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How to Become a Data-Driven Public Sector Organization

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Data driven public sector organization

The Basics
What do I need to know?

Visibility
Who is using what data and how?

Accountability
How do you ensure responsibility?

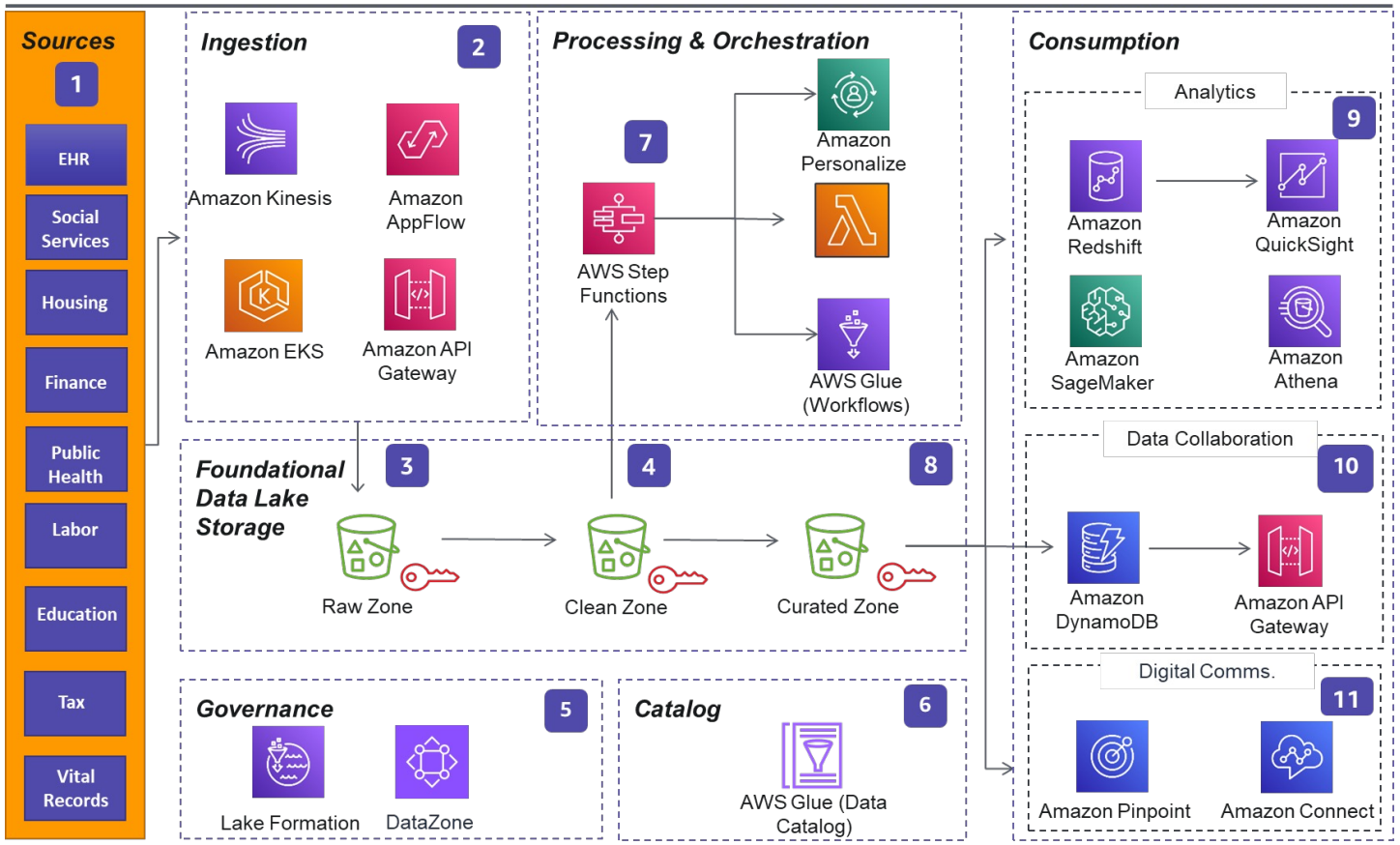
Use Cases
Real world implementations support the public sector mission

Transparency
How do the operating and governance models support data sharing?

AWS Public Sector Enablement
How are you thinking of leveraging your data assets and how can

Basics: Data Platform on AWS

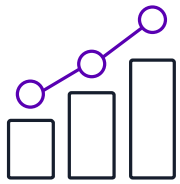
This guidance provides a reference architecture showing best practices in the building of a customer data platform covering data ingestion, identity resolution, segmentation, analysis and activation.



Why are public sector organizations becoming data-driven?

- Improve **operational efficiency**
- More customer-centered **services**
- Right data, right time, **right people**
- Better **outcomes** for constituents
- **Visibility** of outcomes for decisions

Trends driving a change in data strategies



Growing exponentially

New Sources Velocity & Variety

AI/ML across the Data Value Chain

Diverse Stakeholders

Insights Embedded in Workflows

What is a data driven public sector organization?

- Data is valued as a **strategic asset**, not a by-product of business processes
- Data is **FAIR** (Findable, Accessible, Interoperable, and Reusable)
- Stakeholders throughout the organization are **empowered** to make actionable decisions

The data-driven government

Culture

Align business and technology leaders

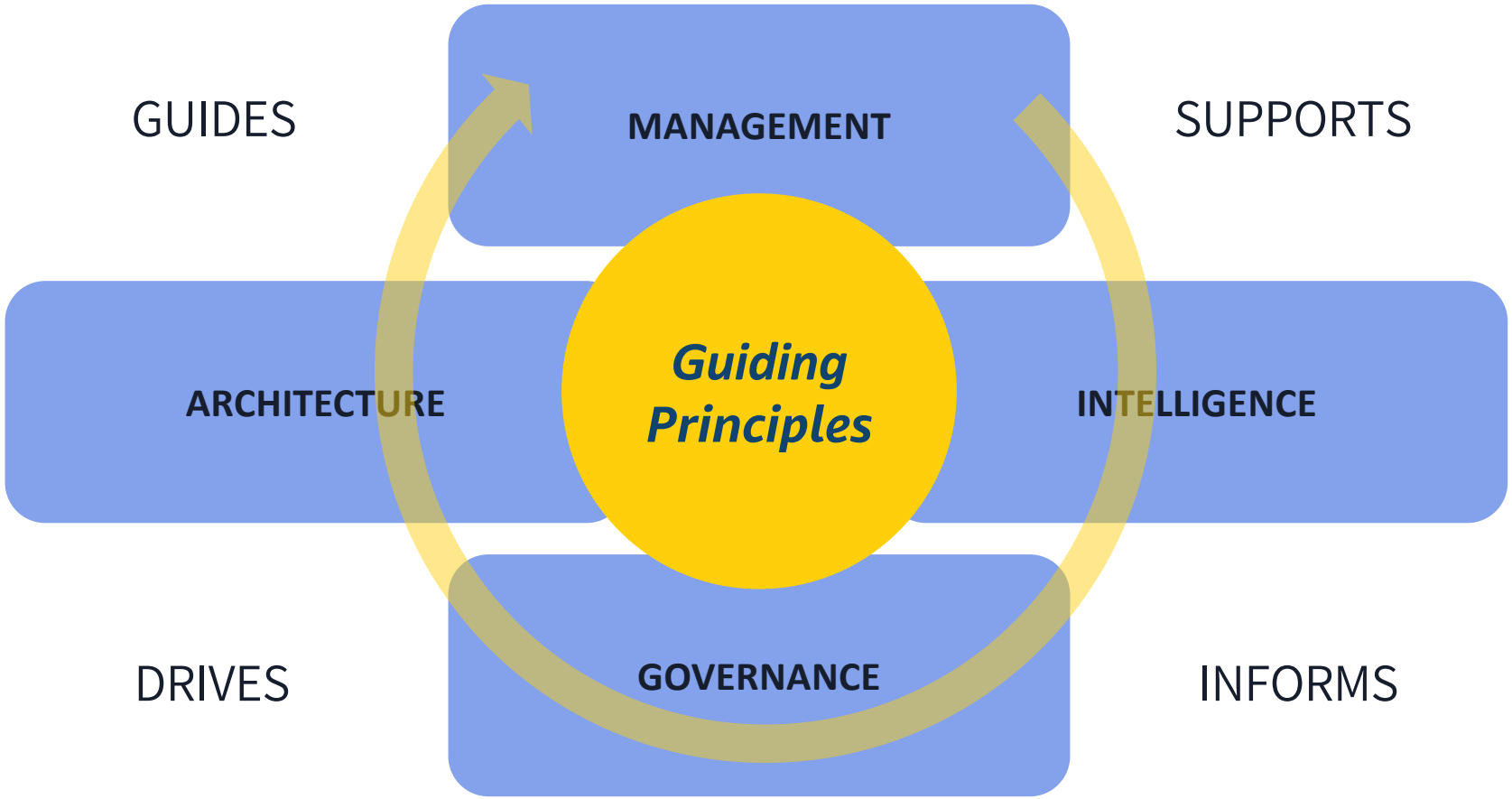
People and process

Build the right organization and process model

Technology

Empower leaders with an end-to-end data strategy

Components of a modern data strategy



Data sharing and integration produces results

65%

reduced risk of lawsuits, data breaches, and data errors

30%

reduced effort to launch new services/adhere to new requirements

85%

were able to decommission legacy technologies

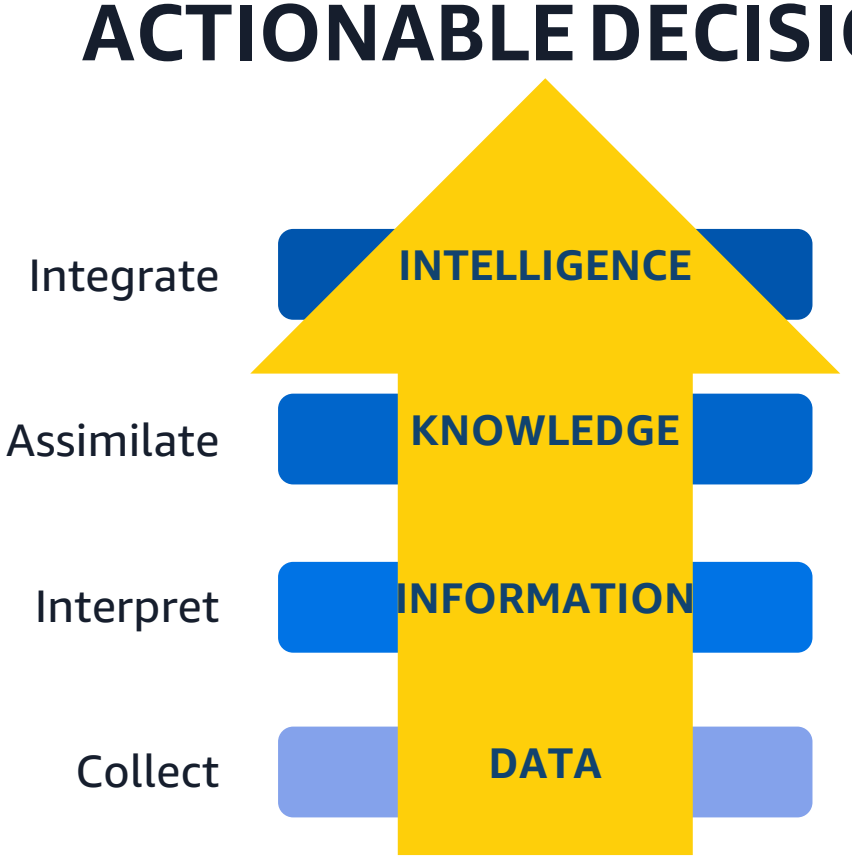
Forrester Research, Inc., "The Total Economic Impact of Data Integration for the Public Sector: Cost Savings and Socioeconomic Benefits Enabled by Data Integration."

AWS Public Sector Blog, "Forrester study commissioned by AWS estimates an ROI of 33% from data integration"

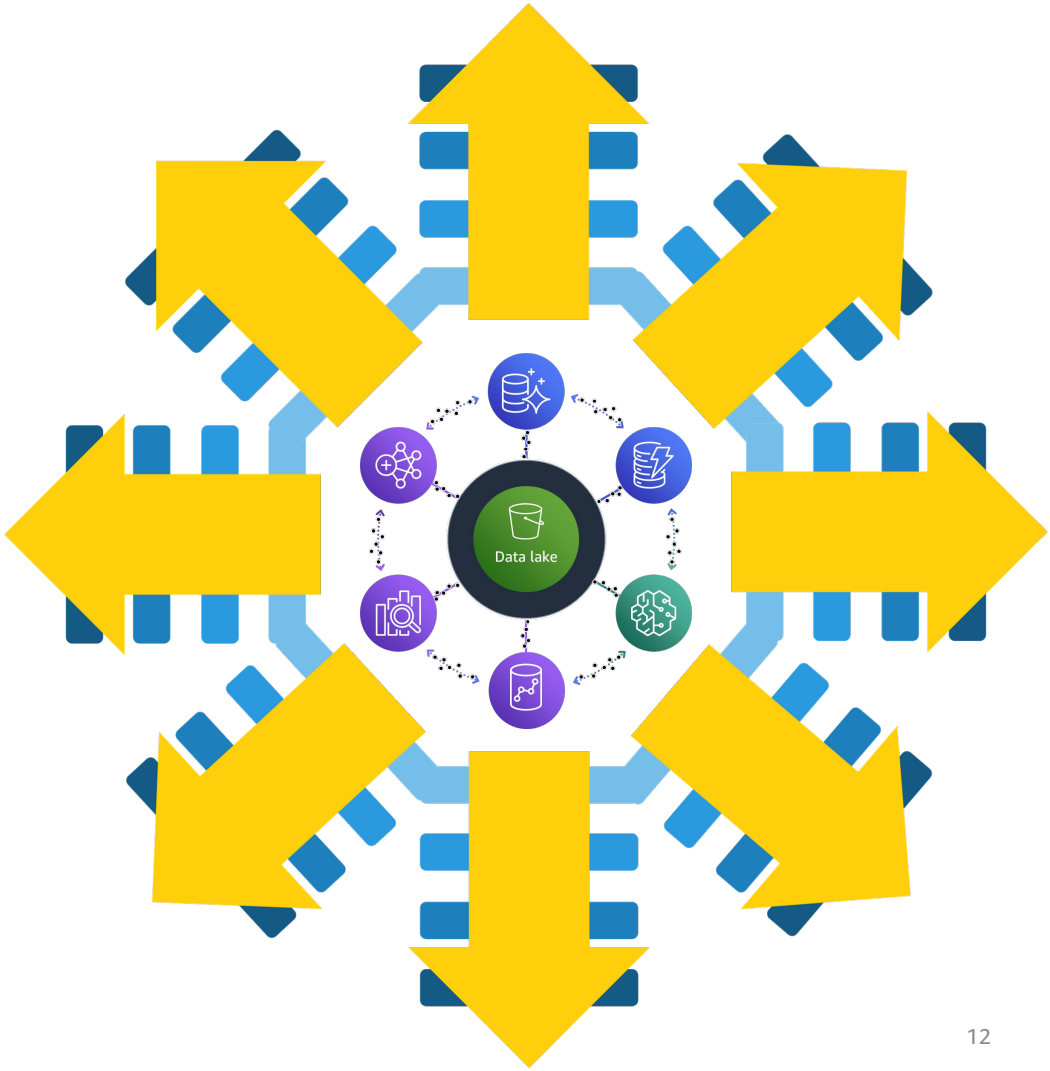
> *Public sector organizations realize exponential benefits from incremental investments when they leverage mission-critical use cases to iteratively build foundational capabilities that facilitate data sharing, integration, analytics, and intelligence throughout the enterprise.*

Carlos Rivero, former Chief Data Officer for the US Commonwealth of Virginia

Transforming data to intelligence increases its value

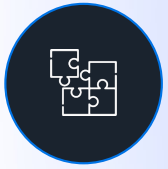


Supporting multiple use cases exponentially increases the value of your data



Public sector organizations see the value in sharing data with a trusted community of organizations, but face challenges

Data siloes



Lack of standards

Lack of trust

How can a public sector organization build trust?

- Establish **accountability**
- Operate **transparently**
- Promote **visibility**

Accountability

Key relationships facilitate accountability

Producers

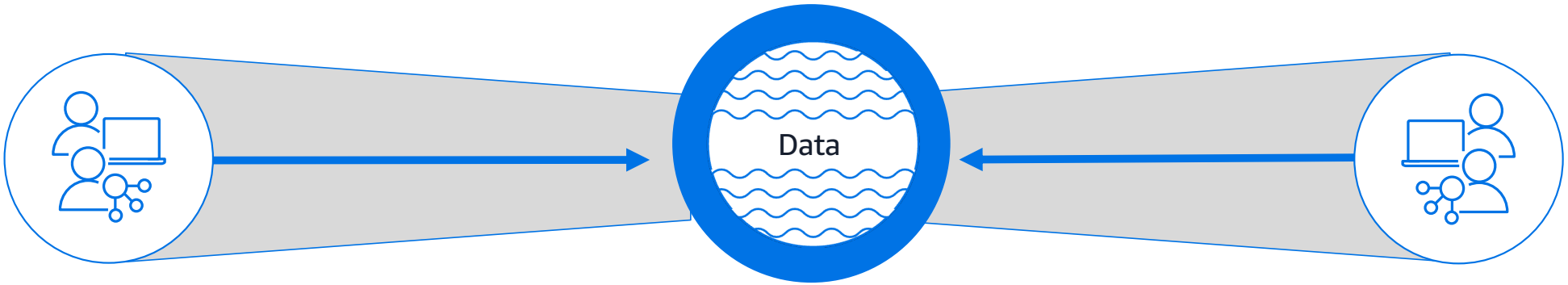
"Teams that want to share data"

Trustee

"Team that operates the platform"

Consumers

"Teams that want to use data"



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

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

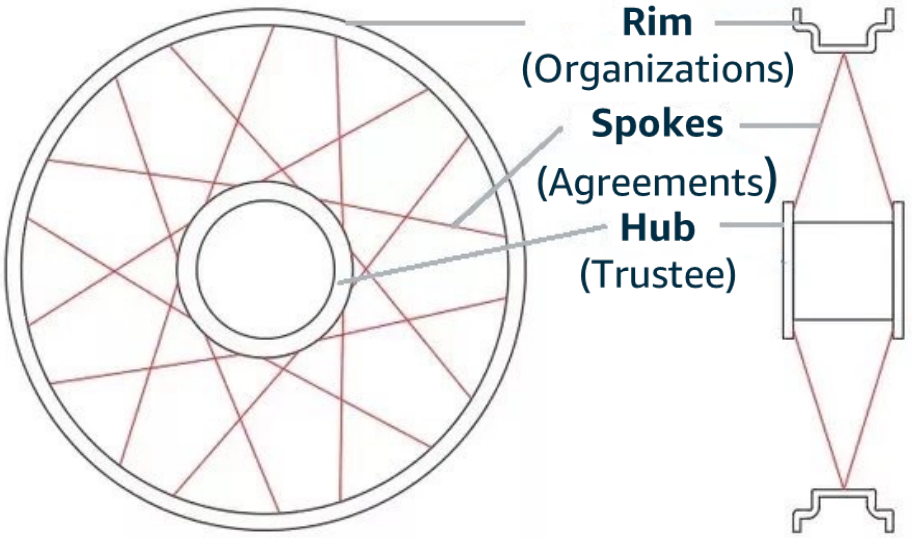
- Execute business priorities
- Business analytics development
- Data Discovery
- Data pipeline development
- Creation of new insights

Level of decentralization depends on maturity of skills, complexity of business, domain knowledge required, and pace of tech change

Building trust begins with the right legal framework

Safe, secure, and legally compliant information sharing environment

- Establish consistent requirements for trust members through a standardized data sharing agreement process
- Provide a scalable alternative to multiple “point-to-point” sharing agreements
- Promote trust among members through common rules for data security, privacy, and confidentiality
- Reduce technical costs by onboarding to a single environment using standard NIEM protocols
- Start small with focused project-based data trusts and evolve into enterprise implementation



Organizations are not putting their data in the trust, they are making data available through the trust.”

Carlos Rivero

Former Chief Data Officer, Commonwealth of Virginia

Transparency


Government Agency
Law Enforcement
Medical Professional
Policy Maker
Innovative Research
Social Worker
Academia Higher Ed
Community Leader
Public Stakeholder


DBHDS
VEC
DMAS
DBVI
DJJ
DCJS
VCCS
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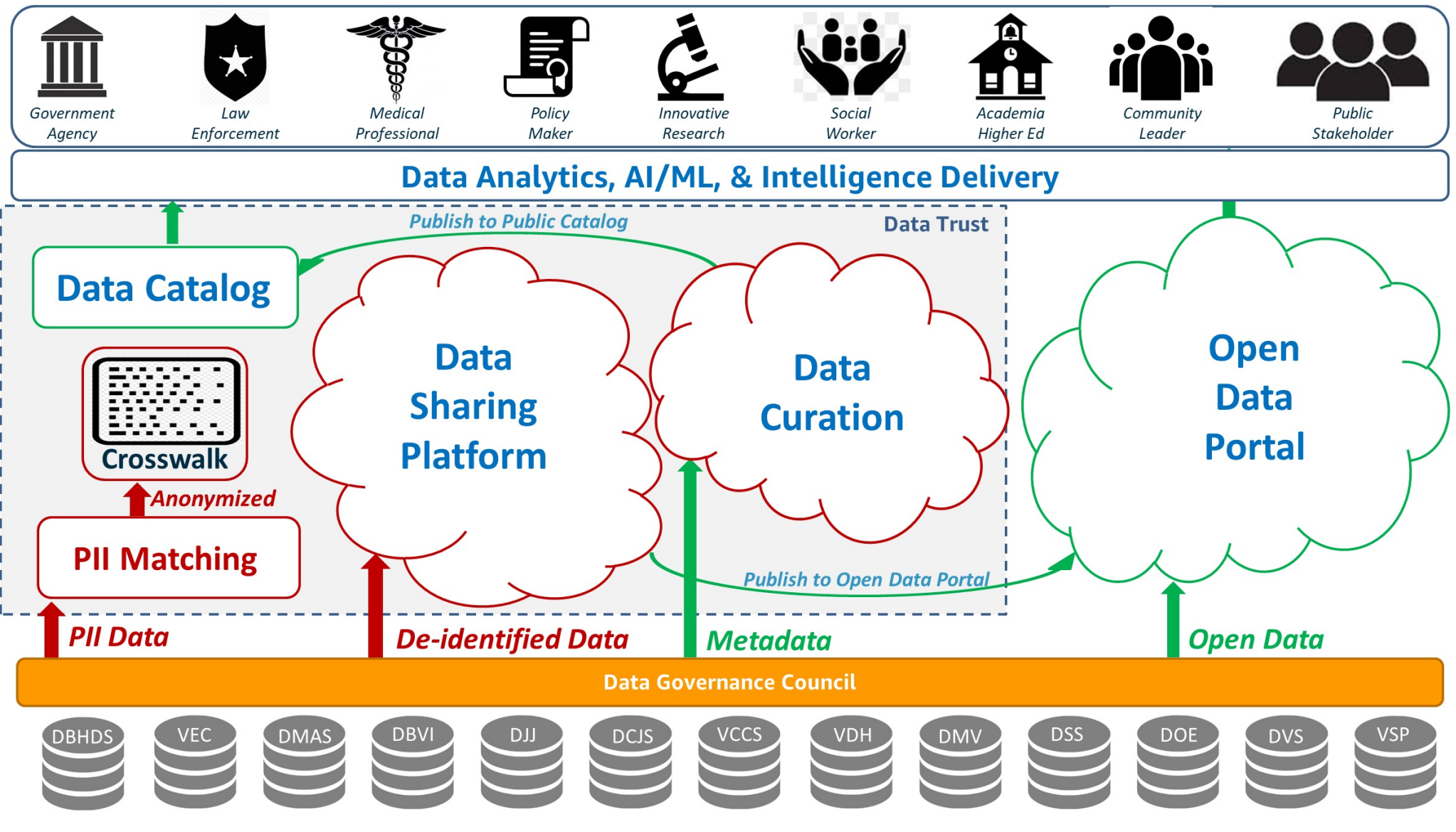
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Public Stakeholder
Data Analytics, AI/ML, & Intelligence Delivery
Publish to Public Catalog
Data Trust
Data Catalog
Crosswalk
Anonymized
PII Matching
Data Sharing Platform
Data Curation
Open Data Portal
Publish to Open Data Portal
PII Data
De-identified Data
Metadata
Open Data
Data Governance Council
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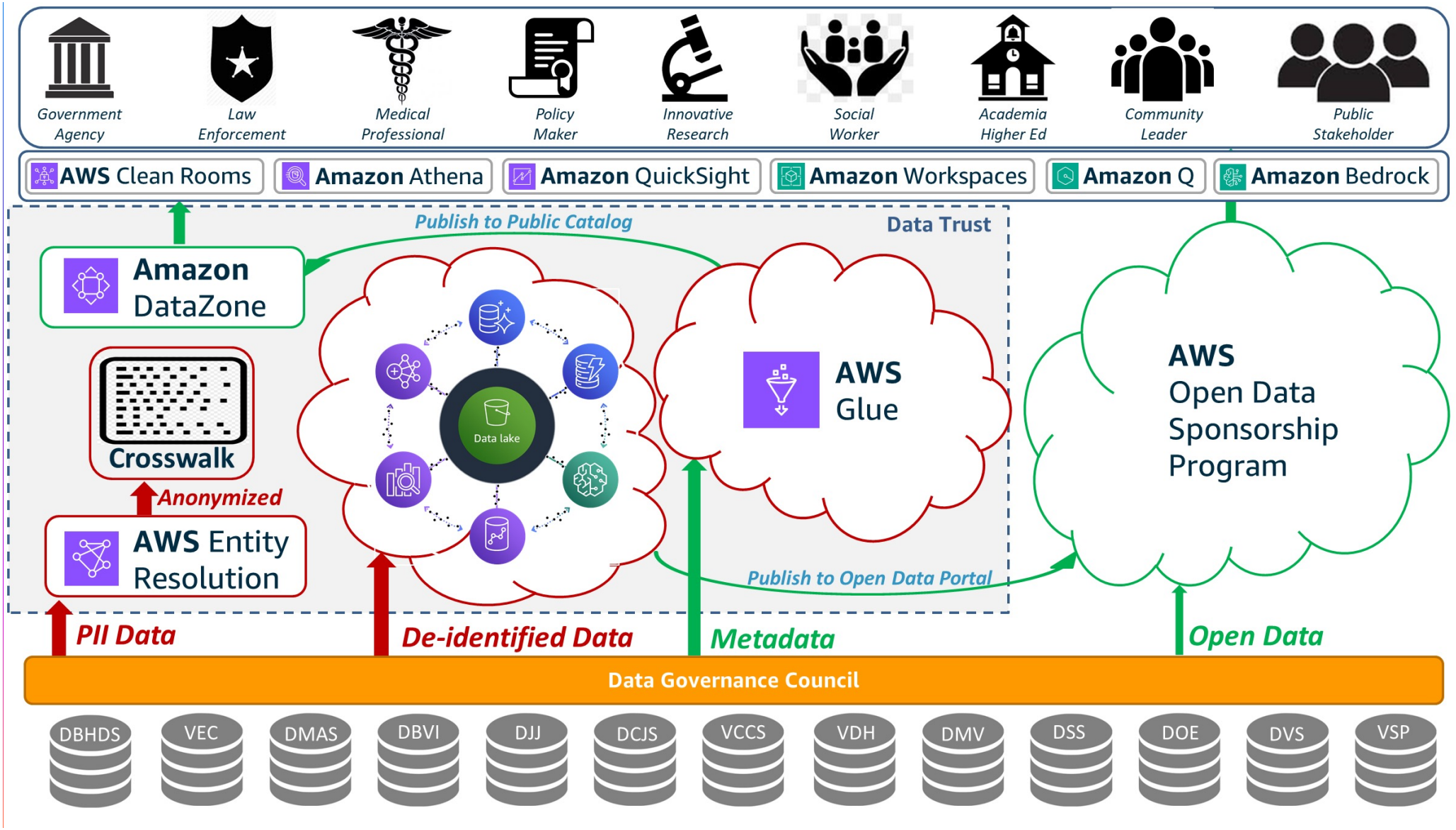
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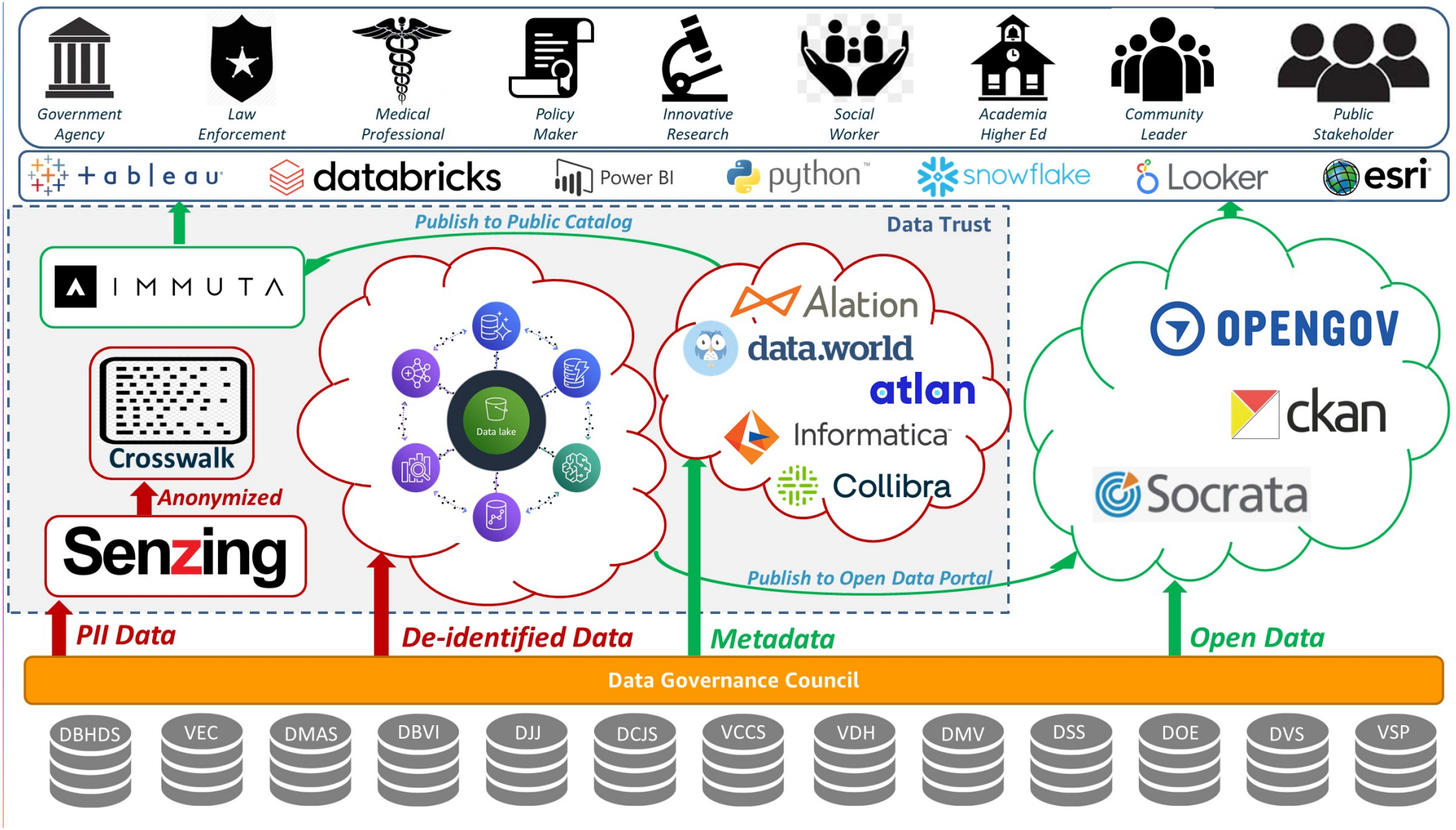
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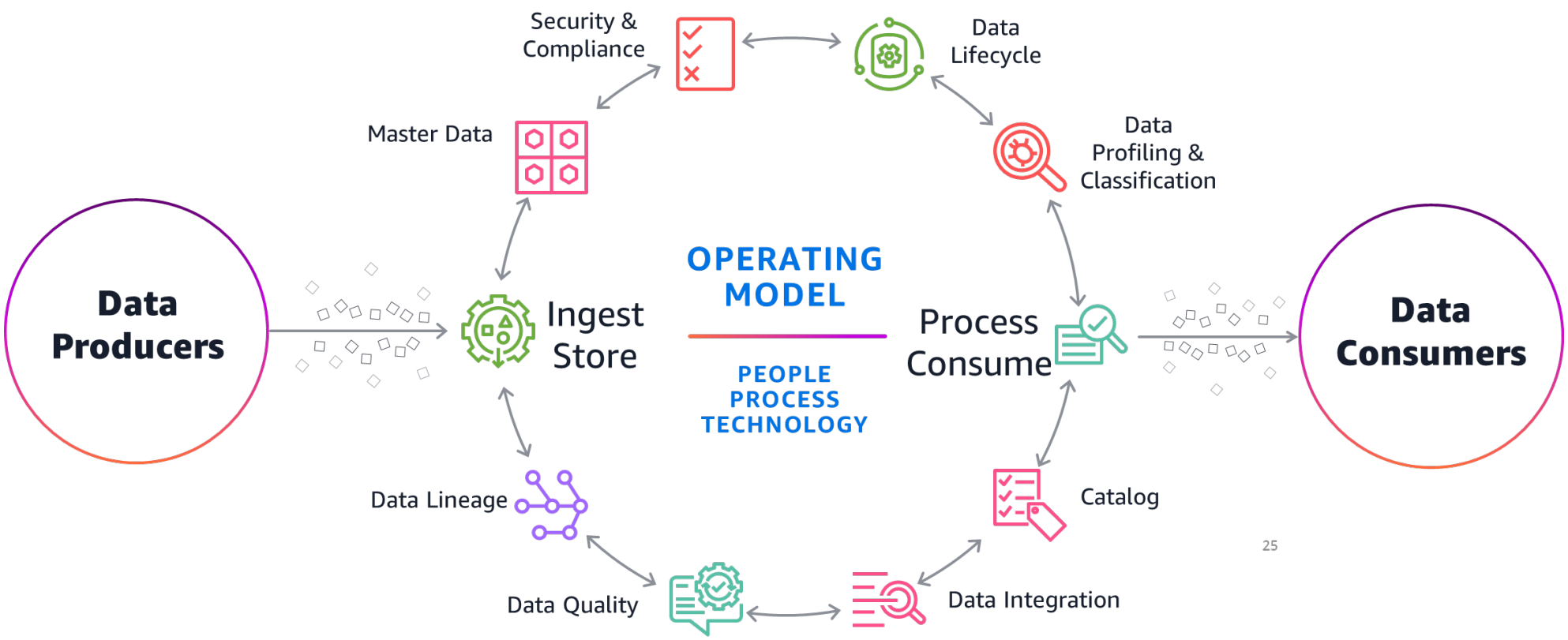
Operating model supports transparency



Visibility

Data governance framework oversees data operations

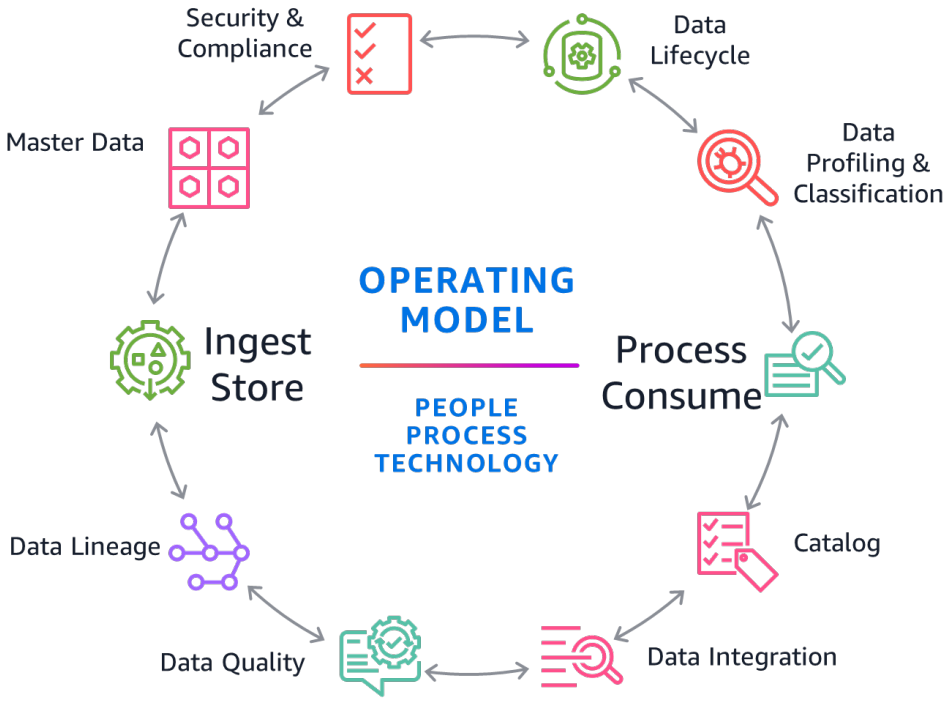
- **High-level Organizational Leadership**
- Identify organizational goals and objectives
- Prioritize initiatives for implementation
- Recommend changes to policies and budget

- **Line of Business Leaders**
- Review, adopt, and implement recommended policies, standards, and best practices
- Oversee the Data Governance Council

- **Data Owners**
- Oversee the operations of the Data Trust
- Recommend policies, standards, and best practices to improve data quality, security, accessibility, and use

The AWS approach to data governance

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

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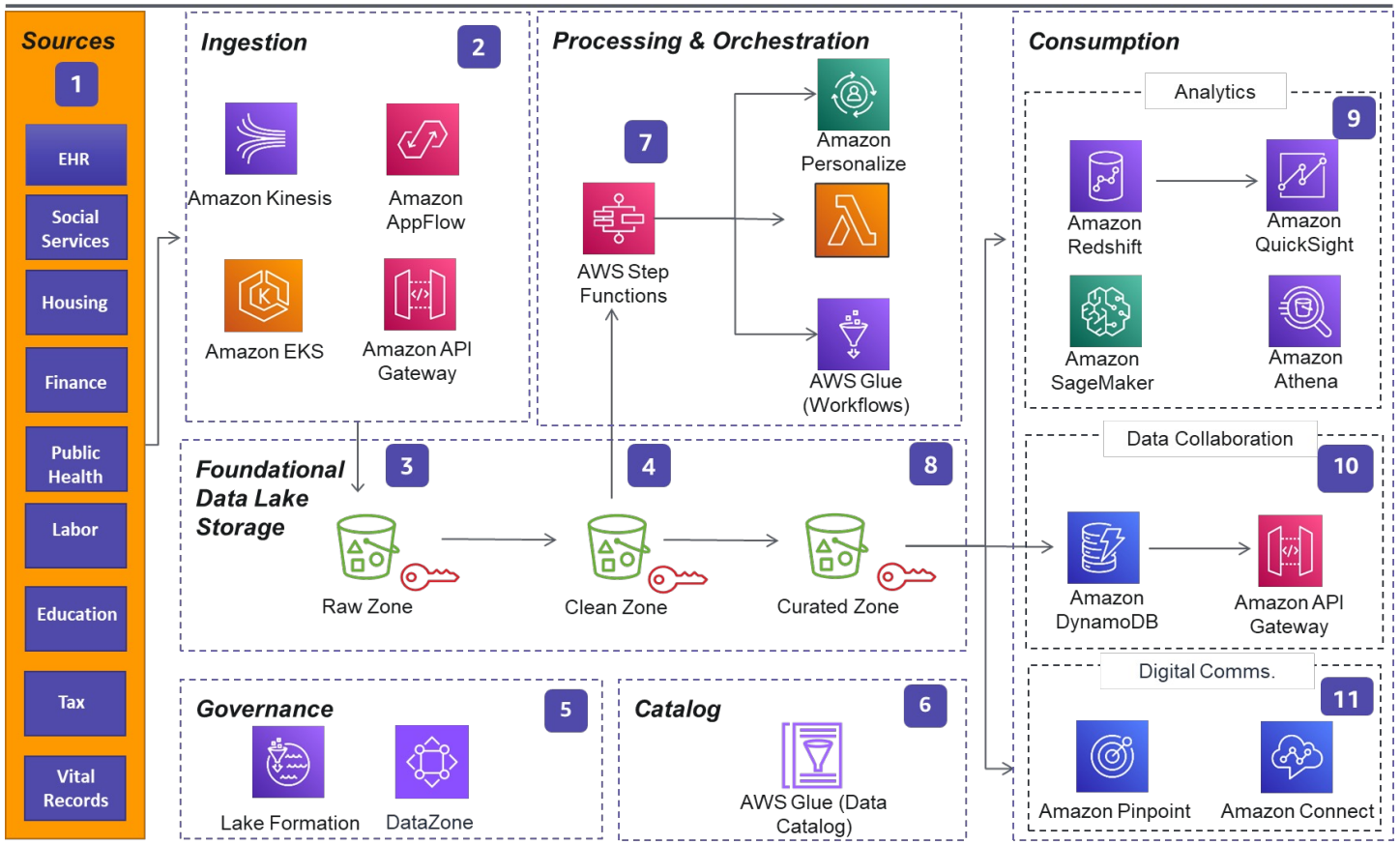


Best practices to build trust

Reasonable Questions	Best Practice	Benefit
Who is responsible for ensuring only authorized individuals access sensitive or restricted-use data for approved projects?	The Chief Data Officer or Data Leader facilitates enterprise data sharing transactions on behalf of operational units	Accountability
How do I know the security and access controls align with defined data sharing policies and procedures?	Data Governance Council oversees the operations of the data program and meets regularly to monitor progress and address concerns.	Transparency
How will my data be used? Who's accessing my data? Are products produced using my data published without my knowledge or consent?	Real-time data access and use reports based on audit logs available to all data producers for their respective data assets.	Visibility

Use Cases

Mission use cases build the path to data program maturity

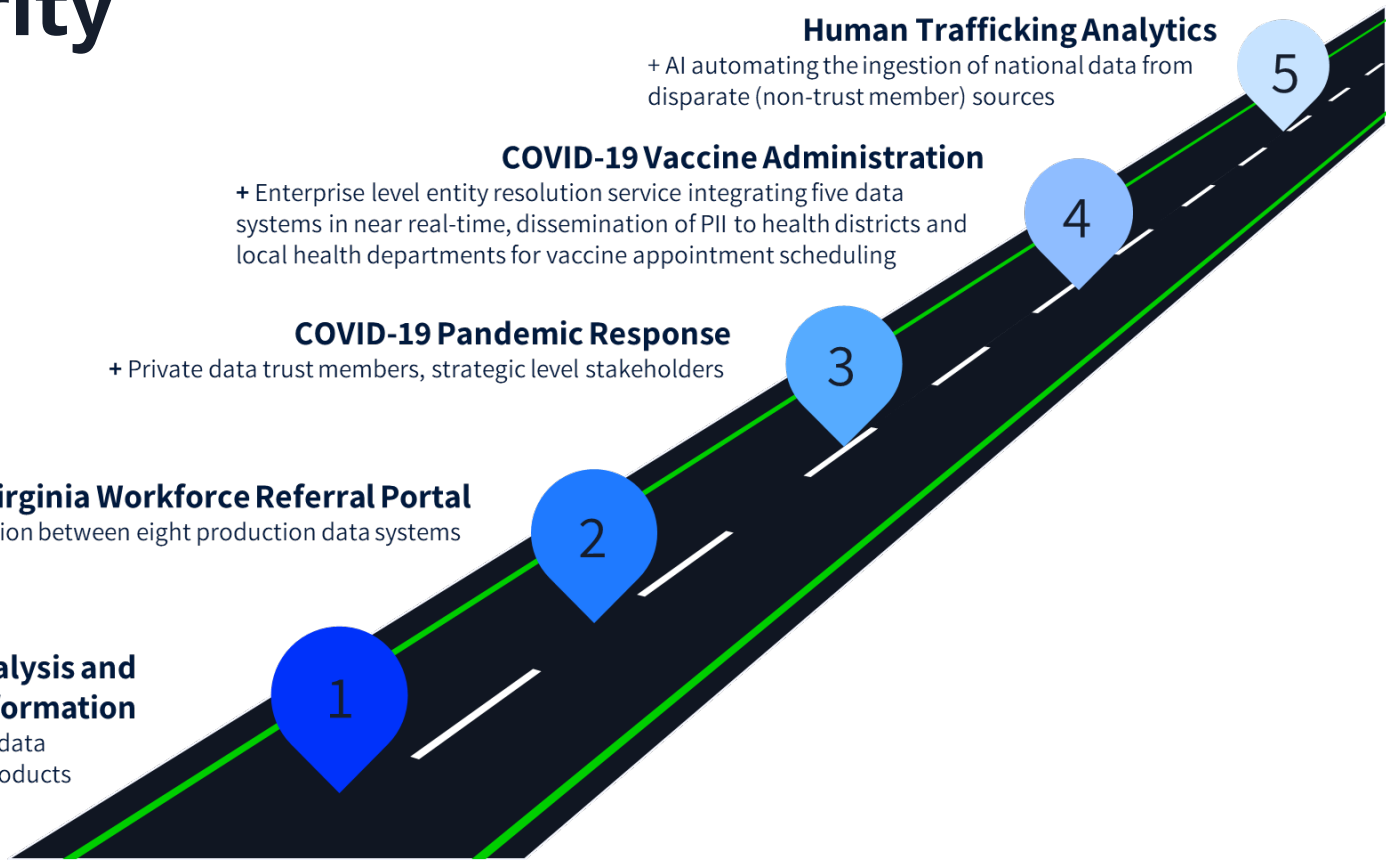
Human Trafficking Analytics
+ AI automating the ingestion of national data from disparate (non-trust member) sources

COVID-19 Vaccine Administration
+ Enterprise level entity resolution service integrating five data systems in near real-time, dissemination of PII to health districts and local health departments for vaccine appointment scheduling

COVID-19 Pandemic Response
+ Private data trust members, strategic level stakeholders

Virginia Workforce Referral Portal
+ Real-time integration between eight production data systems

FAACT – Framework for Addiction Analysis and Community Transformation
Data trust, governance framework, data sharing platform, data integration services, and community-based intelligence products



That the Virginia Commission on Youth shall convene a work group to include representatives from the Department of Juvenile Justice, the Department of Social Services, the Department of Behavioral Health and Developmental Services, the Department of Education, youth and families with lived experience in the juvenile justice and child welfare systems, representatives of Virginia juvenile justice advocacy groups, representatives of local public defender offices, and representatives from other relevant state or local entities. The work group shall review current data and record sharing provisions with regard to youth served by the juvenile justice and child welfare systems and make recommendations on best practices for the sharing, collection, and use of such data and records while respecting the privacy interests of youth and families. The work group shall report its findings and recommendations to the Governor and the Chairmen of the Senate Committee on the Judiciary and the House Committee for Courts of Justice by November 1, 2021.

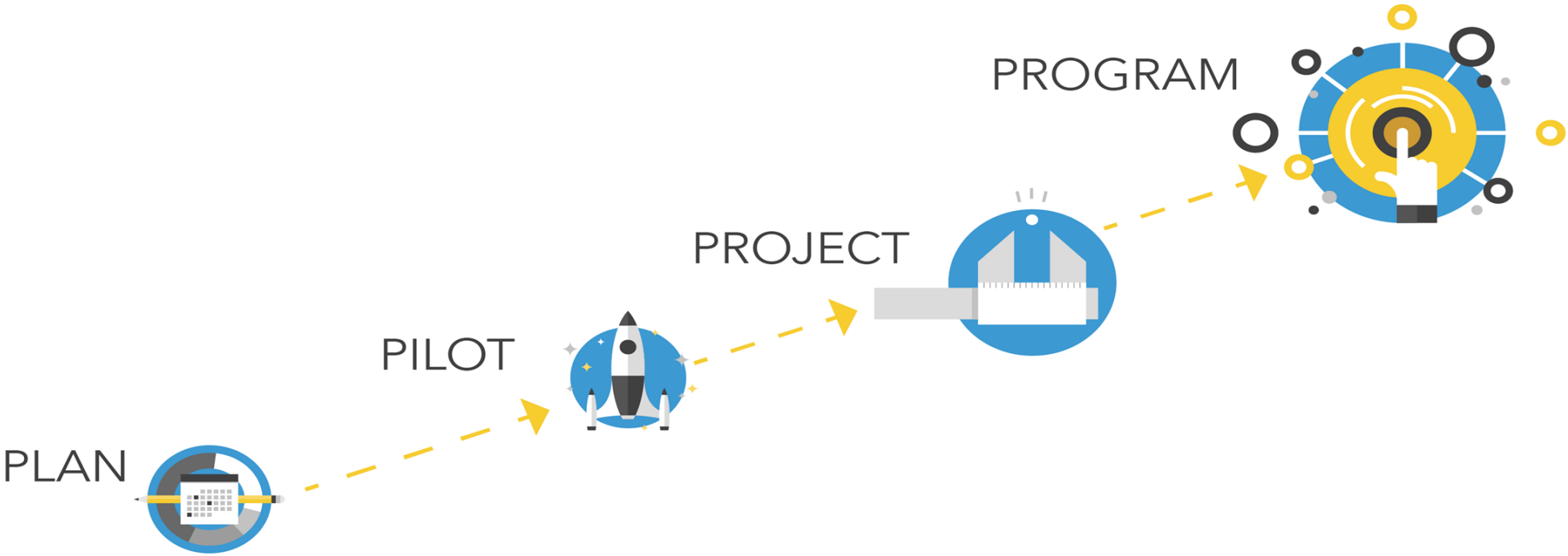
Virginia 2021 Legislative Session

Virginia General Assembly

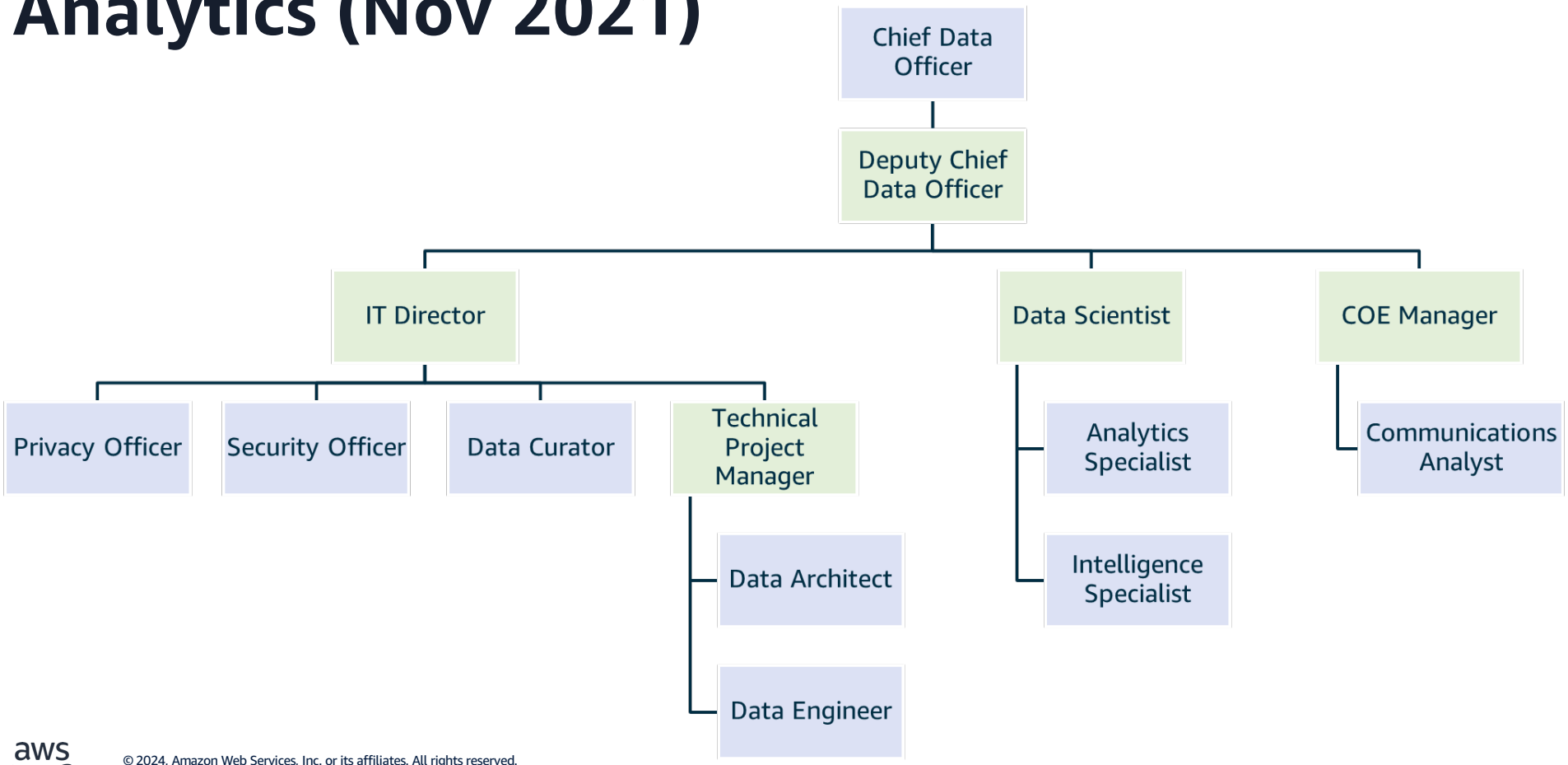
Virginia 2021 Legislative Session Senate Bill 1206 sponsored by Senator George Barker.

Confidentiality of juvenile court records; exceptions.

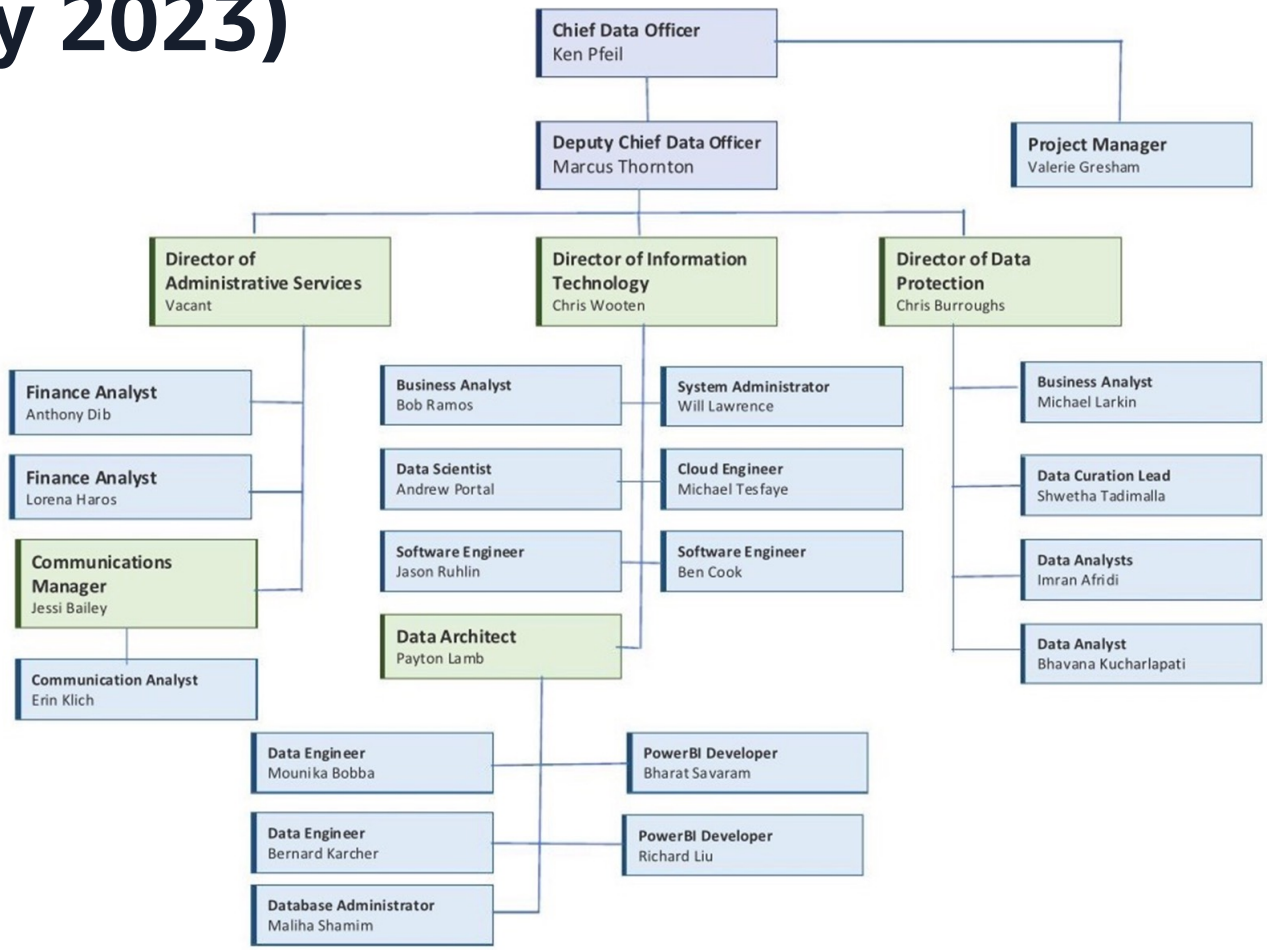
Path to data maturity



Virginia's Office of Data Governance and Analytics (Nov 2021)



Virginia's Office of Data Governance and Analytics (July 2023)



AWS Public Sector Modern data strategy enablement programs

The journey to becoming a data-driven organization

Beginner

- Disconnected data and business strategy
- Reactive business operations
- siloed, fragmented data landscape
- Limited skills

First big challenge

Experimenter

- Data sponsorship growing
- Isolated data and AI initiatives
- Pockets of talent and value
- No connection between data and AI architectures

Harder than anticipated

Adopter

- Senior stakeholders engaged and advocate data
- Cross functional teams forming
- Value being realized, not consistently tracked
- Common data and AI standards, architectures, platforms forming

How to elevate?

Scaler

- Business actively investing in data
- Data as strong part of culture
- Cross functional teams and data-AI communities
- Active skill development
- Standardized governance and architectures integrated across data and AI

Data Driven

- Data and AI as significant part of the business value proposition
- Proactive actions, automated decision making
- Widespread autonomy in innovating with data and AI
- Product teams embedded in the business
- Autonomous use of standardized platforms, ethics, and governance

Stakeholder engagement: the 5 keys

Organizational Leadership

Roles with maximum/high responsibility for mission and data within the organization in scope

Examples: Chief Data Officer, Cabinet Secretaries, Mayor's staff, Commissioners, Legislators

Business Users

Business roles that use data solutions and roles that facilitate consumption of the solutions by the business

Examples: Business analysts, program data analysts, frontline operators

Program Management

Business and technical roles that are accountable for a specific data domain within the organization in scope

Examples: Executive Director or Agency/Department heads, Program Directors, Line of Business Leaders

Data Solutions Engineering

Developers that build data products and solutions

Examples: Director of data engineering, principal data architect, principal data engineer, data scientist

IT Infrastructure and Operations

Technical roles responsible for the infrastructure of the data platform and operations

Examples: Chief Information Officer, IT Director, VP of Data and Technology, Director of Operations

Next steps to guide you on your journey

Align key mission stakeholders

aws Public Sector Data Day

- ✓ Educate your high-level stakeholders through exposure to mental models and strategies based on the first-hand experience of former public sector CDOs
- ✓ Qualifying criteria:
  - ✓ Executive Sponsor

Assess data program maturity

aws Data Strategy Diagnostic

- ✓ Create a common understanding among mission and technology leaders of your organizations maturity level across 4 perspectives:
  - ✓ Mindset
  - ✓ People
  - ✓ Process
  - ✓ Technology
- ✓ Qualifying criteria:
  - ✓ Executive Sponsor
  - ✓ Mission Program Engagement

Accelerate governance and engagement

aws Data Governance Accelerator

- ✓ Identify the right roles to participate in a governance structure appropriate for your organization
- ✓ Develop the charters and necessary decision-making processes
- ✓ Establish communication and escalation mechanisms
- ✓ Qualifying criteria:
  - ✓ Executive Sponsor
  - ✓ Mission Program Engagement
  - ✓ Defined Mission Use Case

Key concepts learned

Sharing data is challenging and requires trust

The right legal framework establishes accountability

An understandable operating model enables transparency

End-to-end governance facilitates visibility

Use cases that solve mission problems build the path

AWS can help you get started through training, enablement, and partners

Next steps

- Identify the **goals** for your data program
- Document **use cases** that will help you accomplish your goals
- Engage the right **stakeholders**
- Develop a data modernization **strategy**
- Implement a modern data **architecture**
- Encourage learning and **managed experimentation**
- Leverage the **AWS Public Sector Enablement Programs** to help your organization become data driven
- Adopt an iterative approach: **Think Big, Start Small, Scale Fast**

Thank you!

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Please complete the survey for this session

Executive Track

How to Become a Data Driven Public Sector Organization

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