AWS State, Local, and Education Learning Days

Washington DC

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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

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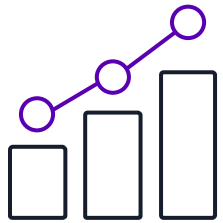
Trends driving a change in data strategies



Growing exponentially

New Sources Velocity & Variety

AI/ML across the Data Value Chain

Diverse Stakeholders

Insights Embedded in Workflows

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Why are public sector organizations becoming data-driven?

- Improve **Operational Efficiency**
- More Customer-centered **Services**
- Better **Outcomes** for Constituents

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The data-driven organization

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

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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

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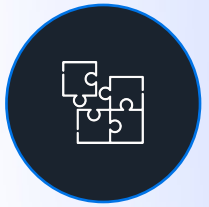
Public sector organizations see the value in sharing data with a trusted community of organizations, but face challenges

Data siloes



Lack of standards

Lack of trust

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How can a public sector organization build trust?

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

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Key relationships facilitate accountability

Producers

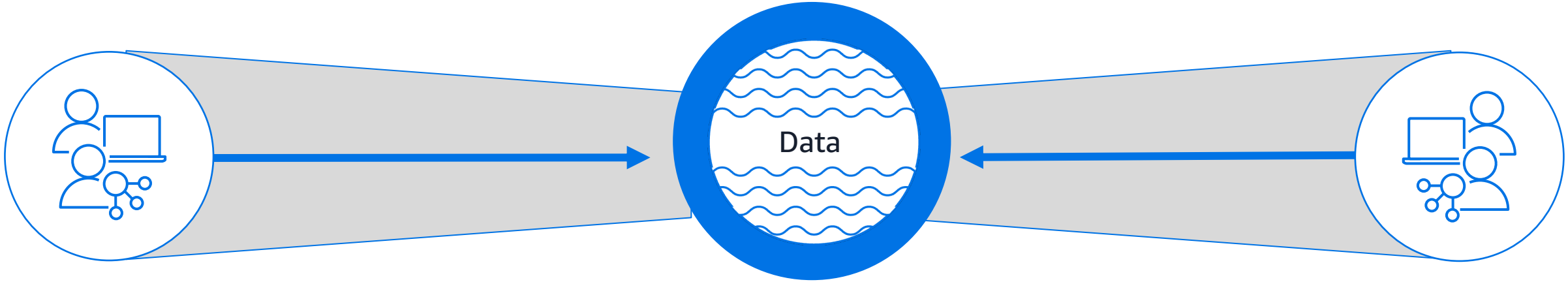
"Teams that want to share data"

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

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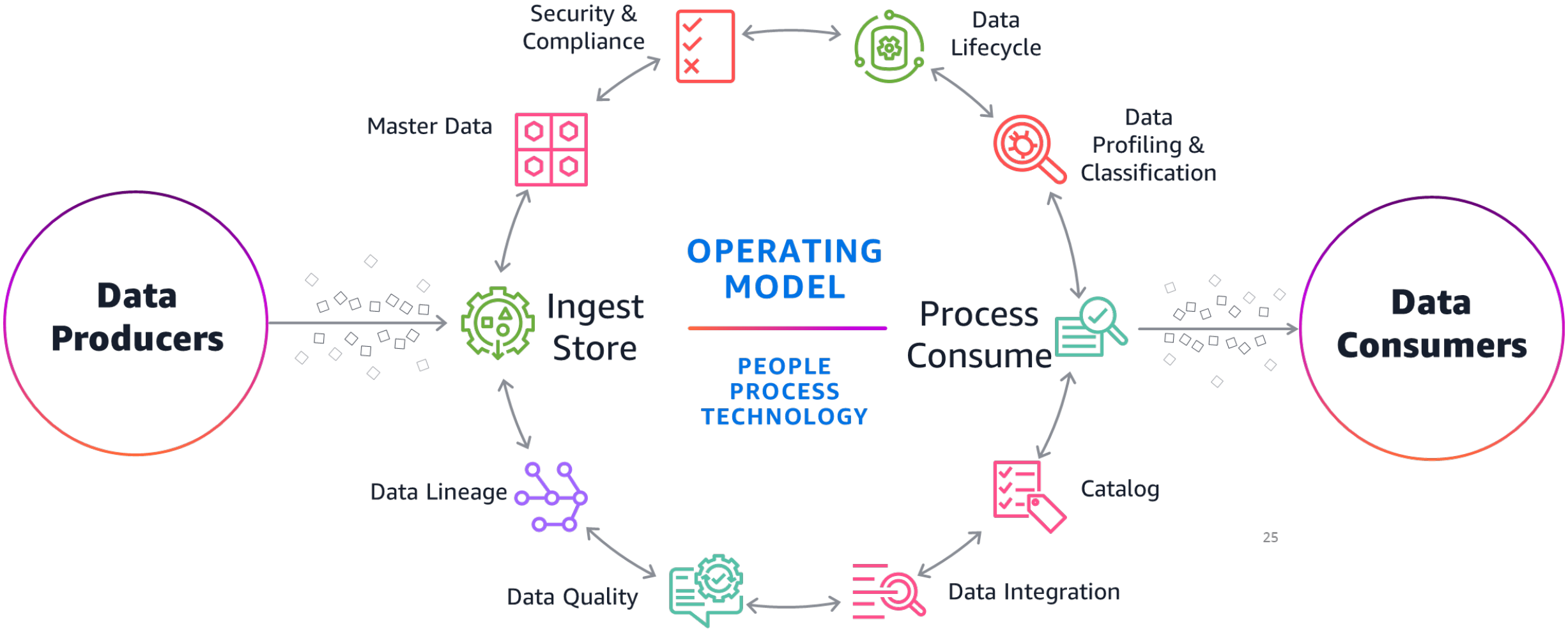
Operating model supports transparency



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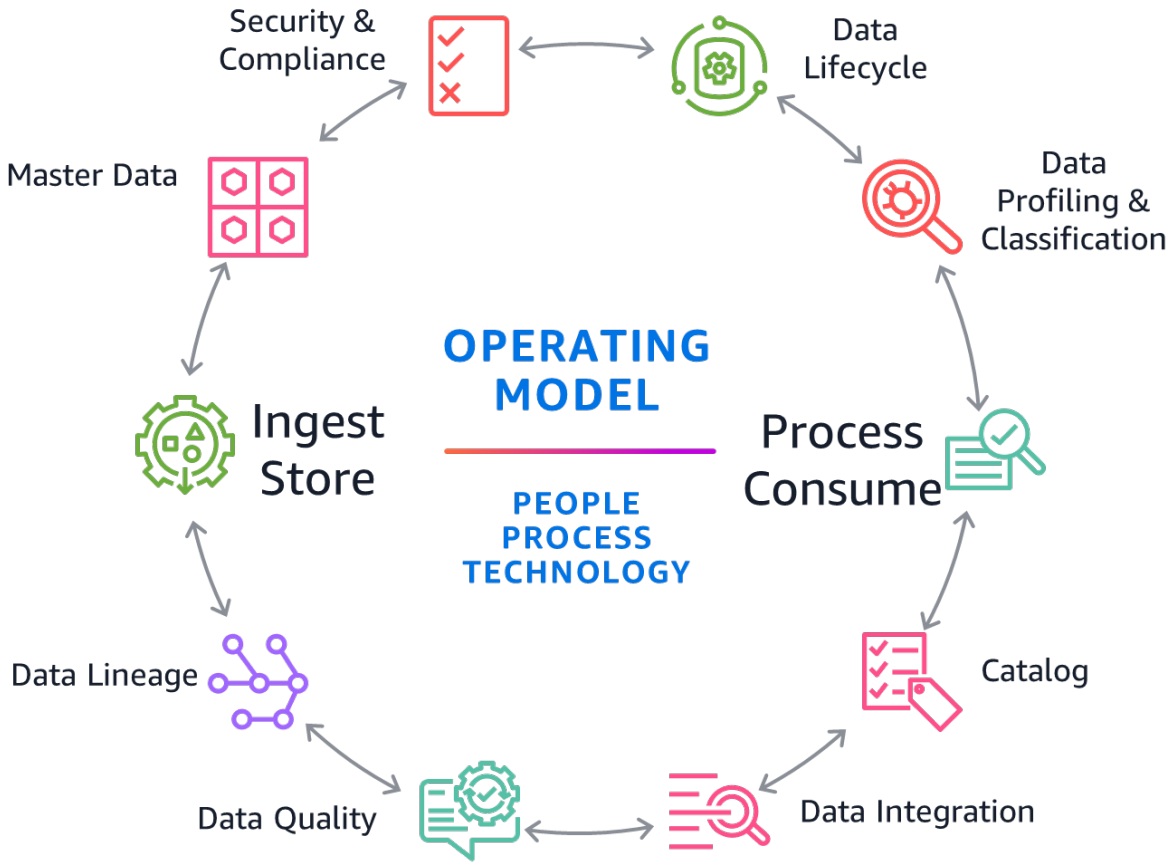
The AWS approach to data governance

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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Use cases

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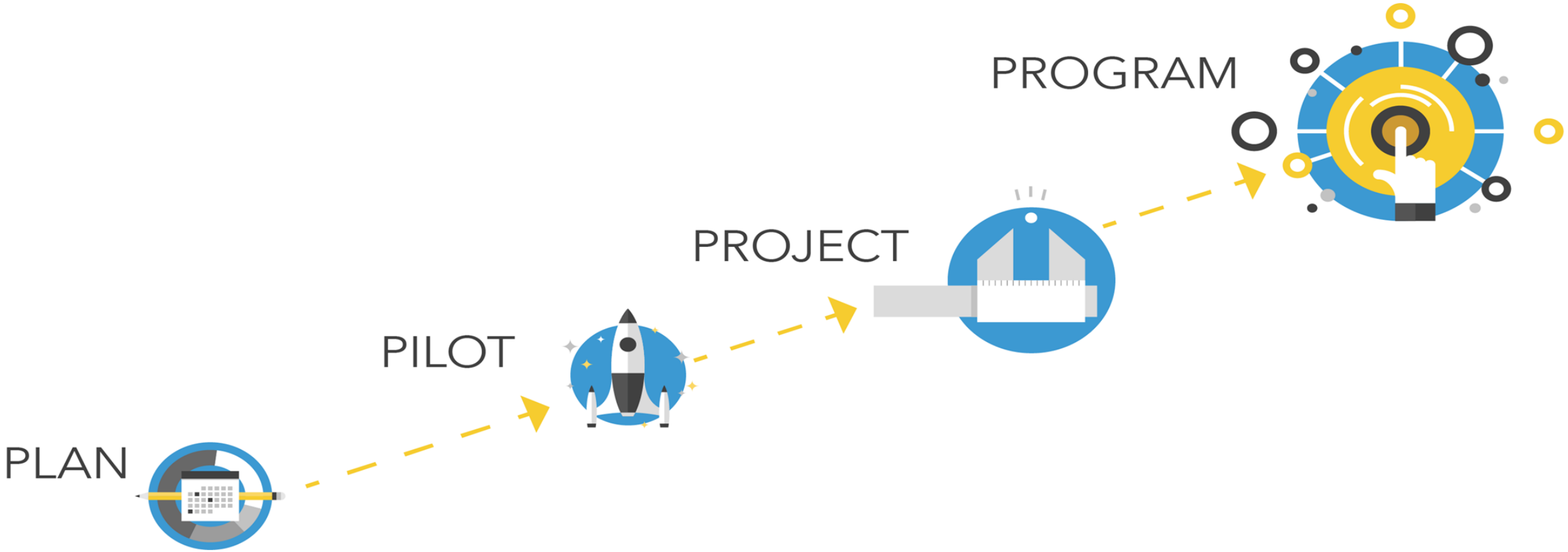
Path to data maturity



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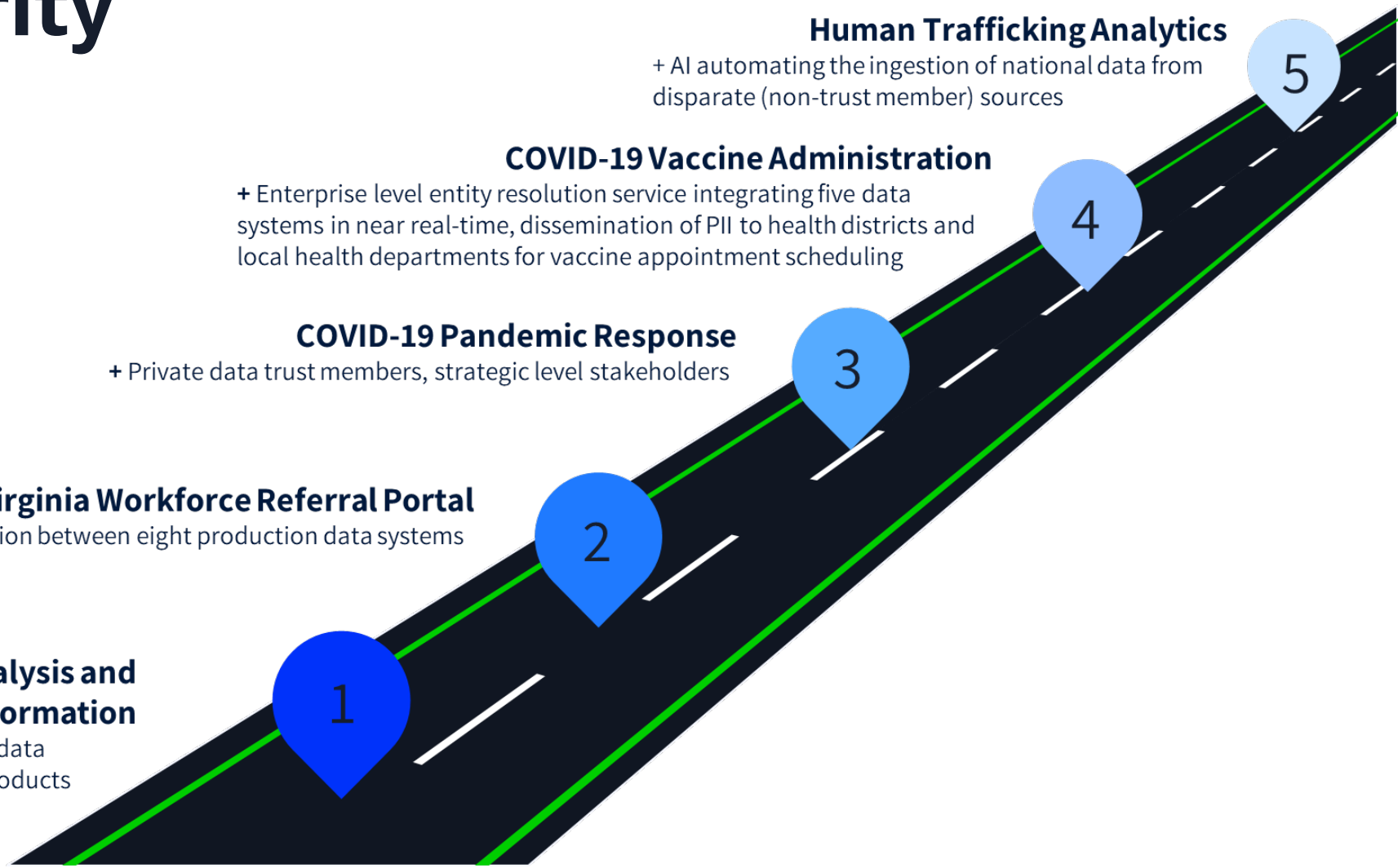
Mission use cases build the path to data program maturity



FAACT – Framework for Addiction Analysis and Community Transformation

Data trust, governance framework, data sharing platform, data integration services, and community-based intelligence products

Virginia Workforce Referral Portal

+ Real-time integration between eight production data systems

COVID-19 Pandemic Response

+ Private data trust members, strategic level stakeholders

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

Human Trafficking Analytics

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

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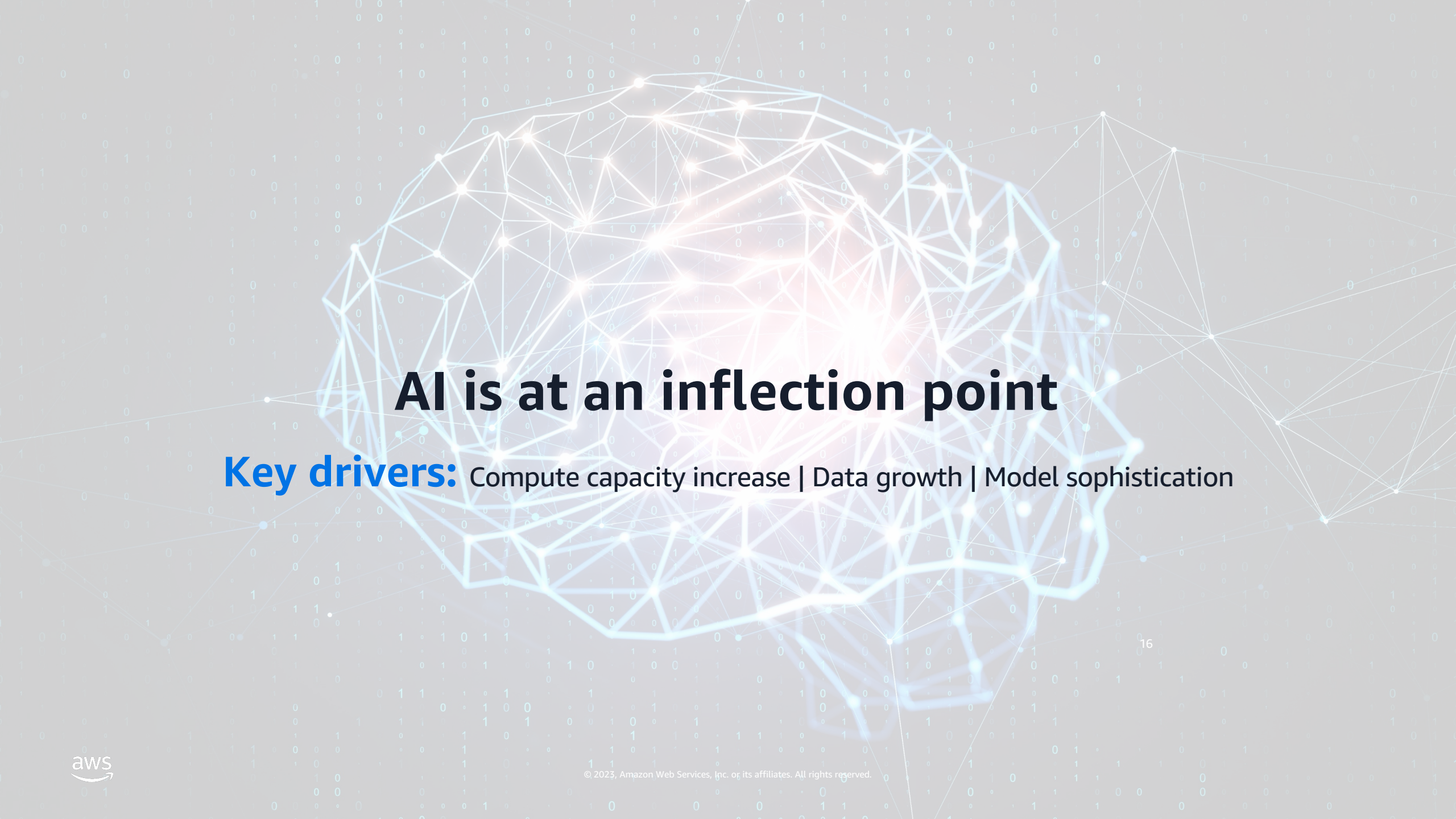

AI is at an inflection point

Key drivers: Compute capacity increase | Data growth | Model sophistication

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What is the public sector doing with AI?

Improve operational efficiency

DOCUMENT PROCESSING

PROCESS OPTIMIZATION

CYBERSECURITY

DATA AUGMENTATION

Accelerate mission execution

CONVERSATIONAL SEARCH

SUMMARIZATION

CODE GENERATION

DATA TO INSIGHTS

Enhance stakeholder experience

CHATBOTS

VIRTUAL ASSISTANTS

AI-POWERED CONTACT CENTER

PERSONALIZAT

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How the public sector consumes AI capabilities

End-User Applications

+

SaaS Platforms

+

Enterprise AI

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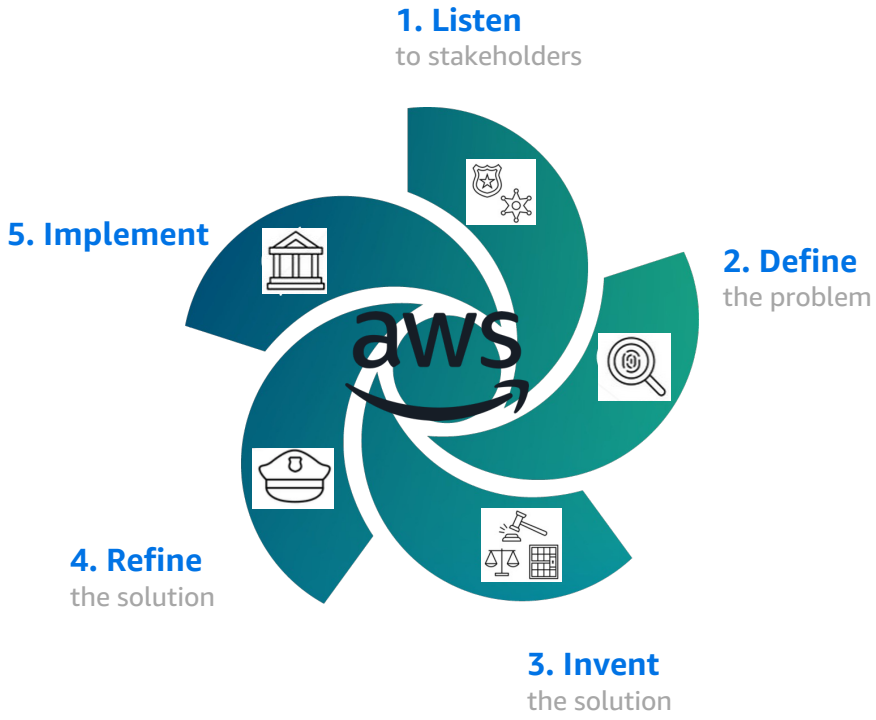

Let’s Work Backwards

We start with you as the stakeholder and work backwards from your mission objectives to best determine your data and analytics needs. We work through a series of questions that help inform our approach as we identify the right data sources, analytical solutions, and intelligence delivery services to best address your needs.

5 STAKEHOLDER QUESTIONS

1. What data do you wish you had that will enable you to have a greater impact in your role?
2. What is the primary problem and desired outcome for your stakeholder?
3. Which of your ideas would drive the most mission value?
4. What capabilities, tools, or skills do you need to implement your solution?
5. How would you describe your solution and its benefits?

Use this workbook to follow along with the discussion. The exercises will help you clarify your thinking as you develop ideas for new solutions or services driving positive impact in your organization.

Let’s get started.

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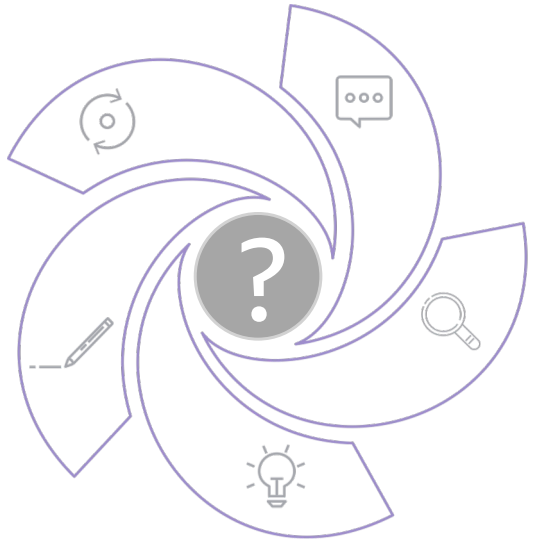
1. What data do you wish you had that will enable you to have a greater impact in your role?

Start the Working Backwards process by establishing an understanding of the impact you desire and which stakeholders would benefit from the improvement. Think about the change from the perspective of your internal or external stakeholder(s).



Try it

Who are the stakeholders that you serve?
(Identify at least 5 defining characteristics to frame your stakeholder's identity, context, and form of engagement to document how you address their needs.)

Identify 2-3 key data assets, measures, or metrics you would need to address the needs of your stakeholder.
(Do not worry if the data assets, measures, or metrics exist. Simply document the intelligence you would like to have.)

Identify 2-3 key challenges you face in providing the intelligence your stakeholders need to inform actionable decisions.
(Document any known or perceived barriers. These include not knowing what data is available, who to contact for access, how to get access, etc.)

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2. What is the primary problem and desired outcome for your stakeholder?

Now that you've identified your stakeholder, data needs, and challenges, the next step is to describe current problems or new opportunities. What challenges does your organization wrestle with in delivering optimal services to your stakeholders?

INTERNAL EXAMPLE:

Today MPD program directors

have to wait for an annual report that quantifies the performance of their respective programs

when they would benefit from quarterly, monthly, weekly, or daily reporting that includes charts, graphs, and analytics to help them make timely data-driven decisions.

EXTERNAL EXAMPLE:

Today single parents

have to work multiple jobs to pay bills and provide for their children

when they would rather spend quality time raising their children while ensuring they have enough to live a comfortable life.

Try it

Think about the stakeholder you identified in the previous activity. Complete the statement below to describe the problem and desired outcome you would like to focus on.

Today _____
(stakeholder)

have to _____
(describe problem)

when _____ .
(desired outcome)

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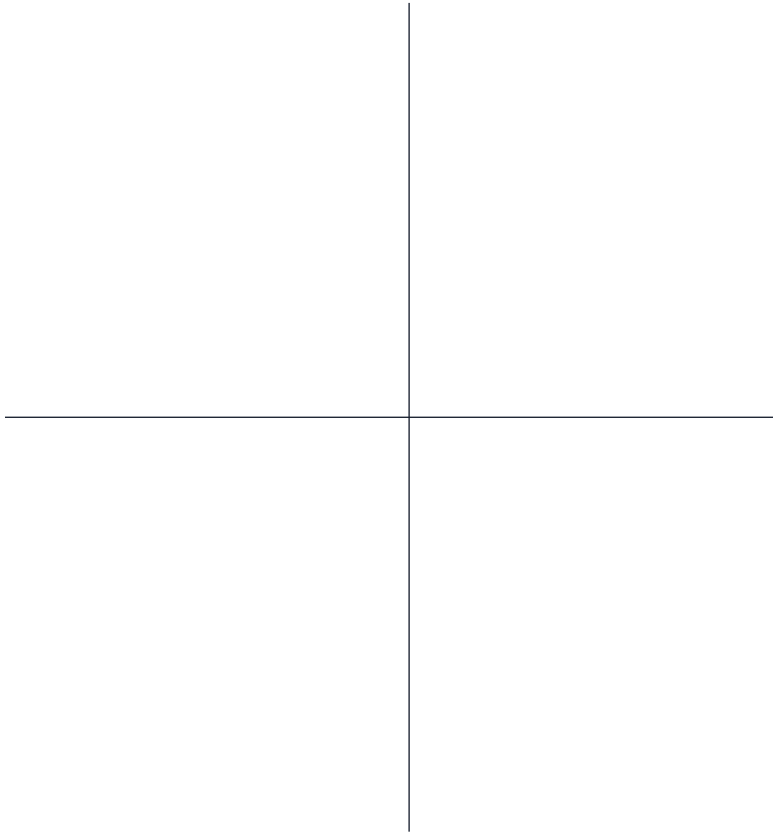
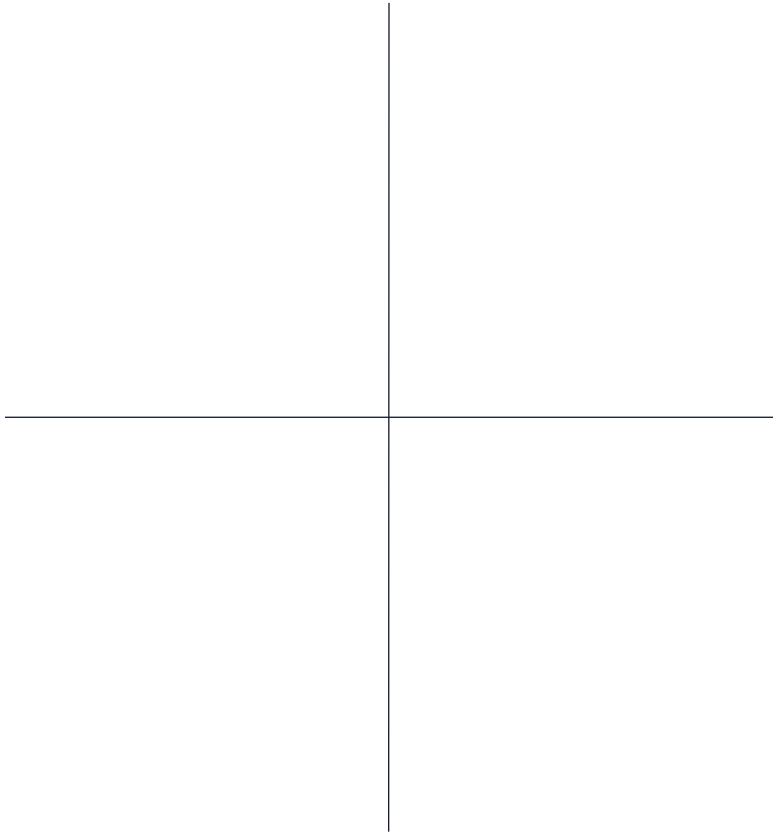
Activity: Generate ideas

Now that you have an understanding of your stakeholder and their problem, it’s time to geneWrite down eight ideas that directly address the defined problem or influence the desired outcome. rate ideas for potential solutions. You will have 8 minutes to complete this task.



Try it

Think big, think differently, and don’t be afraid to write down silly ideas. Use a mixture of words and pictures to help unlock new ideas.



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3. Which of your ideas would drive the most mission value?

While you may have eight breakthrough ideas, this question forces focus – challenging you to prioritize and select a specific solution.

Which of your eight ideas directly addresses the stakeholder problem or outcome previously identified?

Which of your eight ideas would have the most impact?

Which idea would be the most visible?

Which idea would be the most feasible?

Try it

Which of your eight breakthrough ideas have the highest value in terms of impact, visibility, and feasibility. Write the idea below.

The big idea is:

The most important stakeholder benefit delivered as a result of implementing this big idea is:

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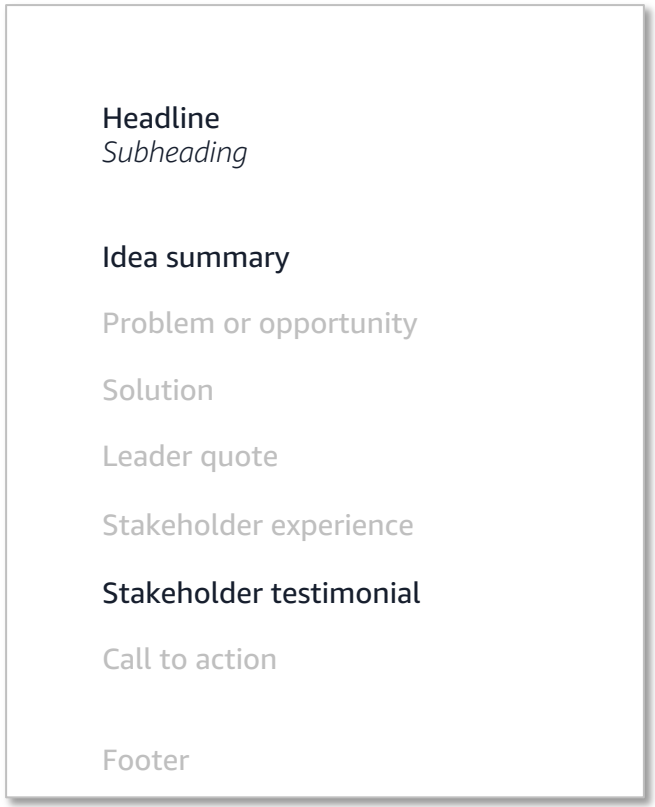
5. How would you describe your solution and its benefits?

Write your elevator pitch.



Try it

Write your headline, idea summary, and stakeholder testimonial.

Headline:
(Short, compelling description)

Idea summary:
(A few sentences to describe your solution and the most important stakeholder benefit)

Stakeholder Testimonial:
(Imagine how your stakeholder will feel and what they will say once they use your solution. Make sure it is specific.)

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4. What capabilities, tools, or skills do you need to implement your solution?

Often, just having access to data is not enough. We need capabilities, tools, and skills to enable the solutions we wish to implement.

Think of capabilities like business processes or functions that will support the solution. These are things the organization should be able to DO. For example:

- Data governance function that ensures the right people have access to the right data for the right purpose.
- Data quality processes that ensure the selected data is fit for the desired purpose with consistent quality.
- Entity resolution function that maps individuals across data systems enabling privacy, confidentiality, and security.

From a tools perspective, think about what you could USE that will help you acquire the capabilities necessary to implement your solution.

- A data catalog to help us implement governance functions throughout the operating model.
- An automated data quality analysis tool that consistently monitors data assets and pipelines.
- An AI-enabled entity resolution tool that facilitates deterministic and probabilistic matching.

Regarding skills, what do you need to KNOW in order to effectively implement the solution.

- A better understanding of how the operating model should work and where to insert governance functions.
- How to deploy an automated data classification and sensitivity analysis tool to support the data cataloging efforts.
- What are the right data elements and weighting factors across the various data assets to facilitate enterprise entity resolution.

Try it

Let's define some constraints or limitations that would keep your organization from implementing your big idea.

It would make it easier to implement my solution if …

I were **able** to:

I had **access** to:

I **knew how** to:

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AWS Public Sector Modern Data Strategy Enablement Programs

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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

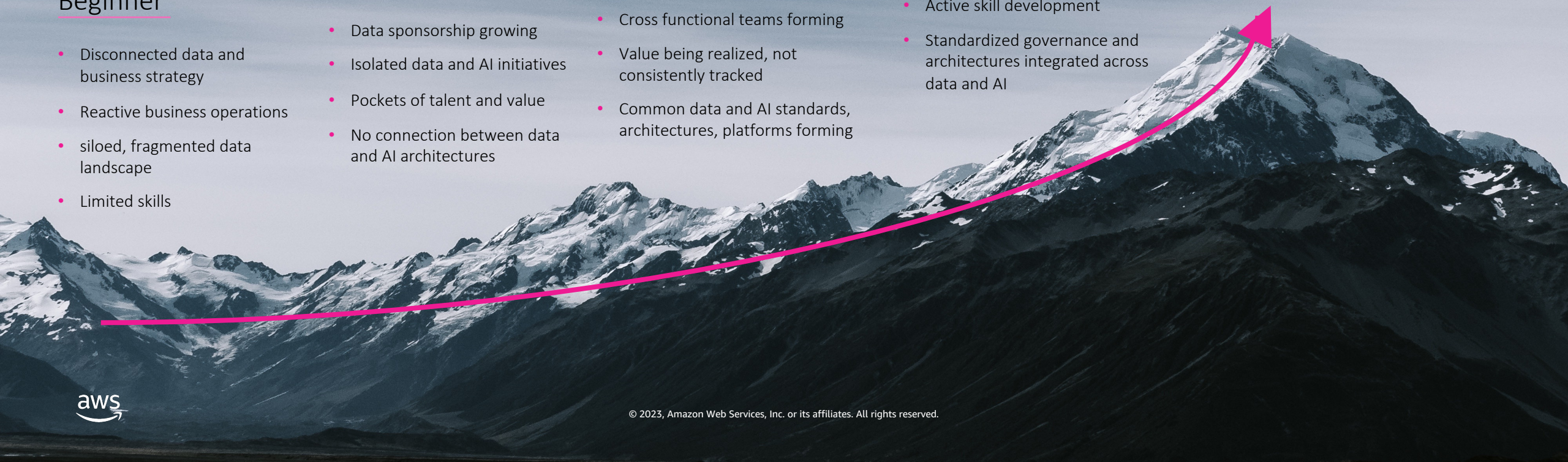
How to elevate?

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



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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

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Our Data and Digital Transformation Approach

Educate

Dive deep on modern approaches and best practices in the field

Assess

Map where you are and where you'd like to be

Select

Evaluate options, understand multiple paths to move forward, and identify the right one for your organization

Implement

Achieve program objectives and mission goals through the implementation of the modern data strategy

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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

Inspire and **accelerate** cultural transformation

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

Know where you are on **data journey** where you'd like to be

Identify mission use cases

aws Use Case Brainstorming

- ✓ Engage your line of business leaders, program directors, and organization executives
- ✓ Qualifying criteria:
  - ✓ Executive Sponsor
  - ✓ Mission Program Engagement

Hear directly from your mission stakeholders about their **priorities**

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

Engage the **right people** in the right processes

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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

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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**

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Additional resources

QR Code

Learn More!

Learn how data modernization supports government efficiency.

QR Code

Explore!

Virginia leveraged data to become more resilient.

QR Code

Share!

Public sector organizations are improving data literacy.

QR Code

Let’s Connect!

Connect with the D2T team to get started.

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Thank you!

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Executive Track

How to become a data-driven public sector organization

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