Service Oriented Enterprise Architecture
and Service Oriented Enterprise

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Content Summary

- The current state and trend in SOA practice
- Enterprise architecture, service oriented architecture, and service oriented enterprise architecture
- How service oriented enterprise architecture relates to enterprise architecture
- Concept of service oriented enterprise
- Service oriented domain in service oriented enterprise
- Relationship of service oriented enterprise with SOA
- From service oriented enterprise architecture to service oriented enterprise
- The impact of service orientation to an enterprise
- Cloud computing continues the evolution towards service-orientation enterprise
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
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)
- Business Reference Model (BRM)
- Service Component Reference Model (SRM)
- Data Reference Model (DRM)
- Technical Reference Model (TRM)

- Performance Model
- Business Architecture
- Application / System Architecture
- Info/ Data Architecture
- Technical Architecture

- Service Performance Model
- Business Service Architecture
- Service Component Architecture
- Info/ Data Service Architecture
- Technical Service Architecture
How SOEA Relates to EA

- SOEA in EA
Concept of Service Oriented Enterprise

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

- **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

Enterprise Planning & Architectures
Enterprise Portfolio Management
Enterprise Service Planning & Architectures
Enterprise Service Portfolio Management
Enterprise Service Lifecycle & Governance
Enterprise Service Programs & Projects
Enterprise Lifecycle & Governance
Service Oriented Domain
SOE Domain
Relationship of SOE with SOA

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

- 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**.

- **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

- **SOE ensures an end to end adoption** of service orientation and effectiveness in execution.
From SOEA to SOE

From Service Oriented Enterprise Architecture
To
Service Oriented Enterprise

Progressing from Planning to Execution!
Apply service orientation to

- **Business Management and Operation**
  - Enterprise planning and architectures
  - Enterprise portfolio management
  - Enterprise lifecycle and governance
  - Enterprise programs and projects

- **Business Process Modeling and Management**
  - Layered business processes to implement layered business services
  - Business process implementation by layered business and IT services

- **IT Enablement, Support, and Facilitation**
  - Application and system implementation and operation
  - Data implementation and operation
  - IT infrastructure implementation and operation
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.
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
Enterprise Governance (continued)

Enterprise Governance

Enterprise Corporate 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

Enterprise IT Governance
- Structure, roles, and responsibility
- Policies & rules
- Processes
- Measurements
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
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

Reference Matrix for ROI

IT Strategic Planning

Performance Measurement

inputs

guidance

inputs

guidance
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 cannot be solved by technologies (as mentioned in the slide: The Impact of Service Orientation to an Enterprise)