The 23rd Open Group Enterprise Architecture Practitioners Conference

Service Oriented Enterprise Architecture and Service Oriented Enterprise

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Content Summary

n **The current state and trend in SOA practice**

n **Enterprise architecture, service oriented architecture, and service oriented enterprise architecture**

n **How service oriented enterprise architecture relates to enterprise architecture**

n **Concept of service oriented enterprise**

n **Service oriented domain in service oriented enterprise**

n **Relationship of service oriented enterprise with SOA**

n **From service oriented enterprise architecture to service oriented enterprise**

n **The impact of service orientation to an enterprise**

n **Cloud computing continues the evolution towards service-orientation enterprise**

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The Current State and Trend for SOA Practice

- **Current State**

  - More emphasis on applications and systems, weak in business involvement regarding

    - Enterprise Planning: business model, service model, cost model, etc.
    - Enterprise Management and Operation: service portfolio, lifecycle and governance, etc.

  - Started making progress in infrastructure to support service orientation

    - Cloud computing (promoted by Federal CIO, facilitated by industries)
    - Service oriented infrastructure (or infrastructure as a service, in addition to cloud computing support)

  - Lack of clarity about where SOA applies and where it doesn't

- **Future Directions**

  - Apply the service oriented approach across the full enterprise IT planning and operation lifecycle

  - Make progress in SOA applicable areas (e.g. cloud computing currently), and better handle their natural dependencies

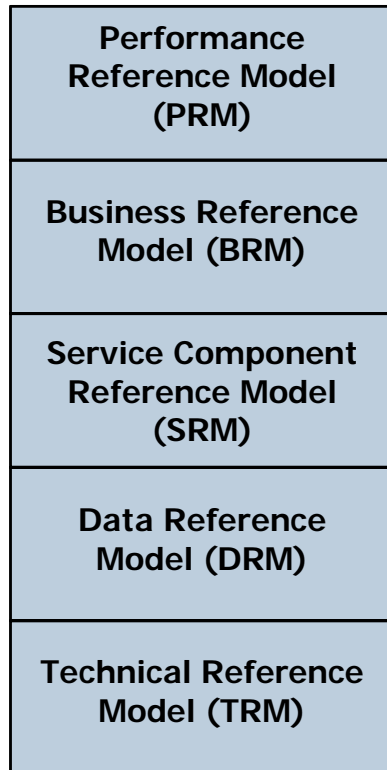 - SOA is a means for achieving goals, not a goal by itself

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EA, SOA, and SOEA

- **EA** is an established discipline that deals with architectures in enterprise scope. It's a subject domain that is independent of approaches and methodologies for its development and presentation

- **SOA** is an architecture style and approach that emphasizes well-defined, loosely coupled, and sharable services

- EA provides SOA with an enterprise view; SOA brings new agility to EA by delivering tangible results, which helps EA get broader acceptance and increased usability

- **SOEA:** EA modeling with service-oriented style and approach
  - SOEA uses SOA as a practical modeling approach for appropriate part of EA development.
  - SOEA bridges EA with solution architecture and implementation by layered service components across business, application, and technology.
  - SOEA links enterprise model with service model that enables a better implementation from business strategies to IT capabilities.
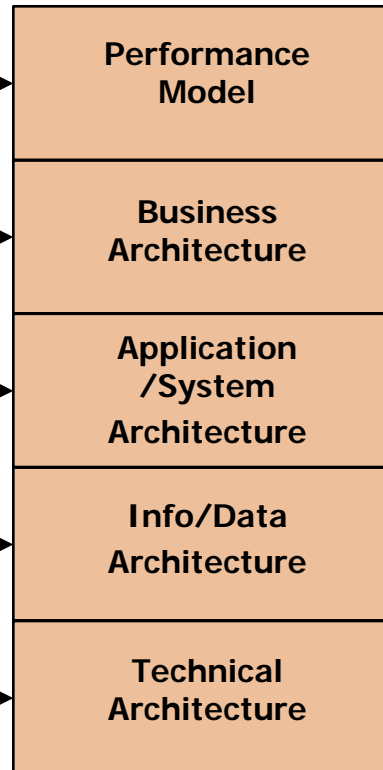
How SOEA Relates to EA
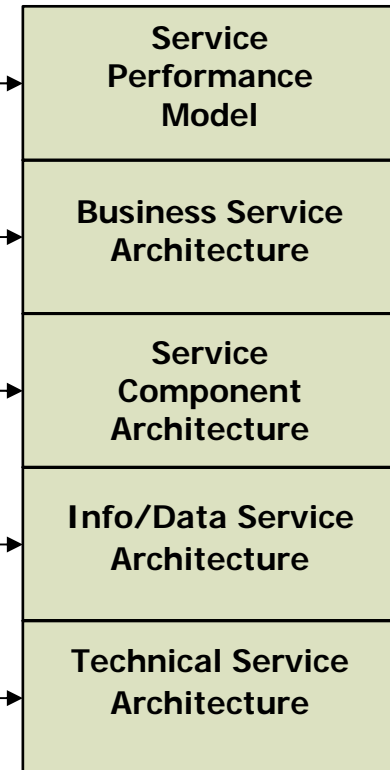
- Progression from FEA to EA to SOEA

Reference Architecture (FEA)	EA for an Enterprise	Service Oriented EA
Performance Reference Model (PRM)	Performance Model	Service Performance Model
Business Reference Model (BRM)	Business Architecture	Business Service Architecture
Service Component Reference Model (SRM)	Application /System Architecture	Service Component Architecture
Data Reference Model (DRM)	Info/Data Architecture	Info/Data Service Architecture
Technical Reference Model (TRM)	Technical Architecture	Technical Service Architecture

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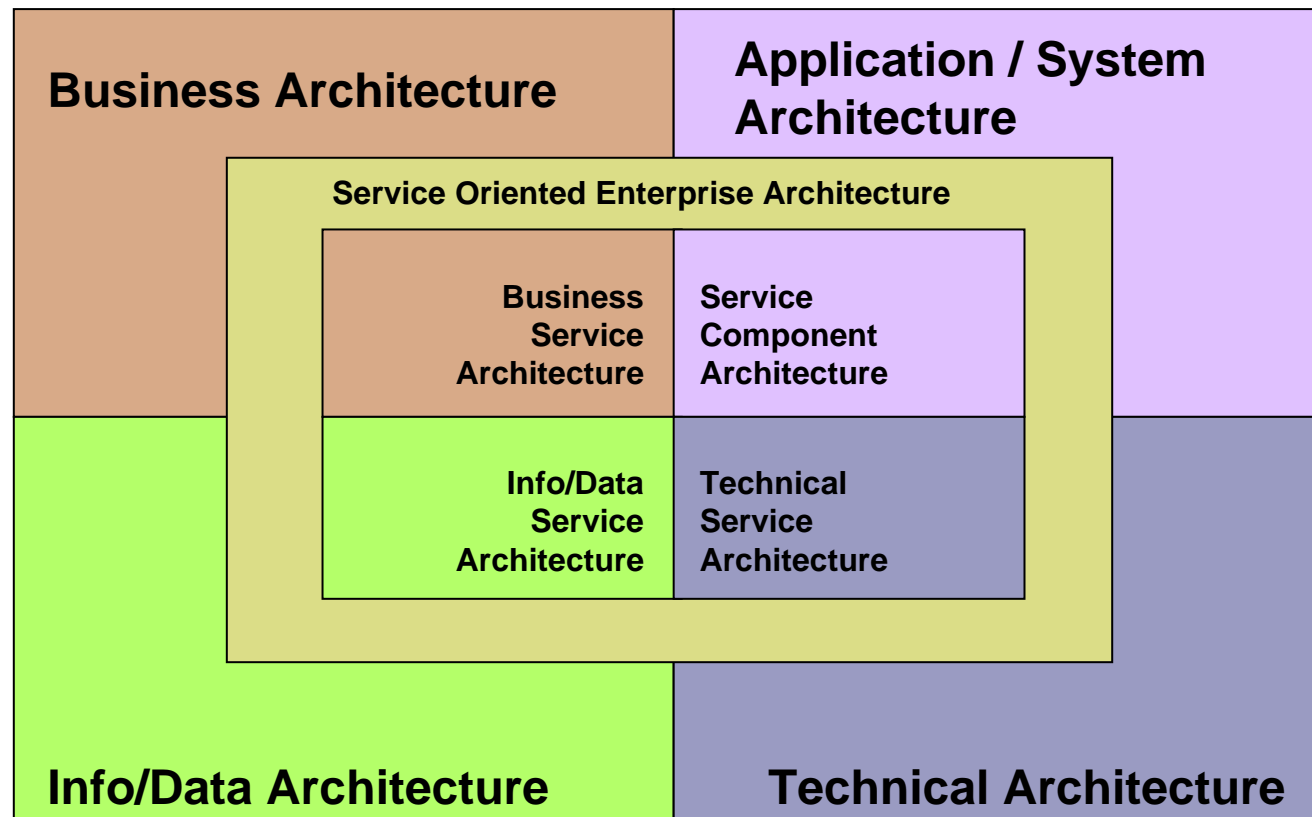SOEA and SOE, Yan Zhao, Ph.D; The 23rd Open Group Enterprise Architecture Practitioners Conference

How SOEA Relates to EA
- SOEA in EA

Concept of Service Oriented Enterprise

n **Service Oriented Enterprise (SOE):** is an enterprise that applies service orientation to its full scope business management and operations _where appropriate_.

n **The SOE Practice**

- takes guidance from SOEA
- is enabled by SOA implementation in businesses, applications and systems
- is facilitated by Service Oriented Infrastructure (SOI)

Service Oriented Domain in SOE
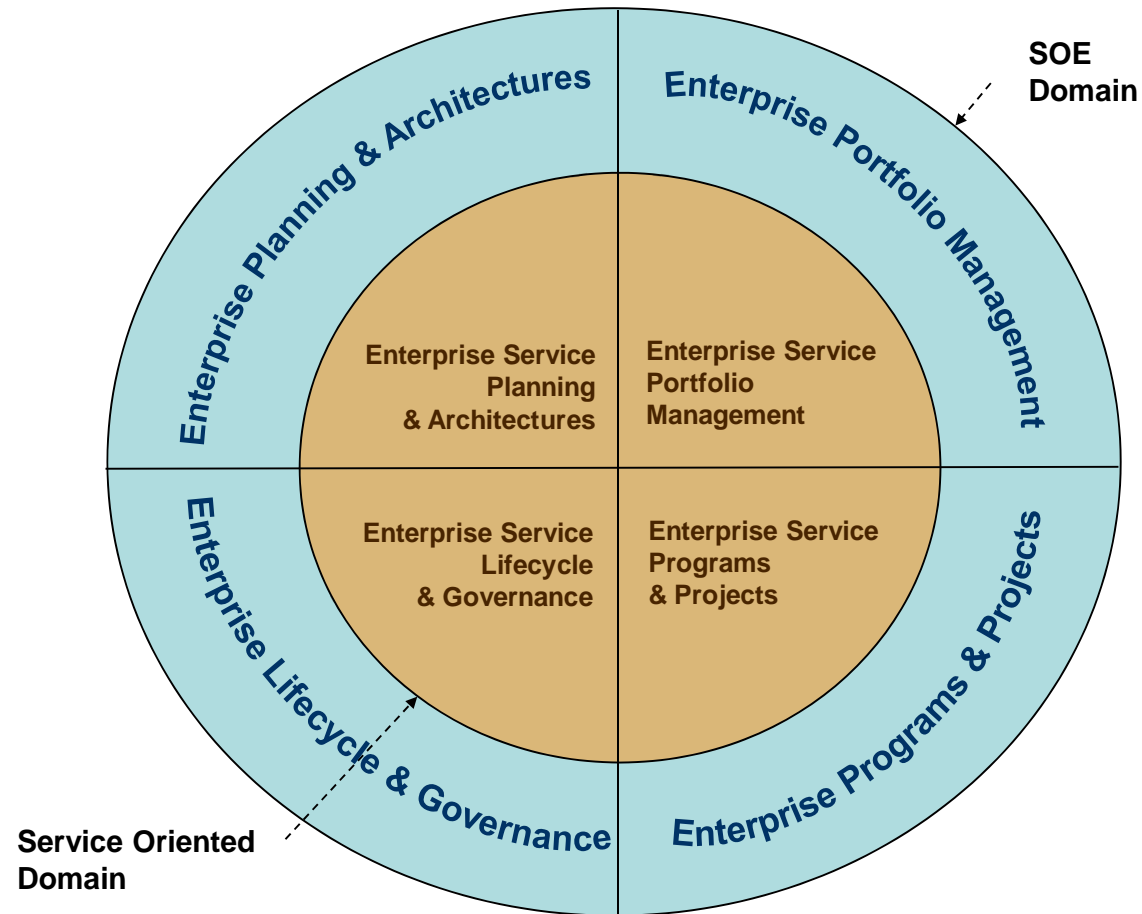
Relationship of SOE with SOA

n As architecture is a part of the planning phase for an enterprise, **SOA (or SOEA) is a part of the planning phase for SOE**

n As an enterprise uses service oriented approaches across their enterprise IT planning and operation lifecycle, the emergence of an **SOE will be the natural evolutionary step forward from SOA.**

n **SOE provides organizational enablement, capabilities, and readiness** in achieving the widely claimed benefits of SOA. It provides environment that enables planning and execution of shared services across organization boundaries

n **SOE ensures an end to end adoption** of service orientation and effectiveness in execution.

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From SOEA to SOE

**From Service Oriented Enterprise Architecture
To
Service Oriented Enterprise**

Progressing from Planning to Execution!

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SOE in Practice

Apply service orientation to

n **Business Management and Operation**

- – Enterprise planning and architectures
- – Enterprise portfolio management
- – Enterprise lifecycle and governance
- – Enterprise programs and projects

n **Business Process Modeling and Management**

- – Layered business processes to implement layered business services
- – Business process implementation by layered business and IT services

n **IT Enablement, Support, and Facilitation**

- – Application and system implementation and operation
- – Data implementation and operation
- – IT infrastructure implementation and operation

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Enterprise Service Portfolio Management

- Enterprise service portfolio management should be **built into enterprise plan**, and be synchronized with strategy and governance

- The enterprise service portfolio should **take input from enterprise architecture**

- **Integrate business processes with business services** in enterprise service portfolio (layered processes and services)

- **Evolve application portfolio management to service portfolio management** with services being categorized and being described in layers

- **Manage service portfolio lifecycle:** planned services, current services, obsolete services

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Enterprise Governance

Governance: policy, rules, structure, process, measurement

Two Governance Aspects:

- Governance of performance: for process execution and sustainable performance
- Governance of change: for determination and management of changes

Two Governance Stages (for each governance aspect)**:**

- Governance definition (legislative): structure, process, standard, rules, policies, guidelines, etc.
- Governance enforcement (judiciary): enforcement of execution, results, and consequences

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Enterprise Governance (continued)

Enterprise Governance

Enterprise Corporate Governance

Enterprise Service Governance

Enterprise IT Governance
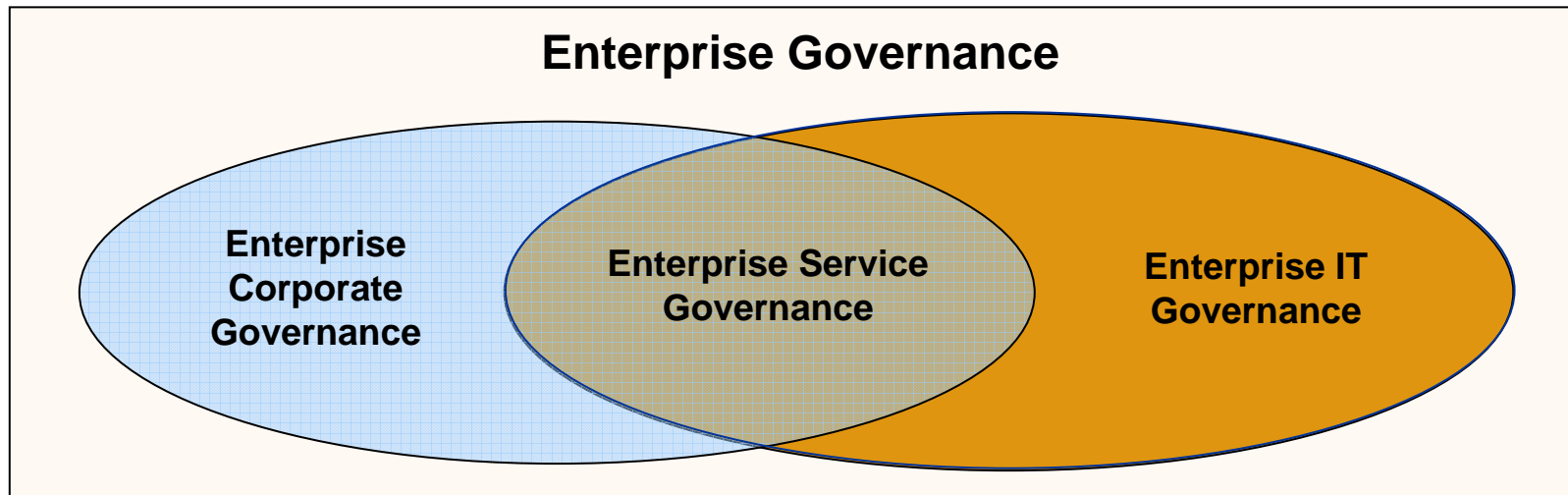
Enterprise Corporate Governance

- Structure, roles, and responsibility
- Policies & rules
- Processes
- Measurements

Enterprise IT Governance

- Structure, roles, and responsibility
- Policies & rules
- Processes
- Measurements

Enterprise Service Governance

- Cross enterprise business and IT
- Governs service planning & architecture, development, deployment and operation

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IT Infrastructure Support

- **Service Oriented Infrastructure**

  - IT infrastructure as a commodity service

  - IT infrastructure as a line of business

  - IT infrastructure architecture as a segment architecture in EA

- **Cloud Computing**

  - Further **enhances service orientation** for enterprise IT infrastructure services

  - It consists of:

    - Software as a service

    - Platform as a service

    - Infrastructure as a service

  - It needs enablement from Service Oriented Enterprise in order to identify and apply appropriate **service model, cost model, and operation model** across organization boundaries

  - It shares the common nature and benefits of service orientation

  - It is started as a technology solution, but the implication is far beyond technologies
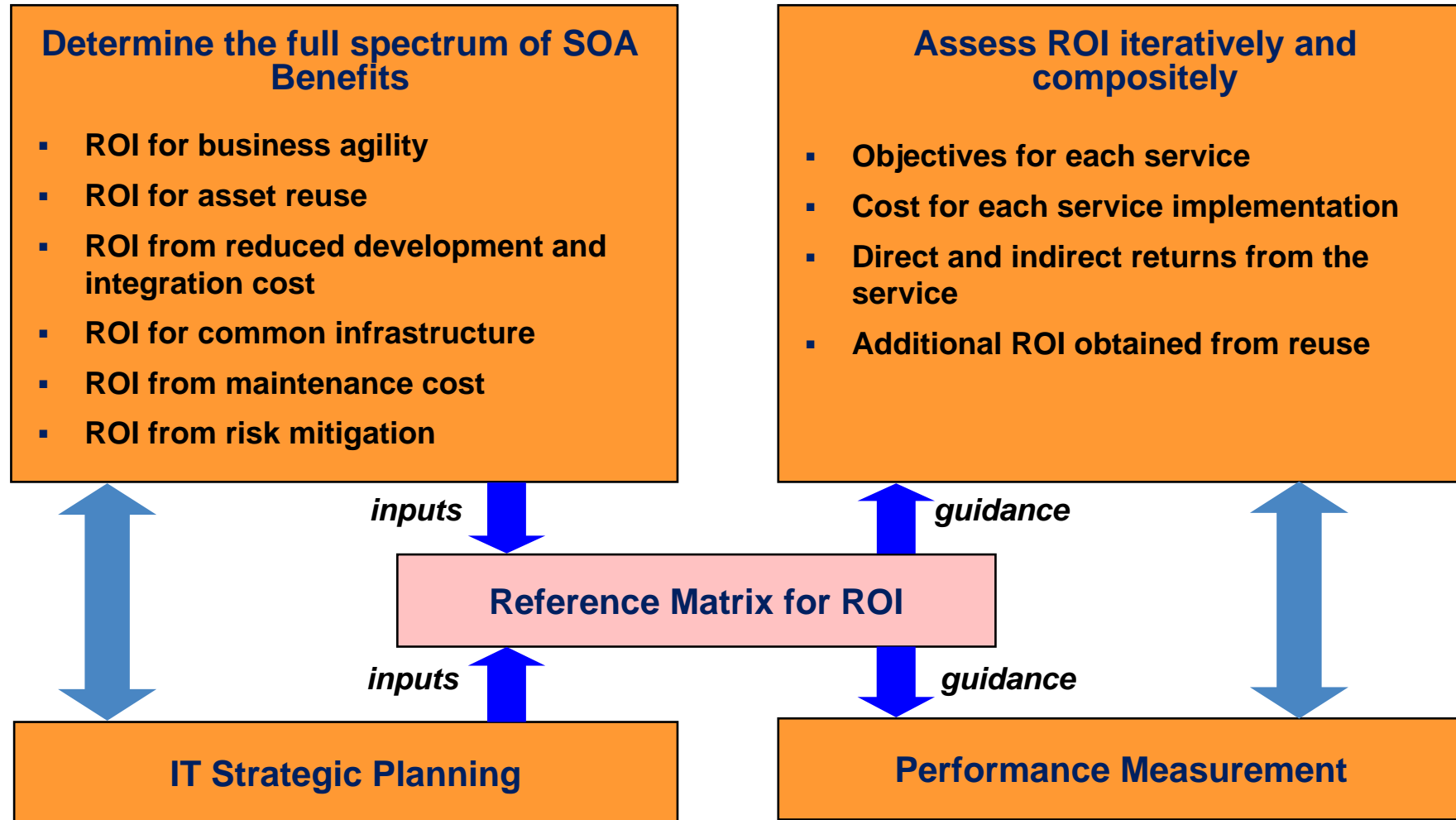
The Impact of Service Orientation to an Enterprise

- **Service Orientation introduces a paradigm shift for enterprise**
  - Manage business functions into loosely coupled services to reduce complexities and lessen the impact of changes
- **Service Orientation introduces changes to traditional organization culture and management mechanisms**
  - Loosely coupled service organizations break stove pipes and promote collaboration
  - Dynamic relationships between service providers and service consumers
  - Achieve long-term benefits instead of short-term ones
- **Service Orientation can optimize enterprise operational cost**
  - Shared services
  - Dynamic business changes supported by flexible IT service implementation
- **Service Orientation can enhance enterprise lifecycle and governance by introducing service life cycle and governance**
  - Enable better scoping for measurement and control

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The Impact of Service Orientation to an Enterprise

- Establish and Assess Return On Investment (ROI)

Determine the full spectrum of SOA Benefits

- ROI for business agility
- ROI for asset reuse
- ROI from reduced development and integration cost
- ROI for common infrastructure
- ROI from maintenance cost
- ROI from risk mitigation

Assess ROI iteratively and compositely

- Objectives for each service
- Cost for each service implementation
- Direct and indirect returns from the service
- Additional ROI obtained from reuse

inputs

guidance

Reference Matrix for ROI

inputs

guidance

IT Strategic Planning

Performance Measurement

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Conclusion

- **Service Oriented Enterprise Architecture** is a sub-set of Enterprise Architecture

- **Service Oriented Domain** is a sub-set of a Service Oriented Enterprise

- **SOA should be used where it applies,** *to reduce hype and confusion*

- **SOA is a means, not a goal,** during an enterprise's continuous evolution of business and IT towards increased efficiency and reduced cost

- **Cloud Computing** is a continuation of service orientation efforts in enterprise

- **There are natural dependencies** in enterprise business management and operations with respect to service sharing, which can not be solved by technologies (as mentioned in the slide: The Impact of Service Orientation to an Enterprise)

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