SEI Architecture Techniques complementary to the RUP

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Agenda

- Setting the scene
- SEI & the RUP
- Summary
- Future Work
- Q&A
Our Business

- Telecommunication Industry

- OSS: Operations Support Systems
  - Customer Relationship Management
  - Service Management and Operations
  - Resource Management and Operations
  - Supplier/Partner Relationship Management

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eTOM: Enhanced Telecom Operations Map®

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Strategy, Infrastructure & Product

- Strategy & Commit
- Infrastructure Lifecycle Management
- Product Lifecycle Management
- Marketing & Offer Management
- Service Development & Management
- Resource Development & Management (Application, Computing and Network)
- Supply Chain Development & Management

Operations

- Operations Support & Readiness
- Fulfillment
- Assurance
- Billing
- Customer Relationship Management
- Service Management & Operations
- Resource Management & Operations (Application, Computing and Network)
- Supplier/Partner Relationship Management

Enterprise Management

- Strategic & Enterprise Planning
- Enterprise Risk Management
- Enterprise Effectiveness Management
- Knowledge & Research Management
- Financial & Asset Management
- Stakeholder & External Relations Management
- Human Resources Management
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Business Component Approach

The Rational Unified Process ®

- Software development process framework that is:
  - Based on 6 best practices (Essential Principles).
    - Develop software iteratively
    - Manage requirements (Use Case driven)
    - Use component-based systems. (Architecture Centric)
    - Model software visually
    - Continuously verify software quality
    - Control changes to software
  - Risk driven planning
  - Customisable

- Process Product that provides you with a knowledge base.
RUP® Overview

SEI & the RUP

- What does it mean to be Architecture Centric?
  - Ensures that business goals are met
  - Defines constraints on implementation
  - Dictates organisational structure
  - Enables more accurate cost and schedule estimates
  - Enables reason about and management of change
  - Basis for training
Software Process and the ABC

Architecture-specific activities include the following:
- Creating the business case for the system.
- Understanding the requirements.
- Creating and/or selecting the architecture.
- Documenting and communicating the architecture.
- Analysing or evaluating the architecture.
- Implementing the system based on the architecture.
- Ensuring that the implementation conforms to the architecture.

RUP® Overview
Workflow of a Software Architect

Perform Architectural Synthesis

Inception
Define Candidate Architecture

Elaboration

Supplementary
Ref.Arch. Specification

Tactics / Patterns

Constraints

General Scenarios

Vision →

Architecture Analysis

QAW

Scenarios

SAD

Use Case Model

Use Case Realization
Architect Workflow

Refine Architecture

Elaboration

Scenarios

SAD

Tactics / Patterns

Supplementary Specifications

Identify Design Mechanisms
Identify Design Elements
Incorporate Existing Design Elements

Structure the Impl. Model
Describe Run-time Architecture
Describe Distribution

Review Architecture
Documentation & Review

Kruchten's 4+1 View Model

Module Viewtype

Logical View

Implementation View

Scenarios

Process View

Deployment View

Woods

Rozanski

Logical

Analysis

Overall

Analysis Interaction

Analysis Focused

Component Interaction

Component

Layered

Subsystem

Logical Data

Subsystem Interface Dependency

Garland

Anthony

Evolution

Security

Performance

Availability

Usability

Logical

Rozanski

Woods
Summary

SEI enhances the RUP by introducing:

- Architecture Centric Definition
- Quality Attribute Workshops
- Tactics and Patterns
- Documentation

Future Work

- ATAM
- SOA & Software Product Lines
Q&A Session

References