aligned use-cases



People / Process

Structure and roles that accelerate data-driven outcomes and processes that enable and scale effective use of data



Technology

A North Star vision for a future data architecture to support priority use cases

Why Does It Matter?



Create better citizen & student experiences & outcomes



Student success & Community relevance



Respond to the unexpected



Inform Policy



Unifying data to enable 360-degree views



Transforming human services



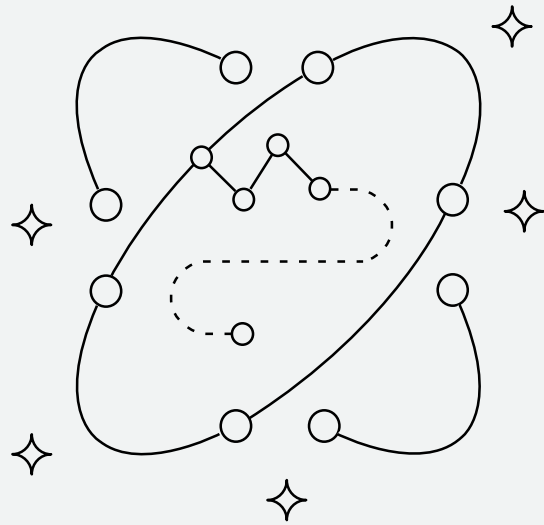
Enhancing efficiency



Save time, money, and lives

How do I develop a modern data strategy?





Mindset

Establish Key Tenets – Communicate from the Top

These represent the guiding principles for your data strategy

Empower the business to solve their specific problems independently

Data is democratized, available, and discoverable for all

Use data to differentiate our services in the market from our competitors

Only move and duplicate data when it is absolutely essential for supporting a specific use case

Serve data widely, across the enterprise, with controls and traceability

Decentralized governance to improve agility while still protecting the data



Abstract technical complexities so teams can move fast

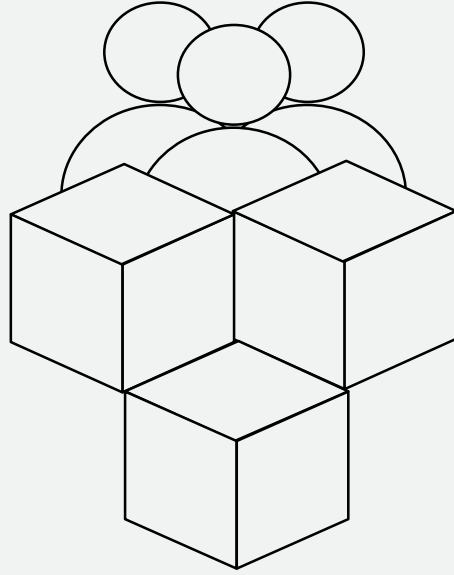
Business value is secondary to customer value

Land data once and reuse it in its natural location and most functional format

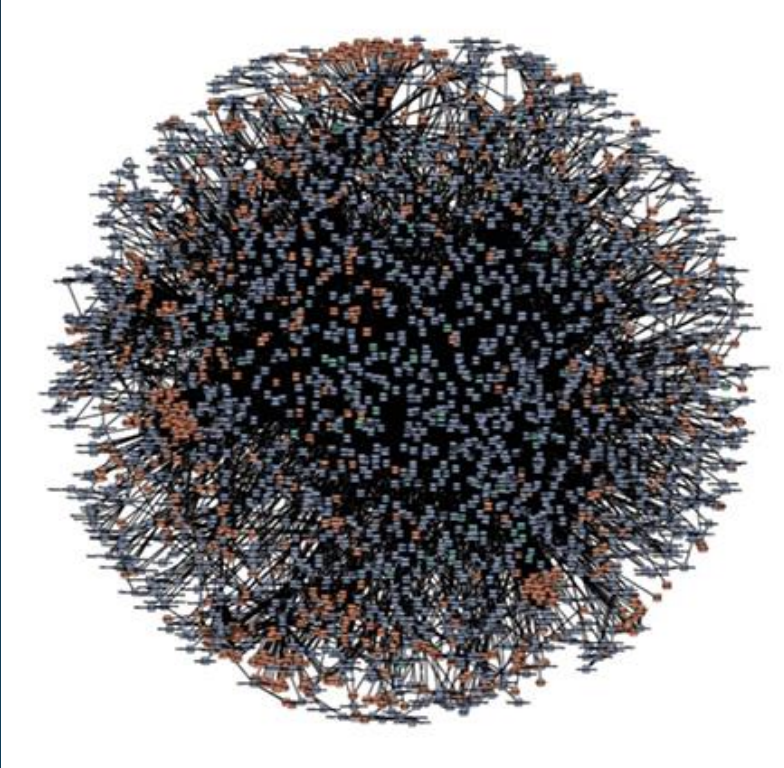


Align with Business Strategy Goals

Business Themes	Business Priorities	Data Use Cases	Metrics
 Invest in our people	Reduce regrettable attrition	<ul style="list-style-type: none">Attrition driver analysis, risk scoring, and prediction	<ul style="list-style-type: none">Voluntary vs involuntary regrettable loss
	Avoid single points of failure and develop career paths	<ul style="list-style-type: none">Roles/ people at risk identification and resolution actions	<ul style="list-style-type: none">% of active development plans
	Diversity, Equity, and inclusion	<ul style="list-style-type: none">DEI insight, metrics, and reporting (operated in a safe analysis space)	<ul style="list-style-type: none">Diversity metrics by team, dept, remote vs. office workers
	Remarkable work life experience	<ul style="list-style-type: none">Use of personalization and automation for hiring and onboarding.Tools for hybrid working	<ul style="list-style-type: none">Engagement scoresLead time to hire by team/ deptsAverage open time by role
 Sustainability	Measure and reduce our carbon emissions	<ul style="list-style-type: none">Emissions metrics, tracking, and actionable insightsBenchmarking and cost of sustainability	<ul style="list-style-type: none">Measure of emissions generated during operations% emissions target achieved
	Optimize raw material, manufacturing, and product waste	<ul style="list-style-type: none">Operational equipment efficiency (OEE) dashboardsScrappage and quality defect reporting	<ul style="list-style-type: none">% ScrappageFirst Pass YieldOEE
	Create products with longevity	<ul style="list-style-type: none">Sustainable product mix reporting	<ul style="list-style-type: none">Product lifetime measure% of recyclable products



People / Process

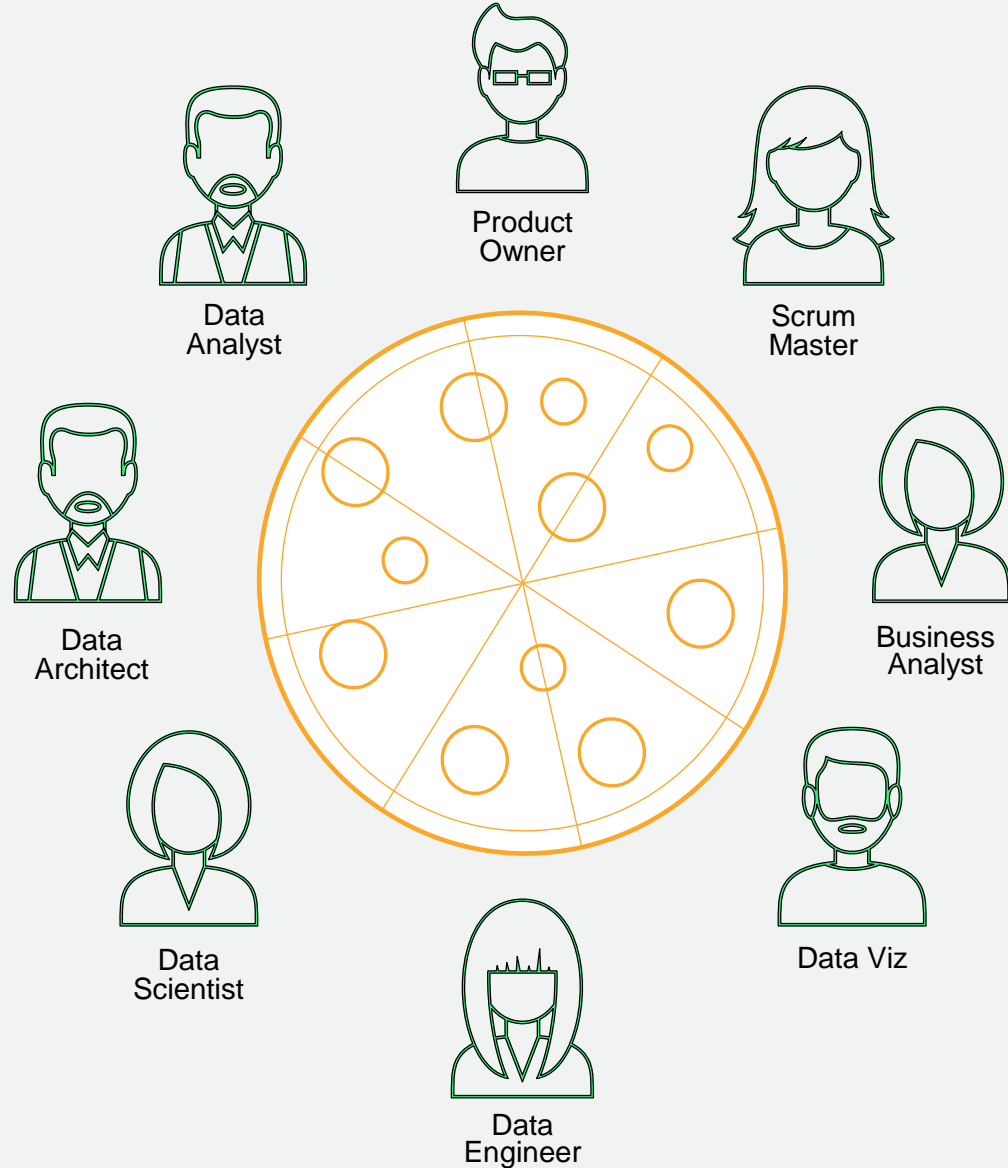


“In the same way that organizations have uncovered benefits by decoupling and moving from monolith IT to micro-services, the modern data community is an organizational and cultural shift from monolith data organizations to decoupled responsibility.”

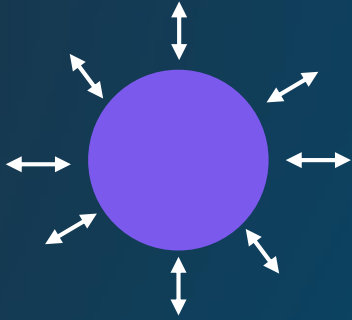
(AWS (2021), *“The Data-Driven Organization”*. Available [here](#).)

The Two-Pizza Team

- Single-Threaded Leadership
- Domain Oriented
- Cross-Functional

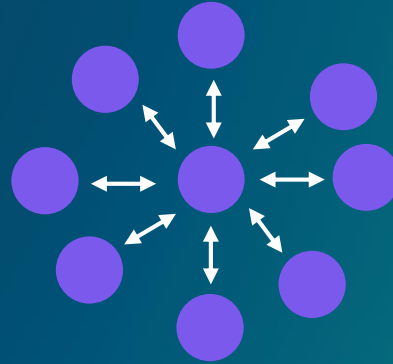


Aligning your Organizational Model



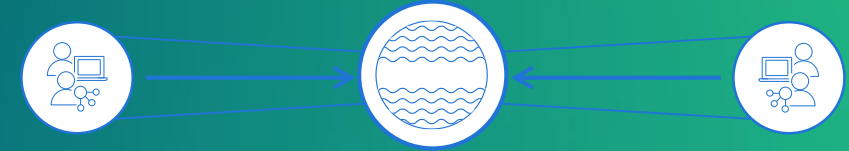
Centralized governance and control

- + Highly regulated domain
- + Over index on controls
- + Single point of accountability
- + Data ownership and control
- + Manage scarce resources
- Slow decision making and agility
- Can become a bottleneck
- Impacts time to value



Decentralized within the Lines of Business

- + Self sufficient teams
- + Shorter time to value
- + Tighter alignment of business/tech
- + Embrace change
- Compliance and security risk
- Limited control
- Duplication (by design)



Modern Data Community

- + Decentralized decision making
- + Leverage/govern core capabilities
- + Establish standards
- + Manage data ecosystems
- Perceived loss of control
- Incentivizing producers to participate

The Modern Data Community

Data-driven organizations enable agility by pushing responsibility to the edges, to the producers and consumers of data

Producers

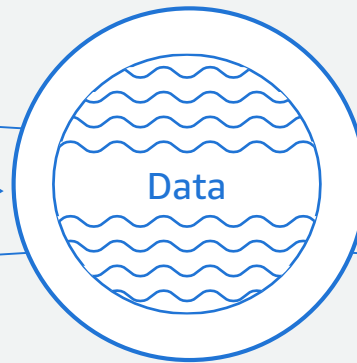
"Teams that want to share data"



- Domain expertise
- Data ownership and governance
- Data quality
- Metadata Management

Technology

"Team that runs the platform"



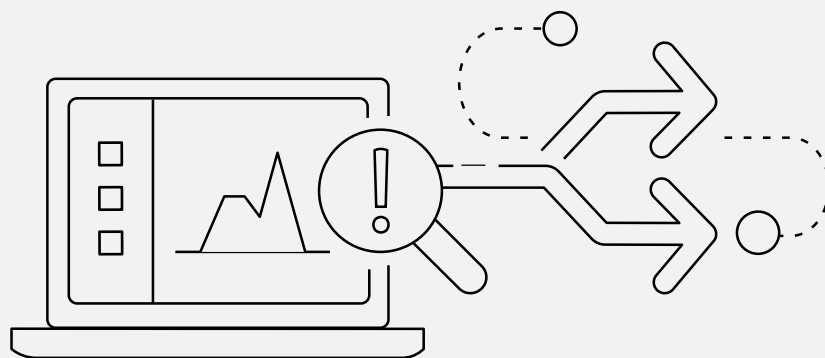
- Build security controls
- Build and run the platform
- Simplify on-boarding
- Enterprise datasets
- Training and community

Consumers

"Teams that want to use data"

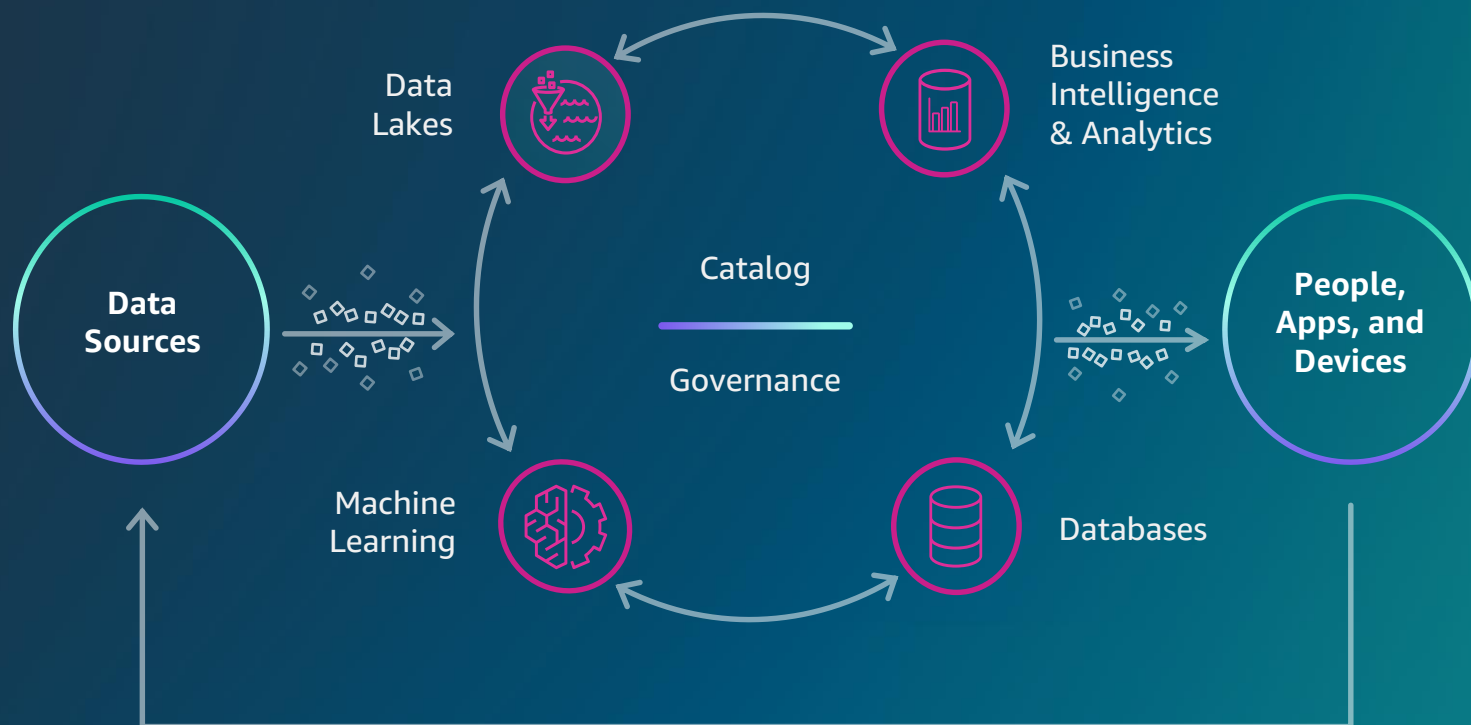


- Execute business priorities
- Business analytics development
- Data Discovery
- Data pipeline development
- Creation of new insights



Technology

Modern Data Strategy in Action



Scalable data lakes

Purpose-built
data services

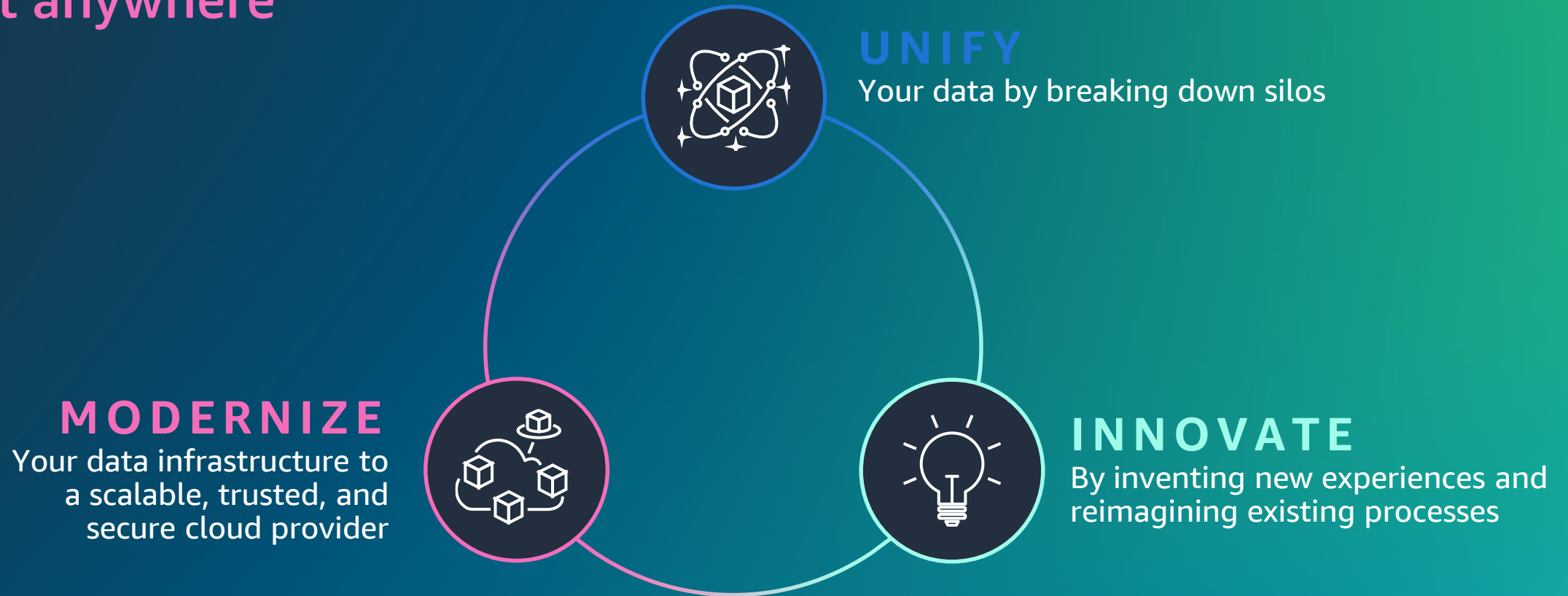
Seamless
data movement

Unified governance

Performant and
cost-effective

Modern data strategy for better business outcomes

Start anywhere



How do I get started?



THINK BIG, START SMALL, SCALE FAST

1. **Architect** to support the wider data strategy
2. **Implement incrementally** based on business initiatives and use cases that drive the data strategy
3. Further **evolve** data capabilities **over time**

We are here to help

Need peer-level executive guidance?



- ✓ Executive Government Advisors (EGA)
- ✓ Get a peer-level sounding board and sparring partner

Inspire and accelerate your data transformation

Want to build a data vision and strategy?



- ✓ Create an organizational vision for innovation with data to drive business outcomes
- ✓ Define the first pilot, learn, and build

Jump-start the data flywheel

Need guidance on governance?

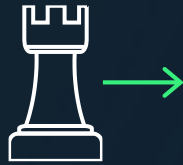


- ✓ On-demand videos
- ✓ Full training guide/workbook



Govern at scale

Data maturity assessment



Evaluate current strategy

4-hour assessment survey
Facilitated by AWS Data Strategists
Assessment recommendations



Execute recommendations

Data modernization
Data-driven everything
Professional Services
AWS Partners



Evolve data strategy

Assessment results
Implementation of recommendations
Iteration of your data strategy

Data governance workshops

Data governance immersion day

Facilitated by AWS experts, a hands-on engagement using AWS services to experience well-governed solutions.

Data governance assessment

Facilitated by AWS experts, a well-governed evaluation mechanism to assess your current governance posture and understand future needs.





Thank you!

Jason Moldan

jmoldan@amazon.com



Step 1: Executive Track
Step 2: Building a modern data strategy
for public sector

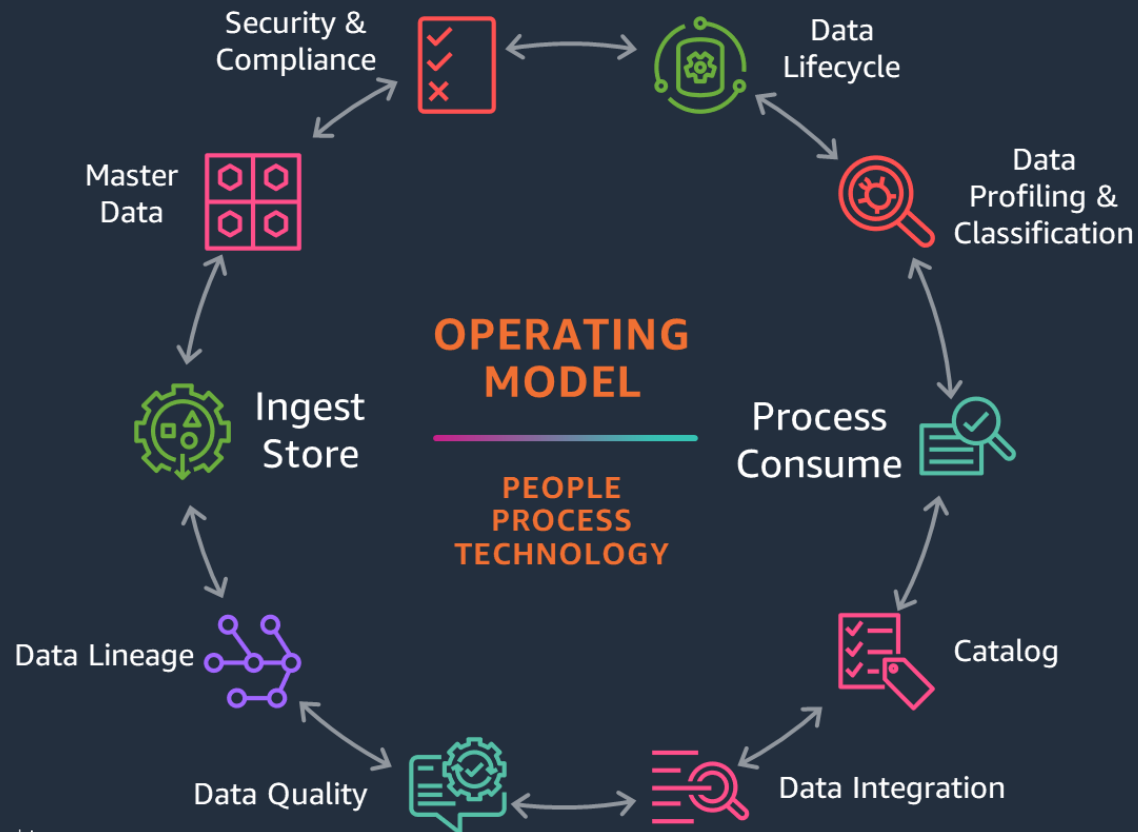
PATTERNS AND ANTI PATTERNS

- Executive ownership
- Start with the business problem
- MVP = early wins
- Build the right team

- Building an Ivory Tower or Field of Dreams
- Lack of upskilling
- Keeping the same processes and tools
- Fighting Inertia

AWS approach to data modernization

Data governance is the combination of **people**, **processes**, and **technology** that organizations use to ensure the quality and security of their data throughout its lifecycle



THINK BIG, START SMALL, SCALE FAST

1. **Architect data governance** to support the wider data strategy
2. **Implement incrementally** based on business initiatives and use cases that drive the data strategy
3. Further **evolve** data governance capabilities **over time**