IBM

Rational® software

IBM Rational Unified Process

Highlights

■ *Enhances productivity with industry-proven configurable techniques and practices to fit individual project needs*

■ *Supports team collaboration and individual practitioners with context-sensitive guidance across geographies and functions*

■ *Enables early risk mitigation using iterative processes centered around business priorities and stakeholder needs*

■ *Promotes organizational transformation with comprehensive education services and an extensive consultant and partner ecosystem*

When projects are late, over budget or considered failures, it's often a process issue. Either there are no standard processes in place, or existing processes are not being followed because they are outdated or not easily accessible.

Without standard processes, development and management become ad hoc. Productivity is low because team members don't know what to do. They don't know what tasks to complete or what work products and artifacts to produce and when. And, as team members move from project to project, they have to relearn everything.

Outdated and inaccessible processes are as bad as no processes at all. For example, what if a project needs a service-oriented architecture (SOA) process? Can you easily ramp up on SOA and be quickly productive and effective?

Based on more than 20 years of experience working with clients on thousands of projects, the IBM Rational® group has built a library of proven practices for software and systems development that are flexible, extensible and scalable to fit specific project needs. An integral part of the IBM Rational Method Composer solution, the IBM Rational Unified Process® (or IBM RUP®) is a comprehensive library that provides tested practices that have

evolved—and continue to evolve—in close collaboration with a broad community of clients, partners and academics to reflect the latest thinking and experience.

The practices offered with the Rational Unified Process solution are centered around a core set of principles that IBM has found characterize the world's most successful software and systems organizations:

• *Adapt the process.*
• *Balance stakeholder priorities.*
• *Collaborate across teams.*
• *Demonstrate value iteratively.*
• *Elevate the level of abstraction.*
• *Focus on quality.*

These principles help you improve individual productivity and team collaboration to create higher-quality software and systems that effectively align your information technology with business priorities. They guide you in globally distributed development activities by bridging geographical and cultural gaps. You're able to be responsive to change while building resilient systems that can grow and adapt with your organization.

For more details, consult the "Key principles for business-driven development" article in the Rational Edge at ibm.com/developerworks/rational/library/oct05/kroll/index.html.

Adapting processes to project needs for improved productivity

More process is not necessarily better. It's more effective to fit the process to the needs of the project. For smaller projects with colocated teams and known technology, the processes can be simple and informal. For larger, distributed projects that use more technologies and must comply with stringent standards, the processes become more complex and disciplined. In addition, the lifecycle stage of the project affects process. At project inception, you typically have a lot of uncertainty and want to encourage creativity in addressing business needs. This means *less* process. However, late in the project, you often need to control unnecessary project churn and the associated risk of introducing late-stage defects. This translates into *more* process.

The Rational Unified Process solution provides a collection of out-of-the-box processes that you can customize to address a diverse set of project needs and development styles. You're able to support virtually any type of development effort—from agile and iterative projects using very light process guidance, to more formal and regulated processes. You can adapt the process to the size and distribution of the project team, to the disparate systems and complexity of the applications being developed, and to compliance requirements. The Rational Unified Process library includes processes for:

- *Small, medium-size and large projects*
- *Commercial off-the-shelf or package application development*
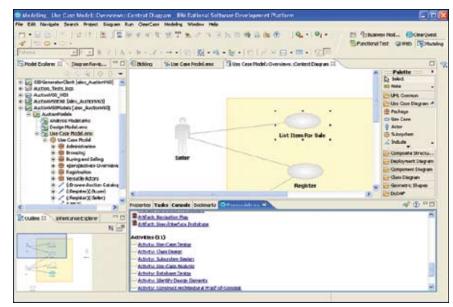- *Mainframe and IBM System z™ application development*

Figure 1: The Process Advisor function enables your development team to work with a common development process that is configured for a practitioner-specific environment such as Rational Software Architect, shown here. The result is context-sensitive guidance.

- *Systems engineering*
- *Business modeling*
- *Maintenance*
- *SOA development*
- *Asset-based development*
- *Compliance management*
- *The Department of Defense Architecture Framework (DoDAF)*

The Rational Unified Process solution also provides a set of plug-ins with specialized content around various domains and technologies that you can use to augment or alter provided processes, or to build completely new processes. IBM and its associates continually add new plug-ins, covering such key content areas as Java™ 2 Platform, Enterprise Edition (J2EE) and Microsoft® .NET development, as well as tool-specific guidance, which explains how to effectively leverage IBM Rational software development tools such as IBM Rational Software Architect and other vendors' tools.

Please visit ibm.com/developerworks/ rational/downloads/06/rmc_plugin7_1 for a complete list of available Rational Unified Process plug-ins.

Providing context-sensitive process guidance to enhance team collaboration

Having knowledge assets and process guidance that get team members up to speed and working consistently, no matter their function or location, is important for improving productivity. The Rational Unified Process content spans the software and systems development lifecycle from business modeling and requirements planning to testing and deployment, and is available in 11 languages. In addition, the Rational Unified Process solution integrates with practitioner tools such as the IBM Rational Team Unifying Platform™, IBM Rational Software Architect, IBM Rational Application Developer, IBM Rational Functional Tester and IBM Rational Performance Tester solutions. This integration is called Process Advisor (see figure 1). Team members are able to obtain context-sensitive guidance and templates without leaving their preferred tools and environment.

As a result, all team members share the same information within the scope and context of their specific activities throughout the project lifecycle. They're able to make informed decisions that help save time and money while gaining greater control over the project outcome.

What you also want to be able to do is execute on the process. The Rational Unified Process solution comes with work-breakdown structures that can be exported as project plan templates for many different project types. These out-of-the-box project plans can be used as a starting point for quickly initiating a project and can be customized to your project needs using IBM Rational Method Composer software. Once the work-breakdown structure is developed, the project manager can export it to the Microsoft Project application and/or the IBM Rational Portfolio Manager application, a tool that manages project resources, schedules and tasks.

Available with Rational Method Composer software, the Process Advisor function helps you configure context-sensitive guidance for the RUP solution out of the box. It also enables you to customize the RUP solution and any other method content, including the content you author on your own using the Rational Method Composer application.

Addressing project risk early with iterative processes

The Rational Unified Process solution enables you to deliver incremental releases for early and continuous feedback. This is accomplished by dividing projects into sets of iterations. In each iteration, you do some

Phases

Disciplines	Inception	Elaboration	Construction	Transition
Business Modeling				
Requirements				
Analysis & Design				
Implementation				
Test				
Deployment				
Configuration & Change Mgmt				
Project Management				
Environment				

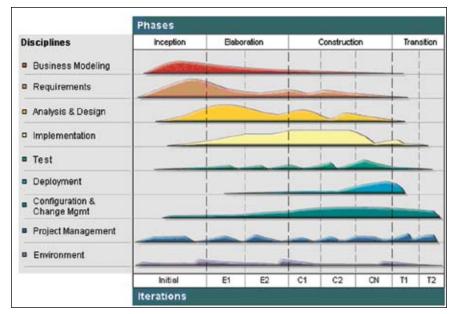| Initial | E1 | E2 | C1 | C2 | CN | T1 | T2 |

Iterations

Figure 2: With the Rational Unified Process solution, you do some requirements planning, designing, implementing and testing of your applications at each phase of the solution delivery lifecycle, enabling you to address risk early and continuously.

requirements planning and some designing, implementing and testing of your applications, thus producing a deliverable that is one step closer to the final solution (see figure 2). In this way, you can demonstrate progress and address risk early. Iterative processes involve virtually all team members in all phases of the solution delivery lifecycle, so the entire team owns quality.

To help you achieve iteration objectives, the RUP solution also includes templates, guidelines, concepts and checklists, which help increase team productivity and help ensure consistency, thereby helping to improve quality.

Promoting organizational transformation with access to an extensive knowledge base

Adopting a process is about organizational change. Just as important as implementing the RUP solution for individual projects is implementing the RUP solution as an organizational software/systems development lifecycle.

Both require extensive knowledge transfer and guidance by consultants who have done it before. IBM is well positioned to help, offering the following deployment resources:

- *The most extensive education services and classes based on the Rational Unified Process key principles for iterative software and systems development, including such disciplines as project management, requirements planning, analysis and design, testing, change, configuration, and release management*
- *An extensive ecosystem of services as well as certified consultants and business associates who have many years of experience delivering assessments, providing mentoring and helping customers deploy projects*
- *A comprehensive set of books, white papers and articles on the Rational Unified Process solution and related subjects*
- *An online user community and extensive resources at the IBM developerWorks® site*

A process solution for the enterprise

The IBM Rational group provides methods, practices and tools that span the enterprise, allowing you to effectively integrate your governance, systems and software development, and operations and systems management organizations.

Development governance

- IBM Rational Method for Service-Oriented Architecture Governance: guidance for governing and realizing the full potential of SOA

- IBM Rational Method for Portfolio Management (for Initiatives): guidance for the portfolio management domain

- IBM Rational Method for Program Mobilization: guidance for large-scale program efforts

For more information, visit: ibm.com/developerworks/rational/downloads/06/rmc_plugin7_1

IBM Tivoli Unified Process Composer

- IBM Tivoli® Unified Process Composer Method for IT Service Management: guidance for improving an organization's IT efficiency

For more information, visit: ibm.com/software/tivoli/products/unified-process-composer

IBM Rational Method Composer

All of the above process assets are included in the Rational Method Composer product, which also offers:

- Methods for all Rational processes and the IBM Tivoli Unified Process Composer solution.

- An authoring environment for customizing and extending the methods.

- Publishing for easy team access.

- Configuring for selecting what method library content to deploy.

For more information, visit: ibm.com/software/awdtools/rmc

Specifications

The IBM Rational Unified Process solution is included with IBM Rational Method Composer software and is bundled with:

- IBM Rational Portfolio Manager
- IBM Rational Team Unifying Platform
- IBM Rational Suite®

Supported languages

- Chinese (simplified and traditional)
- Danish
- English
- French
- German
- Italian
- Japanese
- Korean
- Portuguese (Brazilian)
- Russian
- Spanish

For more information

To find out more about the IBM Rational Unified Process and IBM Rational Method Composer solutions, please contact your local IBM sales representative, or visit:

ibm.com/software/awdtools/rmc