NUMBER**SIX**®

**Second Annual MDA Implementers' Workshop:
Succeeding with Model Driven Systems**

Where Does MDA Start?

5/18/2004

Number Six Software brings together the teams, methods, and processes necessary to resolve risk and ensure the success of enterprise software development projects.

Where Does MDA Start? - Overview

- Background
- Motivation
- The "Business" of MDA
- Project Managers
- Analysts
- Testers
- Summary
- Questions and Answers

Where Does MDA Start? - Background

- The following slides outline a project of:
  - Team of 8
    - 1 Project Manager
    - 1 Analyst (Business/System)
    - 3 Developers
    - 2 Testers
    - 1 Documentation Specialist
  - Where we are heading, not where we are…
  - Highly iterative process
  - SEI CMM Concerns
  - Trusting clients and champions

The "Business" of MDA

- Contractual Issues
  - State assumptions and agreements in a model driven vocabulary
  - Roadmaps, work break-downs, and preliminary schedules should revolve around the anticipated maturity of the model
  - Required deliverables are be "model driven"
    - Generated reports instead of "independent" documents
    - Should be based on a proceeding deliverable
  - Stress the efficient use of system models in the project and reuse of best practices when "<u>creating families of systems</u>".
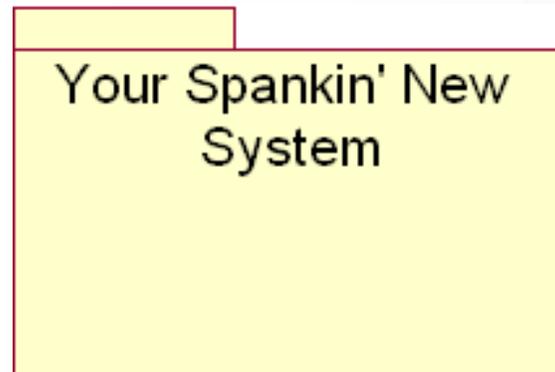
Project Managers and MDA

- State project estimates and project plan as model elements

- Model the project's organization
  - Organizational Structure, Roles and Responsibilities
  - External Interfaces
  - This is the start of "The Model"
  - The project manager is the first line of business modelers

- Project reviews are model reviews

Analysts and MDA

- Introduce the stakeholders to the model right after you introduce yourself…

"Hi, I'm Dave and this is the model"

Your Spankin' New System

Analysts and MDA

- Build upon the previously stated organizational structure, roles and responsibilities

- Define a shared vocabulary and concepts among domain and system tasks

- State business process and rules within the model
  - Expressed as constraints
  - Reduction weeds out ambiguity

- Define the "As-Is" and "To-Be" in the same model
  - Define profiles to help isolate needed level of detail

Analysts and MDA

- Functional and non-functional requirements are housed in the model
  - Functional requirements are expressed as activities in activity diagrams
  - Non-functional requirements are expressed as constraints of each activity or state transition

- Enforce the platform independent nature of requirements

- Create Domain Independent Models (DIM's)
  - Reuse
  - Reduce complexity for stakeholders

Question: If detailed activity diagrams are organized in packages, what benefit would use cases provide developers that activity diagrams do not?

USE CASES

Testers and MDA

- Test cases and scripts are generated as reports from activity diagrams
  - Actors' activities are the test actions
  - System's activities are the expected results

- Errors discovered in testing map directly to the model, not narrative, "independent" requirements documents

Where Does MDA Start? - Summary

- MDA starts when the project starts
- Efficiency
  - Introducing models early in the life cycle promotes understanding, communication and ownership.
- Consistent and predictable
  - Transitions between disciplines and roles are more clear and understood
- Team building
  - Instead of having a team made of several roles, teams are made of several molders…
- Repeatable
  - Libraries, patterns and templates speed future projects

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Questions & Answers…