U.S. Department of the Interior
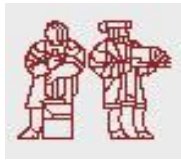
Unification &
Simplification
Through:
• Cooperation
• Innovation
• Opportunity

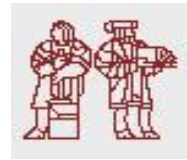# Authoritative Data Source Strategy Overview
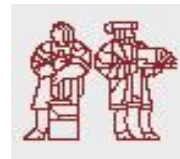## July 2007

Agenda

- **Authoritative Data Source (ADS) Strategy**
- **ADS Alignment to Department of the Interior's (DOI's) Methodology for Business Transformation (MBT)**

Authoritative Data Source (ADS) Strategy

What is an ADS?   Why is it Important?

What is an Authoritative Data Source (ADS)?

- Cohesive set of data assets that provide trusted, timely, and secure information to support a business process
- Information is visible, accessible, understandable, and credible to information users

Who are Information Consumers?

- Business Users – View Data
- Internal Application – Share/Reuse Data
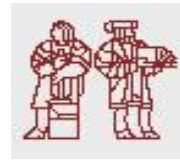- Business Partners – Exchange Data

FY07 Department Goal

- Develop an ADS Strategy
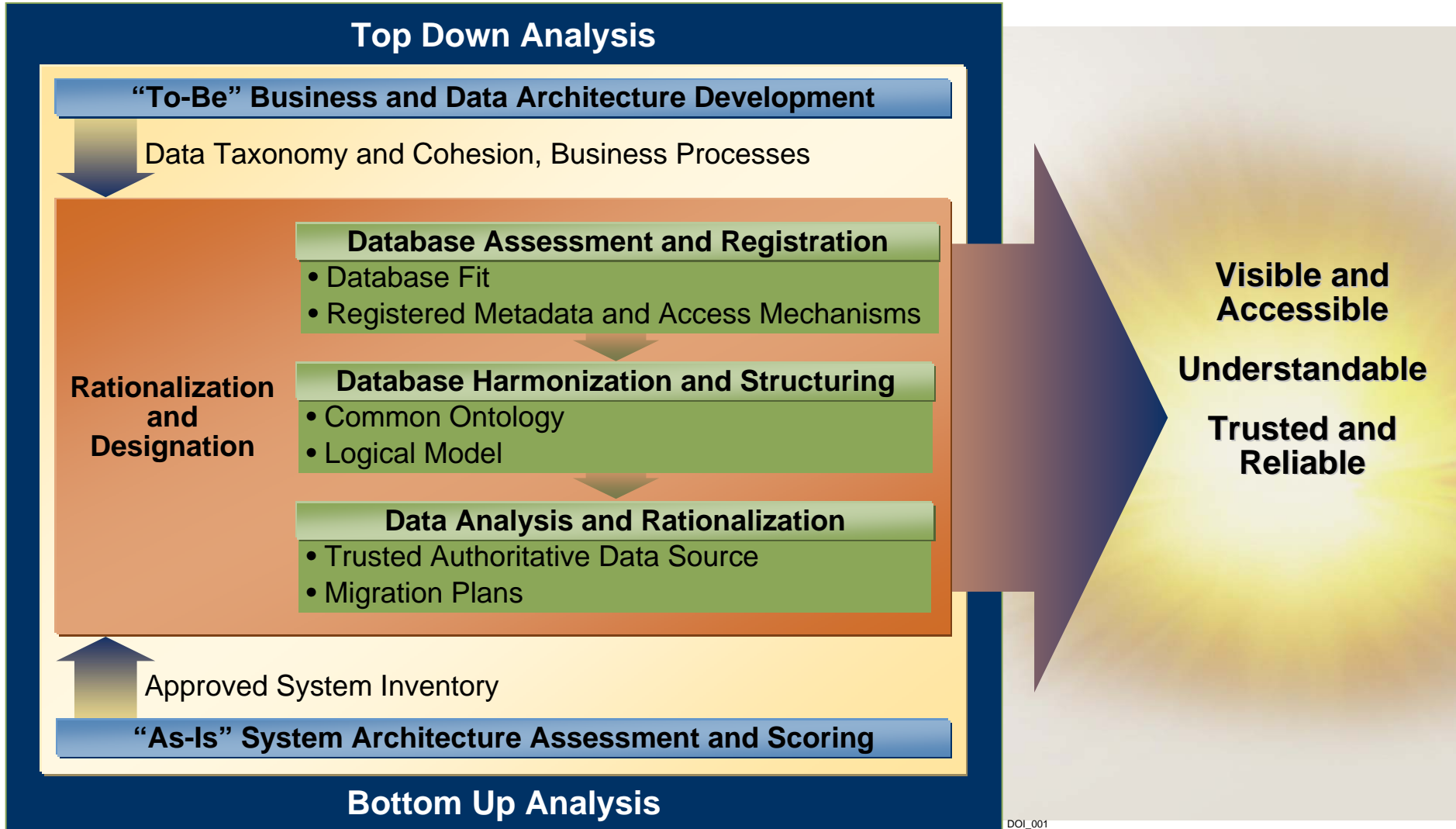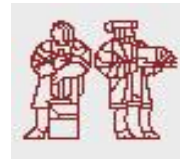- Pilot the ADS Approach

Benefits

- **Leverage the Modernization Blueprint efforts to document and designate trusted, timely, and reliable data sources**
- **Support data consolidation, reuse, and exchange**
- **Provide a foundation for an integrated, business-driven data solution that is tied to DOI's performance goals**

ADS Framework

Top Down Analysis

"To-Be" Business and Data Architecture Development

Data Taxonomy and Cohesion, Business Processes

Rationalization and Designation

Database Assessment and Registration
- Database Fit
- Registered Metadata and Access Mechanisms

Database Harmonization and Structuring
- Common Ontology
- Logical Model

Data Analysis and Rationalization
- Trusted Authoritative Data Source
- Migration Plans

Approved System Inventory

"As-Is" System Architecture Assessment and Scoring

Bottom Up Analysis

Visible and Accessible

Understandable

Trusted and Reliable

DOI_001

ADS Strategy – Designation

"To-Be" Function/Data Actions and Exchanges

"To-Be" Data Requirements

"To-Be" Functional Requirements

"As-Is" Legacy Data Sources

"As-Is" Legacy Systems

- Duplicative Data Source
- Data Source Characteristics (e.g., DQ, Security, and Privacy)
- Requirements (Function/Data) for a Service Component
- Legacy System Disposition

Authorization Data Sources (Best "Fit" for Service Component Data and Functional Requirements)

DOI_002

Data Quality (DQ) Dimensions

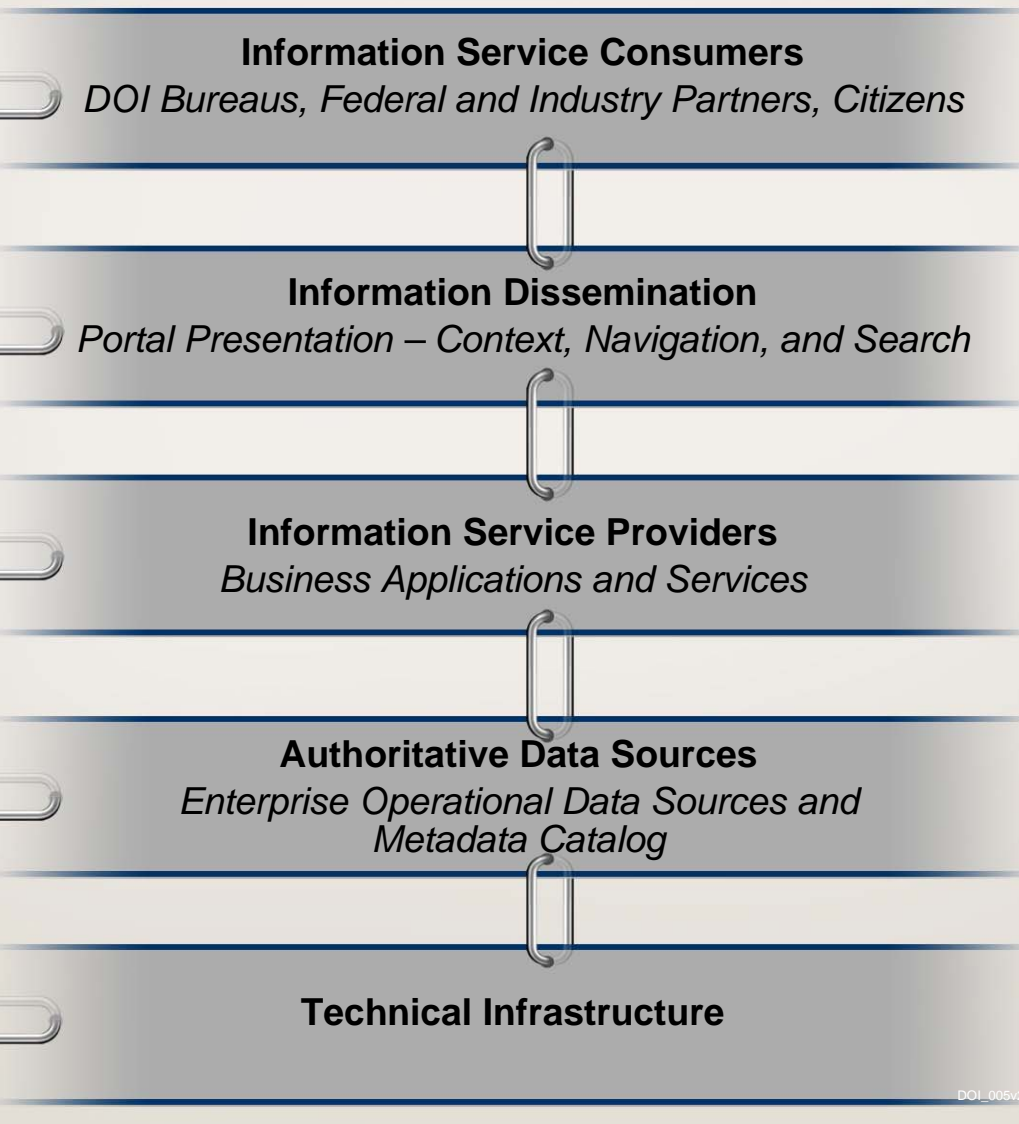| DQ Dimension	Description	Measure (Example)
Accuracy	Qualitative assessment to which data accurately reflects real-world object or matches original source of data	Percent of values that are correct when compared to actual value
Completeness	Degree to which values are present in the attributes that require them	Percent of data fields having values entered into them
Consistency	Degree to which redundant facts are equivalent across two or more databases	Percent of matching values across tables/files/records
Precision	Degree to which data is known to the right level of granularity	Percent of data fields having the appropriate level of granularity
Timeliness	Degree to which data is up-to-date and available to support a given knowledge worker or process	Percent of data available within a specified threshold timeframe
Uniqueness	Degree to which there are no redundant occurrences or records of the same object or event	Percent of records having unique primary key
Validity	Degree to which data conforms to its definition, domain values, and business rules	Percent of data having values that fall within their respective domain of values
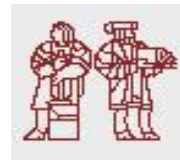
ADS Strategy – Transition and Implementation

Recommendations	Transition Plan	Implementation
• Recommend data sources that should be converted and retired • Recommend data sources that should exchange data with ADS • Recommend data stewards for ADS • Identify data quality, security, and privacy concerns (high-level)	• Schedule data standardization, assessment, and correction task • Sequence and schedule legacy data source transition to ADS	• Harmonize and standardize data requirements for ADS • Assess data quality against standardized requirements and rules (data converted and exchanged) • Correct and transform data • Implement monitoring and improvement

Convert and Retire

Authoritative Data Source

Openly Exchange

DOI_004v2
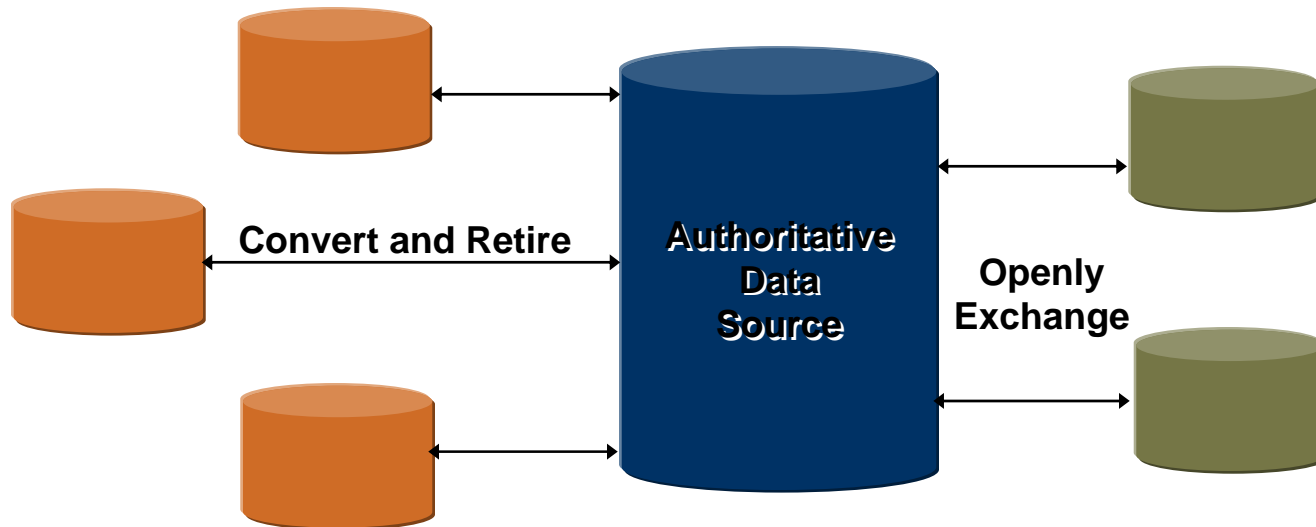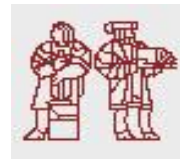
ADS Vision

Administration
Security, Privacy, and Stewardship

Information Service Consumers
DOI Bureaus, Federal and Industry Partners, Citizens

Able to search, understand, and retrieve relevant and trusted information services

Information Dissemination
Portal Presentation – Context, Navigation, and Search

Serves information based on business utility and policy requirements to appropriate internal and external users

Information Service Providers
*Business Applications and Services*

Encapsulates ADS with business process and policy for business usage

Authoritative Data Sources
Enterprise Operational Data Sources and Metadata Catalog

Provides trusted and reliable data source documented and managed by a data steward

Technical Infrastructure

Enables access to data sources on various platforms and databases

DOI_005v2
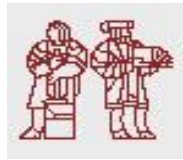
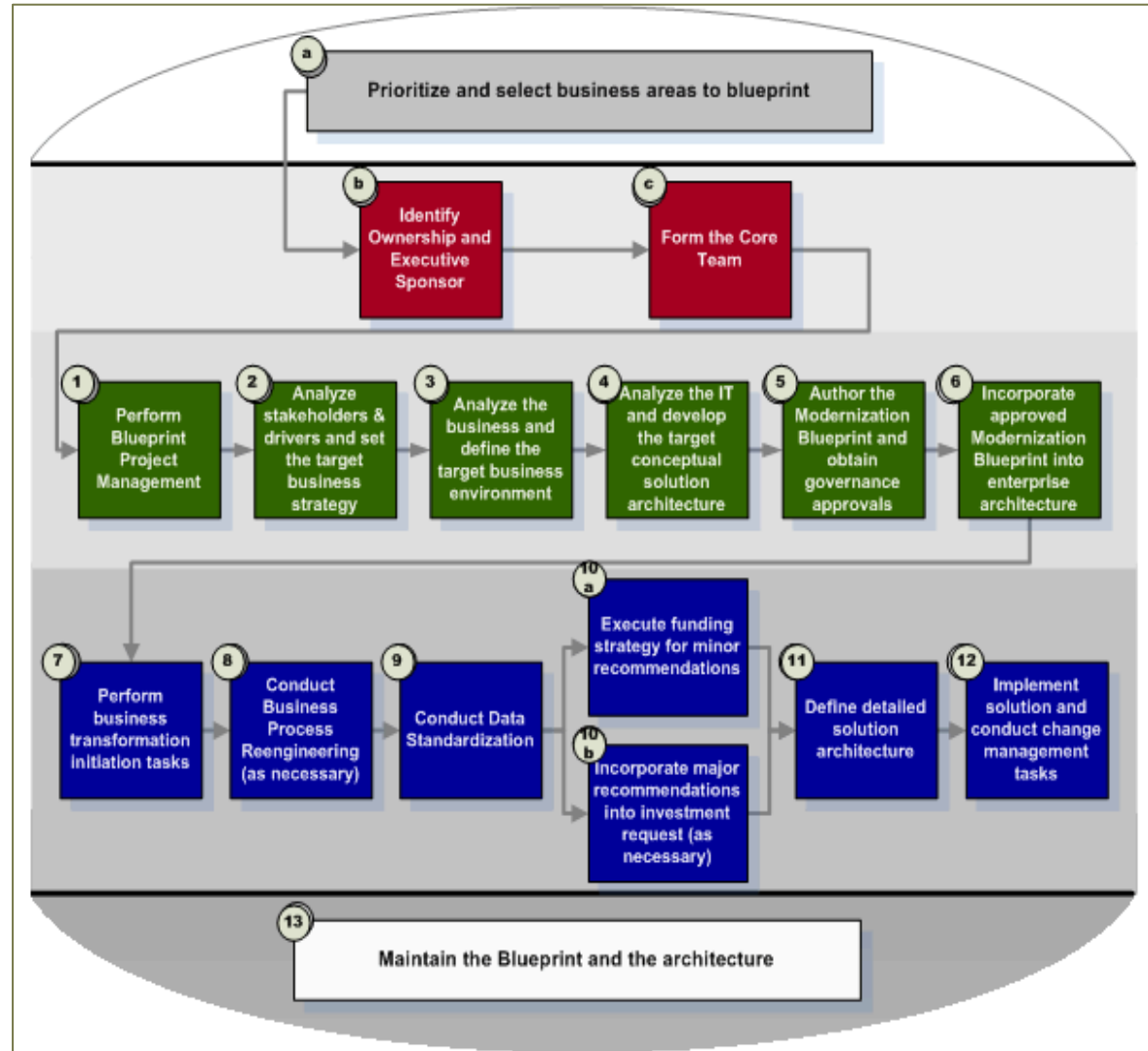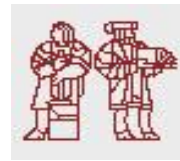# *ADS Alignment to DOI's Methodology for Business Transformation (MBT)*

DOI's Methodology for Business Transformation

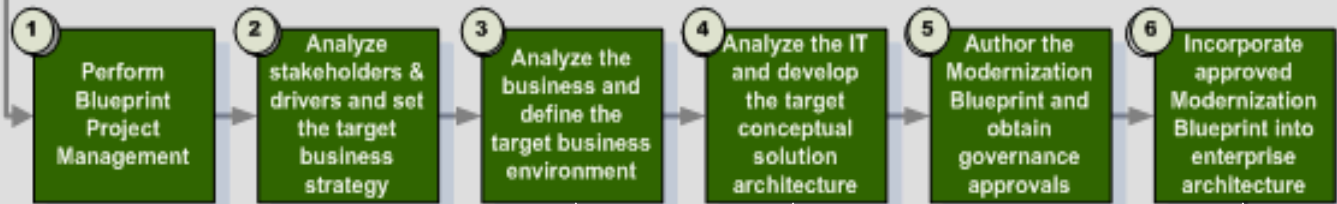**Create the Blueprint** *(6-9 months)*

Implement Business Transformation *(1-5 years)*

Maintain the Architecture *(continuous)*

ADS Alignment to MBT Blueprint Phase

Create the Blueprint *(6-9 months)*

1. Perform Blueprint Project Management
2. Analyze stakeholders & drivers and set the target business strategy
3. Analyze the business and define the target business environment
4. Analyze the IT and develop the target conceptual solution architecture
5. Author the Modernization Blueprint and obtain governance approvals
6. Incorporate approved Modernization Blueprint into enterprise architecture

- **Define Target Information Services Requirements**
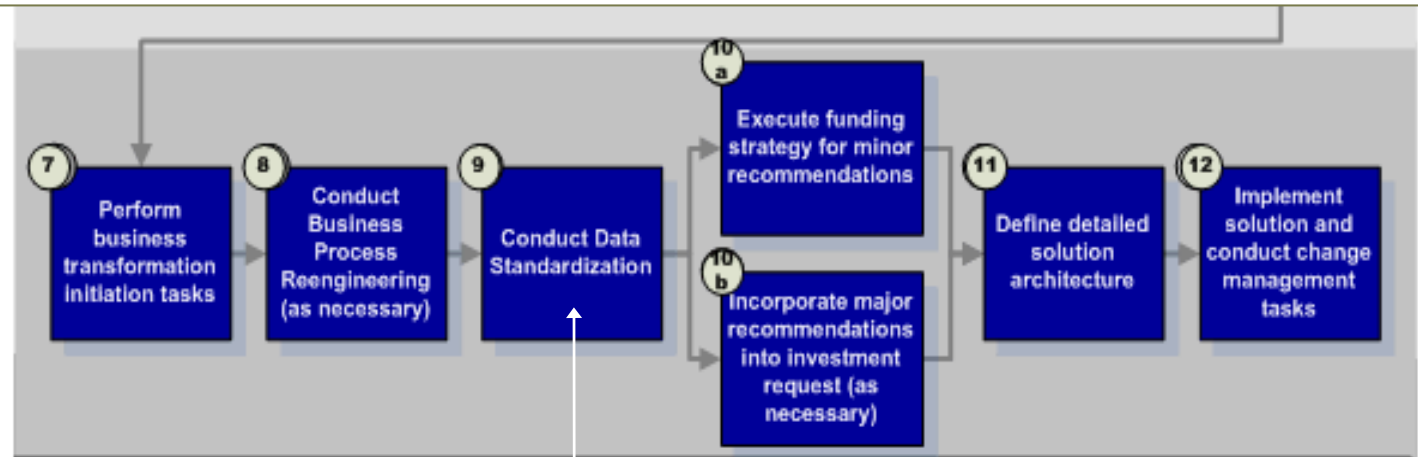- **Identify Data Steward Organizations**

- **Align As-Is Data Sources to Target Architecture**
- **Qualitatively Assess and Score As-Is Data Sources**
- **Recommend ADS and As-Is Data Source Disposition**

- **Plan ADS Transition and Data Disposition (e.g., Migration, Retirement)**
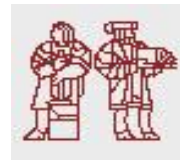
ADS Alignment to MBT Implementation Phase

Implement Business Transformation *(1-5 years)*

- **Define DOI Data Standards**
- **Quantitatively Assess ADS Data Quality (Value Chain, Content, and Dissemination)**
- **Perform Gap Analysis between Target and As-Is Data Sources**
- **Describe ADS Structure and Business Utility (Metadata)**
- **Establish Data Correction and Transition Plans**
- **Implement Data Improvement and Monitoring Controls**
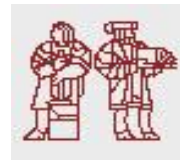
Summary and Questions

- **An ADS is a cohesive set of data assets that provide trusted, timely, and secure information to support a business process.**

- **The ADS approach is a Departmental goal to enable data consolidation, reuse and exchange.**

- **The ADS framework uses a top down and bottom up approach to designate, standardize and certify data sources.**

- **The ADS process is an integral set of activities in DOI's Methodology for Business Transformation (MBT).**

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