

# Making the Case for SOA

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## Agenda

- **Service Oriented Architecture (SOA) Research Project Overview**
- **Introduction to SOA**
- **SOA Research Findings**
- **Cost / Value Analysis for SOA Projects**
- **Status and Steps Forward**

## SOA Research Overview

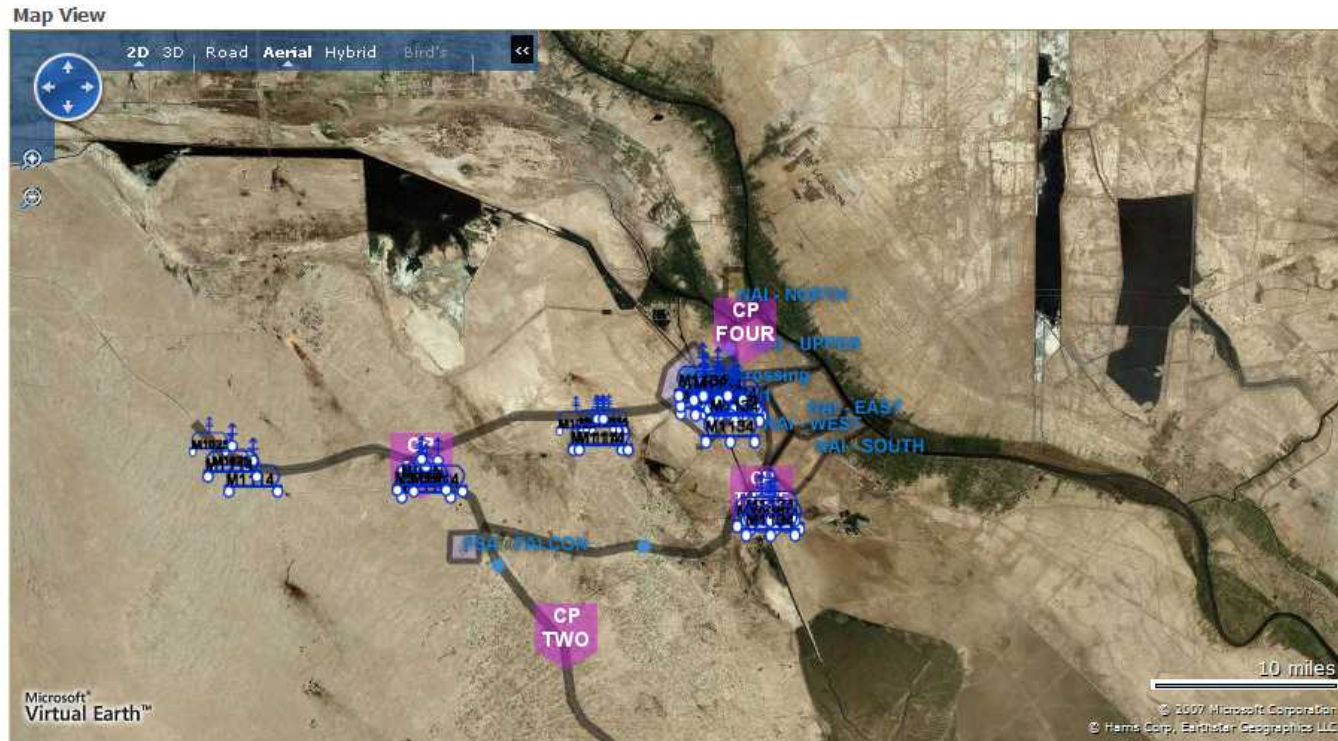
- **Research Project focused on affordability and process issues associated with SOA – working with Army CERDEC**
- **Study SOA projects with focus on cost and value drivers**
- **Identify where existing cost estimating technologies work for SOA**
- **Develop methodology for extending existing technologies where necessary**
- **Develop methodology for assessing value and performing business case analysis for SOA projects**

## Introduction to SOA

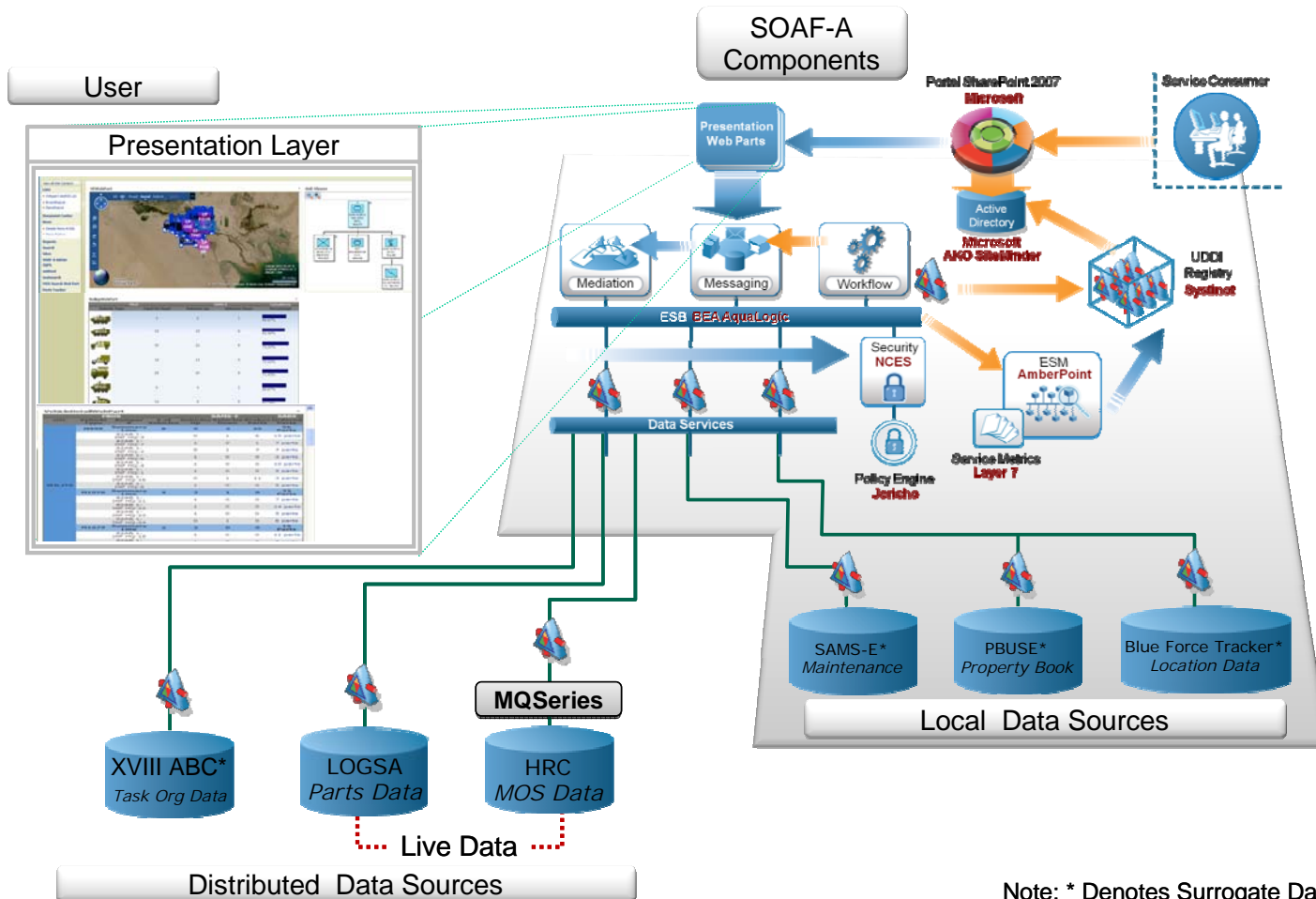
- **SOA uses networking capabilities to integrate applications in a way that is independent of:**
  - Architecture
  - Programming language
  - Development platform
  - Vendor
  
- **Service Orientation can be thought of as the next generation of object orientation**
  - New degree of abstraction
  - More sophisticated tools available to deploy

## Service Orientation from the Software Perspective

### Division Maintenance Status Portal



# Division Maintenance Status Portal



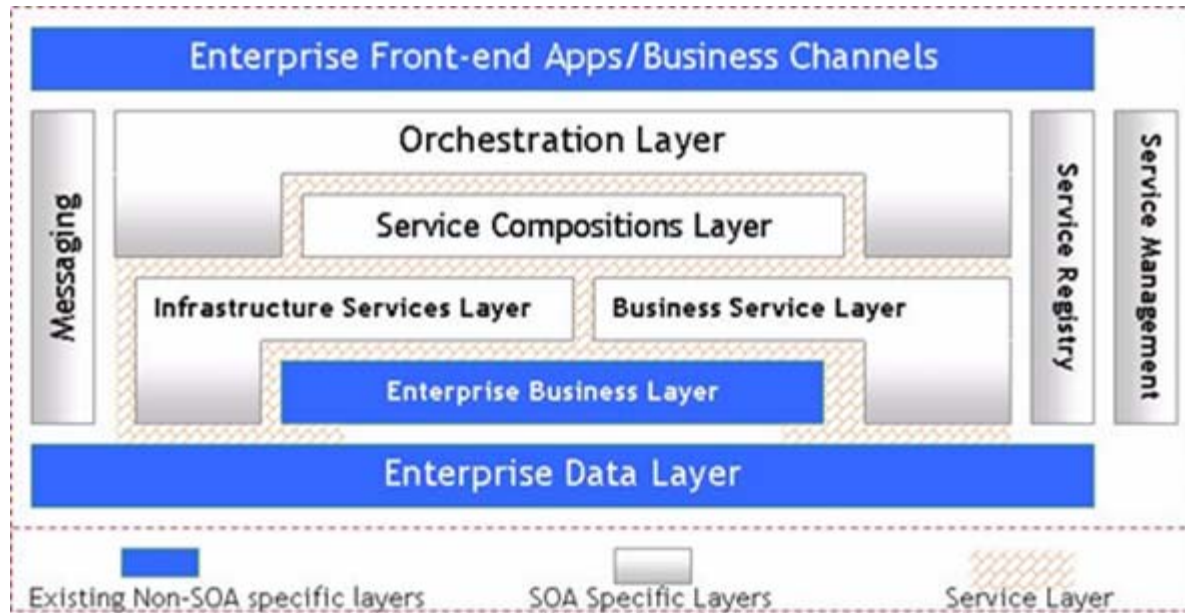
Note: \* Denotes Surrogate Data

## Why SOA? The Value Proposition

- **Value to the business**
  - Agility
  - Visibility of business processes
  - Business/IT alignments
  - Better, faster decision making
  
- **Value to IT**
  - Reduced redundancy
  - Development efficiency increase (as services are reused)
  - Loose coupling reduce impact of changed processes

## SOA – a more Technical Perspective

- Infrastructure provides services multiple apps need
- Business services implement rules specific to business or organization
- Business processes are composed through orchestration layer

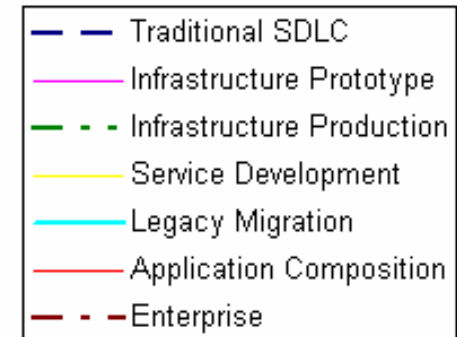
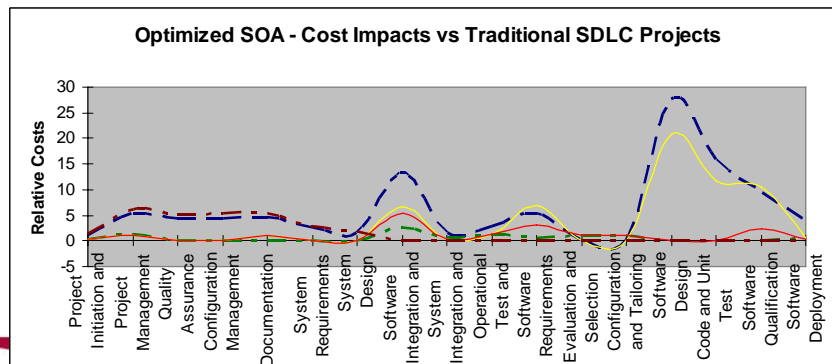
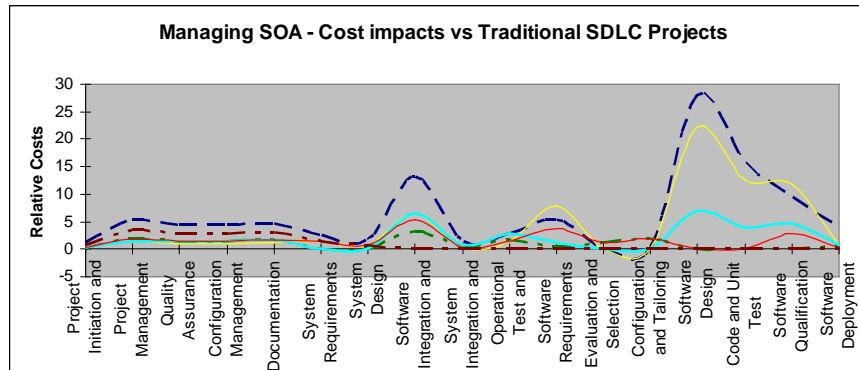
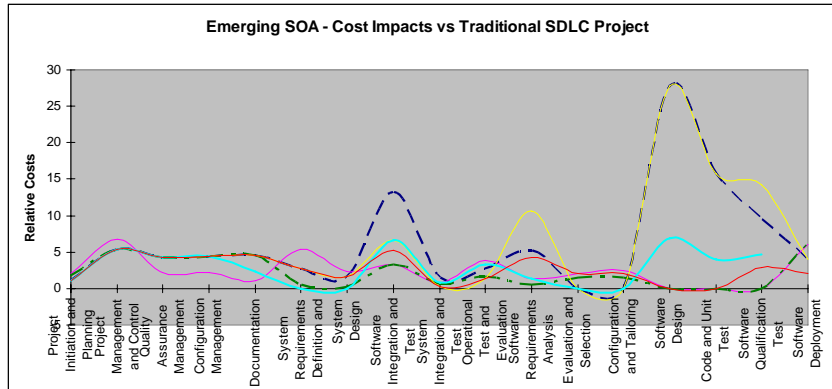




## SOA Research Findings – where are Costs Generated?

- **Three levels of SOA Maturity studied**
  - Emerging
  - Managed
  - Optimized
  
- **Five distinct areas are being studied**
  - Deploying infrastructure prototype
  - Deploying instances of infrastructure ('production')
  - Developing Services
  - Migrating legacy capabilities to Services
  - Application Composition

# SOA Research Findings – Maturity and project type(s)



## SOA Research Findings – Enterprise Vs Project Level Cost

### ■ Emerging Projects

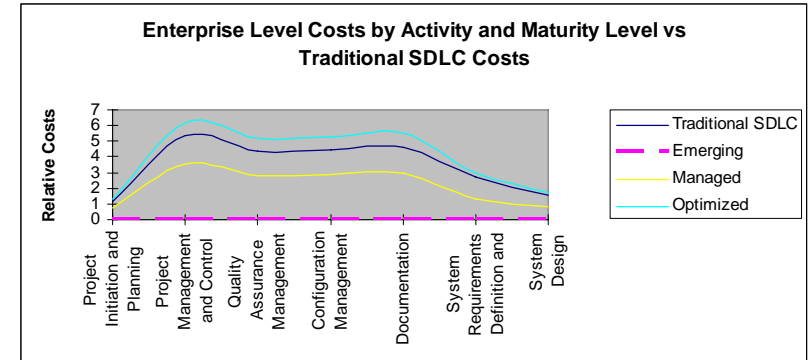
- Each a new adventure
- IT Staff is learning about SOA technologies
- Driven by a few SOA literate individuals

### ■ Managed Projects

- Organizational Commitment
- SPA Stakeholder board
- More decisions made at an enterprise level

### ■ Optimized Projects

- SOA Entrenched
- SOA Center of Excellence
- Virtually all planning, management and decisions at enterprise level



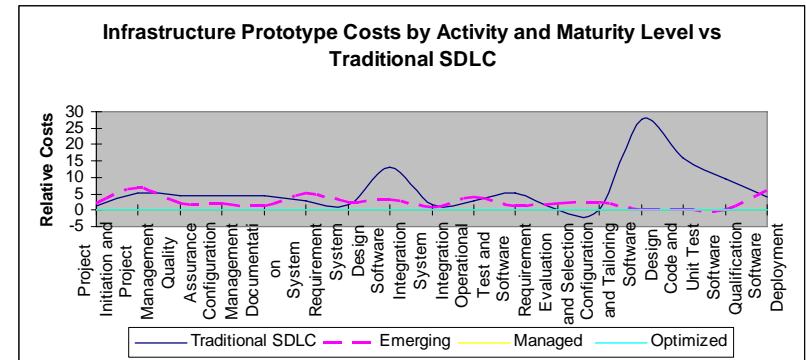
## SOA Research Findings - Organizational Influences

- **Organizational Cost Drivers**
  - At all maturity levels
    - Number of stakeholders
    - Amount and granularity of data
  - When SOA is emerging and managed (sometimes)
    - Existing governance policy
    - Extent of existing Enterprise Architecture
    - Clearly defined ownership
    - Organizational agility
    - Organizational commitment

## SOA Research Findings - Infrastructure

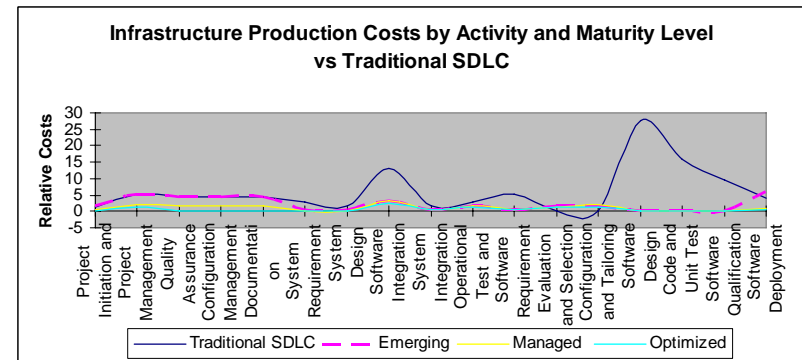
### ■ Prototype

- Only relevant for emerging SOA
- R&D Effort
- Evaluation, Selection, Tailoring
- Significant drivers:
  - Skill set of staff, Existence of Enterprise Architecture



### ■ Production

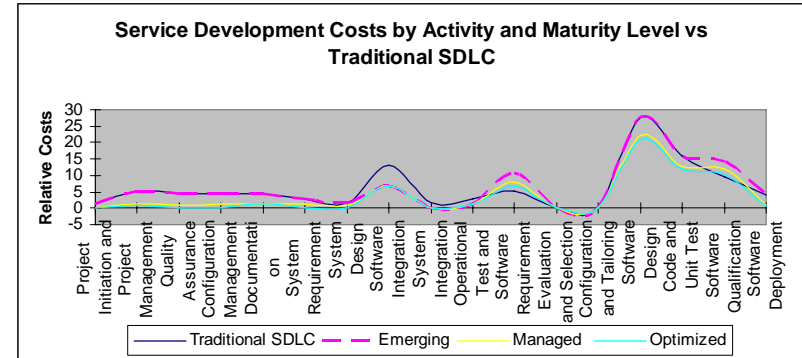
- Deploying instances of stack for scalability, redundancy, etc.
- No two completely alike but learning assumed
- Drivers include:
  - Degree of invention
  - Legacy technology
  - Communication among deployment teams



## SOA Research Findings – Service Development

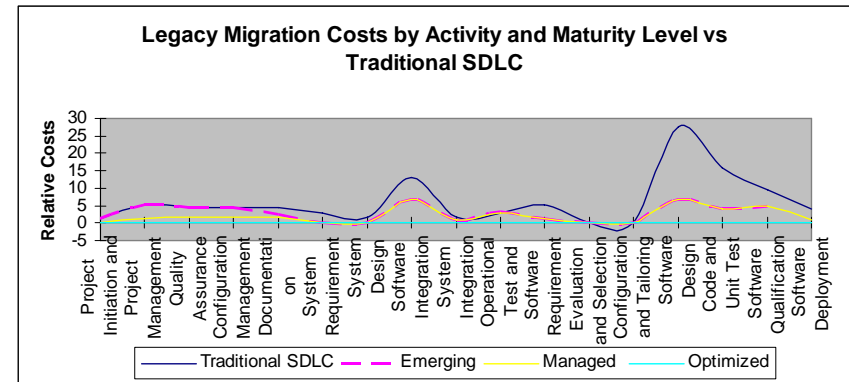
### ■ Service Development

- ‘Design for Reuse’ on steroids
- Emphasis on requirements
- Drivers at all levels of maturity:
  - Amount of data
  - Degrees of data granularity
- Drivers in early stages
  - Skill set of developers
  - Familiarity with SOA
  - Business process understanding
  - Understanding of business processes
- Drivers as maturity is reached
  - Extent of service inventory



## SOA Research Findings – Legacy Migration

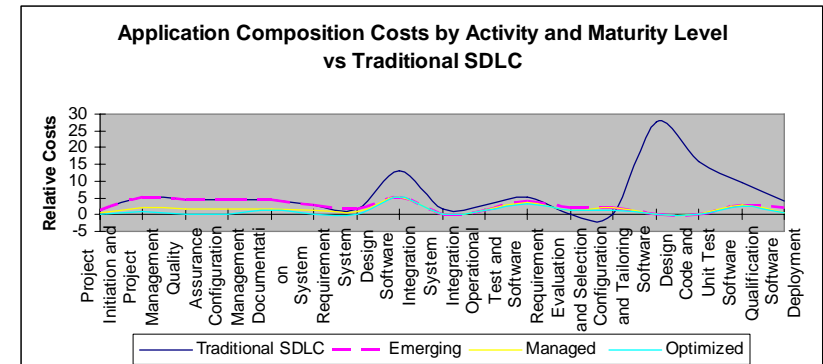
- **Software Reuse Project**
- **Not relevant for optimized SOA**
- **Significant Drivers**
  - Technology Maturity of legacy application
  - Type of migration/migration requirements
  - Data issues
  - Skills of developer
    - Familiarity with SOA and SOA Migrations
    - Familiarity with Legacy Application
    - Familiarity with SOA Infrastructure Technology



## SOA Research Findings – Application Composition

### ■ Application Composition

- Service identification – requirements and evaluation type activities
- Integration and deployment activity
- As SOA emerges – infrastructure changes likely
- Significant drivers
  - Data issues
  - Skill and Knowledge of IT Staff
  - Number of services available





## SOA Business Case Analysis Framework

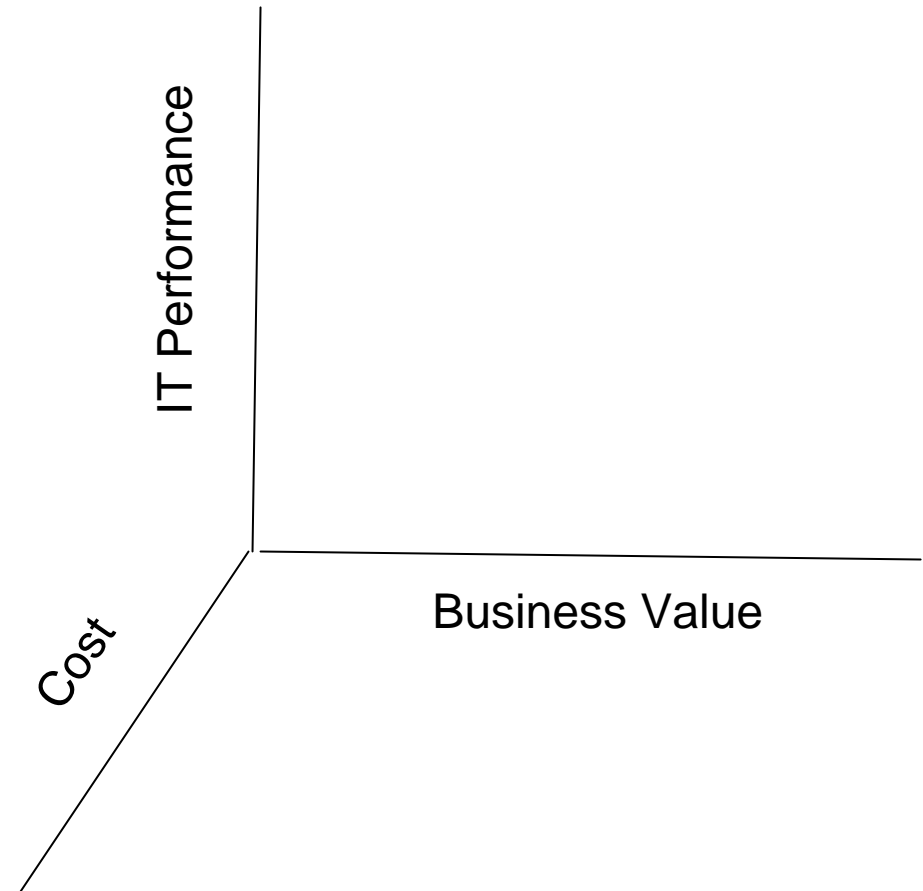


- **Modified Business Value Index**
  - Uses Intel's Business Value Index as base
  
- **Includes elements of OMB e300 to include Performance Reference Model**
  - Measurement Areas: General Areas of Interest
  - Measurement Categories: Performance Criteria
  - Measurement Indicators: Specific methods of measure
  
- **Includes elements of Gartner's ITFM concepts**

## Recommended SOA Business Case Analysis Framework

- **Measurement Areas:**

- IT Performance
- Business Value
- Cost



## Value - Measures of Performance / Measures of Effectiveness

### IT Performance

- Service Re-Use
- Productivity

### Cost

- Cost Avoidance
- Retrospective ROI

### Business Value

- Business Alignment
- Agility
- Adaptability
- Flexibility
- Delivery

## Status and steps forward

- **Data collection on SOA cost drivers on going within and outside of the Army**
- **Identification of cost drivers for SOA at various levels of maturity**
- **Developing methodology to estimate SOA costs using TruePlanning for Products**
- **Alignment of Measures of Effectiveness and Measures of Performance with KPPs to support Analysis of Alternatives for SOA projects**
- **Next steps will incorporate the methodologies provided in phase I into commercial solution (prototype) customized specifically for Army requirements focused on Analysis of Alternatives**

# Questions



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