

Business Relevance: Driving Data Strategy Impact



PRESENTED BY

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UNLIMITED UNCLASSIFIED RELEASE

SANDIA NATIONAL LABORATORIES

A federally funded R&D center that develops advanced technologies to ensure global peace

“Exceptional Service in the National Interest”

41 FFRDCs

There are 41 Federally Funded Research and Development Centers

25 R&D

25 are research and development labs

16 DOE

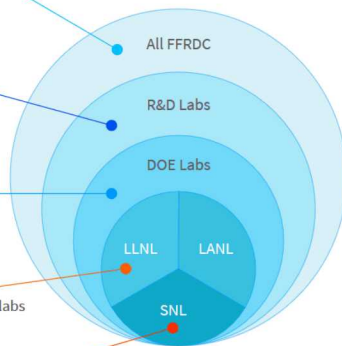
16 are DOE-sponsored FFRDCs

3 NW

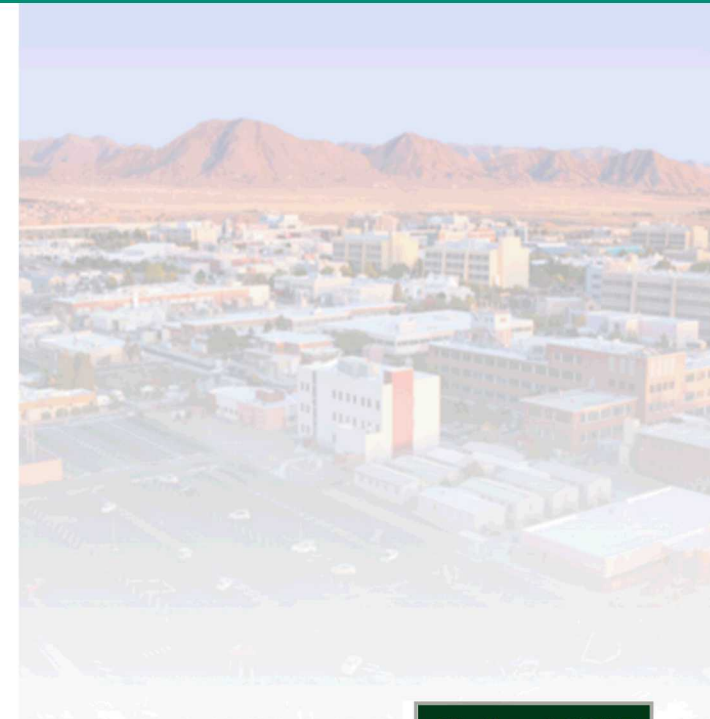
3 are nuclear weapons labs

SNL

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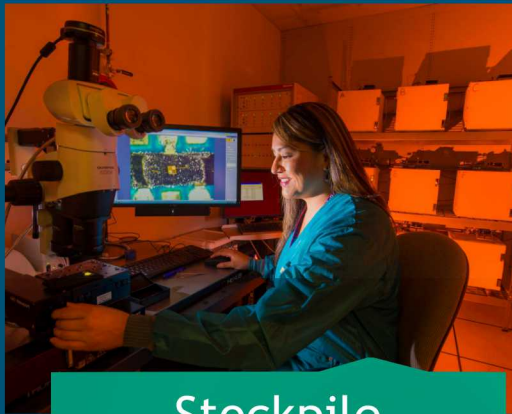
- **4 Sites**
 - Albuquerque, NM
 - Livermore, CA
 - Tonopah Test Range, NV
 - Kauai Test Facility, HI
- **4 Portfolios**
 - Nuclear Deterrence
 - National Security Programs
 - Defense Nuclear Non-Proliferation
 - Integrated National Security Solutions
- **12,300 Employees**
- **\$3.2B Total Lab Funding**



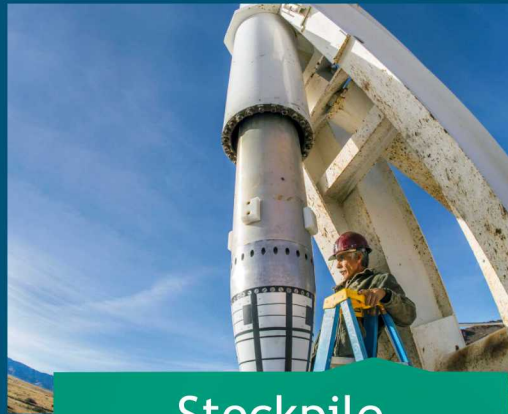
3 NUCLEAR DETERRENCE

“...as long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies...”

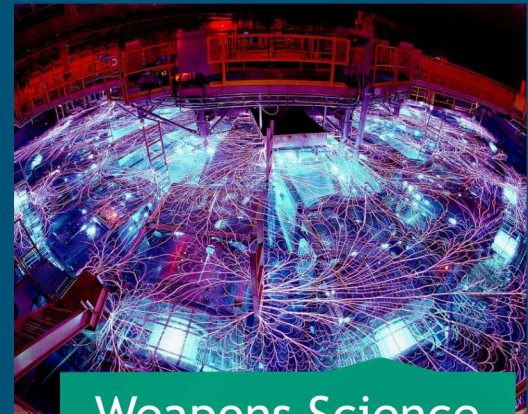
President Obama, *A World Without Nuclear Weapons*, Prague, 2009



Stockpile
Stewardship



Stockpile
Modernization



Weapons Science
& Technology

OUR JOURNEY

Our path towards data governance started with a simple question,

“Why is it so hard to integrate our data?”

2013-2014

- “The Problem”: root cause analysis
- “The Solution”: Development of governance proposal

2015

- Approval to implement data governance
- Development of strategy
- Development of governance processes

2016-2017

- Leadership endorsement of strategy
- Alignment of “pathfinder projects”
- Implementation Roadmap

2018

- “Open for Business” by end of FY18
- Cloud Storage & Provisioning
- Data Catalog
- Engineering Workspaces

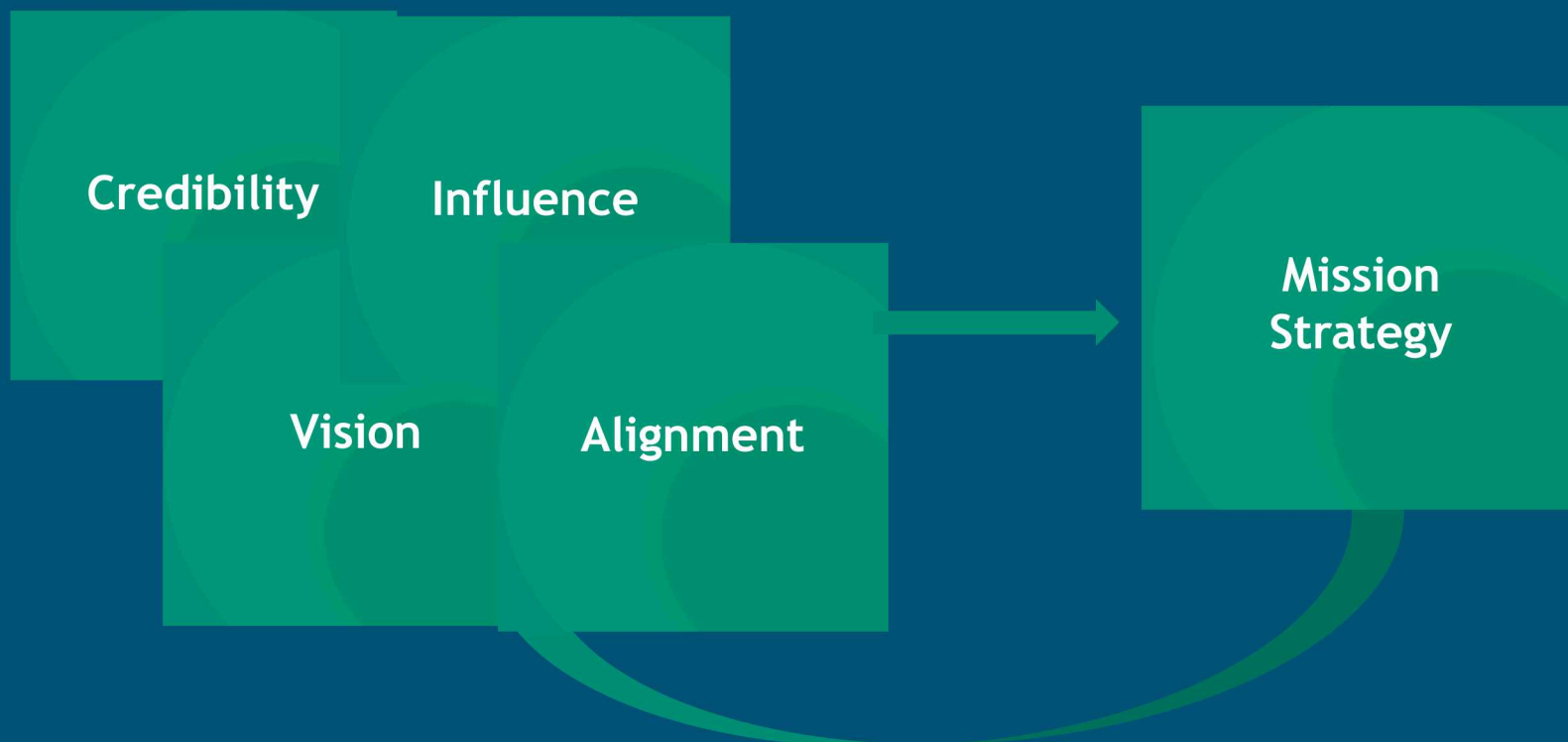
5

THE RIGHT CHAMPION

at

THE RIGHT TIME

In 2015, we were able to embed key pointers to the data strategy within the Nuclear Deterrence Mission Strategy.



MISSION STRATEGY ELEMENTS

What do these have to do with data?

Rapid Capability Delivery

Accelerated Cycles of Learning

- Rapid prototyping
- Rapid testing

Continuous Demonstrators

Agile Architectures

- Modular
- Model-based

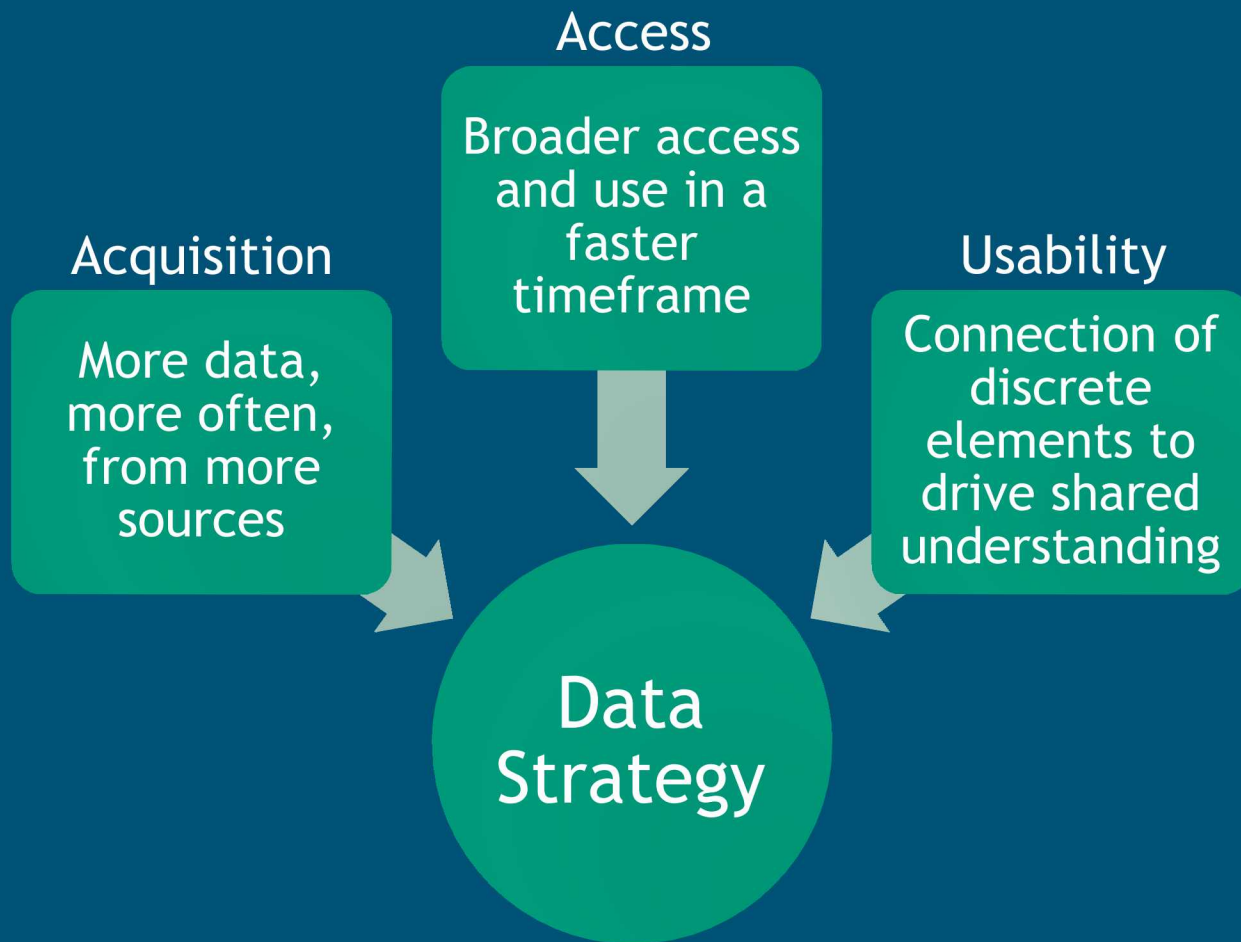
Expanded Participation

Open Participation and Inclusion

Partnerships

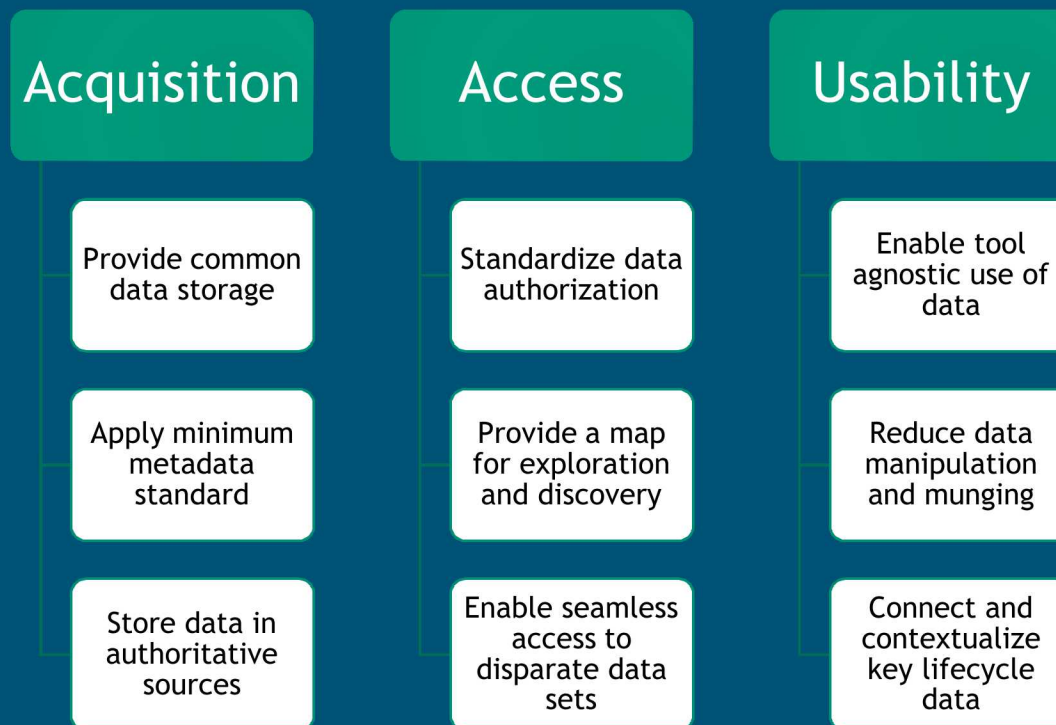
Integration Across the Lifecycle

7 ALIGNMENT

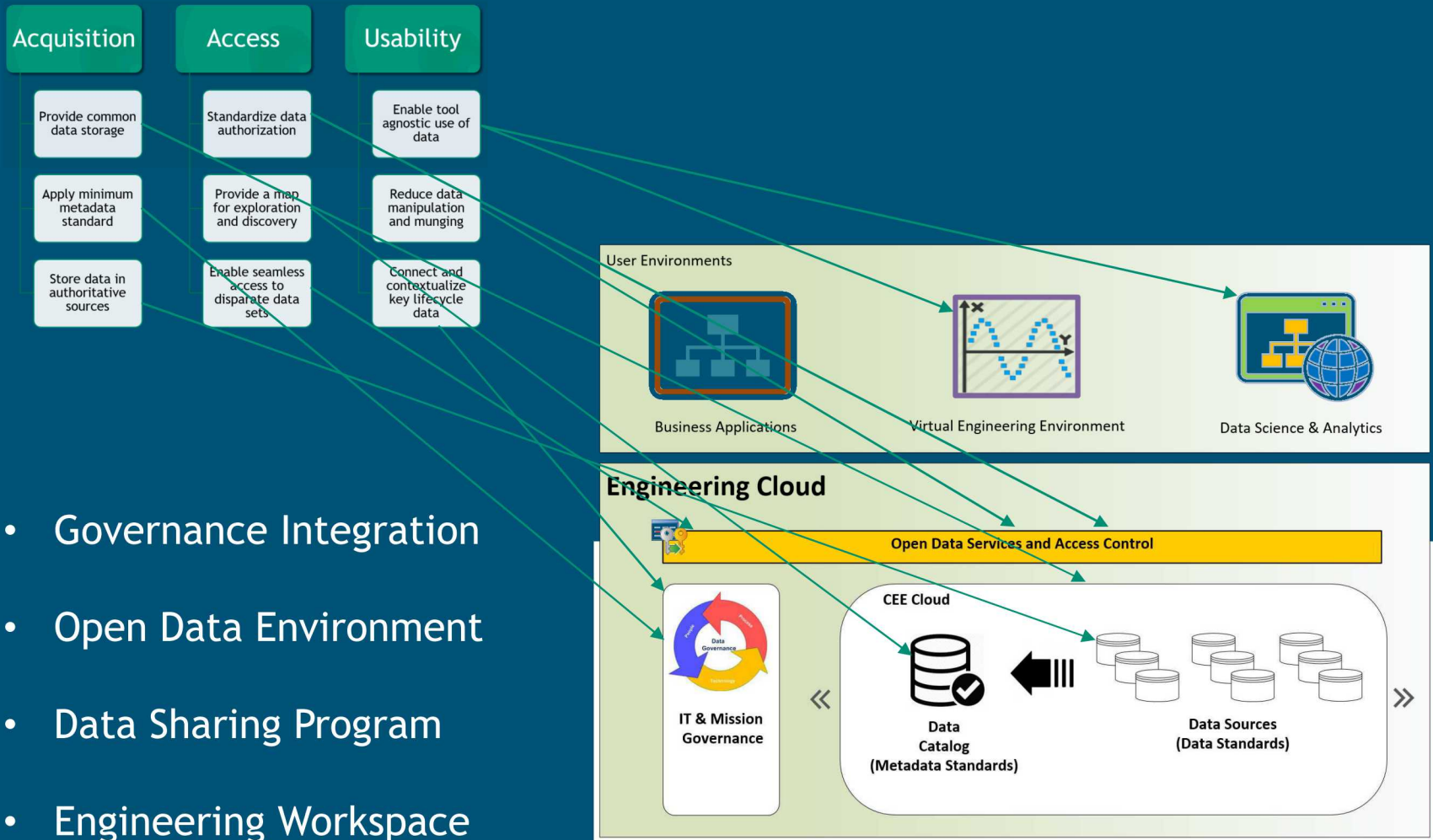


FOUNDATION CAPABILITIES

Foundational Capabilities must be created to support viability of Specific Capabilities



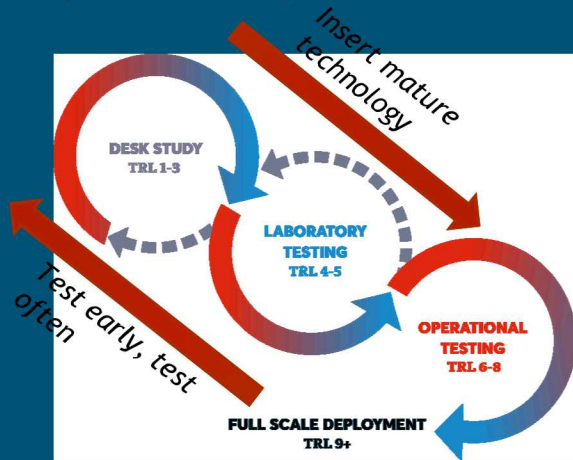
CAPABILITY IMPLEMENTATION



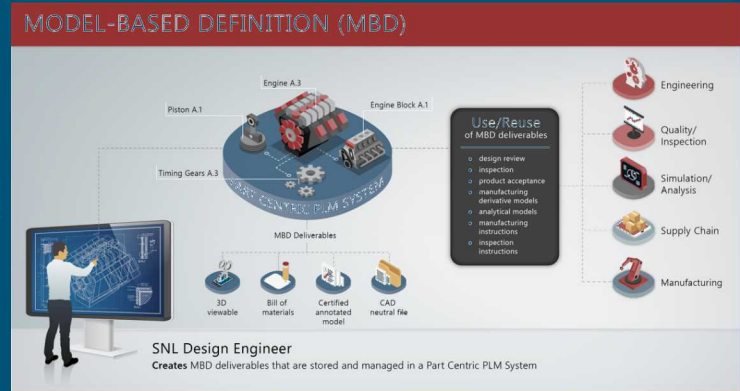
- Governance Integration
- Open Data Environment
- Data Sharing Program
- Engineering Workspace

SPECIFIC CAPABILITIES

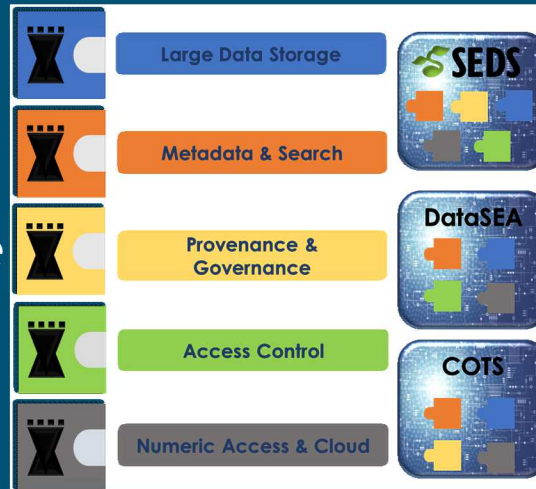
Rapid Testing



Model-based



Integration Across Lifecycle



11

BUILDING THE FOUNDATION

VS

SHOWING RESULTS

Years

Long lead times

Dependencies as forcing functions

“Optional”

Months

Sustainability

Dependencies as constraints

Mission Critical

*With a finite amount of money and resources,
how do you balance these?*

GOOD PATHFINDERS

A Tale of Two Projects...

Material Parts Library

- Single year project
- “Nice to have” strategic initiative
- Local milestones
- Indirect funding
- “Just one part of my job”
- Partners with conflicted incentives

Stockpile Evaluation Data System

- Multi-year project
- Mission critical system
- Highly visible milestones
- Direct funding
- Dedicated team
- Partners with multiple incentives to participate

13 OUR RESULTS

Capabilities with direct tie to key mission milestones

Cloud Environment

Data Sharing Program

Integrated Test Data Platform

Capabilities with direct tie to Nuclear Deterrence strategy

Model-based Definition

Rapid Testing

Capabilities with direct tie to data strategy

Data Catalog

Engineering Workspace

Governance Integration

LESSONS LEARNED

Embed your data strategy in the business strategy, but also...

Pair governance with specific milestones

- Choose milestones that would exist regardless of the strategy

Select pathfinders that will apply pressure on developing foundational capabilities in order to realize the specific capabilities

- Build in dependencies with the chosen milestones

Don't partner ONLY with strategic initiatives

- These are okay to do if they make sense in tandem with the specific milestones

It's okay to have multi-year pathfinder projects

- Find creative ways to highlight the progress and show incremental success

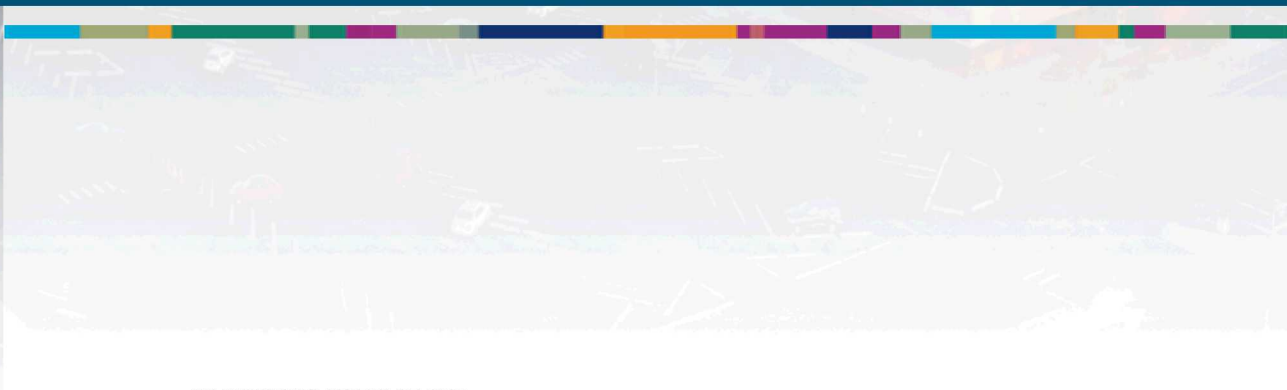


THANK YOU

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BACKUP SLIDES



DATA STRATEGY ELEMENTS

CHALLENGES

GOALS

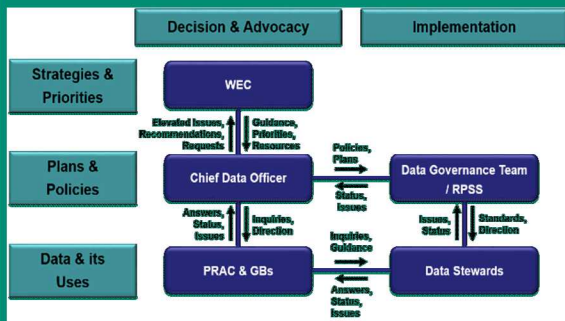
STRATEGIES

DATA GOVERNANCE

Are we collecting the right data?
Can we use it?

Data is an asset and its value is understood

Enable data stewardship

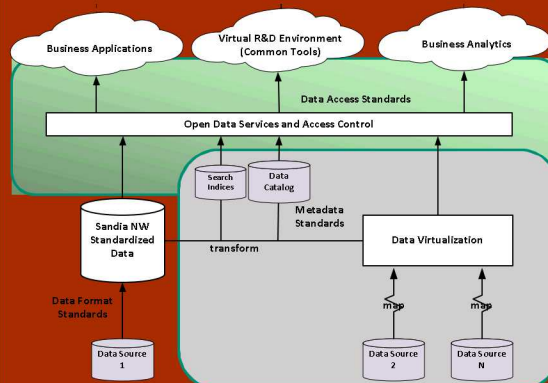


INFRASTRUCTURE

Data is everywhere, so it is really nowhere

Data is collected and shared across the lifecycle

Open Data Environment



DATA SCIENCE

Few autonomous, trusted techniques to exploit our data

Realize the power of our data

Build the capability

