Integrating Enterprise Architecture (EA) and Solution Architecture (SA)

Course Number: WA2332

Duration: 2 days

Course Description

This course is for organizations that have or desired to establish an enterprise architecture function. This course describes enterprise architecture, solution architecture, and the relationship between them.

- Course topics include: EA architecture frameworks, reference architectures, Solution Architecture, architecture viewpoints, requirements analysis, architecture roadmaps, architecture patterns & tactics, COTS architectures, architecture techniques, and building an architecture toolbox.

Who Can Benefit

Enterprise Architect, Solution Architect, Architecture Stakeholders

Course Details

Outline

Chapter 1 - Introduction

- Introductions
- Course Outline
- Handouts & Appendices
- Practical Application

- Course Evaluation & Questions
- Course Delivery Overview

Chapter 2 - Enterprise Architecture (EA) Primer

- Architecture
- Architects
- Enterprise Architecture Definitions
- IEEE, TOGAF, & Gartner Perspectives
- Group Discussion: Expectations of EA
- Key Enterprise Architecture Terminology
- Architecture Framework: Foundation for a Common Vocabulary
- Industry EA Frameworks
- Dimensions of Architecture Scope
- Group Discussion: EA Partitioning
- Architecture Domains
- Depth: Strategic, Segment, and Capability Architectures
- Example: DOE Segment Identification
- Example: Segment Architecture
- Time: Baseline, Target, and Transition Architectures
- Various Solution Architecture Definitions
- Group Discussion: Solution Architecture
- Characteristics of a Solution Architecture
- Example Solution Architecture: SOA for Insurance
- Example Solution Architecture: Customer Contact Center
- Glossary
- Summary

Chapter 3 - EA Framework

- The Importance of a Framework for EA
- TOGAF
- TOGAF Components
- Architecture Development Method (ADM)
- Architecture Content Framework
- Views & Viewpoints

- TOGAF Viewpoints
- Catalogs, Matrices, Diagrams & Viewpoints
- Architecture Deliverables
- ADM Techniques
- ADM Guidelines
- Enterprise to Solution Architecture
- Example: Architecture Roadmap
- Summary

Chapter 4 - Reference Architecture

- Reference Architecture
- Reference Architecture Components
- Reference Architecture Summarized
- Reference Architecture Context
- Architecture Principles
- Components of Principles
- Qualities of a Good Set of Principles
- EA Principles: Creation Process
- Templates: Principle & Principle Catalog
- Example: Architecture Principles
- Group Discussion: Principles
- Applying Architecture Principles
- Policies
- Template: Policy
- Example: Governance Policies
- Example: SOA Policy
- Example: Policies
- Reference Models
- Example: IBM Business Analytics & Optimization Reference Architecture
- Example: IBM Insurance Application Architecture
- Example: SOA Reference Architecture
- Example:Customer Experience Reference Architecture
- Business Scenarios
- Business Scenario Summary

- Business Scenario Outline
- Template & Example: Business Scenario
- Practices: Standards & Guidelines
- Example: Interoperability Standards
- Example: Insurance Reporting Reference Architecture
- Example: Electronic Product Code™ (EPC) Standards
- Example: Health Care Reference Architecture
- Resource: Financial Industry Organizations
- Resource: Health Industry Organizations
- Resource: Retail Industry Organizations
- Resource: Technical Organizations
- Industry Organizations
- Insurance Industry Standards ROI
- Requirements
- Example: Mobile Security Reference Architecture
- Example: MSRA Requirements
- Architecture Building Blocks: Reusable Requirement Sets
- Resource: NIST Security Requirements
- Example: COTS Standard Requirements Set
- Summary

Chapter 5 - Views & Viewpoints

- Views & Viewpoints
- TOGAF Viewpoint Taxonomy
- Example: Documenting a Viewpoint
- Example: Another Viewpoint
- Popular Modeling Notations
- Catalogs, Matrices, Diagrams & Viewpoints
- Metamodel Entities
- Summary

Chapter 6 - Architecture Requirements

- Architecture Quality Attributes
- Quality of Service Requirement Categories

- Trade-off Analysis
- Group Discussion: Trade-offs
- Requirement Patterns
- Example: Non-Functional Requirement Patterns
- Architecture Change Cases
- Elements of a Change Case
- Example: Change Case
- Eliciting Change Cases
- Group Discussion: Change Case
- Summary

Chapter 7 - Architecture Deliverables

- Architecture Requirements Document
- Template: Requirements Specification
- IEEE Architectural Description Document
- Template: Architectural Description Document
- TOGAF Architecture Definition Document
- Templates: Architectural Definition Document
- Group Discussion: Architecture Definition Documents
- Interface Specifications
- Interface Specification Best Practices
- Interface Design Document
- Template: Interface Design Document
- Database Design Document
- Template: Database Design Document
- Platform Design Document
- Template: Platform Design Document
- Architecture Decision Document
- Template: Architecture Decision Document
- Group Discussion: Architecture Decision Document
- Summary

Chapter 8 - Solution Architecture Overview

- Why is Solution Architecture Important?

- Communications Vehicle Among Stakeholders
- The Project is Organized Around Architectural Elements
- What is a System?
- Why Focus on Structure?
- Solution Architecture Context
- Solution Architecture & Domains
- SA Spans All Domains
- Relationship to EA Architecture Development Process
- Solution Architecture
- Solution Architecture Stakeholders
- Solution Architecture Deliverables
- EA Involvement in SA
- Architecturally Significant
- Group Discussion: Architecture
- Resource: Software Engineering Institute (SEI)
- Resource: SWEBOK
- Resource: OpenUp
- Resource: Microsoft Library
- Group Discussion: Methodologies
- Summary

Chapter 9 - Core Solution Architecture Methods

- Shared Vision
- Example Shared Vision
- Draw the Boundary
- Well-defined Interface
- Example: Context Diagram
- Identify the External Interfaces
- Subsystems
- Subsystem Context Diagram
- Layers
- Example: Subsystems with Layers
- Components
- Decomposing the System

- Partitioning Patterns
- Example Partitioning Based on Patterns
- Example: Healthcare SOA Framework
- Requirements Allocation
- Group Discussion: Requirements Allocation
- Configuration Management Implications
- Release Management Implications
- Testing Implications
- Work Pattern & Skill Set Implications
- Work & Build Dependencies
- Increment/Sprint Planning
- Sizing Implications
- More Than Executable Architecture
- Development Architecture
- Operations Architecture
- Group Discussion: Integrating Operations Architecture
- Summary

Chapter 10 - Solution Architecture Views

- The 4+1 Views Approach
- Take a Multiple View Approach
- UML: Unified Modeling Language
- UML Notation Examples
- Use Case View
- Logical View
- Process Views
- Implementation View
- Deployment View
- Summary

Chapter 11 - Patterns

- What are Patterns?
- Elements of a Pattern
- Pattern Levels

- Pattern Types
- How to Start Using Patterns?
- Common Architectural Patterns
- Layers Pattern
- Example: Retail Layered Architecture
- Object-Oriented Design Patterns
- Structural Design Pattern: Facade Pattern Example
- Enterprise Integration Patterns
- Messaging Systems: Overview
- Example Pattern: Pipes and Filters
- Monitoring Credit Bureau Example
- EAA Patterns
- Model-View-Controller (MVC) Pattern
- SOA Patterns
- Example: Saga Pattern
- Business Process Patterns
- Example: Synchronizing Merge Pattern
- Configuration Management Patterns
- New Patterns Continue to Emerge
- Group Discussion: Patterns
- Summary

Chapter 12 - Architecture Tactics

- Tactics
- Availability Tactics
- Modifiability Tactics
- Architectural Patterns and Corresponding Tactics for Modifiability
- Performance Tactics
- Security Tactics
- Testability Tactics
- Usability Tactics
- Approach for Describing Tactics
- Group Discussion: Tactics
- Pipes & Filters: Tactics

- Service-Oriented Architecture (SOA): Tactics
- Summary

Chapter 13 - Architecture Techniques

- ATAM: Scenario-based Architecture Review
- Progressive Filtering
- Rubric
- Example: Service Design Rubric
- Example: Architecture Rubric
- Refactoring
- Think About the Future, But Wait to Act
- Feature Tree
- Decision Tables
- Decision Table Example
- Flowcharts
- Strength, Weakness, Opportunity, Threat (SWOT) Analysis
- Example: SWOT Layout
- SWOT Steps
- Summary

Chapter 14 - Commercial-Off-The-Shelf (COTS)

- COTS Advantages & Disadvantages
- COTS Implication: Accept Design Influence
- COTS Implication: Plan for Stability
- COTS Implication: Sustain Competency
- COTS Implication: Vendor Lock-In
- COTS Implication: Balance Business Needs & Architecture
- COTS Inherent Risks
- COTS Risk Management Strategy #1
- COTS Risk Management Strategy #2
- COTS Risk Management Strategy #3
- Group Discussion: COTS
- Typical COTS Architecture
- Summary

Chapter 15 - The Architecture Toolbox

- The Architecture Toolbox
- The Toolbox
- What Goes in A Toolbox
- More Patterns
- Business Analysis Book of Knowledge (BABOK)
- Resource: Business Architecture Body of Knowledge (BIZBOK™)
- DAMA DMBOK
- Reference Library
- Practitioner Toolbox Items
- Group Discussion: Toolbox Items
- Summary

Chapter 16 - Lessons Learned

- Process Recommendations Summary
- Structural Recommendations Summary
- Anti-Patterns
- Anti-Pattern: Bleeding Edge
- Anti-Pattern: Goldplatting
- Anti-Pattern: Strive for Perfection
- Anti-Pattern: Stuck in the Weeds
- Anti-Pattern: Technology Above All
- Group Discussion
- Summary

Handout 1 - Sample Principles

- Business Principles
- Data Principles
- Application Principles
- Technology Principles
- Governance Principles
- SOA Governance Principles

Handout 2 - Requirement Patterns

Handout 3 - Rubric Worksheet

Appendix A - Reference Library

- Industry Organizations
- References & Further Reading

Appendix B - Glossary

- ABC
- DEF
- GHI
- MNO
- PQR
- STU
- VWXYZ

Appendix C - Pattern List