

# Selecting Services for Service Oriented Architecture

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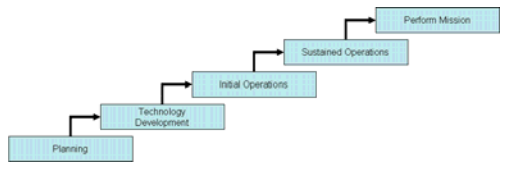
CEM IR&D

# Problem

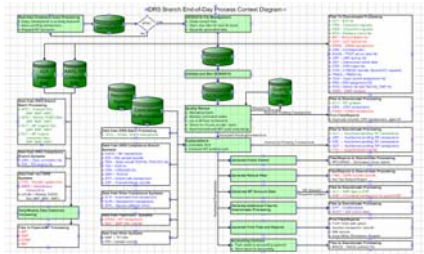
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- **How are services selected for SOA?**
  - **Current methods are ad hoc (SME based), infrastructure focused, and incomplete**
  - **Unknowns**
    - **“Top down” from requirements or “bottom up” from legacy assets?**
    - **Appropriate service hierarchy and categorization?**
    - **Service selection criteria?**
    - **Service prioritization and portfolio management**
    - **Acquisition-ready services roadmap**

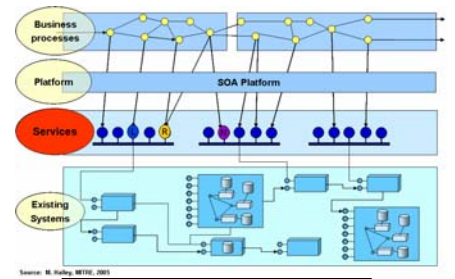
# Background



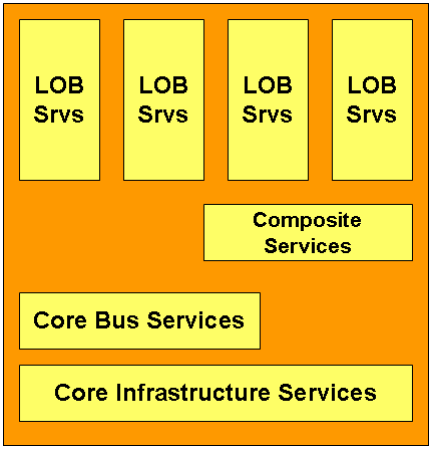
Migration to SOA



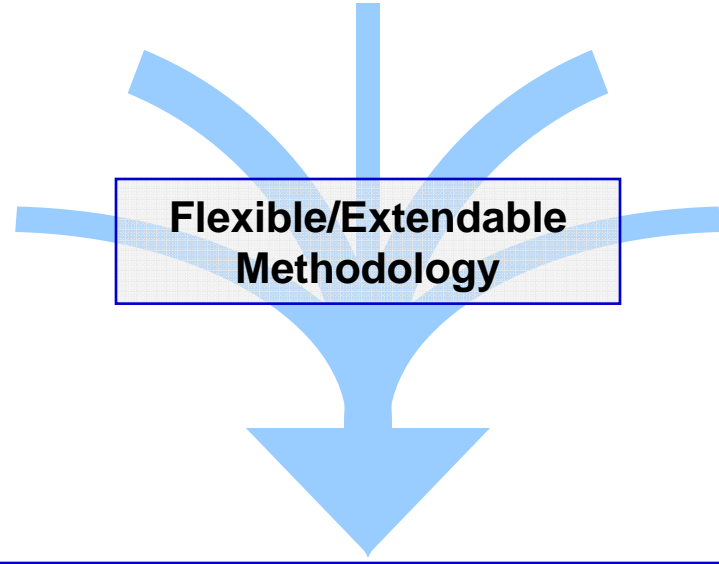
As-is Legacy Assets



To-be Future SOA



Services Hierarchy



**Prioritized Service Portfolio  
and Services Roadmap**

- 1) Strategic Relevance
- 2) Technology Requirements
- 3) Technical Feasibility
- 4) Economic Requirements
- 5) Return on Investment (ROI)
- 6) Organizational and Social Environment
- 7) Third-Party/External Stakeholders
- 8) Time to Market
- 9) Requirements

Services Criteria



# Objective

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- **Using case studies, determine how services were selected from legacy assets to form an SOA**
- **Using the cases, develop a methodology that can create a services portfolio and roadmap from legacy assets**
- **Generalize the methodology for use across the IRS and other government agencies**

# Activities

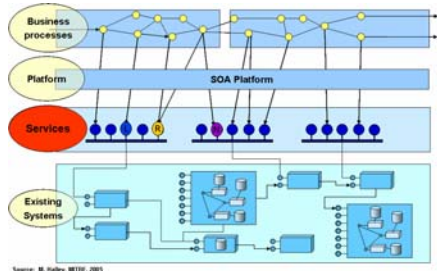
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- **Select and work closely with IRS on two large case studies (e.g., AMS, ETEC, IDRS, F&DC, other)**
- **Create method for service identification**
- **Develop decision tool for prioritization**
- **Create services portfolio and roadmap**
- **Generalize the method**

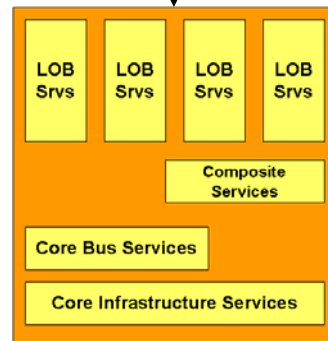
**MITRE**

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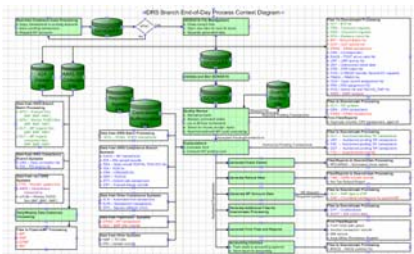
# Highlight



**TO-BE  
Demand-Driven  
Services**



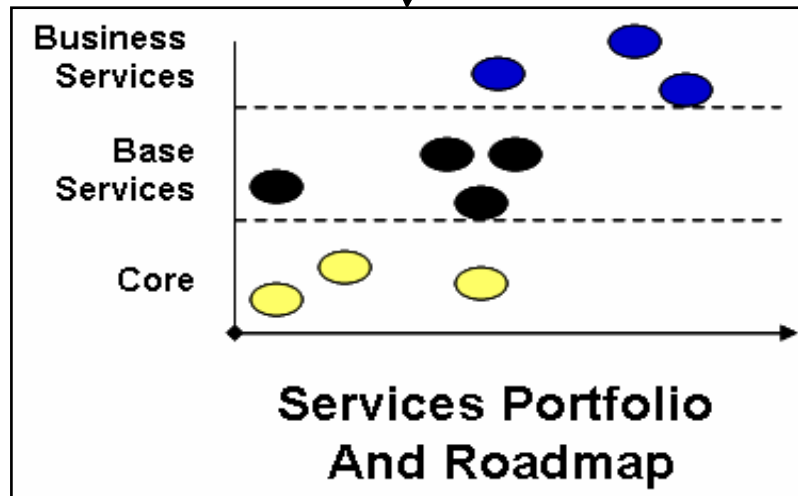
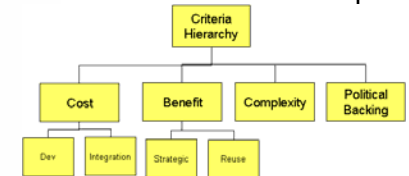
**Candidate  
Services**



**As-is Legacy  
Supply-Driven  
Services**

## Service Criteria and Decision Model

- 1) Strategic Relevance
- 2) Technology Requirements
- 3) Technical Feasibility
- 4) Economic Requirements
- 5) Return on Investment (ROI)
- 6) Organizational and Social Environment
- 7) Third-Party/External Stakeholders
- 8) Time to Market
- 9) Requirements
- 10) Reuse
- 11) Legacy Complexity
- 12) Legacy Change
- 13) Development Environment
- 14) Operational & Maintenance Environment
- 15) Risk
- 16) Data Strategy/Standardization
- 17) Enterprise Commitment to SOA
- 18) SOA Governance
- 19) Ownership

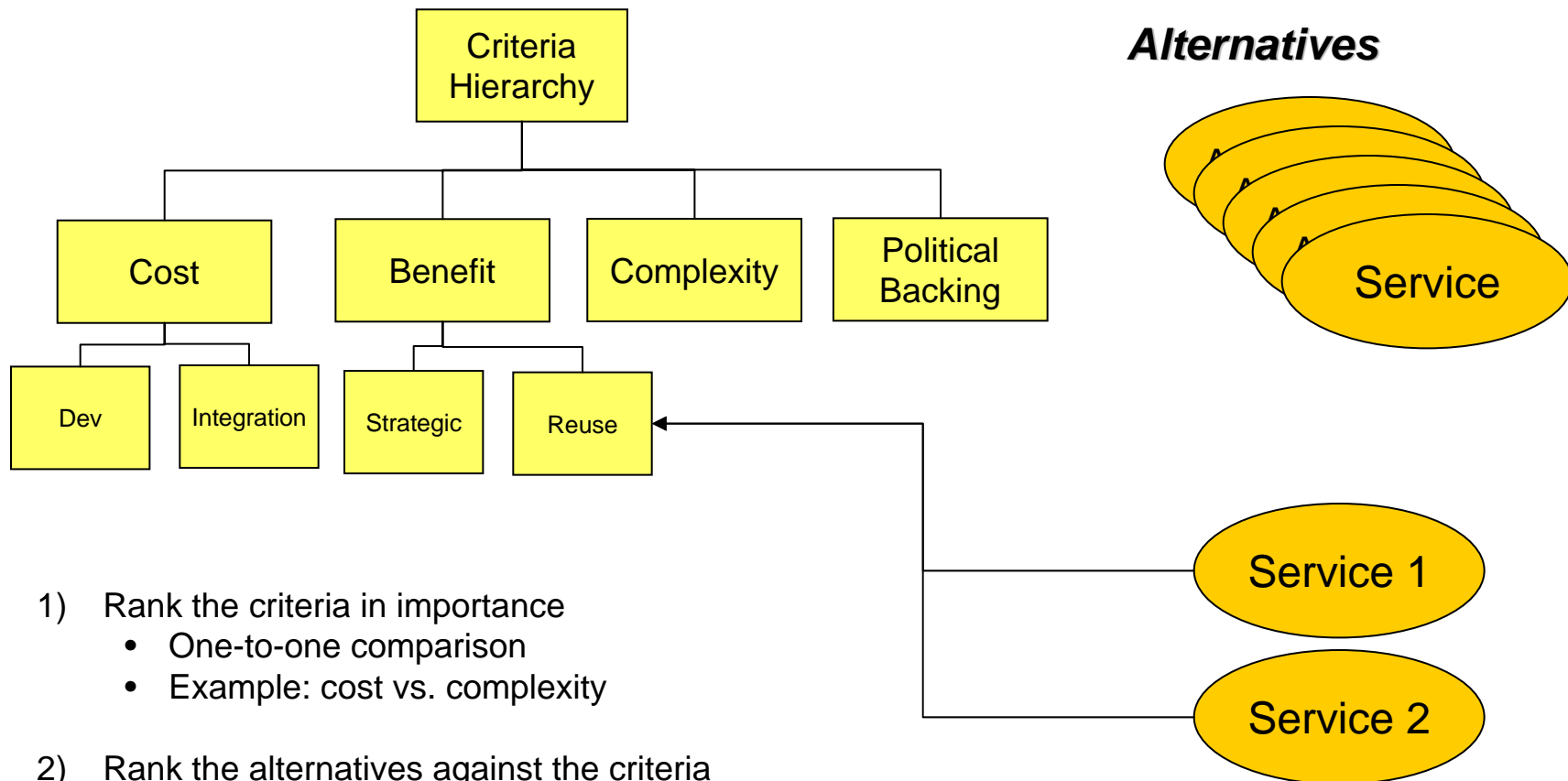


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# Demonstration

## Selection Criteria

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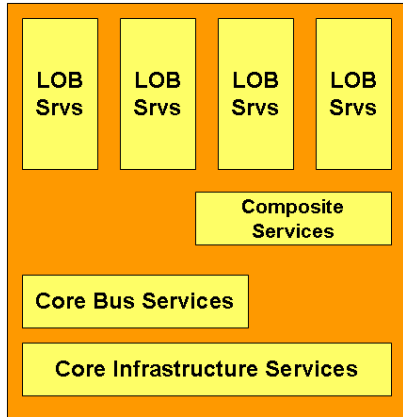
- 1) Rank the criteria in importance
  - One-to-one comparison
  - Example: cost vs. complexity
- 2) Rank the alternatives against the criteria
  - Compare 2 alternatives for each criterion
  - Service 1 versus service 2 on criteria reuse
- 3) Results are ranking of which criteria are most important, which service is most important, and sensitivity analyses of results

# Impact

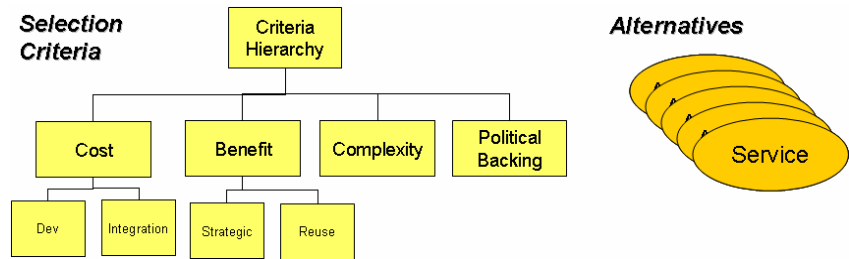
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- 1. Service roadmap for two large IRS programs**  
(Will guide services build-out strategy)
- 2. IRS-specific methodology for selecting services for other IRS programs**
- 3. Extend method for use by federal government**

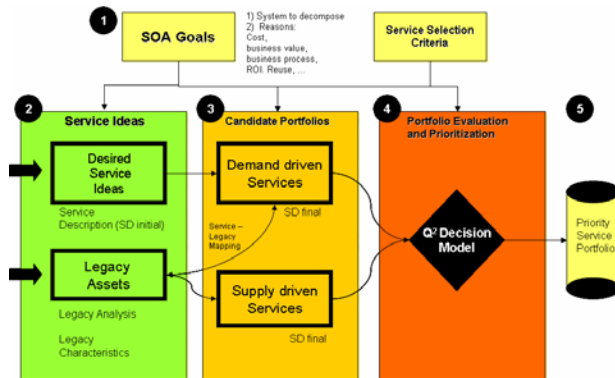
# Future Plans



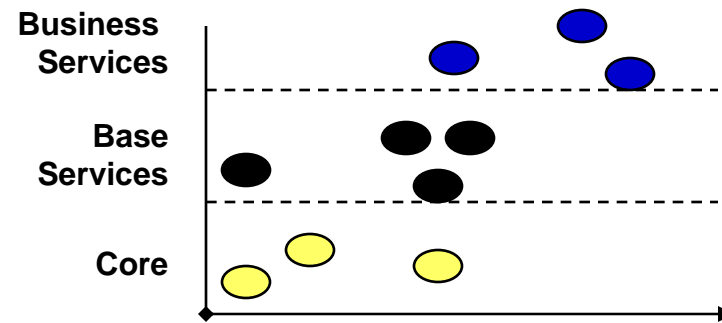
Finalize the Case Study Portfolios



Collaborative Tool for Service Portfolio Selection



Generalize the Selection Method



Use of Services Roadmap To Guide Acquisitions