Overhauling Legacy Enterprise Software Applications with a Concept Refinement Process Model

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Introduction

- What is the OCRPM and why do we need it?
- The high-level objectives of each phase of the OCRPM.
  - Low-level details of the sub-processes will not be covered.
- Summary
- Questions & Answers
The Overhaul Concept Refinement Process Model

- This is NOT a Software Development Process

- This process model is invoked PRIOR to the execution of a Software Development Process

- The intent of this process model is to enable the confident selection of:
  - Software Architectures
  - Software Development Processes
What does this Mean?

Organization

Legacy Software Product

Architecture (e.g., SOA)

Development Process (e.g., Scrum)
The Overhaul Concept Refinement Process Model - Phases

Understand the Existing Issues

Research Software Development Trends & Technology

Identify Remedies for Existing Issues

Collectively Analyze & Conceptualize Solutions

Select a Solution to Refine

Refine Solution with Rapid Prototyping

Final Preparation for Software Development
Phase 1: Understand the Existing Issues

- The goal of the first phase is to understand the high-level issues with the existing architecture, technology, ongoing development process, and all relevant support and maintenance processes.

- The **Issue Discovery Process** is used to accomplish this objective.

- **Resulting Artifacts:**
  - A set of models that describe critical architectural elements from certain viewpoints.
  - A *Symptoms* document listing each reported symptom, and stakeholder group that reported the symptom.
  - An *Issues* document listing and describing each identified issue.
Phase 2: Research Software Development Trends and Technology

The goals:
- Define an adequate domain of research by identifying research items
- Create a research plan,
- Execute the research plan

These goals are attainable via execution of the Research Planning Process.

Resulting Artifact:
- Research Plan
Phase 3: Identify Remedies for Existing Issues

- The objective of this phase is to identify and document potential remedies for each issue that was documented in Phase 1.
  - Remedies are solutions capable of mitigating issues.

- The **Remedy Identification Process** is used to achieve this objective.

- Resulting Artifact:
  - A document that associates ranked potential remedies with the documented issues.
Phase 4: Collectively Analyze and Conceptualize Solutions

- The primary goal of this phase is to conceptualize what the existing software could become and how the transformation could be achieved.
  - Software Architectures
  - Software Development Processes

- To obtain this goal, the **Conception Process** is executed.

- Resulting Artifacts:
  - High-level graphical models of potential Software Architectures.
  - High-level graphical models of potential Software Development Processes.
Phase 5: Select a Solution to Refine

- The goal of this phase is to arrive at a pragmatic pairing of software architecture and software development process that is likely to result in a successful implementation.

- To facilitate this, the Solution Selection Process is executed.

- Resulting Artifact:
  - A prioritized list of architectures paired with a software development process.
Phase 6: Refine Solution with Rapid Prototyping

- The goal of this phase is to validate the pairing of a software architecture and software development process that ranked highest in the list produced in the previous phase.

- This is accomplished via the **Rapid Prototyping Process**.
Phase 7 : Final Preparation for Software Development

- The final phase focuses on the evaluation of the prototype(s) produced in the previous phase, in order to determine if the project can feasibly be pursued.

- To evaluate the prototypes, the **Prototype Evaluation Process** is used.
Conclusion

You have learned:

✓ What the OCRPM is and why it is needed.
✓ What the high-level objectives of each phase are and what sub-processes are used to attain these objectives.

Questions & Answers