



Office of the Chief Information Officer  
U.S. Department of Labor

# **Cognilytica AI in Government “Approaching Emerging Technologies in a Data Rich Environment at the Department of Labor”**

**September 15, 2022**



# Sanjay Koyani

Chief Technology Officer, Department of Labor

Joined the U.S. Department of Labor in 2020.

Previously at U.S. Dept. Health and Human Services. Led enterprise-level innovation programs, enterprise data strategy, and public-private partnerships.

20+ years of experience in leading transformation and modernization efforts in government.

As CTO at Department of Labor, Sanjay:

- ❖ Oversees **emerging technologies** and **advanced engineering incubation and testing** programs.
- ❖ Ensures technologies/applications are aligned to mission need, reduce costs, and improve performance (**enterprise architecture**).
- ❖ Directs the development of a modernized, **enterprise data platform** by utilizing a layered approach to obtain future data insights.



# Get to Know the U.S. Department of Labor



## Mission:

“To foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights.”

## 27 Varying Mission Areas and Sub-Agencies Including:

### Occupational Safety and Health Administration (OSHA):

- Safe working condition inspections

### Mine Safety & Health Administration (MSHA):

- U.S. mine safety and health inspections

### Employee Benefits Security Administration (EBSA):

- 401K/Health Plans

### Veterans' Employment and Training Service (VETS):

- Transition Assistance Program (TAP)

### Employment & Training Administration (ETA):

- Unemployment insurance claims
- Office of Foreign Labor Certification - work visa's
- Apprenticeship.gov
- 120 Job Corp centers: vocational training

### Office of Workers' Compensation Programs (OWCP):

- Work-related injury benefits
- Occupational disease



# A Shared DOL Mission – Enabled by IT

## DOL Mission

*“To foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights.”*



### LABOR ENFORCEMENT & COMPLIANCE

#### Investigators / Inspectors / Adjudicators

Ensure worker safety, improve working conditions, and protect retirement and health care benefits.

#### Key Agencies:

ARB BRB EBSA ECAB ILAB MSHA OAL  
OFCCP OIG OLMS OSHA VETS WHD



### EMPLOYMENT & TRAINING & POLICY

#### Policy Makers / Trainers / Analysts

Advance opportunities for profitable employment and assuring work-related benefits and rights by setting policies and providing relevant outreach and training.

#### Key Agencies:

ETA ILAB OCIA ODEP OPA OWCP VETS WB



### BENEFITS & PAYMENTS

#### Guarantors / Financial Analysts / Controller

Provide wage replacement benefits, medical treatment, vocational rehabilitation, and other benefits to workers or their dependents who experience work-related injury or occupational disease.

#### Key Agencies:

ETA OWCP



### BUSINESS MANAGEMENT

#### Administrators / Financial / Managers

Provide the infrastructure and support that enables DOL to perform its mission, including leadership, business operations, finance, information technology, human resources, legal services, and strategic planning.

#### Key Agencies:

OSEC OASAM OASP OCFO SOL



### STATISTICS

#### Economists / Statisticians / Financial Specialists

Collect, analyze, and disseminate essential economic information through reports and other products to support public and private decision-making.

Key Agency: BLS



## OCIO Mission

*“We are a **customer service** organization dedicated to providing information **technology solutions** and leadership to advance the DOL mission.”*

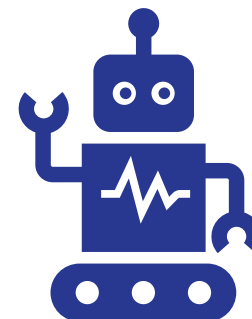
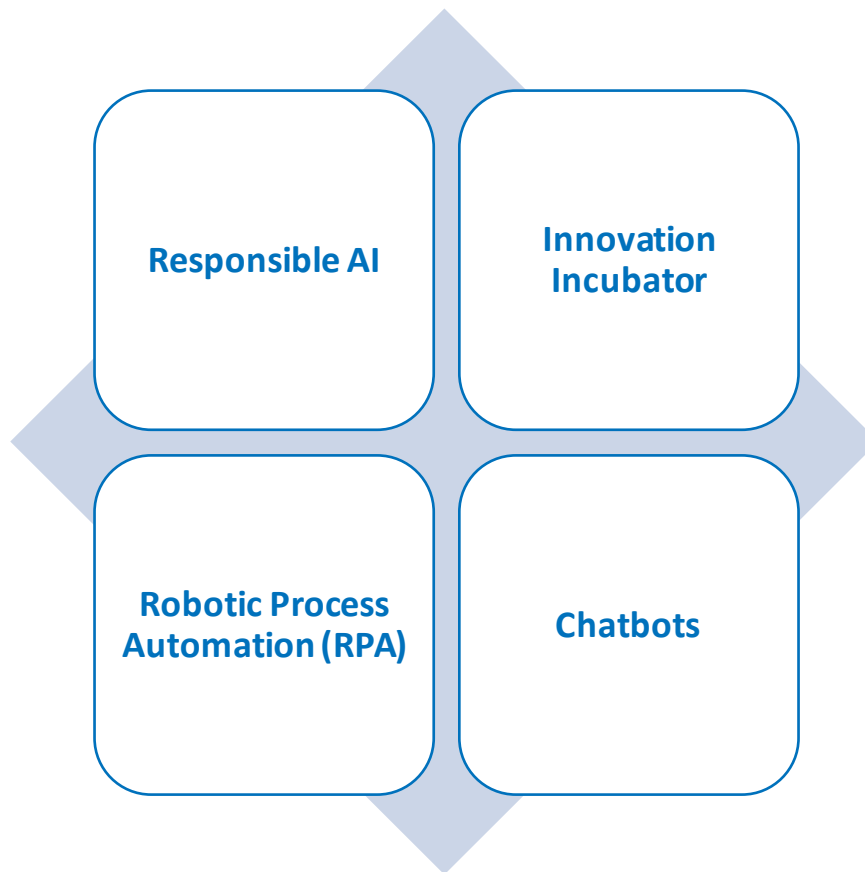
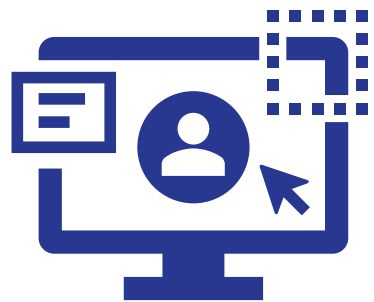
## OCIO Vision

*“To provide premier technology solutions - **best in Federal service** - that empower the DOL mission and serve the American public through collaboration and innovation.”*



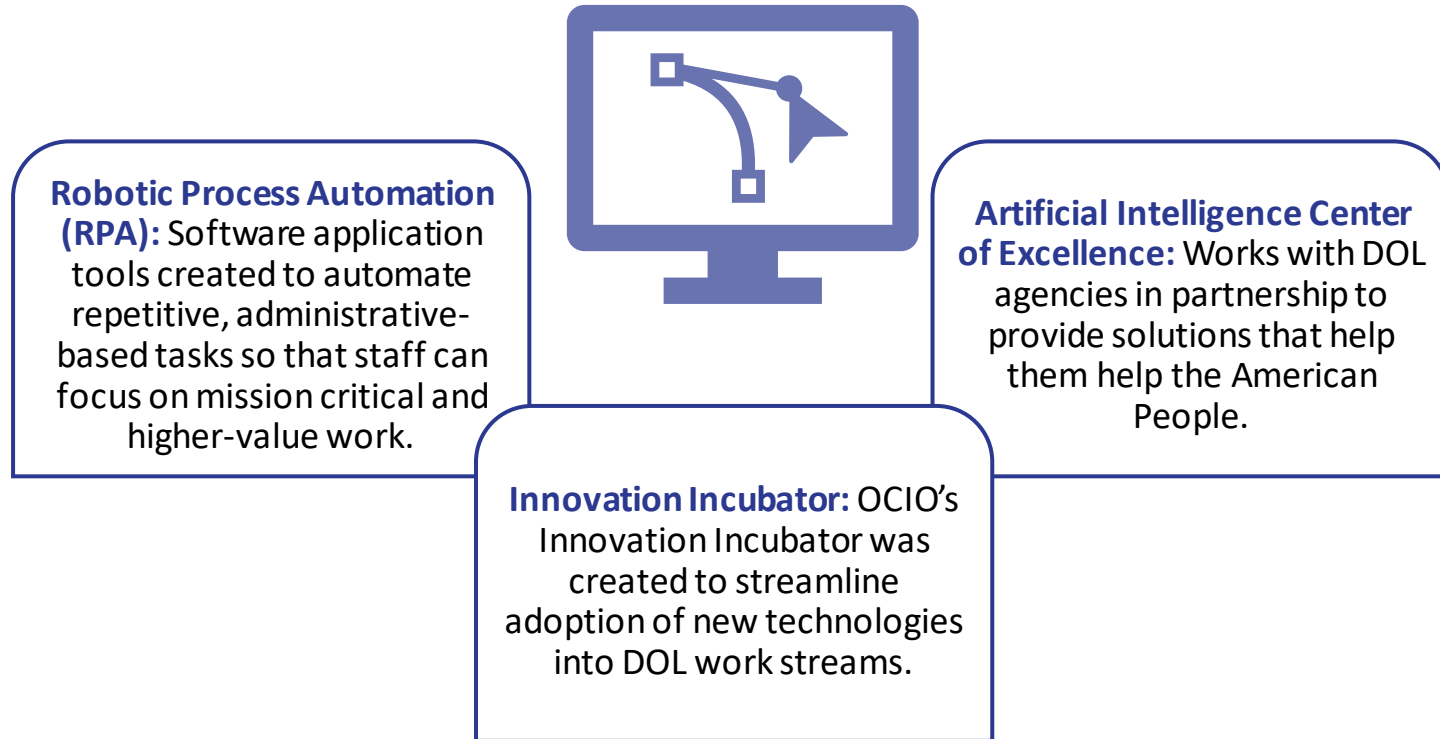
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# Current DOL Emerging Technology Landscape



# How the Emerging Tech Landscape Supports Mission Outcomes

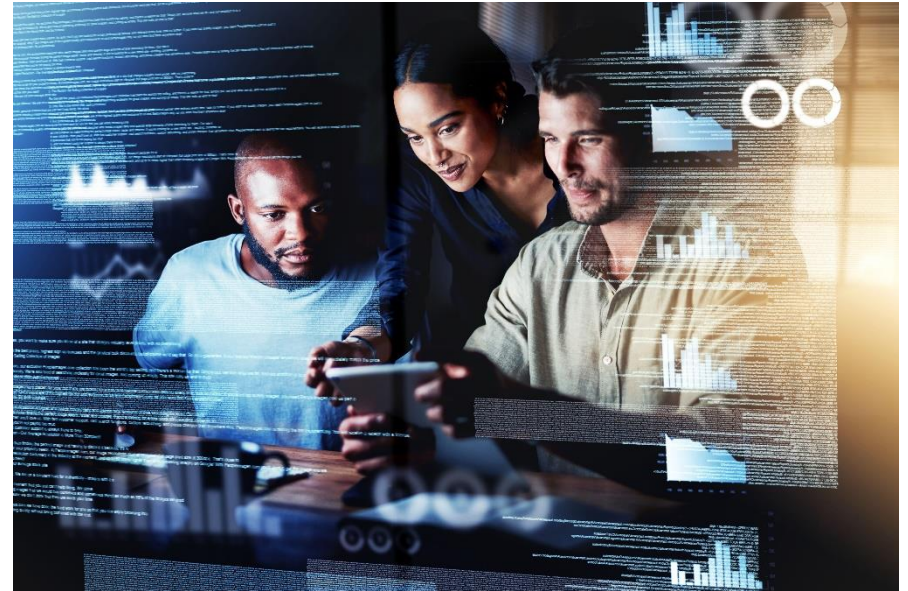
Makes mission delivery more effective and efficient by exploring how new, innovative technologies can increase productivity and allow employees to focus on mission critical tasks and client service.





# Ingredients for ET Success

- Culture Readiness
- Value Proposition and Business Strategy
- Hiring and Workforce Strategy
- User Engagement / Experience Strategy
- Piloting Strategy (KPIs, incubate and test)
- Responsible framework
- Data Strategy
- Future Focus



# Cultural Readiness

If you get the culture right, most of the other stuff will just take care of itself. - Tony Hsieh, CEO of Zappos.com

- Truly understand your case for change
  - Look not only at efficiencies and effectiveness **but** at what indirect impacts new technologies might have: misinterpretations, confidence, morale, true understanding...

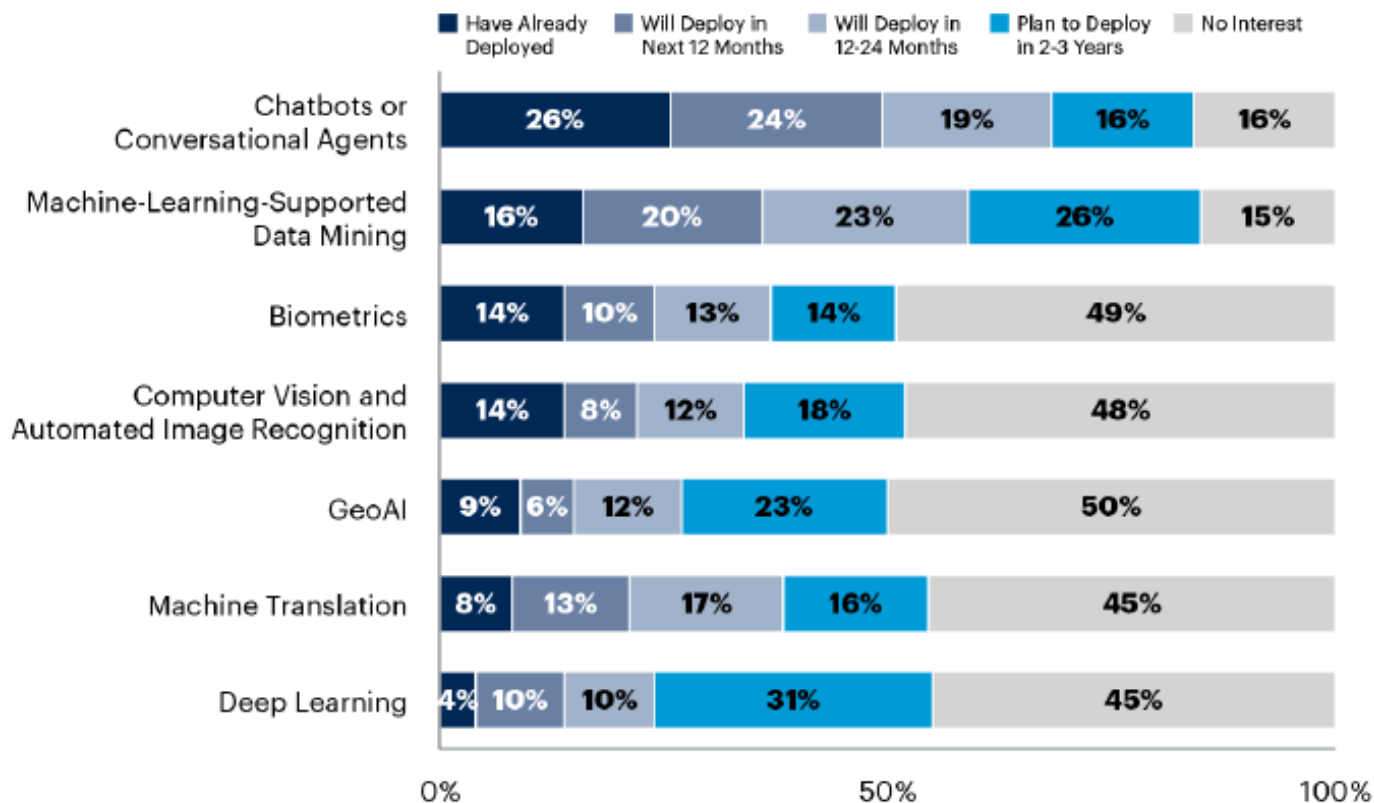


# Cultural Readiness

- Make the case with all audiences: hone messaging and positioning
  - Leadership Meaning
  - Employee Meaning
  - End customer meaning
  - Stakeholder Meaning...
- Educate on the art of the possible delivered with governance with ethical practices

# AI Adoption Across Government

## Type of AI Adoption Across Government



n = 166

Q. What are your organization's plans in terms of the following digital technologies and platforms?

Source: Gartner Digital Transformation Divergence Across Government Sectors

## NABCs

- ❖ **N- Customer Need**
- ❖ **A- Approach** to the problem
- ❖ **B- Benefit** to the customer
- ❖ **C- Competition** or alternatives

# NABCs

Address an important customer/user and societal

**Need** with a new, compelling, and defensible

**Approach** to provide superior (2-10X)

**Benefits** when compared to the

**Competition** and/or alternatives

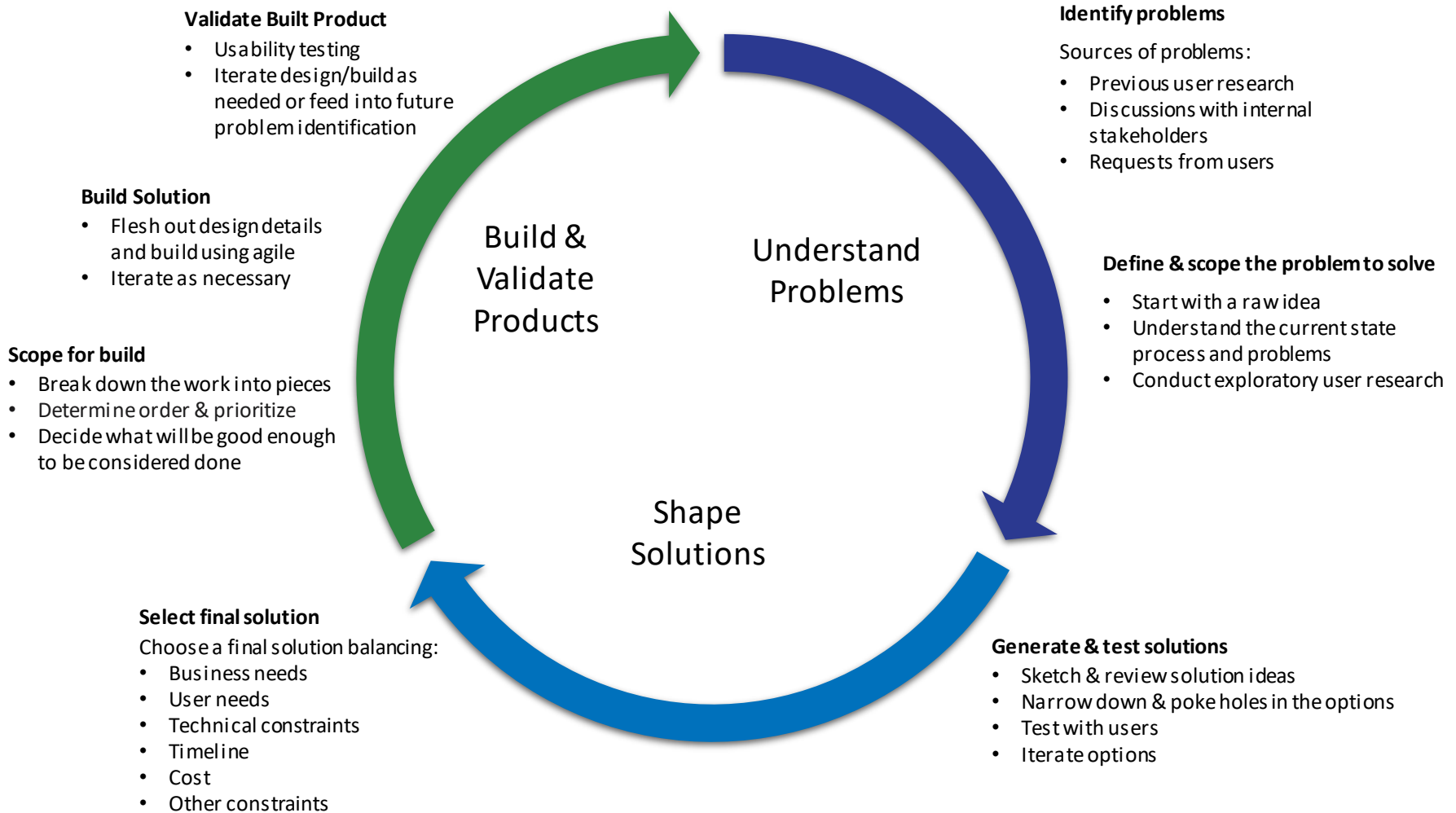
Successful value propositions are:

- Quantitative: bigger, better, faster are not sufficient
- Easy to understand and remember
- Eventually they require a business model

# Hiring and Workforce Strategy

- Established Emerging Technology Branch
  - AI and RPA Focus
  - Hiring Staff
  - Establishing Centers of Excellence and Communities of Practice
  
- What Else is Needed?

# User Experience Strategy





# Innovation Incubator: Business Problem Discovery

Innovation Incubator works to explore how business challenges can be solved with new technology. DOL uses this research and test mechanism to better understand business problems and what success looks like, then determine if an emerging technology can be applied.

## Business Outcomes

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Determine how a new technology could affect a program's business capabilities.

- We'll determine the configuration requirements for the technology and configure it in our POC environment for use case evaluation.



Determine if the technology will solve the problem and whether the investment will be worth it.

- Based on the success criteria we evaluate during the POC, we'll find out what it is going to take to move the technology towards production deployment.

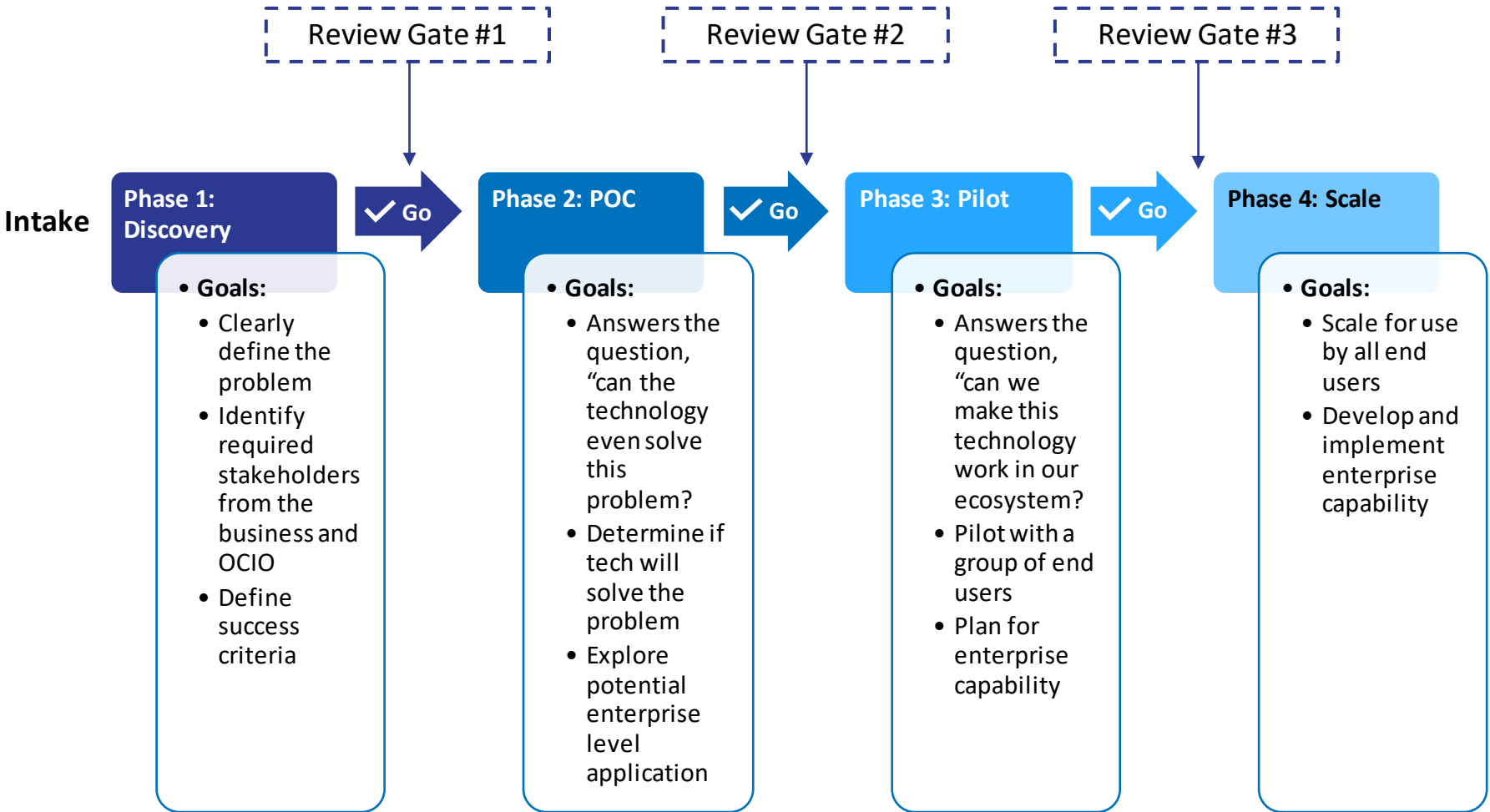
## How It Works

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1. Identify a Problem Area
2. Determine Configuration Reqs.
3. Hold Kick Off Meeting
4. Provision POC Environment
5. Conduct Use Case Evaluation
6. Conduct Demonstrations
7. Document Results and Findings



# ET Piloting Strategy: Innovation Incubator



# ET in Action: Benefits Examiner Process

Manual Approach (previous state)

The Benefits Examiner manually updates the beneficiary's data. The team currently processes approximately **3,000 forms** a month with an estimated processing time of **15 minutes per form**.



Claim forms submitted to examiner via mail

Examiner receives digitized form

Examiner proceeds to manually scan and review forms

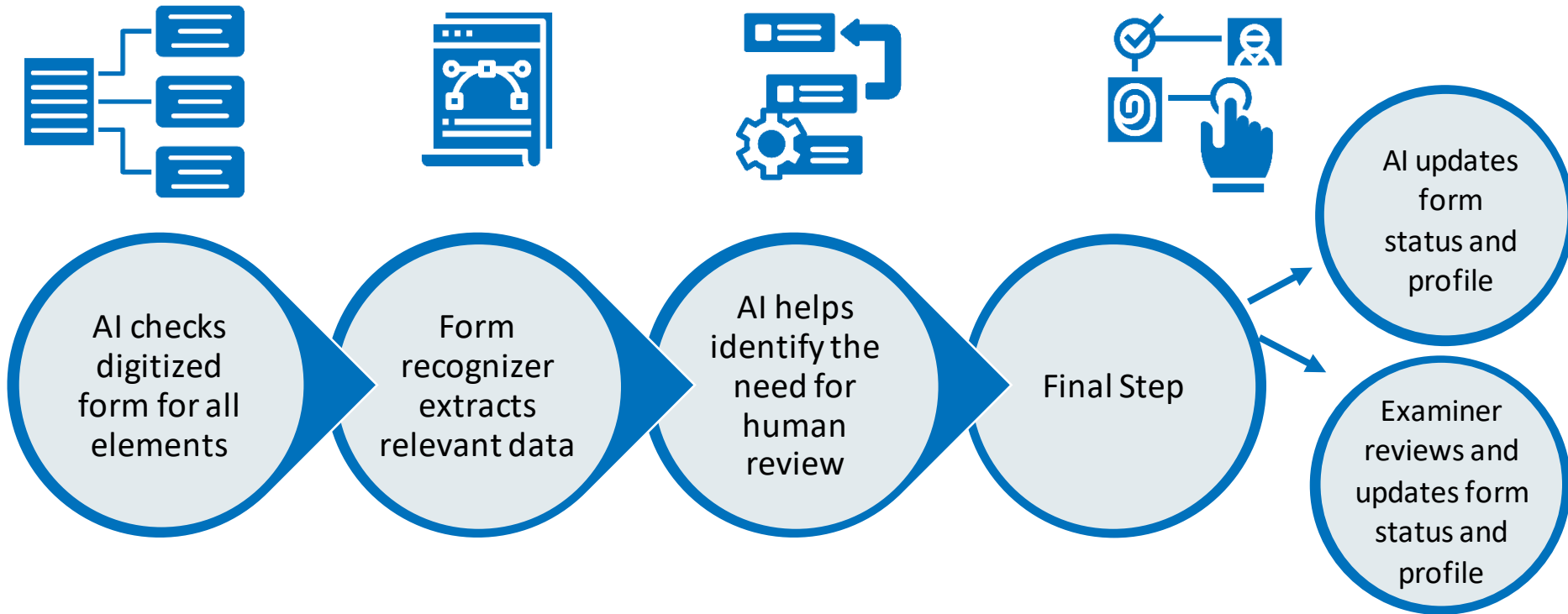
Examiner notates any year-over-year changes

Examiner updates the beneficiary's file

# Benefits Examiner Process

AI Approach (current state)

Automation helps **minimize** the amount of time spent processing forms manually. The future state combines artificial intelligence (AI), form recognition, and automated workflow tools.



# Automating Outcomes

Implementing AI and automation into the Benefits Examiner Process provides the following benefits:

- ❖ Increased accuracy and reduced processing times
- ❖ Dramatically shortened beneficiary payment timeframes
- ❖ Enhanced customer service

## Forms Processed

<b>2,985</b>	<b>1,667</b>	<b>1,318</b>
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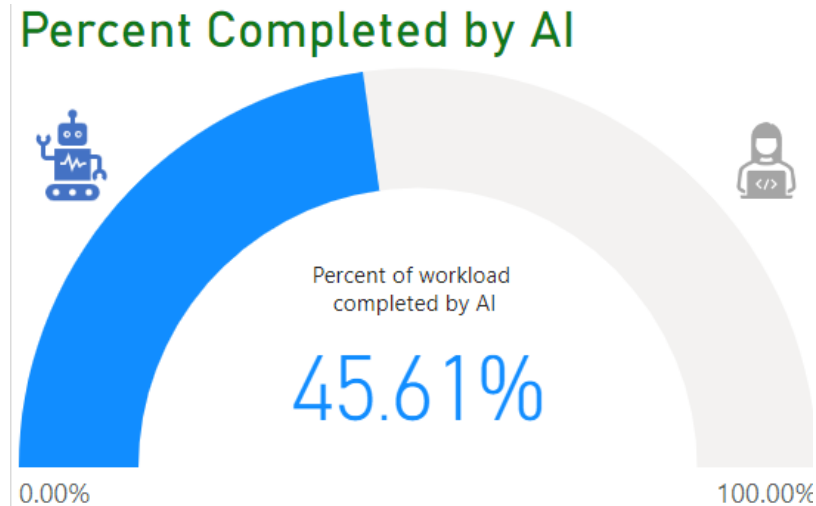
Total # Reviewed

Human Reviewed

AI Reviewed

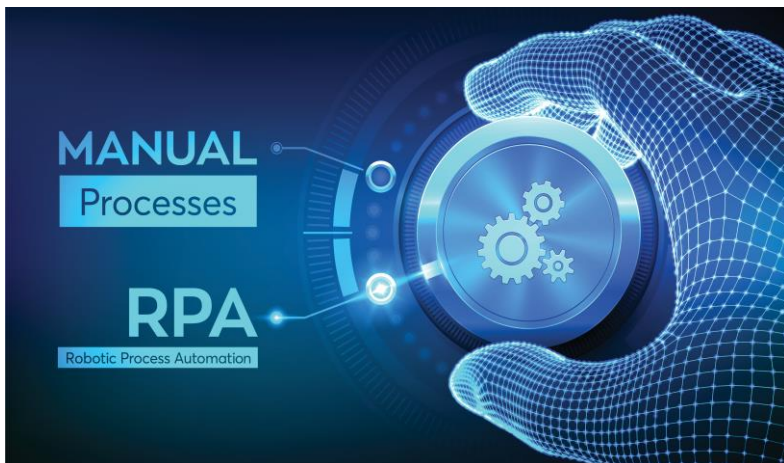
## AI Benefits

**Significant hours saved (approx. 110); cost savings**



\*as of September 2022

# ET in Action: Other Examples



## 11 Robotics Process Automation Bots Pilots

**Contractor Responsibility Determination –**  
*Links data sources to speed DOL acquisition determinations on whether a contractor has behaved responsibly before award.*

**Impact: 1500 hours saved translating to \$120k in 1.5 years of operations**

**Job Corps: Student Travel –**  
*Automates manual reconciliation of card statements and student travel reports for faster validation and processing*

**Impact: saved 160 hours and \$104k per month**



# Creating a Buzz for Pilots

**RPA Bot-A-Thon** – conducted a Bot-A-Thon event to inform agencies about the benefits of RPA and to support the identification of new opportunities to automate existing manual processes.

- 800+ attendees
- 30+ submitted ideas
- 7 aselected to be piloted



# Responsibility Framework for AI

## Embed Responsibility at Every Phase of AI Development

### Design

- Assign a responsible AI mission owner.
- Connect with AI end users / adopters of application to brainstorm and set goals, quantifiable metrics to track, expected performance, and expectations and requirements for fairness / equity / other key responsible AI principles.

### Develop

- Draft a model card (following template for guidance) with information including intended uses/users, ethical risks, training/evaluation data characteristics, limitations, model architecture and inputs/outputs, performance metrics, fairness metrics, and recommendations.
- Ensure enough information is captured to provide meaningful transparency to any stakeholder.

### Deployment

- Outline a plan for data removal and decommissioning.
- Establish a cadence for “expiring” model cards to regenerate or review.
- Assign those accountable for reviewing and re-approving acceptable performance.



# DOL's Data Strategy

## FAIR Principles: Data Must Be

1. Findable
2. Accessible
3. Interoperable
4. Reusable

## Goals for Improved Data Governance: Data Should Be

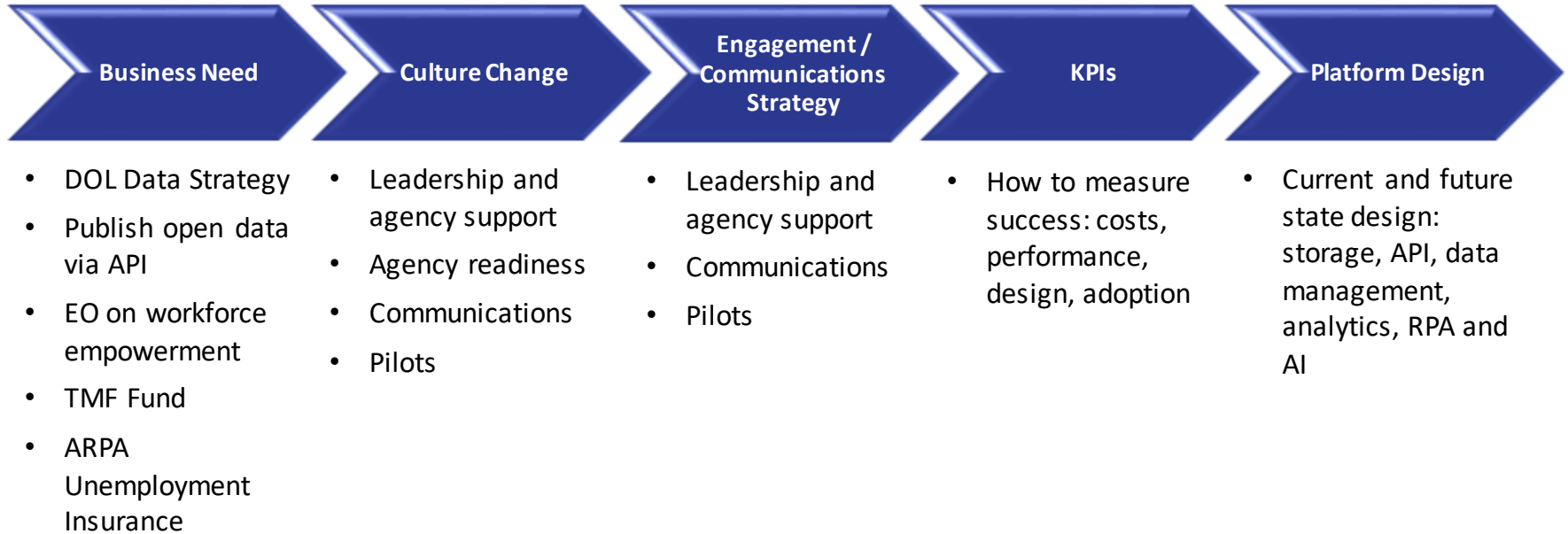
1. Considered "Open" by Default
2. Comprehensible
3. Fit for Purpose
4. Readily Available in Consistent and Predictable Ways
5. A Departmental Strategic Asset

## TMF Funding

- ❖ (2021) \$9.6M investment supports current Data Modernization initiative for enterprise data platform

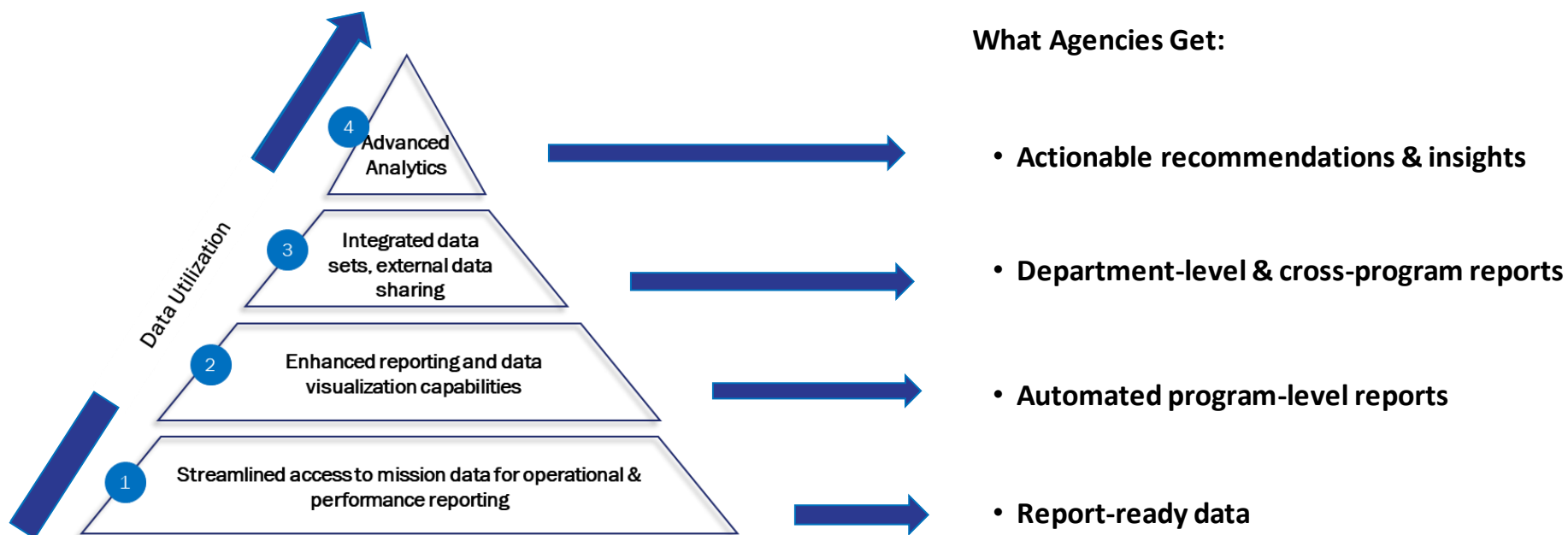


# DOL's Data Modernization Initiative



# Match Data Strategy to Business Need

This framework provides a structured approach in building data capacity at DOL based on agencies immediate needs. Mission agencies and OCIO will work together to determine relevant use cases to maximize impact.



# Lessons Learned for Innovation and AI

- #1 - Leadership
- Enable a safe culture and space to innovate
- Create a case for change with impacts
- Start small and promote
- Engage customers early and iterate
- Fall in love with problems, not solutions
- Quantify it





## Questions

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