Codifying Architectural Frameworks for Web Services and Federated Systems

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Agenda

- Introduction to Model Driven Architecture (MDA)
- Impact of MDA on the Enterprise
- MDA Applied to Federated Systems
OMG’s MDA

**MDA:**

OMG’s Next Generation of Standards

- Applications Expressed in a Platform Independent Model (PIM)

- MDA Tools Translate PIM to an Implementation

- OMG Task Forces Specify Industry Specific PIM’s
What is Codification of Architecture

- Programmable Code Generation
- Model Independent Platform
- Executable Architecture
MDA & Architecture Codification

Application’s PIM is loaded into MDA Tool

MDA Tool generates the application’s implementation

Codified Architecture loaded into MDA Tool

Application’s PIM is loaded into MDA Tool

Codified Architecture loaded into MDA Tool
Impact on the Enterprise

- Traditional Development Compared to Codification
- Economic Impact
- Improved Standards
Architects Specify with:

- Code Fragments
- Prose (.doc)
- UML Snippets

Architects must train each Development Group on each Layer of the Architecture
Programmers need:

- How to Program in Each Layer (According to the Architecture)
- Implement Each Object in Each Layer

Cost of Architecture Proportional to the Size of the Applications
Codified Architecture

- Each Layer Expressed in Codified Architecture
- Codification Independent of Application
Development with Codified Architecture

- Load PIM
- Load Codified Architecture
- Generate 90% of Application
- Customize 10% of Application
Economics of Codification

Enterprises:
- Architectural Cost is Fixed
- Code Generation Capability over 90%
- Eliminates Training Developers on Architecture
Standards

Architecture Fully Generated—Meaning all Applications will Conform to Enterprise Standards

- User Interface
- Database Structure
- EAI
- Documentation
- Production Control
- Modeling
Federated Systems

- Definition
- Web Services
- Challenge
- Interface Compliance
- Unique Enterprise Architecture
Definition

- Loosely Connected Systems from Different Enterprises
- Performing Portions of the Same Application
Web Services

- Web Services Connect Systems
  - SOAP
  - UDDI

- PIMs Express the Application
Challenge

- Interface Compliance

- Application Needs to be Implemented to Each Enterprise’s Architecture

- Each Enterprise’s Application Needs to Implement Unique Functions
Interface Compliance

- Industry Specific PIM Defines Interface
- MDA & Codified Architecture Generate Interface
  - J2EE
  - .Net
Unique Enterprise Architecture

- Enterprises Enhance the PIM to Create an Enterprise Specific PIM (ESP)
- Enterprises Create Codified Architecture Unique to their Environment
Federated System Overview

Member of the Federation
Summary

- Web Services & Federated Systems Accelerate Enterprise Change

- Advances Cause Architectural Complexity

- MDA & Codification of Architecture
  - Manage Complexity
  - Provide Economic Benefits
  - Increase Adherence to Corporate Standards
Thank You

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