Architecture-Driven Modernization (ADM) Task Force: Overview, Scenarios & Roadmap

OMG Architecture-Driven Modernization Task Force

Session Overview

- **Definition, Mission, Goals & Benefits**
- **Architecture-Driven Modernization Roadmap**
- **Architecture-Driven Modernization Scenarios**

What is Architecture-Driven Modernization?

Process of understanding & evolving existing software assets for:

- Software improvement
- Modifications
- Interoperability
- Refactoring
- Restructuring
- Reuse
- Porting
- Migration
- Translation into another language
- Enterprise application integration
- Service-oriented architecture

Modernization starts where existing practices fail to deliver against business objectives

ADM Benefits

- Leverage existing software assets to deliver business value in accelerated timeframes
- Improve ROI in existing software
  - Improve productivity of software development
  - Reduce maintenance effort and cost
- Enable business agility by creating software agility

ADM Task Force Mission Statement

- Create specifications and promote industry consensus on modernization of existing applications*

*Existing application systems are defined as any production-enabled software, regardless of the platform it runs on, language it is written in or length of time it has been in production

ADM Task Force Goals

- Create interoperability across tools, platforms and vendors to:
  - Allow ADM users to leverage modernization solutions across environments
  - Free ADM users from concerns over vendor point solutions
- Leverage OMG standards to incorporate existing software assets into new architectures
- Consolidate best practices leading to successful modernization

ADM – Standards Roadmap

- RFP #1: ADM: Knowledge Discovery Meta-Model (KDM) Package
- RFP #2: ADM: Abstract Syntax Tree Meta-Model (ASTM) Package
- RFP #3: ADM: Analysis Package
- RFP #4: ADM: Metrics Package
- RFP #5: ADM: Visualization Package
- RFP #6: ADM: Refactoring Package
- RFP #7: ADM: Target Mapping & Transformation Package

ADM Scenarios

- Modernization Scenario: An initiative (e.g., portfolio management), project (e.g., migrating platforms) or a series of projects (e.g., consolidating, redesigning and redeploying an application in model-driven architecture) that is applied to existing systems.

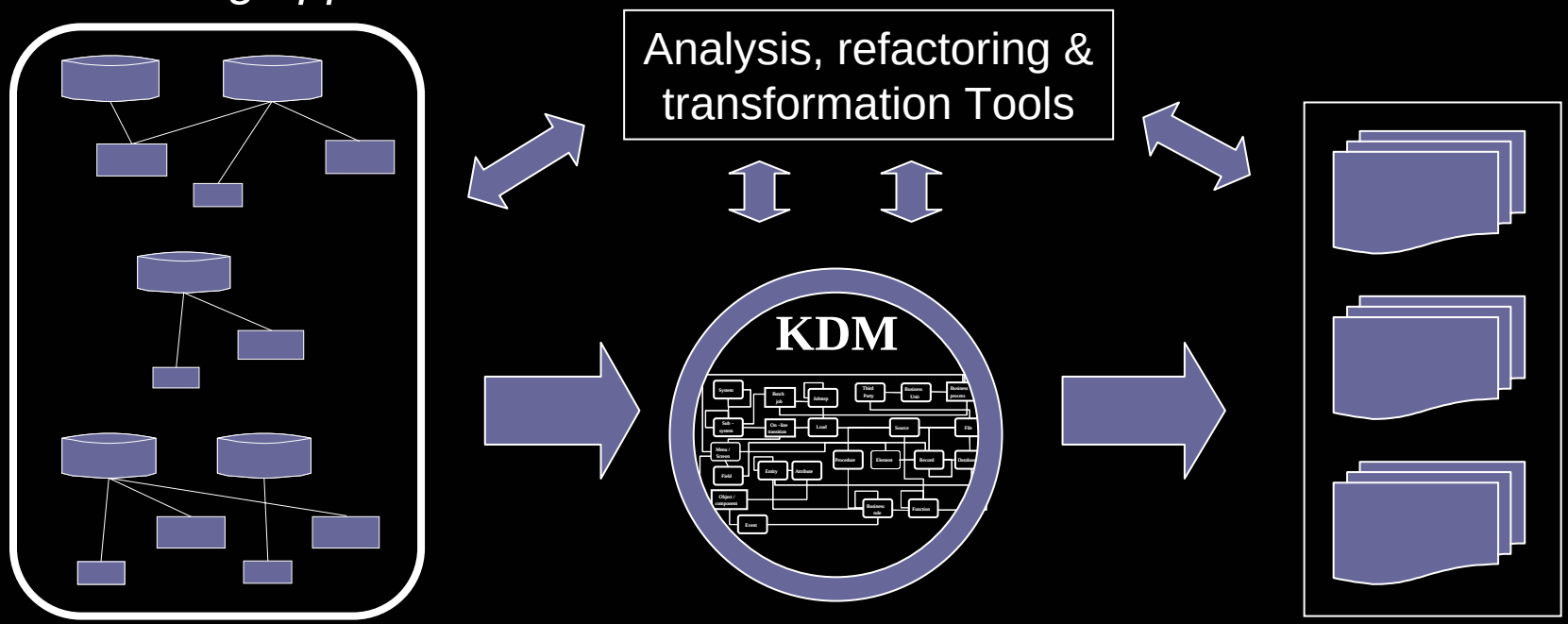
12 Modernization Scenarios*

I. Application Portfolio Management
II. Application Improvement
III. Language-to-Language Conversion
IV. Platform Migration
V. Non-Invasive Application Integration
VI. Services Oriented Architecture Transformation
VII. Data Architecture Migration
VIII. Application & Data Architecture Consolidation
IX. Data Warehouse Deployment
X. Application Package Selection & Deployment
XI. Reusable Software Assets / Component Reuse
XII. Model-Driven Architecture Transformation

* Modernization Scenario White Paper -- http://adm.omg.org/adm_info.htm#white%20papers

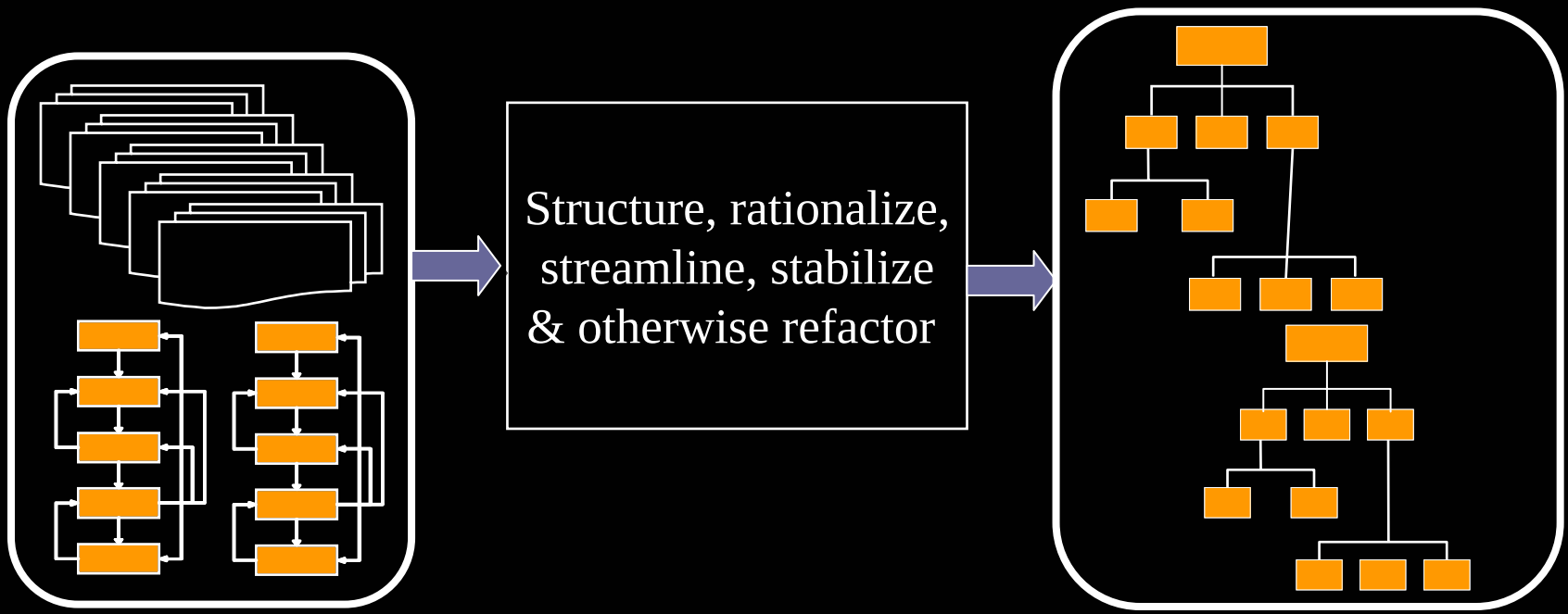
Scenario I. Application Portfolio Management

Objective: Establish multi-dimensional knowledge base for managing & transforming applications.



Scenario II. Application Improvement

Objective: Create a stabile foundation for managing, enhancing or modernizing systems. Reduce application fragility, increase quality.

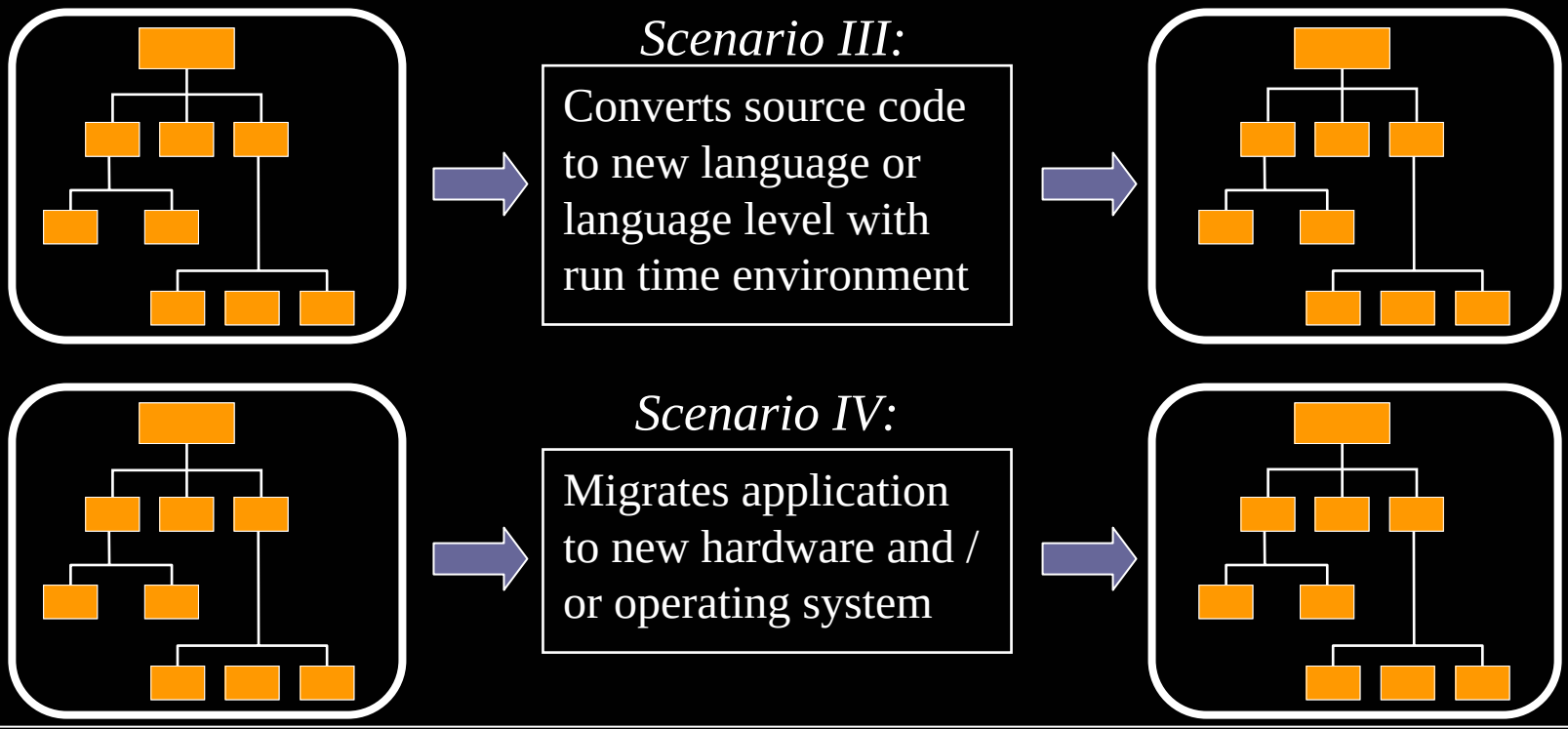


Redundant / poorly defined data & process definitions

Rationalized, structured streamlined source code

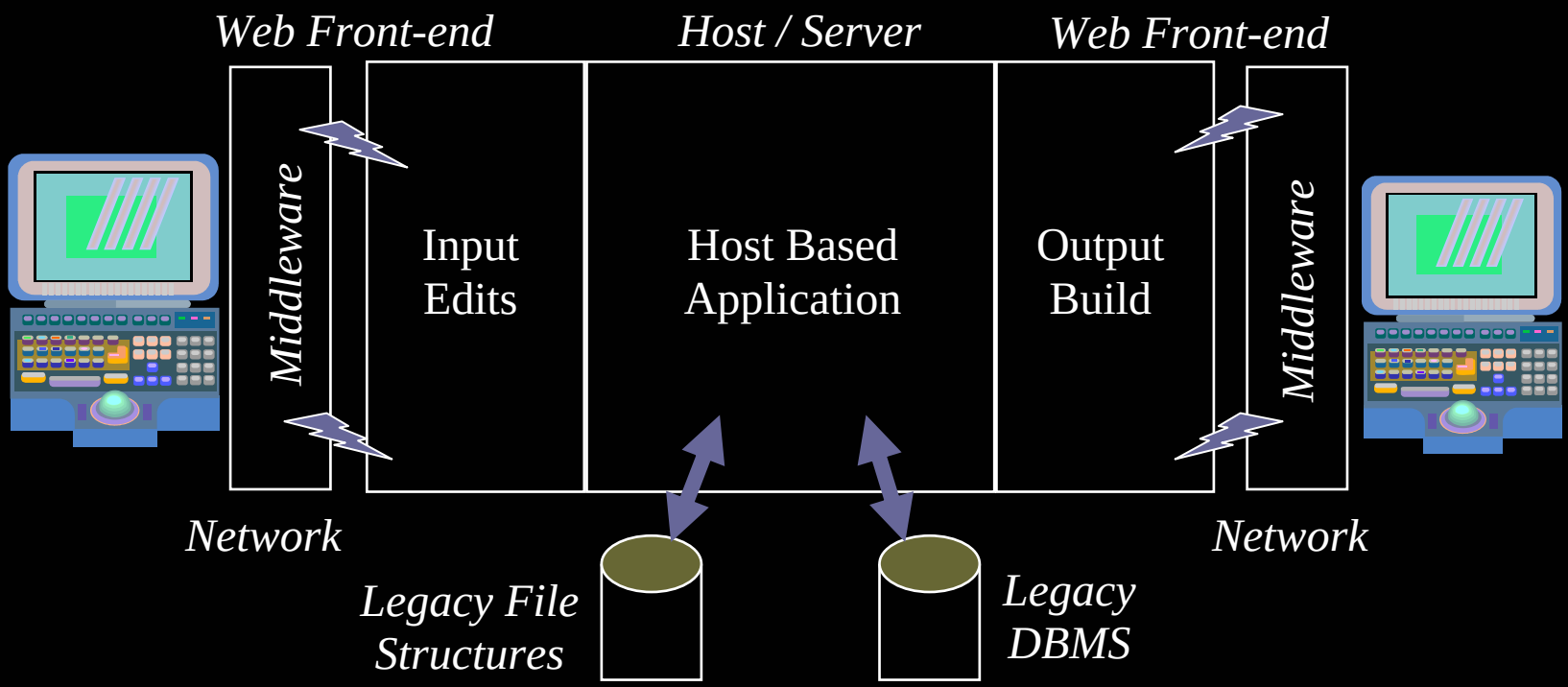
Scenario III. Language-to-Language Conversion
Scenario IV. Platform Migration

Objective: Convert applications to new language and / or run time platform. Scenarios can be performed separately or together.



Scenario V. Non-Invasive Application Integration

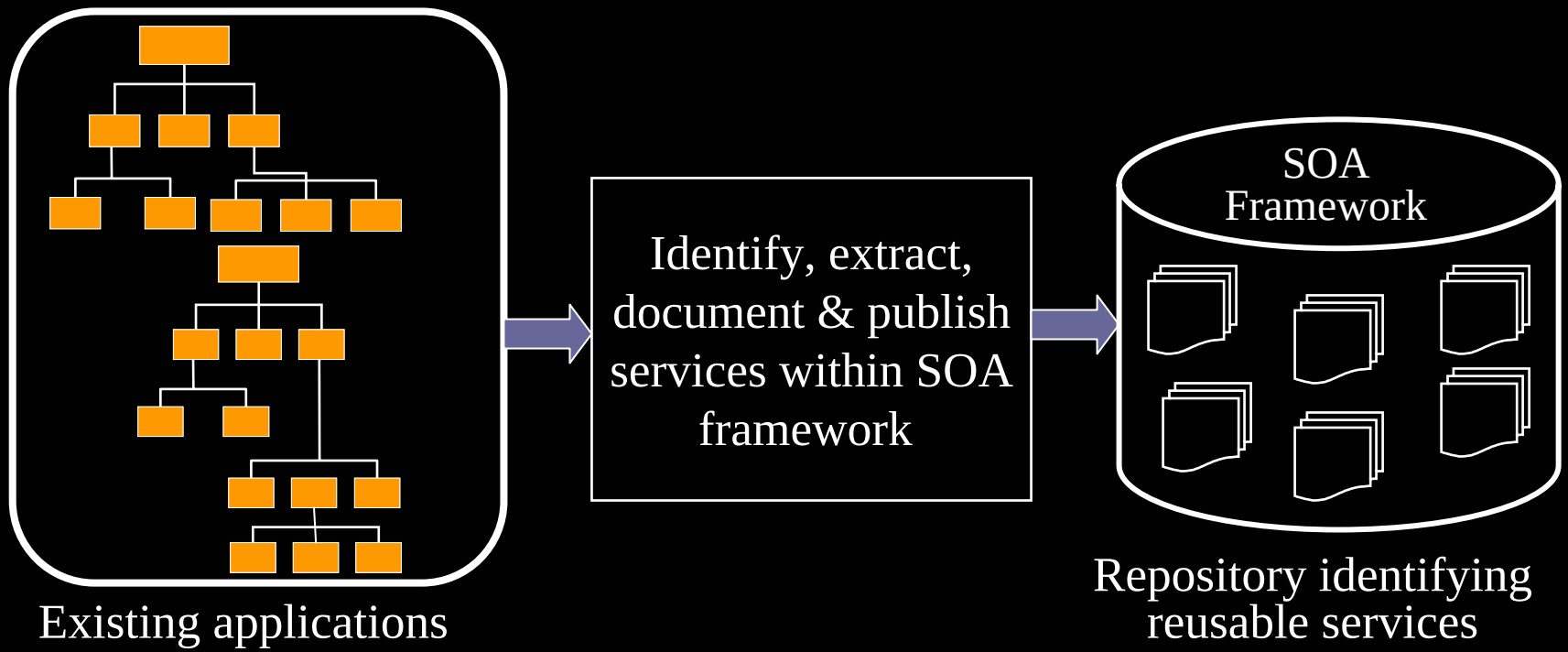
Objective: Create the option of accessing host applications & data via Web-based interfaces.*



*Non-invasive approach only impacts front-ends. Underlying architecture remains intact.

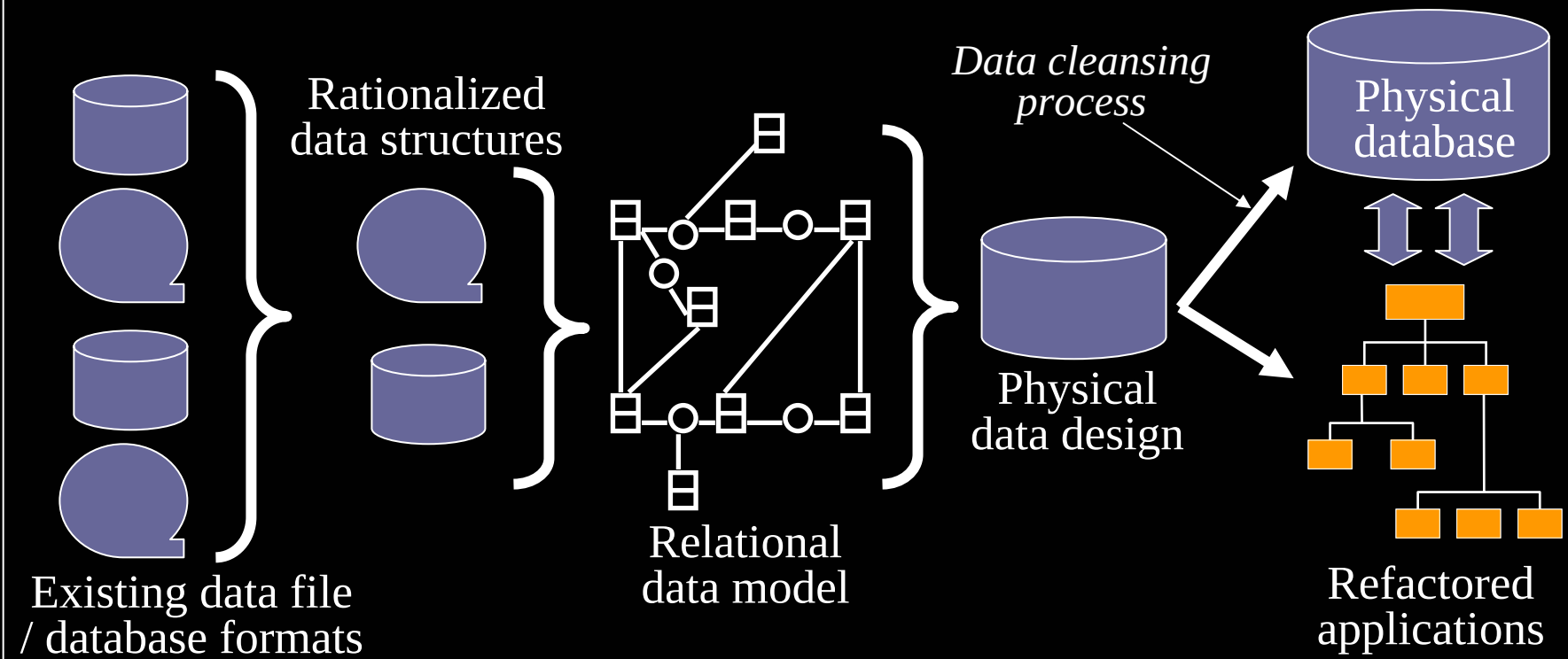
Scenario VI. Services Oriented Architecture (SOA) Transformation

Objective: Create a framework for constructing and interlinking back-end systems with the goal of making applications more agile.



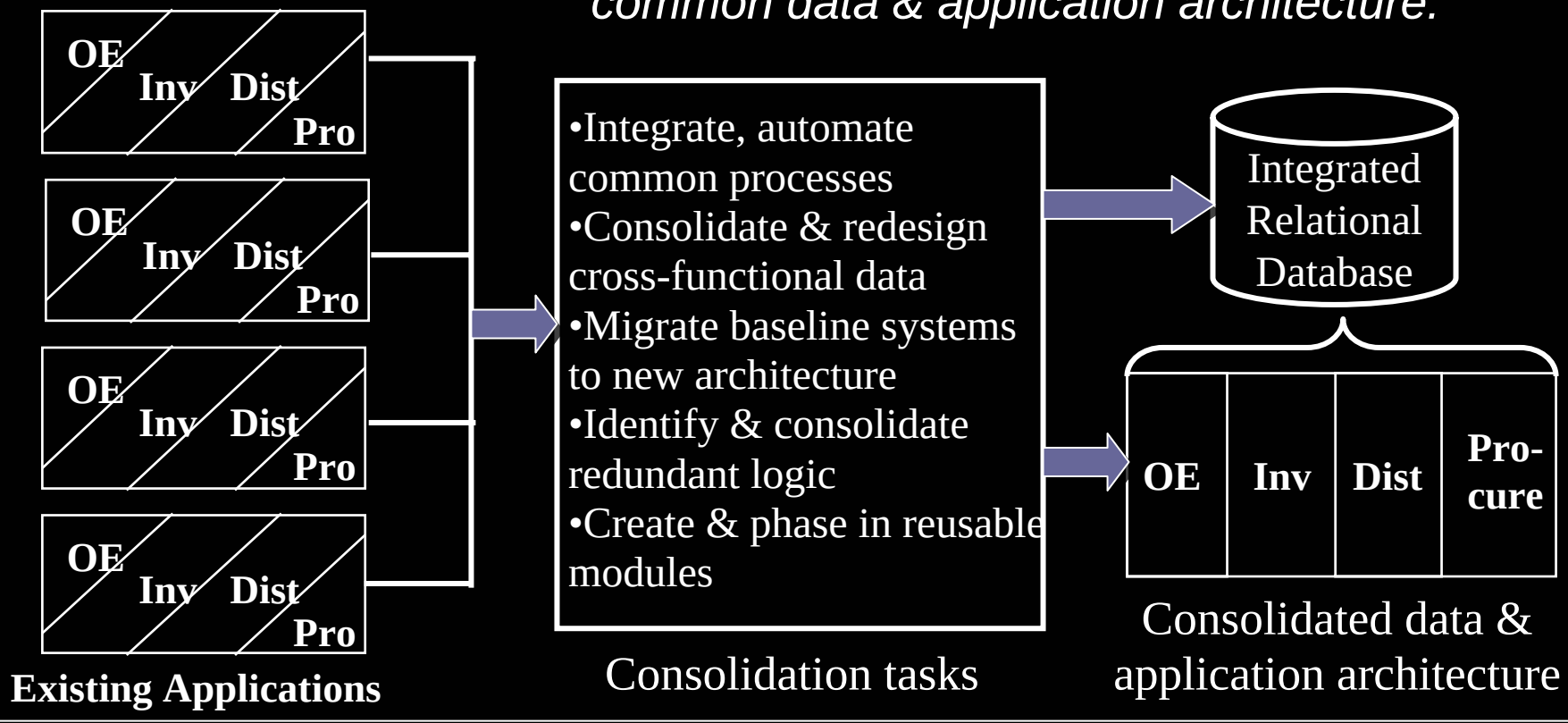
Scenario VII. Data Architecture / Database Migration

Objective: Consolidate, cleanse, redesign & migrate existing data structures to relational database. Refactor applications as required.



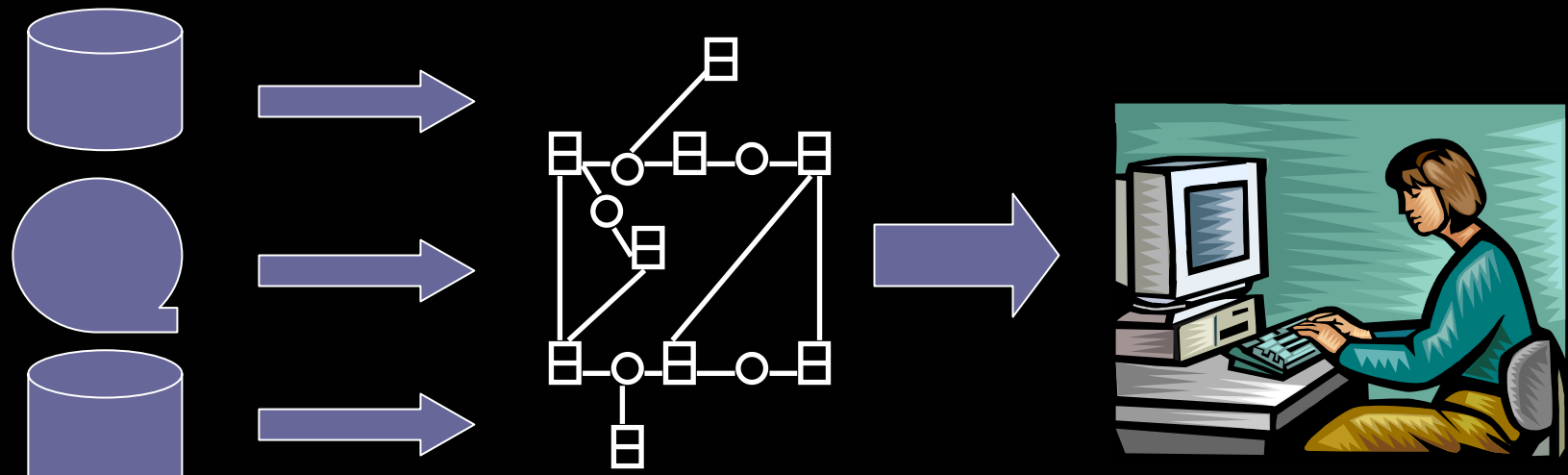
Scenario VIII. Application & Data Architecture Consolidation

Objective: Consolidate multiple redundant or related systems into a common data & application architecture.



Scenario IX. Data Warehouse Deployment

Objective: Create non-operational, consolidated view of data & make this data available to business users in ad hoc formats.



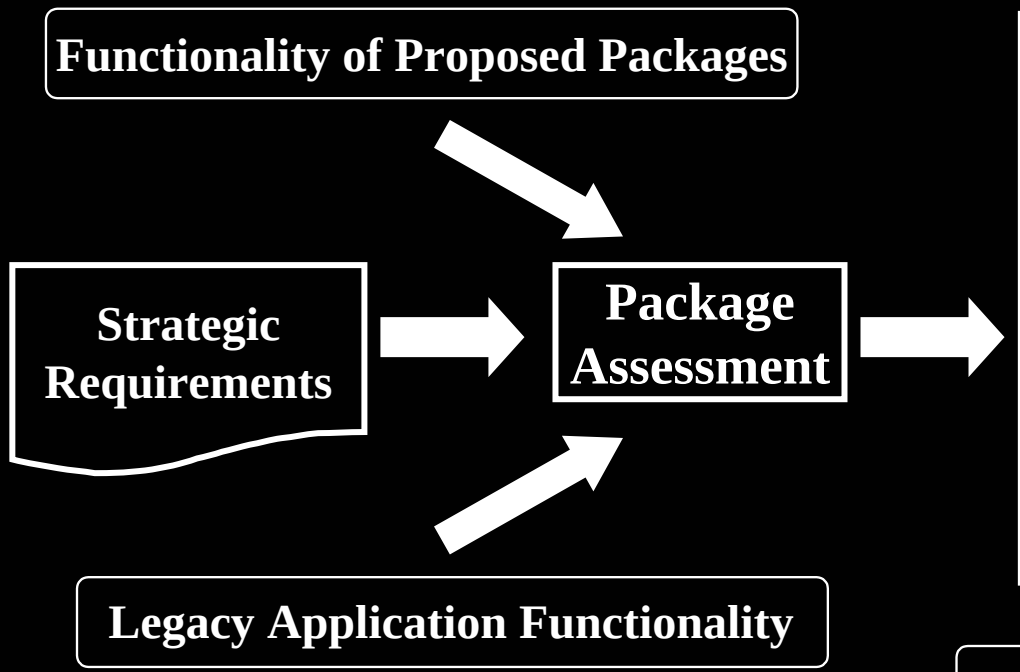
Extract, analyze, transform validate & load

Integrated, rationalized, relational view of abstracted data

End user access to cross-functional data

Scenario X. Application Package Selection & Deployment – phase one

Objective: Provide objective analysis of how well various packages meet strategic information requirements.

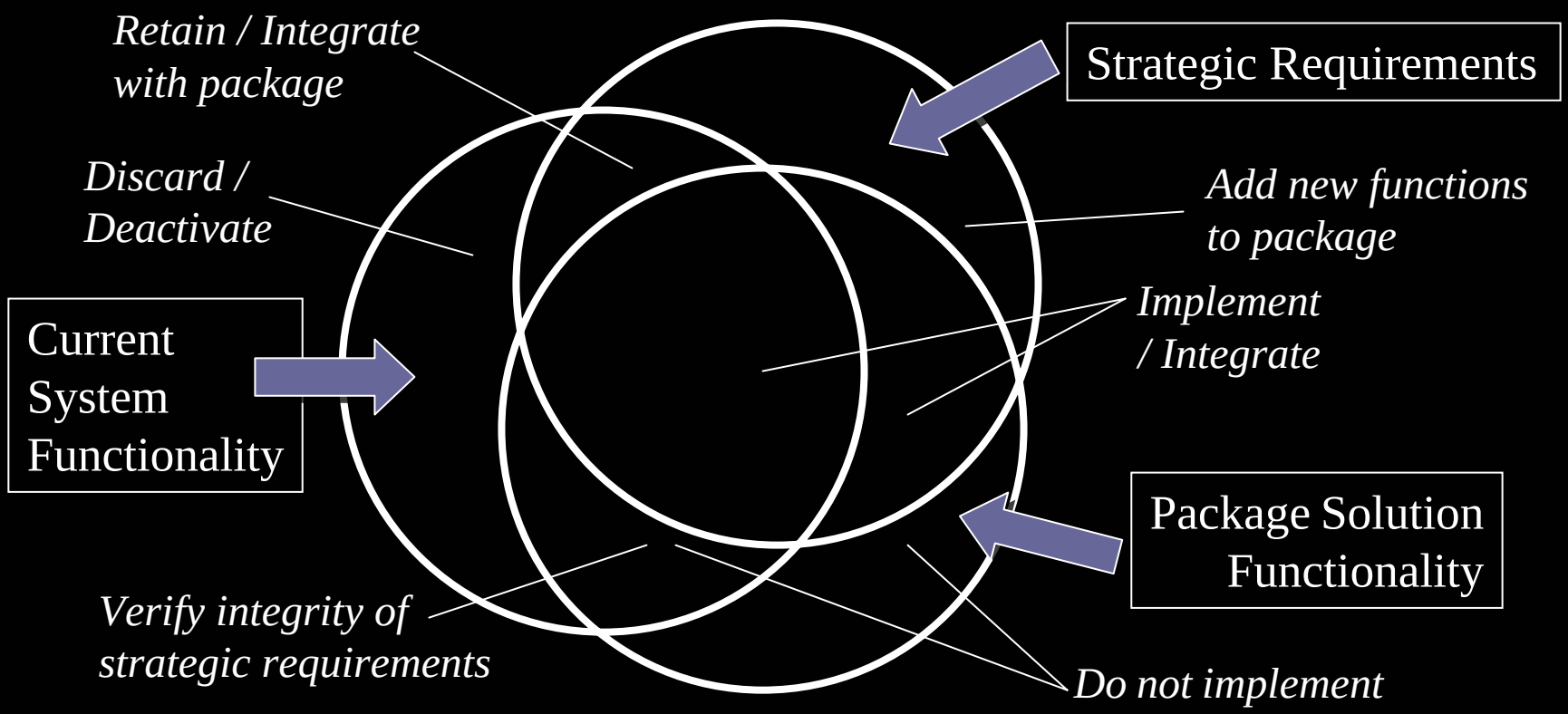


Source / Bus Function	REQ	PK1	PK2	PK3	LEG
Func a	X	X	X	X	X
Func b	X	X			X
Func c	X	X	X	X	--
Func d	X	X		X	X
Func e	X	X			X
Func f	X			X	X
Func g	X	X	X	X	X
.....	X	X		X	X
.....	X	X	X	X	--

Package Selection Results & Plan

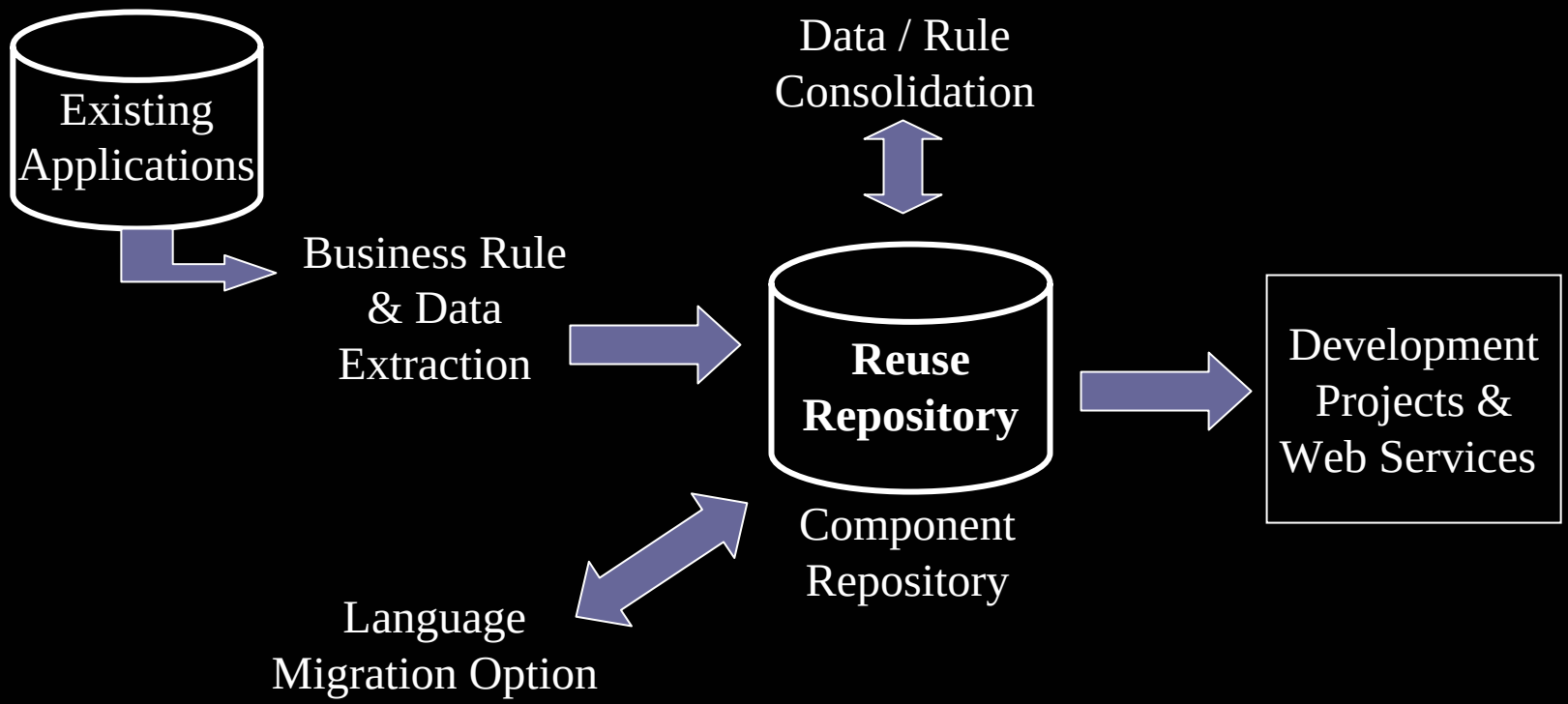
Scenario X. Application Package Selection & Deployment – phase two

Objective: Provide a concrete package deployment roadmap.



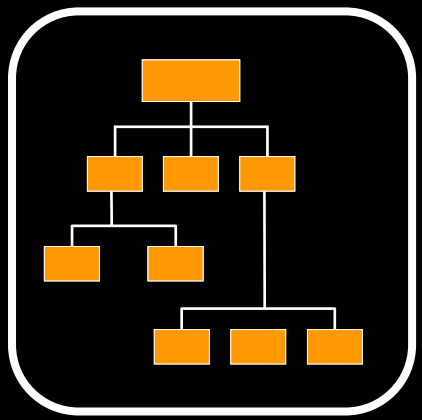
Scenario XI. Reusable Software Assets / Component Reuse

Objective: Create a repository of reusable components.



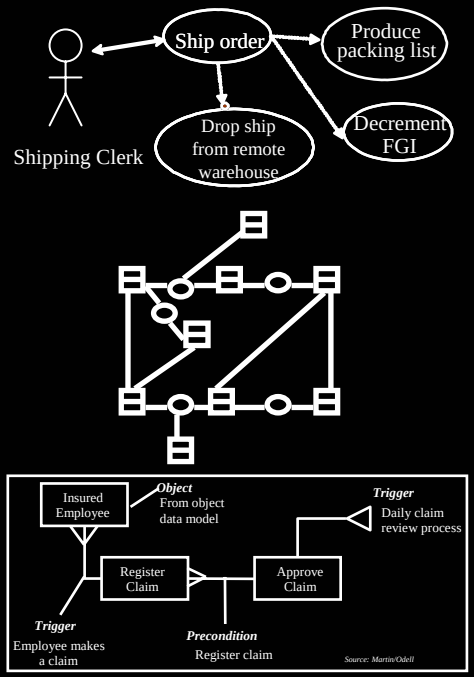
Scenario XII. Model-Driven Architecture Transformation

Objective: Migrate existing applications to an environment in which systems are maintained in models.



Existing applications & data definitions

- Extract business rules & data definitions
- Purge implementation dependent logic
- Rationalize/consolidate data & logic as needed
- Migrate/merge extracted logic & data definitions into applicable models



Sample models

Modernization: Getting Started

- Seek areas where other options have failed
- Focus on delivering user / customer value
- Seek business cost savings & revenue growth (vs. incremental IT savings)
- Start with quantifiable user benefits
- Take a phased approach

ADM Overview

- Ways to Participate
- Comments
- Questions

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