# AWS State, Local, and Education Learning Days

Sacramento, CA

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aws Learning Days
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# How to become a data-driven public sector organization

**Carlos Rivero** (he, him)

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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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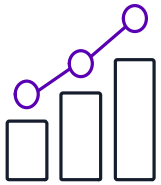
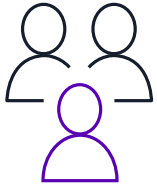
# Trends driving a change in data strategies



**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

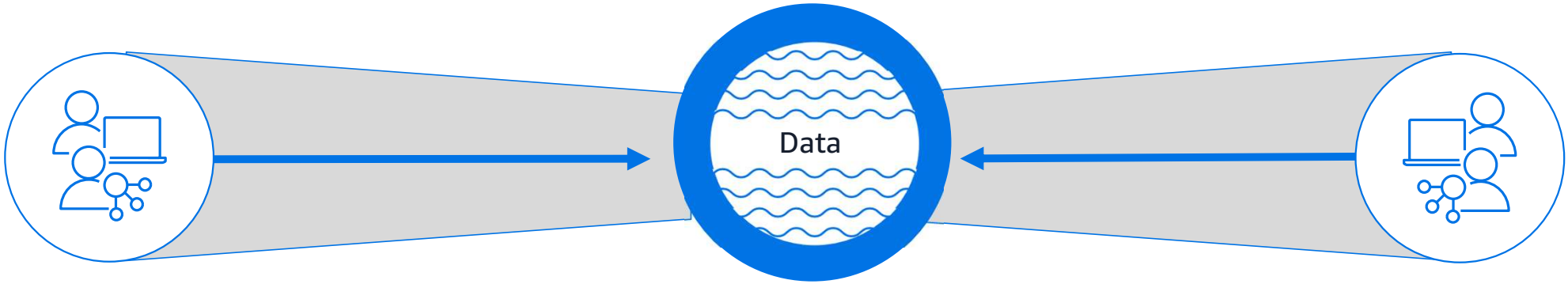
"Teams that want to share data"

## 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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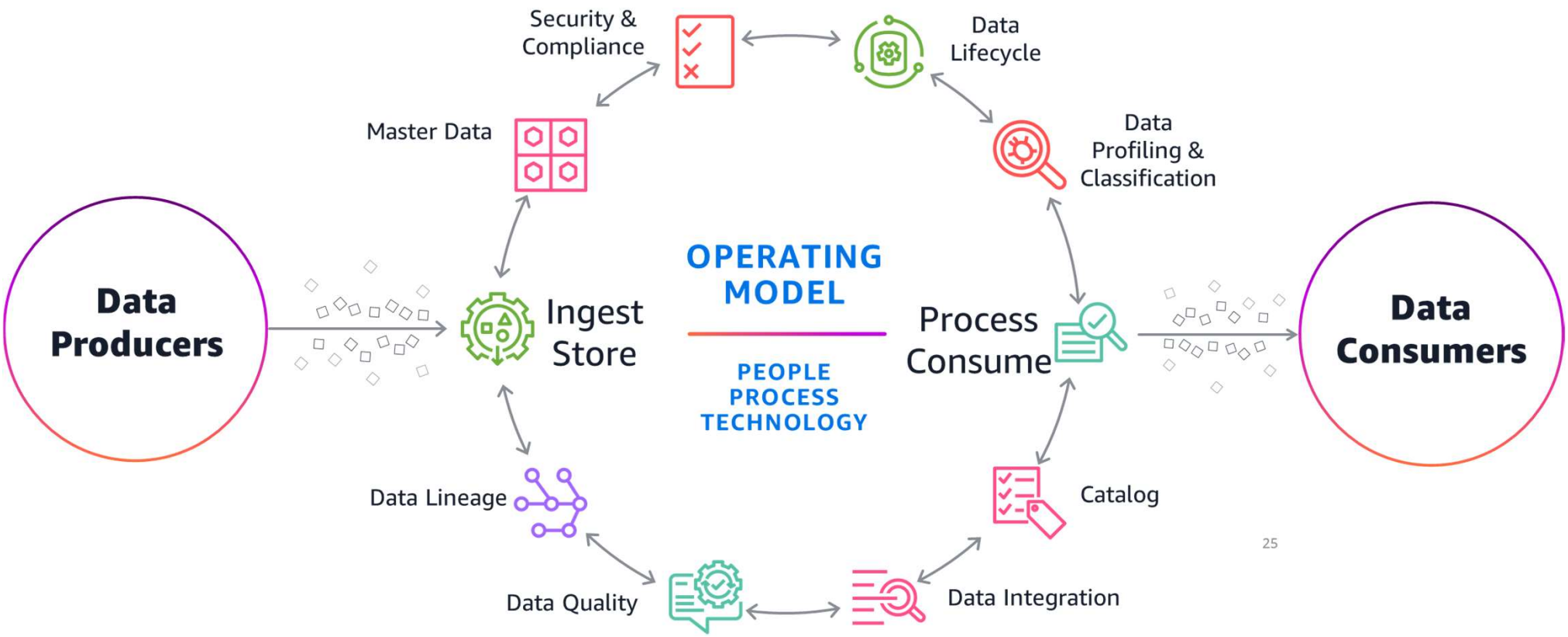
# Operating model supports transparency



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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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# How AI is helping

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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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# AI/ML in the Data Value Chain

- Data Attribution
- Data Curation
- Data Classification
- Data Security
- Dynamic Schema Definition
- Data Discovery
- Data Governance
- Exploratory Data Analysis
- Analytics
- Intelligence Delivery

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**Slide 18**

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Aleza Freeman, 10/31/2019

# How to drive mission value

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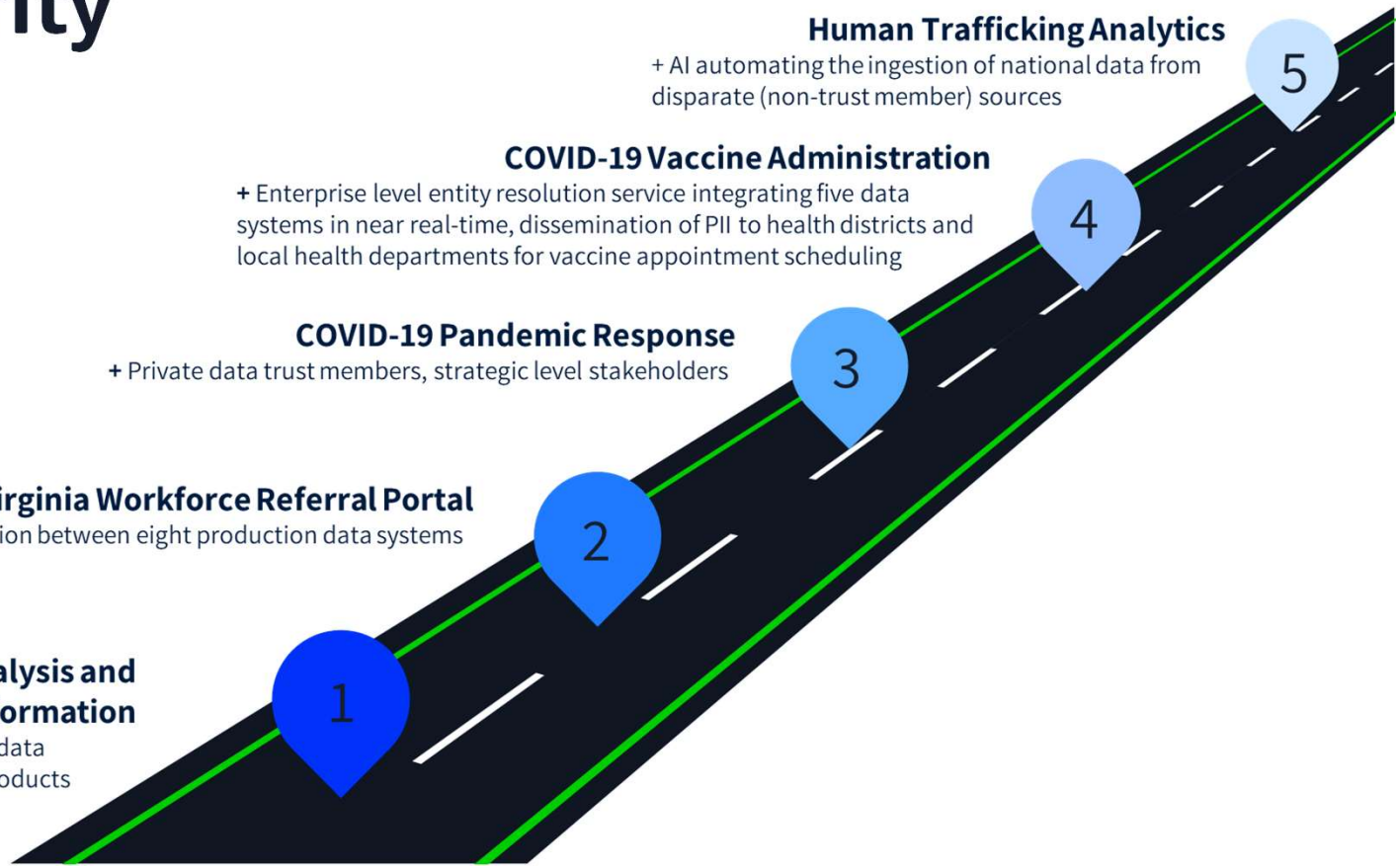
# Mission use cases build the path to data program maturity




**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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# Virginia’s FAACT

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**Learn More!**

Learn how Virginia developed a cloud-based data platform to respond to the opioid crisis.

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# Virginia’s digital tools aid communities

COUNTY & LOCAL

## Virginia launches digital tools to aid communities’ COVID-19 response

Virginia Gov. Ralph Northam is expanding two statewide data analysis platforms to help people find jobs and support localities allocate resources during the COVID-19 pandemic.

BY RYAN JOHNSTON • JUNE 18, 2020

(Getty Images)

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**Learn More!**

Learn how Virginia leveraged its cloud-based data platform to better deliver workforce services.

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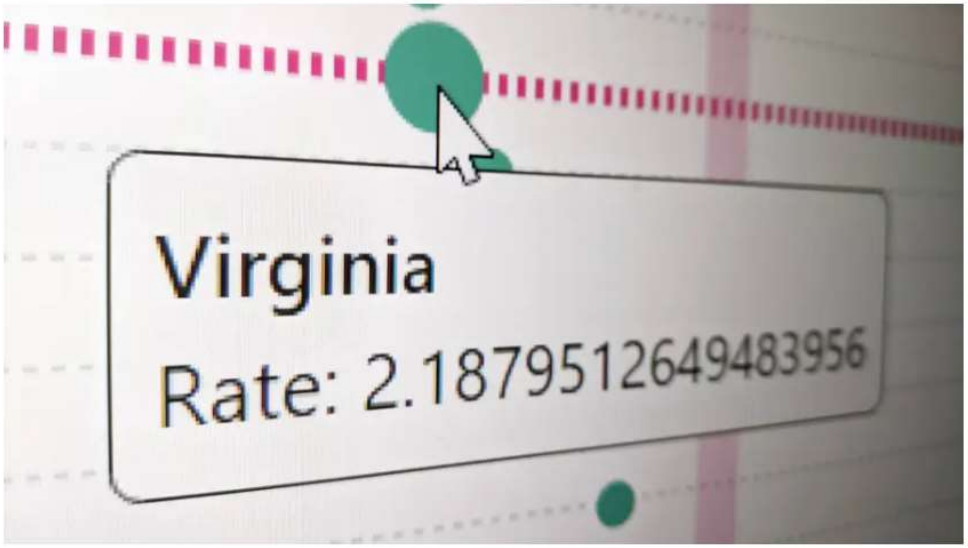
# Virginia uses data to monitor human trafficking

DATA & ANALYTICS

## Virginia to use data analytics tools to monitor human trafficking

New tools to track human trafficking in Virginia build on other data work spotting trends in opioid deaths and COVID-19 cases.

BY COLIN WOOD • APRIL 6, 2022




(Scoop News Group)

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**Learn More!**

Learn how Virginia leveraged its cloud-based data platform to address human trafficking.

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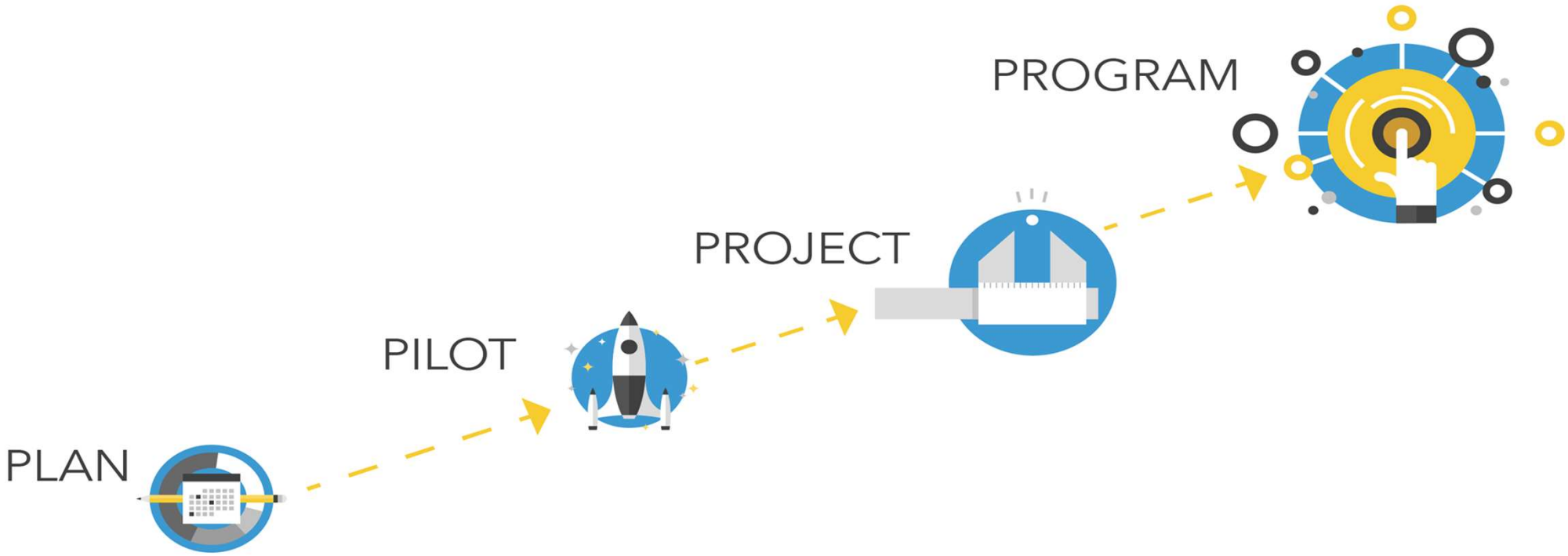
# Path to data maturity

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# Define your own use case

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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.

## 4 STAKEHOLDER QUESTIONS

1. Who are your primary stakeholders and what barriers are challenging your ability to deliver actionable intelligence?
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?

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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# 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

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

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

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

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

## Think Big

- Identify the **goals** for your data program
- Develop a data modernization **strategy**
- Document use cases that will drive **mission value** while you accomplish your goals

## Start Small

- Identify the right **first use case**
- Engage mission **stakeholders**
- Implement a **flexible** and **scalable** modern data architecture

## Scale Fast

- Encourage learning and **managed experimentation**
- Adopt an **iterative approach** addressing mission needs
- Derive **exponential benefits** from incremental investments

Leverage the **AWS Public Sector Enablement Programs** to help your organization become data driven.

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# Additional resources

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**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.

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**Let's Connect!**

Connect with the D2T team to get started.

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# 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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