IBM RUP and Beyond

Delivering project success through organisational culture

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Introductions

- Julian Holmes
  - Process Engineer, Project Reviewer, RUP Instructor, Mentor, and Implementer
  - Supporting Capgemini UK, and global group
  - Currently implementing RUP at the Inland Revenue
- Capgemini
  - Global and UK&I Systems Integration Organisation
  - Employing 22,000 people in our Technology Services division globally
- Our topic for today…

…and how to make an organisation’s use of it successful
• Why standardise on RUP?
  • Key enablers for Implementing RUP
  • Key approaches to achieving the objectives of each Phase
• RUP & Beyond at Capgemini
• Lessons Learnt
• Questions
Why standardise on RUP?

- Organisations develop ‘home-grown’ methods. Why?
- Look for one Software Development Method to:
  - Accelerate project Start-up
  - Become an enabler for re-use
  - Provide a common language for Distributed & Off-shore Delivery
- Why RUP?
  - Market recognition
  - De facto industry standard
  - Relevant to latest technology
  - Support by comprehensive toolset
  - Ability to extend and complement with Best Practice
Key Enablers for Implementing RUP

- Form a RUP-centric Organisation and Culture
- Grow a Network of RUP Expertise
- Develop Plug-Ins for RUP
- Train through a “RUP Academy”
• Permanent organisation “core team”
• Providing services to the project teams
• Consistent and continually refined project support
• Readily available experience to guide and mentor teams
• Key areas of activity, each adding value to projects
A Network of RUP Expertise

- **Defining - Software Quality Advisors**
  - Tailoring RUP to each project
  - Guiding the PM through the project lifecycle
  - Assuring the approach is followed and works
  - Providing feedback to an SEPG to improve the RUP approach

- **Supporting - RUP Discipline Communities**
  - Coaching the implementation of RUP discipline
  - Reviewing key artifacts
  - Producing of RUP best practice
  - Providing a nominated expert for each Rational tool
  - Defining tools use to support the Discipline approach
  - Resolving tools usage issues
Plug-Ins for RUP

- Expand on RUP to provide organisational context
  - Provide guidance on RUP, whilst adhering to organisational constraints
  - Minimise change to RUP, and primarily add content
  - Provide a RUP interface to appropriate best practices
  - Minimise further training requirements for existing staff
- Scope
  - Day-to-day reference
  - Modified RUP intranet site with additional links to other methods
  - A deployable RUP plug-in
- Example Plug-in: Client Engagement Management
  - Existing global method for managing client engagements
  - Designed to accommodate RUP delivery
  - Defines Commercial and Client Management aspects of PM role
Train with a “RUP Academy”

- Instructor-led and hands-on training
- Simulated project from a real case-study
- Use Rational tools environment and mentoring from practitioners
- All participants play many roles
- Requires some previous RUP experience
- Typically attended prior to joining a project

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- Activity: entire project team
- Activity: workshop per discipline
Train with a “RUP Academy”

• Objectives to provide
  • An understanding of RUP principles
  • Experience with key RUP activities, artifacts, and Rational tools
  • Awareness of issues when estimating and planning RUP projects
  • Guidance from RUP mentors
  • Confidence to use RUP in real projects

• Student Feedback
  • Practical sessions excellent for raising and solving problems
  • Realistic scenarios of great value
  • Excellent opportunity to learn about other roles
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Key Approaches to success in Inception

- Workshop Facilitation Environment
  - Establish Project’s Software Scope
  - Estimate Potential Risks
- Estimation and Measurement
  - Estimate overall cost and schedule for the Project
- Infrastructure Support
  - Prepare Supporting Environment for Project
- Process Tailoring
  - Prepare Supporting Environment for Project
Workshop Facilitation Environment

- Complements Requirements discipline activity
- Conducted in purpose-built facilities
- Early and rapid consensus of project scope
- Collaborative workshops to establish and clarify detailed requirements
- Facilitated by trained staff, including project and client team members
Estimation & Measurement

- Provided by an Estimation & Measurement team
- Project metrics captured globally to provide initial project estimates
- Project tracking to continually refine estimate
- By analogy - “Top-down” by Use Case complexity
- By analysis - “Bottom-up” through task aggregation
Infrastructure Support

- Environment designed to support RUP projects
- Configurable areas for small collaborative teams
- Servers and Desktops provided for whole project team
- Infrastructure Support Team located amongst the projects
- Standard deployment and configuration of Rational tools
- Support requests & activity captured in RUP helpdesk
- Development and Test environment available for client
Process Tailoring

- Key to aligning with a project’s context
- Performed by Process Engineer using Development Case
- Standard Development Case templates for each project type
- Maximise re-use through a Delivery Process framework
- Supported by best practice material
- Utilise RUP “plug-ins” for providing organisational and technology contexts
Key Approaches to success in Elaboration

- **RUP-Aligned Contractual Model**
  - Risks mitigated to determine cost and schedule for the completion of the development

- **Quality Management & Assurance**
  - Address all architecturally significant risks of the project
  - Establish a baseline architecture to expose the top technical risks of the project

- **Change & Configuration Management Service**
  - Establish a supporting environment
RUP-Aligned Contractual Model

- Markets often demand a fixed-price model
- Try to at least use a two-step fixed-price approach
  - Inception and most of Elaboration - confirm scope and validate estimates
  - Late Elaboration onward - re-estimated fixed-price delivery
- Allows for Off-shore delivery options in second bid
- Minimise risk for all parties
- Maximise cost savings for client
- Provide more predictable project costs
Quality Management & Assurance

- Proactive approach immersed in projects
- Three combined perspectives
  - Delivery Management
  - Technical Quality Assurance
  - Software Quality Assurance
- Initial assessment of project and team’s capability
- QA approach tailored with process
- Allocated “core-team” support
- Continual review and milestone “toll-gates”
- All “Quality” activity and findings tracked centrally
Centrally managed service and repositories

Skilled & experienced resources available part-time to projects

Consistent implementation of proven approach
  • Schema, Repository structure, Access control, Reporting

Integrated IBM Rational ClearCase and IBM Rational ClearQuest tools

Web and Multi-site extensions provided for client-collaboration, near-shore, and off-shore delivery

Project resource owns content administration
Additional key approaches to success

Construction

- Integrated Rational Toolset
  - Minimise development costs, optimise resources, avoid scrap and rework

- Knowledge Management
  - Minimise development costs, optimise resources, avoid scrap and rework

Transition

- Applications Management
  - Handover and training of maintainers
- Standard Development Toolset “load”
- Configuration provided for each project
- Guidelines provided for each tool
- Integration between Rational Tools, and to IDE’s
- Re-use of schema, “projects”, templates, and repository structures
- Continually refined in Model Office environment
• RUP Community Home-Space
  • Home-Page for RUP knowledge
  • Accessible to whole organisation
• Delivery Process Framework
  • Framework defining the approach to everything done on projects
  • Integrating our RUP approach with the operations of the organisation
• RUP Knowledge-base
  • Published repository of knowledge objects
  • Configuration Management provided by ClearCase
Applications Management

- RUP with “Build to Run” in mind
- Projects designed to run in AM
- Projects delivered with complete project repository
- System maintained with same IBM Rational toolset and RUP approach
- Subsequent major releases delivered again using RUP
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A culture embodies in 3 “A-Centres”
- Accelerated Solutions Environment
- Accelerated Delivery Centre
- Applications Management Service Centre

Providing a complete system lifecycle with RUP
- Using a common language and toolset
- Allowing for mobility of resources
Providing the Environment for Facilitated Workshops
Acceleration Delivery Centre

- Ultimate expression of how we would like to work
  - Purpose-built facility in UK
  - Centre of RUP and Rational tool excellence
  - Common methods and tools
  - Supported infrastructure
- Delivering greater speed & predictability
- A key enabler to the deployment of RUP within the Technology Services division
Projects designed in ADC to run in AMSC

ADC project delivered with complete project repository

System maintained with same IBM Rational toolset and RUP approach

Subsequent major releases delivered again from ADC
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Lessons Learnt

- Pioneering the use of RUP and Rational tools
  - Ensure strong sponsorship and leadership
  - Understand how RUP fits with your organisation
  - Develop a network of RUP expertise
  - Provide adequate learning & development
  - Maintain a close working relationship with IBM Rational
  - Learn from the experiences of others
- Integrating RUP into how we operate
  - Use RUP process framework for additional activities
  - Develop a RUP-aligned contractual model
  - Use expert mentors to configure the process
  - Support projects centrally for common activities
  - Provide a common infrastructure and toolset
Lessons Learnt

• Delivering RUP projects with Speed & Predictability
  • Measure what you do, learn from it, and improve
  • “Harvest” projects for re-use
  • Use tools that support the methods you adopt
  • Don’t adopt the whole RUP and Rational tools at once
  • Remember that not all projects fit the ADC and RUP model
  • People enjoy working in an ADC environment
In Conclusion

- These initiatives are not “rocket-science”

- However, implementing them all together is not easy

- But, aligning them to the RUP framework and using the supporting IBM Rational tools certainly helps

- We are now reaping the benefits
Thank You

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