

# IBM Rational solution for Collaborative Lifecycle Management







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IBM

Software drives today's innovation for a smarter planet Transforming the way we live, work, and play





The defining challenge: Managing "systems of systems" From back-end software to customer facing portals, systems of systems drive your relationships with customers, suppliers and business partners





Business and IT Agility: Balancing Resources to Support Business Innovation Balance IT investments to focus on new solutions.



- Forrester estimates that ongoing operations and maintenance consume 66% of IT budgets
- While new projects and software initiatives represent only **34%**

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## Key Software development lifecycles



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Key Software development lifecycles



# ALM is about connecting the disciplines

#### **Project/Planning**

- Business Drivers
- Iterations
- Sign-off
- Contract
- Risk Assess

 User Involvement

#### Requirements

- Use Cases
- Nonfunctional
- Sign-off
- Contract
- Risk Assess
- Threat Model
- Test
   Requirements

#### Development

- TDD
- Build
   Management
- Static Analysis
- BVT
- Source
   Management
- Pair Programming/ Code Review

### Testing

- Scenario-Driven Automation
- Exploratory Test
- User
   Involvement
- Contract Validation

#### **Continuous Learning and Feedback**

Source: Gartner Application Architecture, Development & Integration Summit Presentation, The Future and Present of AD, Thomas E. Murphy, December 2008



### Rational Application Lifecycle Management (ALM) Modular, open and extensible









# An ALM solution powered by Jazz

**Rational solution for Collaborative Lifecycle Management** 

#### **CREATE SOFTWARE**

Real-time Planning, Lifecycle Traceability, Team Collaboration, Development Intelligence, Continuous Improvement





# Jazz provides open collaboration across the software and systems lifecycle



Learn more at: https://jazz.net/about/



### **Open Services for Lifecycle Collaboration (OSLC)**

An initiative aimed at simplifying data linking and tool integration across the life vcle

# Barriers to sharing resources and assets among tools

- Multiple vendors, open source projects, and in-house tools
- Private vocabularies, formats and stores
- Entanglement of tools with their data

#### Open Services for Lifecycle Collaboration

- Community Driven specified at openservices.net
- Specifications for ALM, PLM and DevOps Interoperability
- Inspired by Internet architecture
  - Loosely coupled integration with <u>"just enough"</u> standardization
  - Common resource formats and services
- A different approach to industry-wide proliferation





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What is required to deliver end-to-end visibility across teams, tools and projects?





### Criteria for effective lifecycle management: ALM imperatives

- 1. Real-time planning
- 2. Lifecycle traceability
- 3. In-Context collaboration
- 4. Development intelligence
- 5. Continuous improvement

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# What is Real-time Planning?

#### Real-time Planning improves time to delivery by:

- Providing a single plan that spans requirements, development, and test, ensuring a team understanding of the overall scope of a project
- Allowing everyone to participate in keeping the plan current and accurate
- Integrating planning with execution, ensuring the entire team understands the true project status
- Helping teams **respond to the unexpected** in a timely manner ensuring the team stays on schedule



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### One plan - Multiple views facilitate detailed analysis

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### Key planning relationships





### Insure alignment across the business, development and test teams

Change and Configuration Management (/ccm)	One of t	he <u>Client Access Licenses</u> expires in 57 days
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### Rankings improve clarity

#### Team clearly understand the goals

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	🔀 Login not working anymore		5 hours	🖶 High	3
	🗈 Donor Dividend Allocation Criteria	5 pts	-	🖶 High	4
	🗐 Implement - Donor Dividend Allocation Criteria		2.5 days	🖶 High	5
	🔀 Logout is not working anymore		3 hours	🖶 Medium	6
	Performance on first startup is bad		2 hours	🖶 Medium	7
	🖄 Some links are not working		5 hours	🖶 Medium	8
	Implement - Frequency of dividend transfer		1 week	🖶 Medium	9
	SWT Exception		1.5 days	🖶 Medium	10
	Implement - Requests sent in form of email		4 days	🖶 Medium	11
	Implement - Organization must identify how much money is desired		1.5 days	🖶 Medium	12
	🗐 Implement - Organization must provide justification for why funds are nee…		4 hours	🖶 Medium	13
	Implement - Organizations can Apply	-	1 day	🖶 Medium	14



### Plan at the right level of detail

Everyone participates in planning





Test your real-time planning capabilities Can your team...

- Plan across the entire team?
- Plan for waterfall, iterative and agile environments?
- Integrate planning with execution?
- Instantly see the impact of a change in project scope or resources?





# What is Lifecycle Traceability?

#### Lifecycle Traceability improves quality by:

- Establishing relationships between software artifacts
- Helping you identify and close artifact gaps, ensuring coverage across disciplines
- Provides visibility into the **completeness** of planned items by inspecting all related artifacts
- Provides easy access to related artifacts ensuring everyone shares the same view
- Delivers transparency which enables everyone to make **fully informed decisions** based business priorities



#### Instant access to details from any point in the development process

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### CLM Link Types



smarter planet []



## SCRUM process Template



smarter planet 🗹



#### Key lifecycle traceability relationships





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### Developer have visibility into the Requirement they will be implementing

For the Developer

- Rich Hovers provides insight at your finger tips reducing time to value.
- Clickable links provides valuable information on requirement

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# Team Leads have visibility into coverage & completeness

- Proactively respond to gaps as they surface through out the project
- Issues quickly highlighted and resolved

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### Automated defect traceability reduces costs and improves quality

4-clicks to submit a defect automatically linked to impacted artifacts

Test results are recorded and linked to test cases, and associated requirements

Test results can be linked to software builds

Everyone has visibility into the defects, their impact, and the action taken to resolve them

app Requests sent in form of email

Frequency of dividend transfer

Donor Dividend Allocation Criteria

Organizations may apply with an initial request

Customers can Nominate an Organization

Defect JKE Charity Coordinator will respond to request in the we A Marco

& Marco

B

Organizations can Apply

Summary



JKE Charity Coordinator will respond to request in :

Customers can nominate an organization for the pi

Actions

JKE Charity Coordinator responds to onl 🙀 425: Running out of SW

Customers can Nominate an Organizati

# IBI

# Test your lifecycle traceability capabilities

Can your team answer these questions...





# What is In-Context Collaboration?

#### In-Context Collaboration improves product value by:

- Making information immediately accessible to all team members in the context of their work
- Empowering teams to collaborate on and review software development artifacts so they can incorporate feedback early and often
- Providing single source of truth hosted in a shared repository so that team members can collaborate effectively around the globe











Threaded discussions on requirements

View All Artifacts								
Page size:	20	•			📲 👻 🗐 No grouping 👻 🔚 🎼 💋 🕼			
	ID	Name	Artifact Type	Last Modified By	Last Modified Date			
	44	Accounts Overview	Part	JTSAdmin	Mar 26, 2011 5:43:06 PM			
	50	Transaction History	Part	JTSAdmin	Mar 26, 2011 5:43:10 PM			
	53	Accounts Overview (Home Page)	Sketch	JTSAdmin	Mar 26, 2011 5:43:11 PM			
	55	38 Dividend Contribution - screen flow	Screen Flow	JTSAdmin	Mar 26, 2011 5:43:11 PM			
	60	Account Details	Part	JTSAdmin	Mar 26, 2011 5:43:13 PM			
	67	Dividend Contribution	Storyboard	JTSAdmin	Mar 26, 2011 5:43:15 PM			
	75	Donor must be registered user to access account details	Business Rule	JTSAdmin	Mar 26, 2011 5:43:19 PM			
	79	B Donors will receive confirmation and receipt	Feature	JTSAdmin	Mar 26, 2011 5:43:21 PM			
	89	Pividend contribution - confirmation	Sketch	JTSAdmin	Mar 26, 2011 5:43:23 PM			

#### Recent discussions highlighted on requirements

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*	62	👄 New		1 pt	Organizations may apply with an initial request	⊜ Marco
	64	💷 In Progress		2 pts	Customers can Nominate an Organization	🌯 Deb
*	66	👄 New		1 pt	Organization must provide justification for why funds are needed	⊜ Marco
*	69	🔷 New		2 pts	Organizations can Apply	⊖ Marco
	70	💷 In Progress		5 pts	Donor Dividend Allocation Criteria	🌯 Deb
*	71	👄 New		1 pt	JKE Charity Coordinator will respond to request in the website trigg	⊖ Marco

Unread work Items bolded for developers

### Viewlets focus the team on recent comments and changes

Comments in All Projects (4)	4
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Page 1 of 1	
	Secent Changes in All Projects (100)
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	User Story Elaboration Template (121) Mar 26, 2011
Any changes to a Requirement	Dividend allocation by percentage (120) Mar 26, 2011
	Dopors can choose to support an organization (118) Mar 26, 2011
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changes so that know exactly what is	Donate wizard pg 1 (115) Mar 26, 2011
changing by whom and can access	Apply for Organizational Funding (114) Mar 26, 2011
immediately assess the impact for the	The Functionality (113) Mar 26, 2011
team.	Page 1 of 10

## Comments on requirements details are in-context

79: Donors will receive confirmation and receipt 😳		🛍 – 🎲 🌆   🗊 🔎 🗈   🗙   🦑 Edit
<ol> <li>Key Scenarios         <ol> <li>Donor will receive confirmation notice that donation has been processed.</li> <li>Once the confirmation is received, the Back Office System will initiate an email to the donor based on the primary contact information in the donor's profile.</li> <li>If the profile indicates no email address available and or the given email address is not valid, then a hard copy of the donation will be sent to the donor's mailing address specified in the donor's profile.</li> <li>The Donor will receive an email - mail notice affirming the donation % and amount.</li> <li>If in email, the donor will be provided an option to print the confirmation notice for tax purposes.</li> </ol> </li> <li>The printed confirmation notice must be in a format that is acceptable by country, state, and province agencies and will be mailed in their Bank Statement</li> </ol>		Overview         Comments (2)         Image: Comment (2)
	:	

A click on the comment highlights the text under discussion.



Test your In-Context Collaboration capabilities Can your team...

- Easily access the "single source of the truth" through linked artifacts?
- Quickly grasp the "who, what, when and why" of team activities?
- Bring new team members up-to-speed quickly?
- Overcome the barriers of multiple time zones when working with outsourced and distributed team members?





# What is Development Intelligence?

#### Development Intelligence improves predictability by:

- Applying Business Intelligence techniques to software and systems development
- Enabling fact-based decision making (to communicate status, monitor progress, diagnose problems, identify corrective actions)
- Steering projects and programs to deliver on-time



Source: Capers Jones, Measurement, Metrics and Industry Leadership, 2009 and Software Engineering Best Practices, McGraw Hill, 2010.

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## Measuring Time-to-Value (Schedule)

Burndown

#### **Iteration Burndown**

Showing how much work is left to do in an iteration. It enables the team to adjust scope or resources to finish the iteration successfully.





#### **Release Burndown**

Shows the estimated functionality remaining to complete the current release.

#### © 2011 IBM Corporation

# **Measuring Product Quality**

#### **Defect Trends**

Shows defect arrival and closure rates, determines the remaining defect backlog, projects the future defect arrival/close rate up to and post-ship

#### **Test Execution Status**

40

Monitors test completion and success



Number of Executed Tests





# Use dashboards to provide that 1 view of project health





### Test your development intelligence Can your team...

#### Time-to-Value

 Produce the right capabilities according to the committed schedule?

#### Product Value

- Deliver a valuable product?

#### Product Cost

Measure what we spending to deliver the system?

#### Product Quality

- Build a high quality system?
- Predictability
  - Manage the risk and uncertainty?





# What is Continuous Improvement?

#### Continuous Improvement reduces cost by:

- Improving software delivery through the ongoing adoption of best practices and automation to reduce manual, non-creative and error prone tasks
- Promoting incremental improvement of a project when needed
- Enabling breakthrough improvement by capturing best practices and reusing across teams
- Allowing everyone to participate with easy to adopt best practices at your fingertips.

"Successful analytics requires taking it beyond software and reporting, and into the realm of management practices and operations improvement" Information Management Online, February 23, 2011



## Adopt - Process Sharing

Leverage the Best practices from Rational and other teams

Process Templates on Server: JKE.tools.com:9443/JTS



#### Import/export Templates

Provides the ability to leverage best practices from Rational and other teams

2

#### Servers support multiple templates

Allowing administrators to support different processes.

Teams improve their process independently.



# Process updates can be shared

Allows teams to control when they want to accept improvements.





# Team Retrospectives help identify areas of improvement

- Tracking Retrospectives help team members to collaborate on improvements.
  - Ranking of process improvements help to focus on where the team feels the biggest pain.
  - Metrics where available help support process improvements and show results.

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BM.							Jazz



### Implement : Require Unit test before deliver

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# Plan tasks are not being completed before Story completed

8 Story 464 * 🖓	Previous  14 in 1 - 15   Next  Child work item '470' is unresolved. Can't resolve work item '464' because its child work item '470' is unresolved.	چ 👜 ا	🖥 🎇 🗞 Save
Summary: * Allocate D	ividends To Multiple Causes		✓ Set Done 💌
Overview Acceptance	Links Approvals History		Loaded: Jun 2, 2011 12:27 PM
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# Test your Continuous Improvement capabilities Can your team...

- Leverage out-of-the-box process templates for traditional and agile workflows?
- Change process "on the fly" as part of a continuous feedback loop?
- Allow team leads to determine how strict or lax the "rules of the road" should be?
- Modify process enforcement over the life of a project, to encourage early-stage experimentation and end-game stability?





## Criteria for effective lifecycle management: ALM imperatives

- 1. Accelerate time to delivery with Real-time Planning
- 2. Improve quality with Lifecycle Traceability
- 3. Maximize product value with In-Context Collaboration
- 4. Refine predictability with Development Intelligence
- 5. Reduce costs with Continuous Improvement

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