

Integrating User Experience into the Rational Unified Process (RUP) for Software Development

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Outline

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- Introduction to RUP
- User Experience and RUP
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Introduction to Our Projects

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My Health_eVet (MHV)

- <http://www.myhealth.va.gov>
- A gateway to veteran health benefits and services
- Produced by the Veterans Health Administration
- Current offerings:
 - Prescription refill
 - Personal health journal
 - Medical libraries
 - Links to Federal and VA benefits and resources
- Coming soon:
 - Patient access to data from VA medical record
 - Secure messaging between patient and medical provider
 - Online learning
 - Delegation

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Consumer Price Index Applications

- CPI is the leading economic indicator of inflation
- Still fairly new to RUP
- Applications using RUP include back-end applications for data analysis
- Typical project characteristics:
 - Project duration: several years
 - Users: Mostly BLS Economists and managers, sometimes data collectors

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Introduction to RUP

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What is RUP?

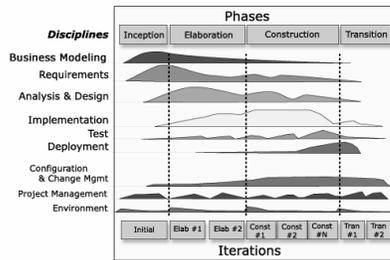
RUP is an iterative process *framework* originally developed by Rational Software (now part of IBM). Its goal is to ensure the production of high-quality software that meets the needs of its end users within a predictable schedule and budget.

RUP is organized around the following key concepts:

- Early resolution of risk driving the content and number of iterations
- A whole team focus on the importance of the requirements as a key to delivering the right solution
- The importance of early architecture definition as a solid foundation for development
- Measurement of progress based on executable software rather than documentation
- Verification of quality throughout the development lifecycle
- The institutionalization of industry proven best practices as a key to predictability and repeatability within an organization

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An Overview of RUP



From Rational Unified Process, Version 2003.06.00.65

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RUP's Disciplines

- Business Modeling
- Requirements
- Analysis and Design
- Implementation
- Test
- Deployment
- Configuration & Change Management
- Project Management
- Environment

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RUP's Four Phases

- **Inception**
Define scope of project and its business case
- **Elaboration**
Analyze the project's needs in greater detail and define its architectural foundation
- **Construction**
Create the application design and source code
- **Transition**
Deliver the system to users

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User Experience and RUP

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User Experience and RUP: Advantages

- Most of RUP's best practices are compatible with UX
 - Develop Iteratively
 - Manage Requirements
 - Model Visually
 - Continuously Verify Quality
 - Manage Change
- Current UX-related processes may be mapped to RUP's framework

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User Experience and RUP: Disadvantages

There is one key disadvantage to RUP when it comes to UX...

There is NO User Experience Discipline!

- The impact of which includes:
 - Lack of understanding of the overall value and ROI UX provides
 - Inconsistencies in UX processes across teams and projects—including roles, activities, and artifacts
 - Limited to no budget and/or resources for UX within projects and teams

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Challenges and Solutions

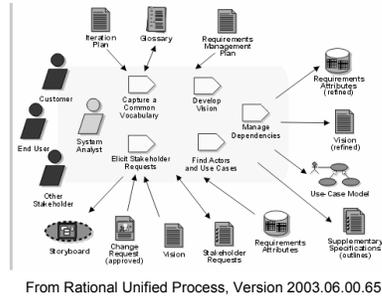
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MHV: No UX Discipline

- RUP-based Governance model was already in place
- Utilizes Number Six's existing baseline mapping of UX to RUP which is continuously being refined
- Core disciplines:
 - Requirements & Analysis and Design
 - Bridge the gap between these two disciplines via UX
 - Illustrate use cases with wireframes
 - Usability test results have led to changes in requirements
 - A requirements analyst usually attends usability tests
 - Test results are presented to requirements team first
 - Test
 - Validate requirements, IA, and UI layout via paper prototype testing early on
 - Test for usability via functional versions of the system
 - Issues are tracked in change management system

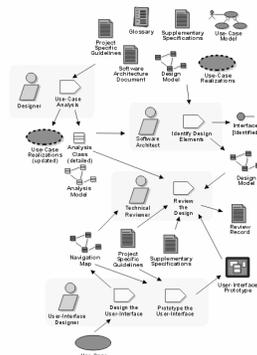
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Requirements Discipline in RUP



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Analysis & Design Discipline in RUP



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BLS: No UX Discipline

- We have a strong UX program
- We work RUP around our process
 - Involve UX Professional throughout development
 - with appropriate responsibility and authority
 - leading a team of appropriate stakeholders
 - Seek and incorporate input from users
 - Address usability problems
 - Focus on Screen Design Documents, which describe all screens and functionality.

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MHV: Integration of UX with Requirements and Development

- Four document types within requirements:
 - Vision (Requirements Team)
 - Use Cases (Requirements Team)
 - Supplemental Specification (Requirements Team)
 - Wireframes and Screen Flow Diagrams (User Experience Team)
- Use of UML within UX artifacts (i.e. Screen Flow Diagrams) improves readability across functional teams
- Modular approach makes it easier to update documents
- Three functional teams—Requirements, Development and UX—review the documents and request changes
- Subject Matter Experts (SMEs) approve documents as they are developed
- To date, the UX and Test teams have not needed to collaborate, but upcoming field testing will require that we integrate the disciplines

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MHV: UX Plug-ins for RUP

- Three plug-ins currently exist for RUP:
 - RUP for Creative Web Design Plug-In v1.0
<http://www-128.ibm.com/developerworks/rational/library/4306.html>
 - RUP for User Experience Plug-In v. 3.0
<http://www-128.ibm.com/developerworks/rational/library/4310.html>
 - User-Experience Modeling Plug-In v. 2.0
<http://www-128.ibm.com/developerworks/rational/library/4310.html>
- Earlier versions of these plug-ins seemed inadequate and did not satisfy project needs.
- Current versions have improved; we have yet to review and incorporate them into our governance model.

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BLS: Our Challenges with Use Cases

- We have to figure out where the documents we use fit into RUP.
- Some people want all specifications and requirements in one place (Use Cases)
- With many alternatives, the “alternate flows” can get confusing.
- We’re still working through the balance that works for us.

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Summary

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Summary

- UX can be integrated within the RUP process framework
- Although plug-ins exist, there is a real need for RUP to include a UX discipline
- For more information about RUP:
 - <http://www-306.ibm.com/software/rational/>

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Q and A

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