

# Extending Rational Collaborative Lifecycle Management Beyond Rational

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Bangalore-CCM Track

IBM Software

# Innovate2011

The Premier Event for Software and Systems Innovation



**Software. Everywhere.**

**August 9-11, Bangalore | August 11, Delhi**



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## Session description

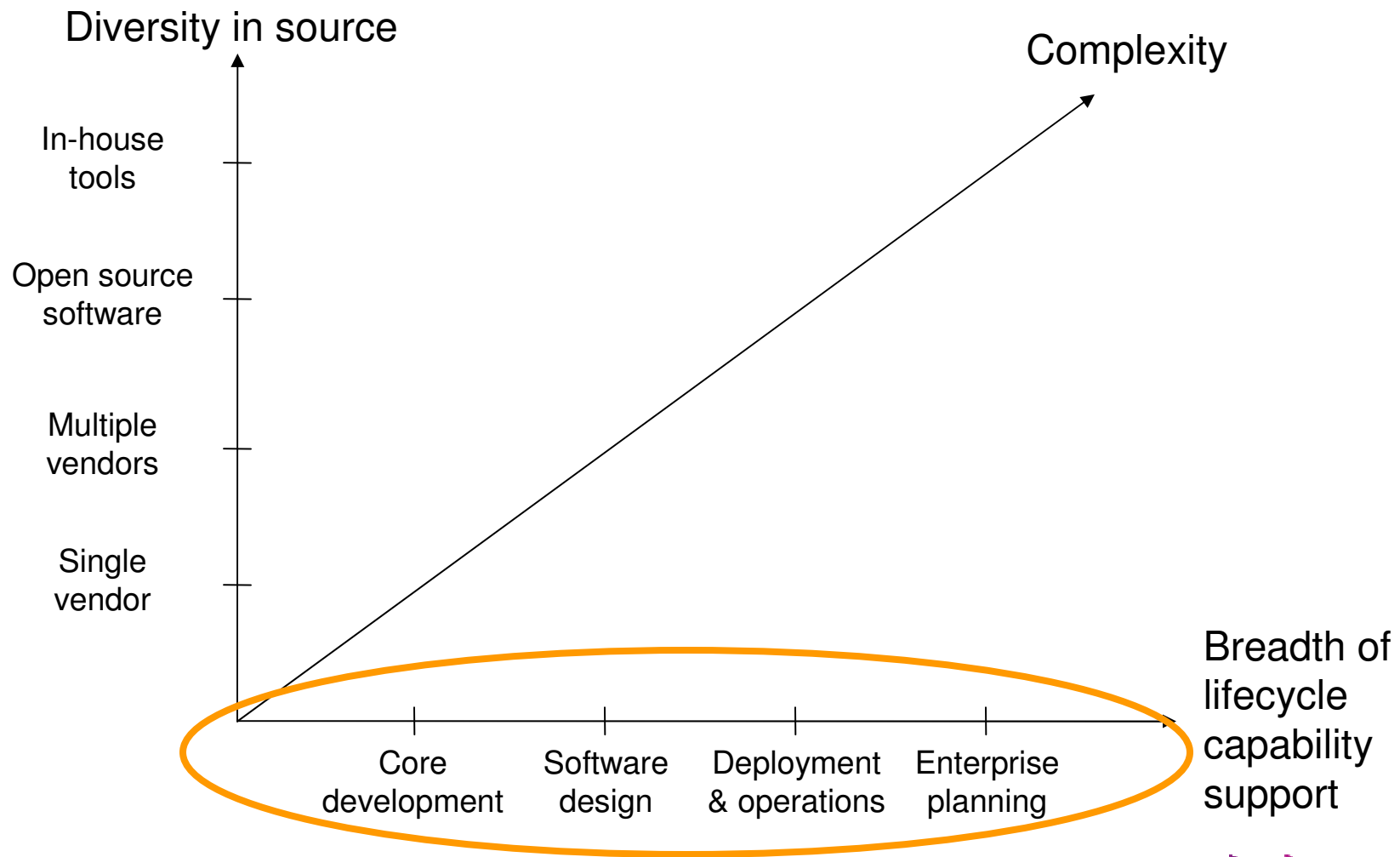
- Jazz is IBM's initiative for improving collaboration across the software & systems lifecycle
- This initiative provides the basis for integrating new and innovative IBM products
  - ▶ Rational Team Concert
  - ▶ Rational Quality Manager
  - ▶ Rational Requirements Composer
- These products comprise the Rational Collaborative Lifecycle Management solution (CLM)
- The Jazz platform also supports integrations beyond new Rational products
- This session will describe how Jazz supports integrations with lifecycle tools stemming from a wide range of sources

## Agenda

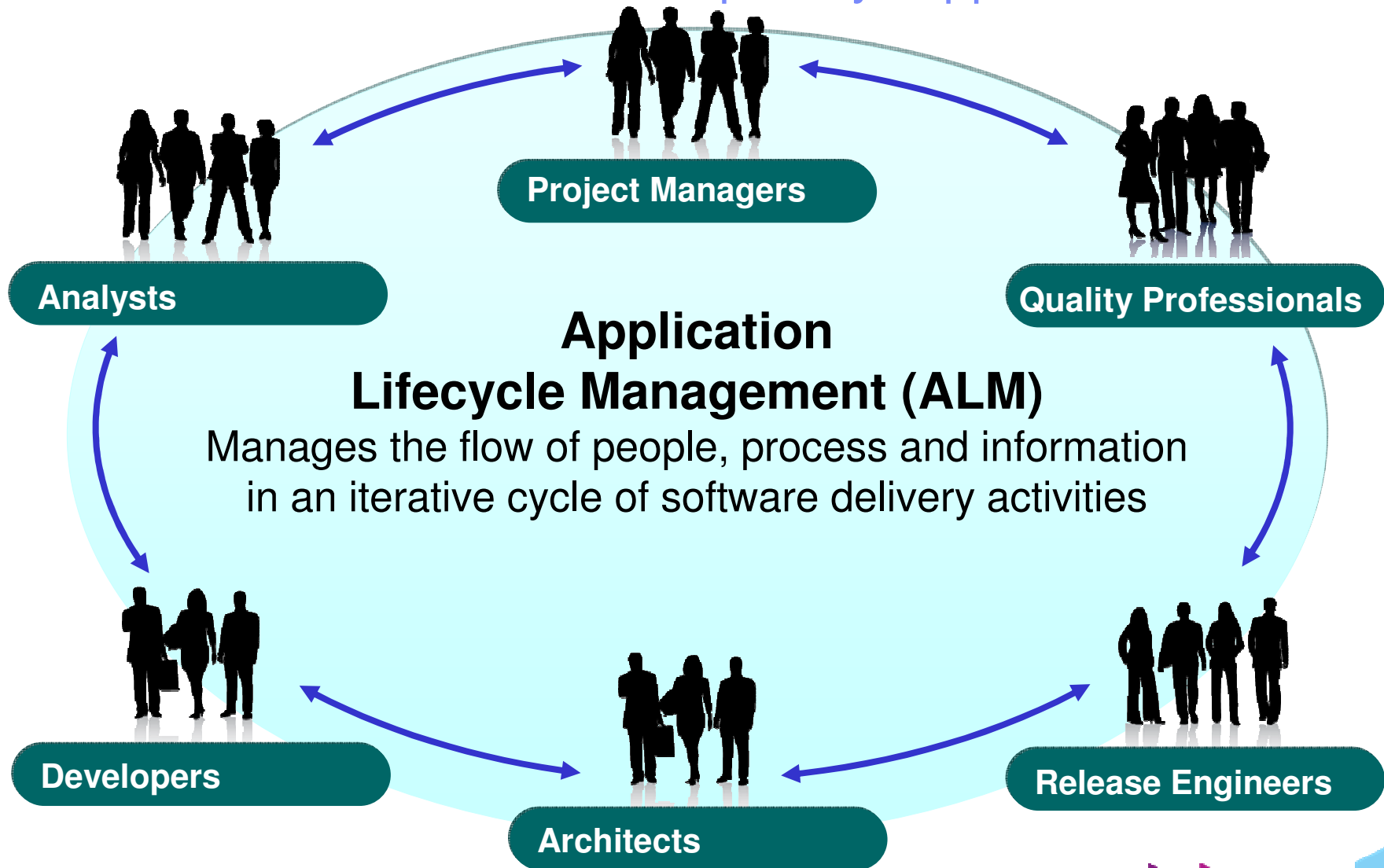


- Scope of the problem
- The Jazz initiative
- Rational business partners solutions
- Rational interoperability evolution

# Lifecycle tool integration can be very complex



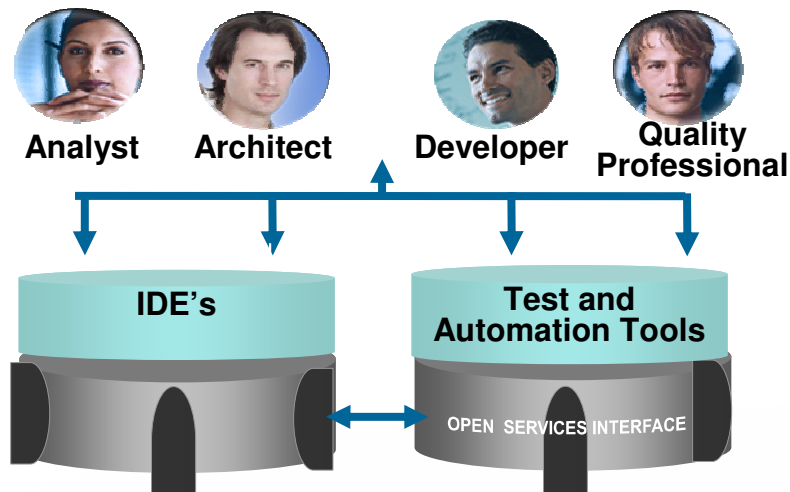
# ALM addresses the breadth of capability support needed



# ALM requires various types of lifecycle tools

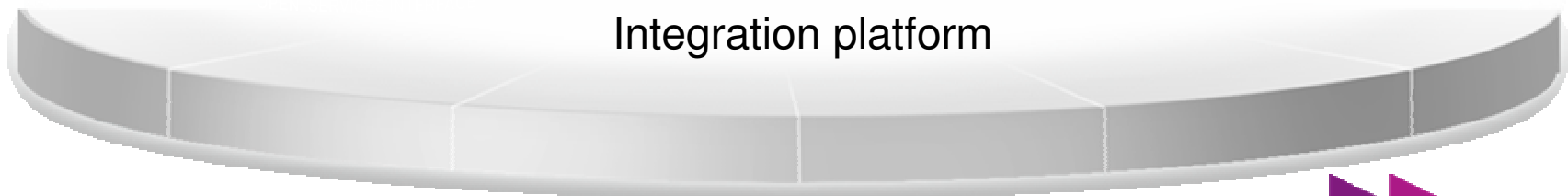
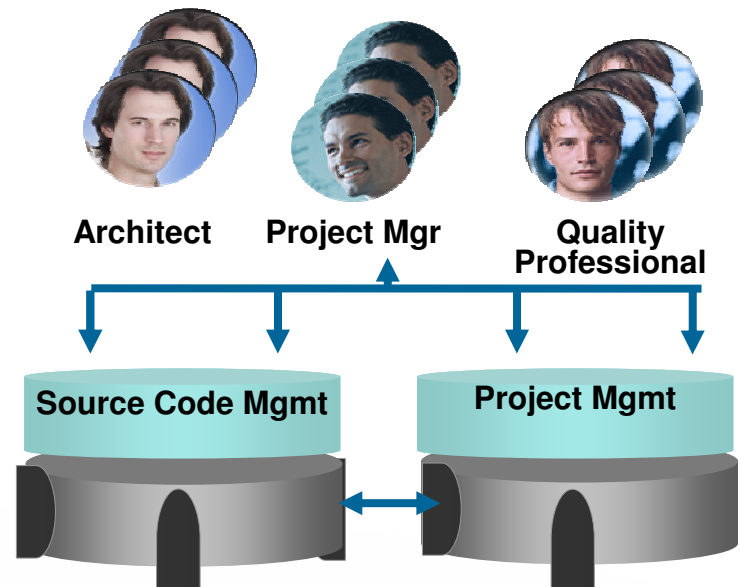
Tools that target a software/systems task or practitioner

Compilers, IDEs, Test automation tools, build automation, security analysis, quality analysis ...

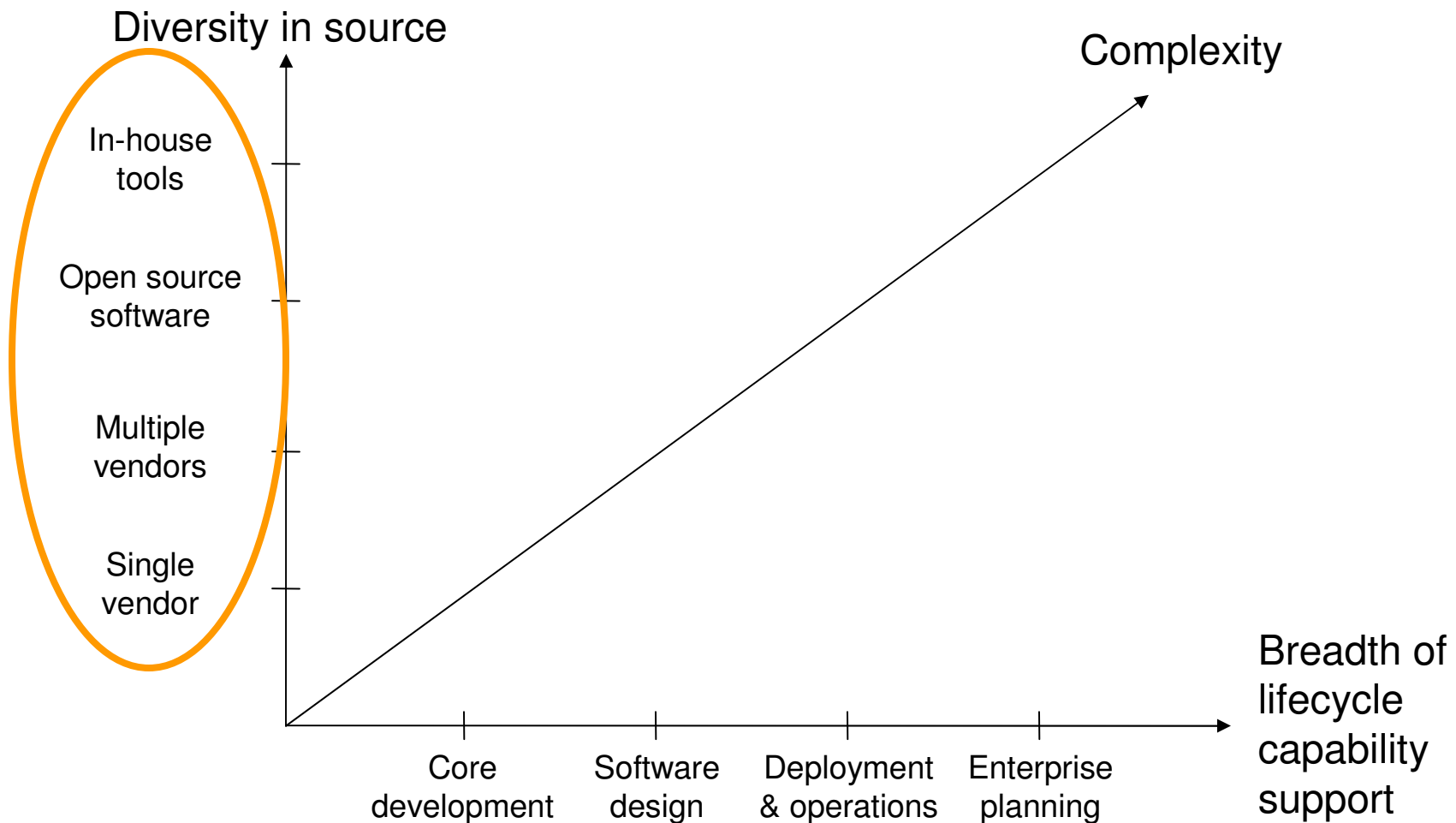


Tools that help manage, control, or analyze the development process

Change mgt, Source Code mgt, Project planning, product/portfolio management, test mgt



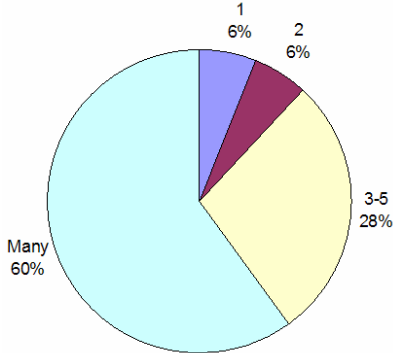
# Lifecycle tool integration can be very complex





# Lifecycle tool environments are becoming increasingly heterogeneous...

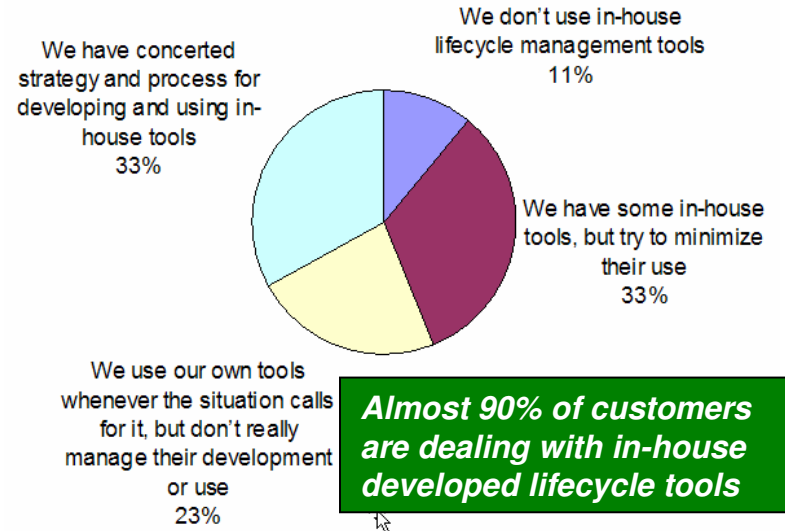
**# of commercial lifecycle tool vendors**



**Almost all are managing 3 or more lifecycle tool vendors**

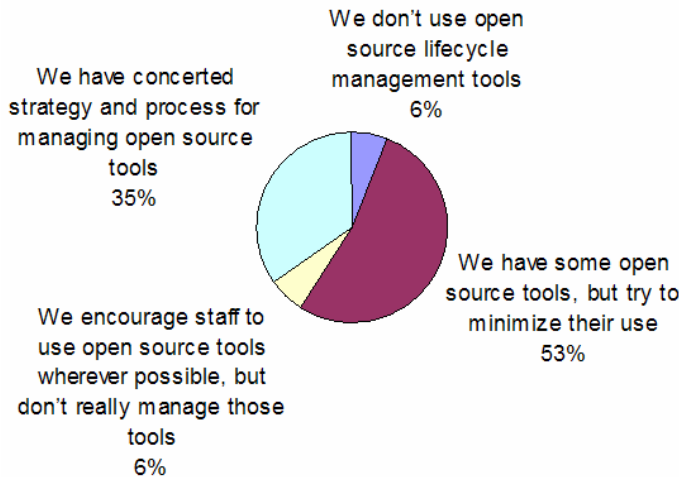
Source: Rational Voice of the Customer Event, November 2010, N=18

**Role of in-house developed tools**



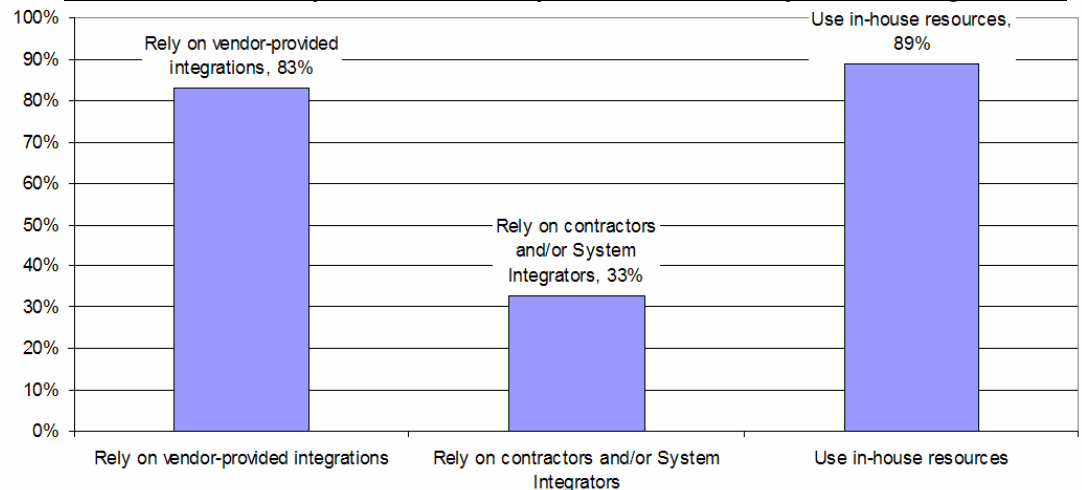
**Almost 90% of customers are dealing with in-house developed lifecycle tools**

**Role of open source lifecycle tools**



**Almost all are dealing with open source lifecycle tools, but 2/3 say not very well**

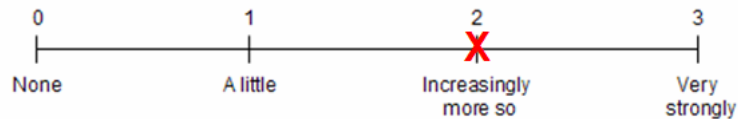
**What resources do you use to develop and maintain lifecycle tool integrations?**



**Vast majority supplement vendor-provided integrations with in-house effort**

## ... and customers see some challenging trends

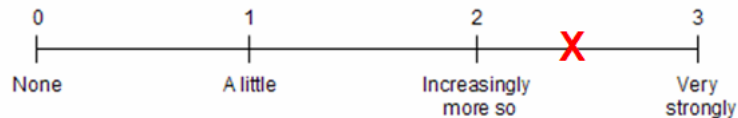
A. My lifecycle tool environment is and will always be heterogeneous



D. Maintaining an ad-hoc integration solution is costly



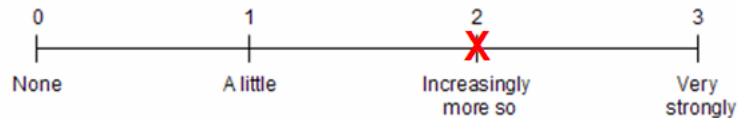
B. I need to integrate my entire software and systems management lifecycle



E. I wish I had a classic “buy vs. build” decision to make for integrating tools



C. My integrations use non-standard interfaces, are difficult to change, cannot scale, and/or fall short on performance and quality expectations



- Heterogeneous is here to stay
- Current integrations fall short of expectations
- Need to integrate more broadly is growing
- Cost concerns beg for a “buy” vs. “build” option for the integration solution

## Consider this situation as we proceed...

From the persona of the customer:

- *I'm already invested in and actively using Rational products today*
- *I also use other commercial products in select areas of capability*
- *I have some degree of home-grown tools actively in use*
- *I have System Integrators and independent contactors who develop and use their own tools that are essential to my business*
- *I currently maintain separate lifecycle tool integration teams with disparate and uncoordinated efforts*
- *My lifecycle tooling environment is only loosely integrated at best, and does not foster effective collaboration between my users*

*How does one integrate the many elements of this highly heterogeneous lifecycle tool environment?*

## Agenda



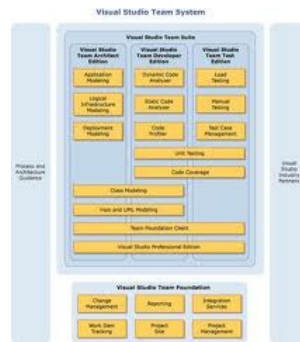
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# Past approaches to lifecycle tool integration have fallen short

∅ Limited choice and coverage ∅

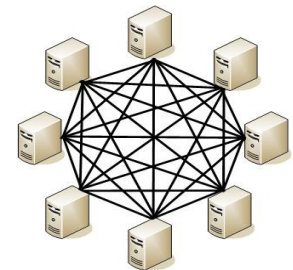
## Single repository

“Can I really expect one vendor to provide all the functionality I need? And what about my existing tools?”



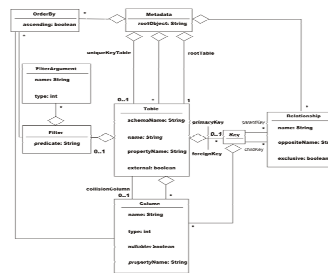
## Point-to-point integrations

“How can I ever upgrade one tool without breaking everything else?”



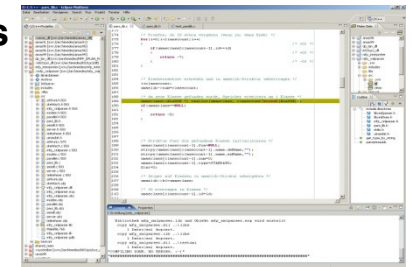
## Universal metadata standard

“How did I ever think all those vendors would be able to agree?”



## Standard implementations

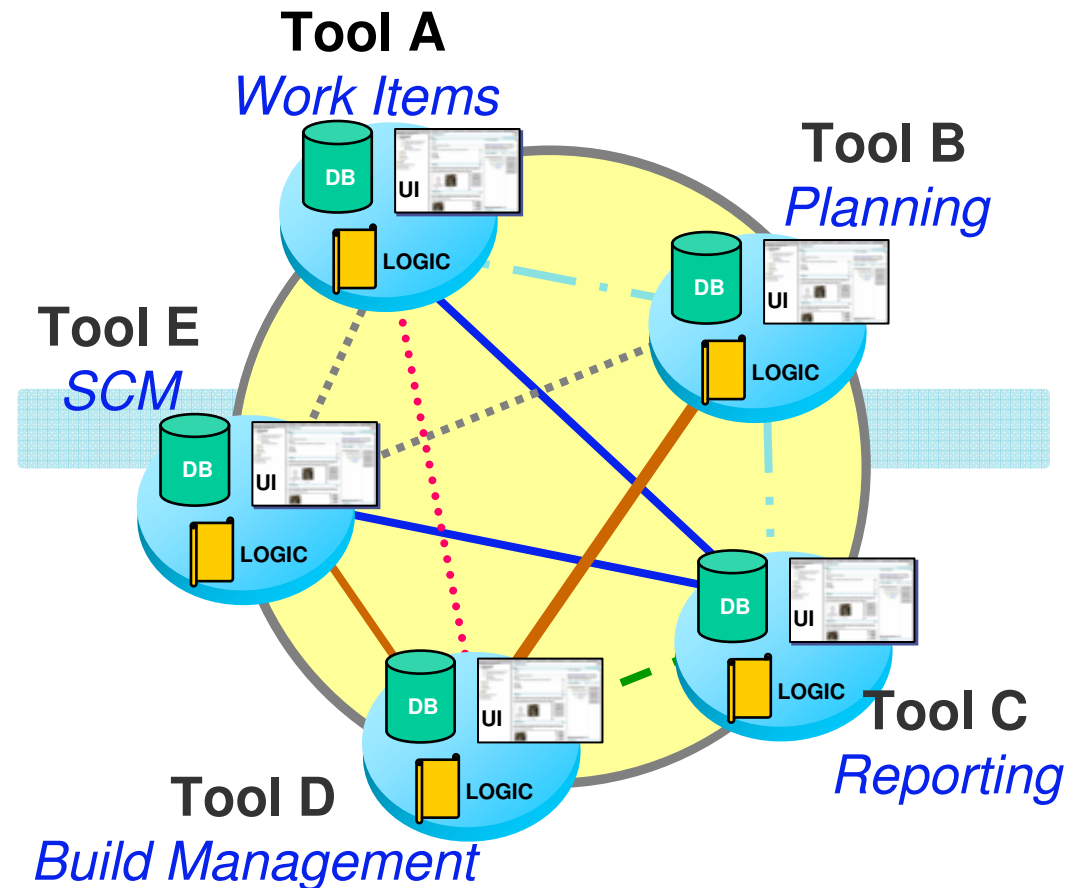
“Did I really believe that every vendor would rewrite their tools on a single framework?”



∅ Slow to emerge and disruptive to adopt ∅

## First, we need a way to break down the silos...

- Each tool typically comes with its own:
  - ▶ UI - Web and desktop presentations of views and tasks
  - ▶ Logic – Workflow, process, search, query, scale, security and collaboration
  - ▶ Storage – Availability, traceability
  - ▶ Privacy, backup/archive
  
- Resulting in...
  - ▶ Brittle integrations
  - ▶ Silos everywhere
  - ▶ High cost to maintain and administer
  - ▶ Proprietary API's



*How do we solve this problem?*



## Open Services for Lifecycle Collaboration

Lifecycle tool integration inspired by the web



Learn



Use



Participate

*An initiative aimed at simplifying data linking and tool integration across the lifecycle*

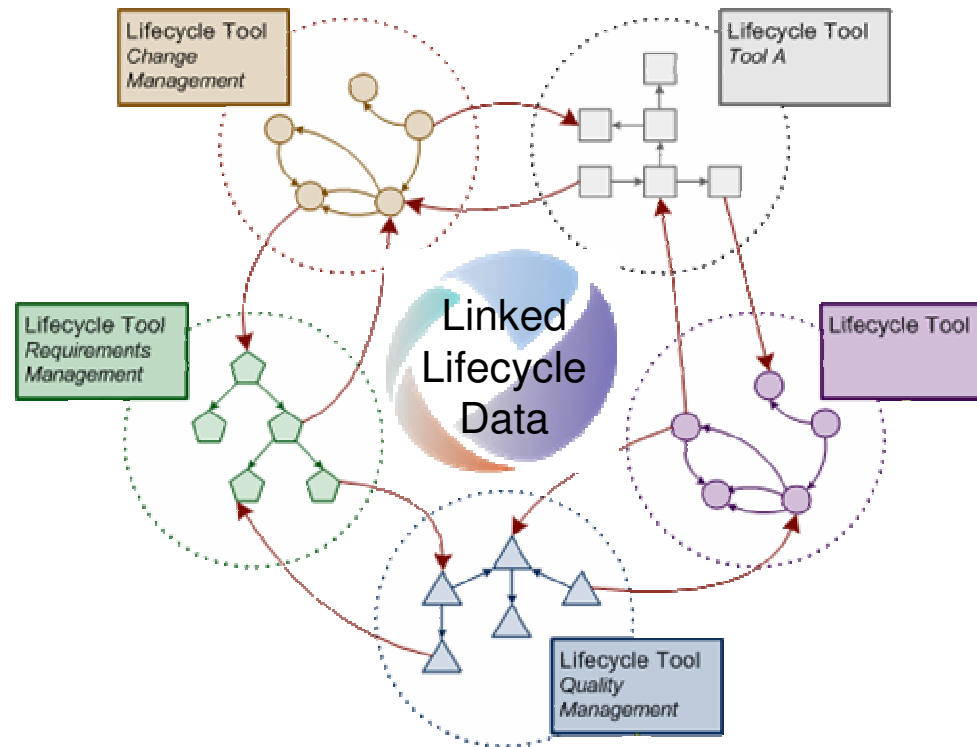
### Open Services for Lifecycle Collaboration

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

- ▶ Community Driven – specified at **open-services.net**
- ▶ Specifications for ALM, PLM and DevOps Interoperability
- ▶ Inspired by Internet architecture
  - Loosely coupled integration with “just enough” standardization
  - Common resource formats and services
- ▶ A different approach to industry-wide proliferation

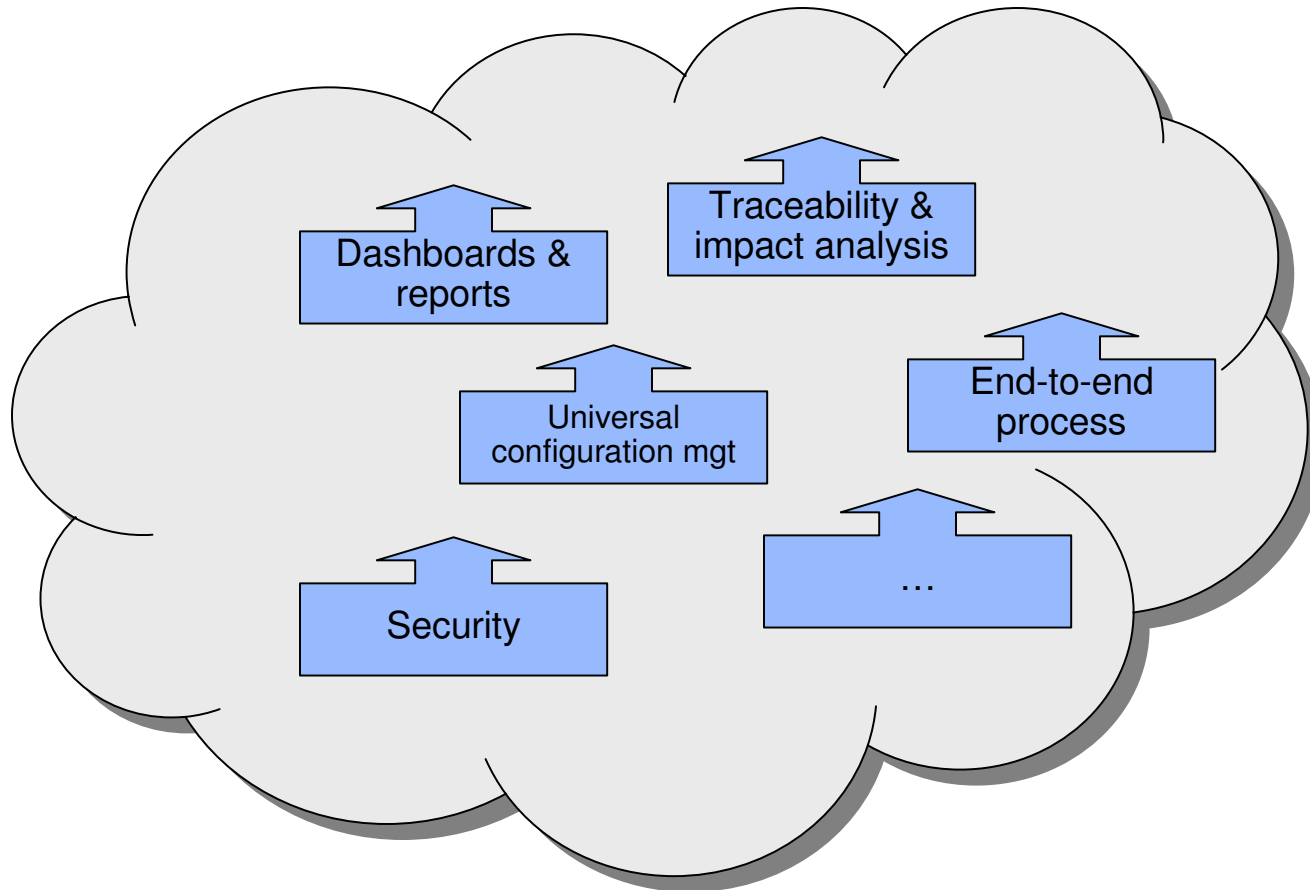
## Open Services for Lifecycle Collaboration (OSLC)



- OSLC allows lifecycle tools to access and link to resources where the data lives, as opposed to a more classical copy and synchronize approach



... and then we need a way to go beyond simply linking data

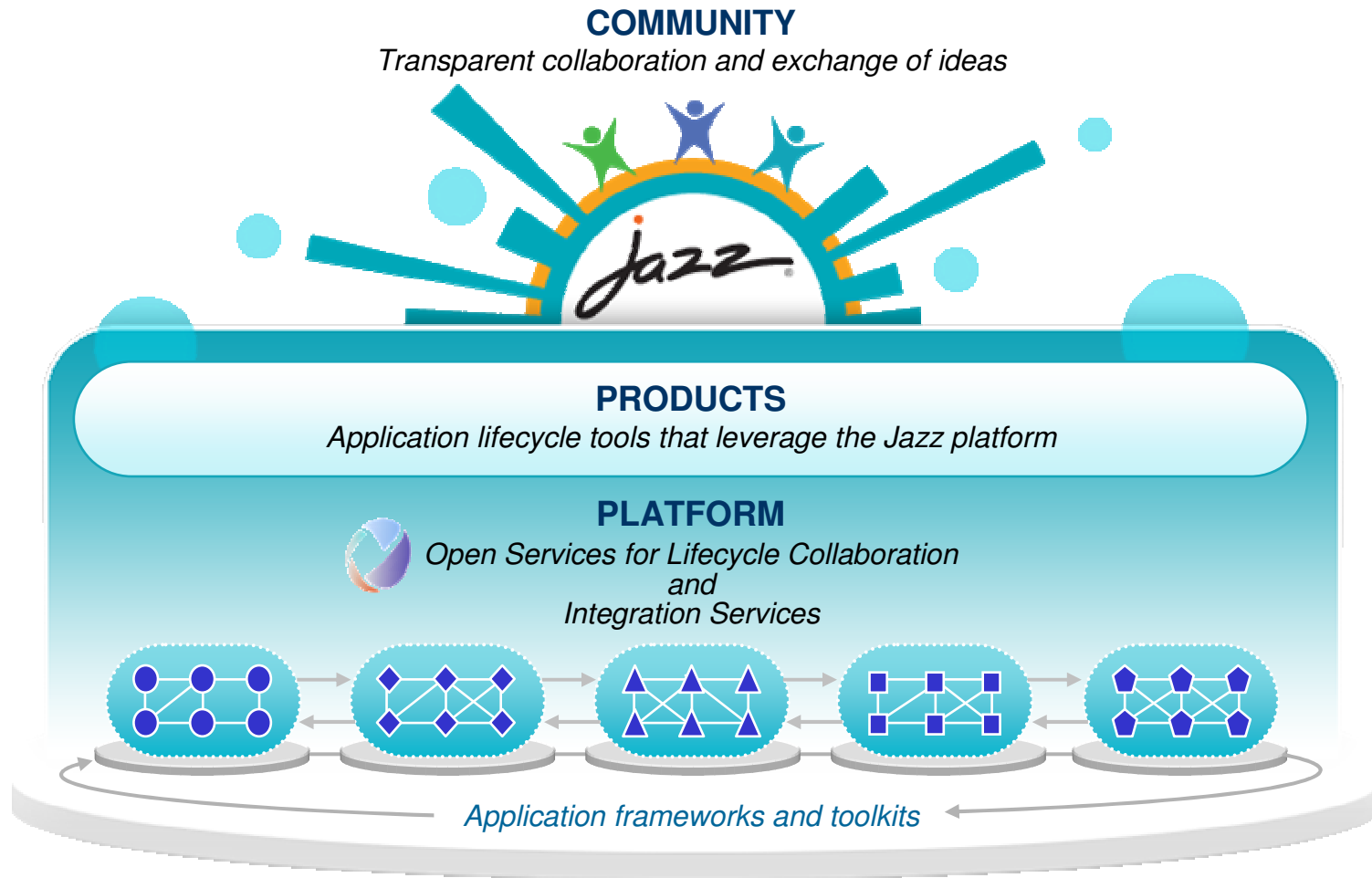


*Some services don't belong in any one tool*

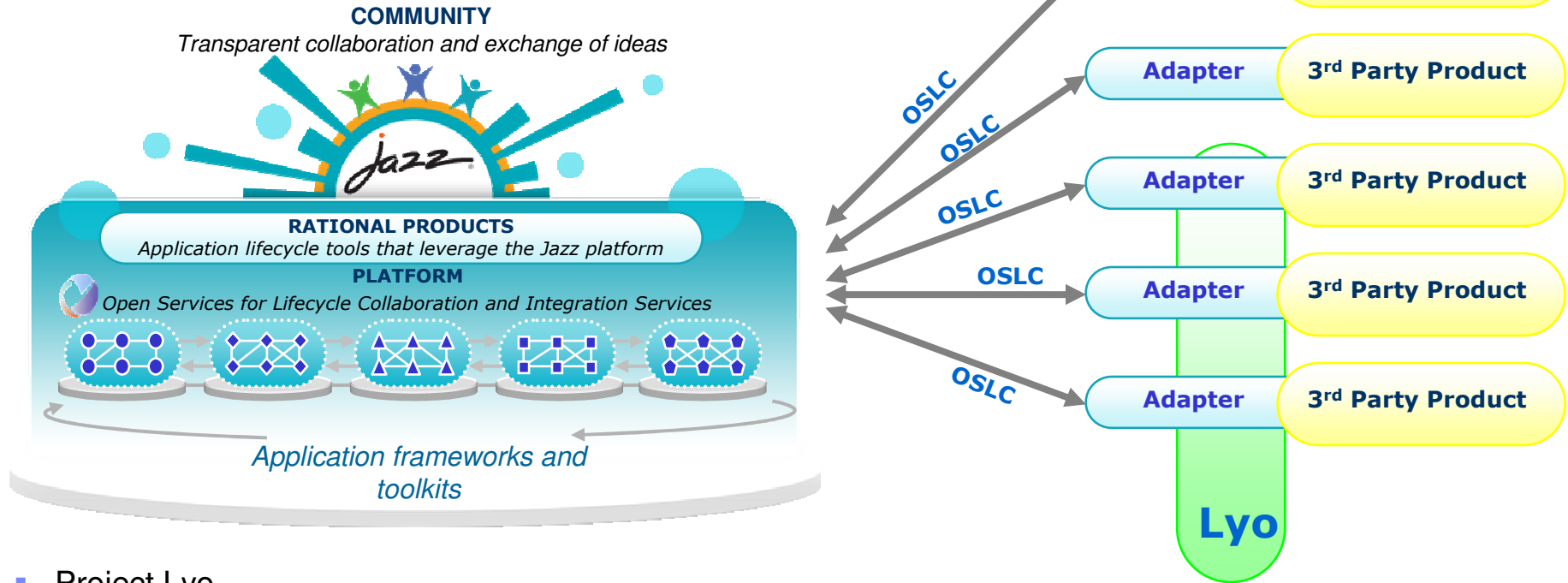


*Improving pair-wise tool integration is necessary, but not sufficient*

# Jazz is IBM's initiative for improving collaboration across the software and systems lifecycle



# The IBM Rational Gearbox initiative



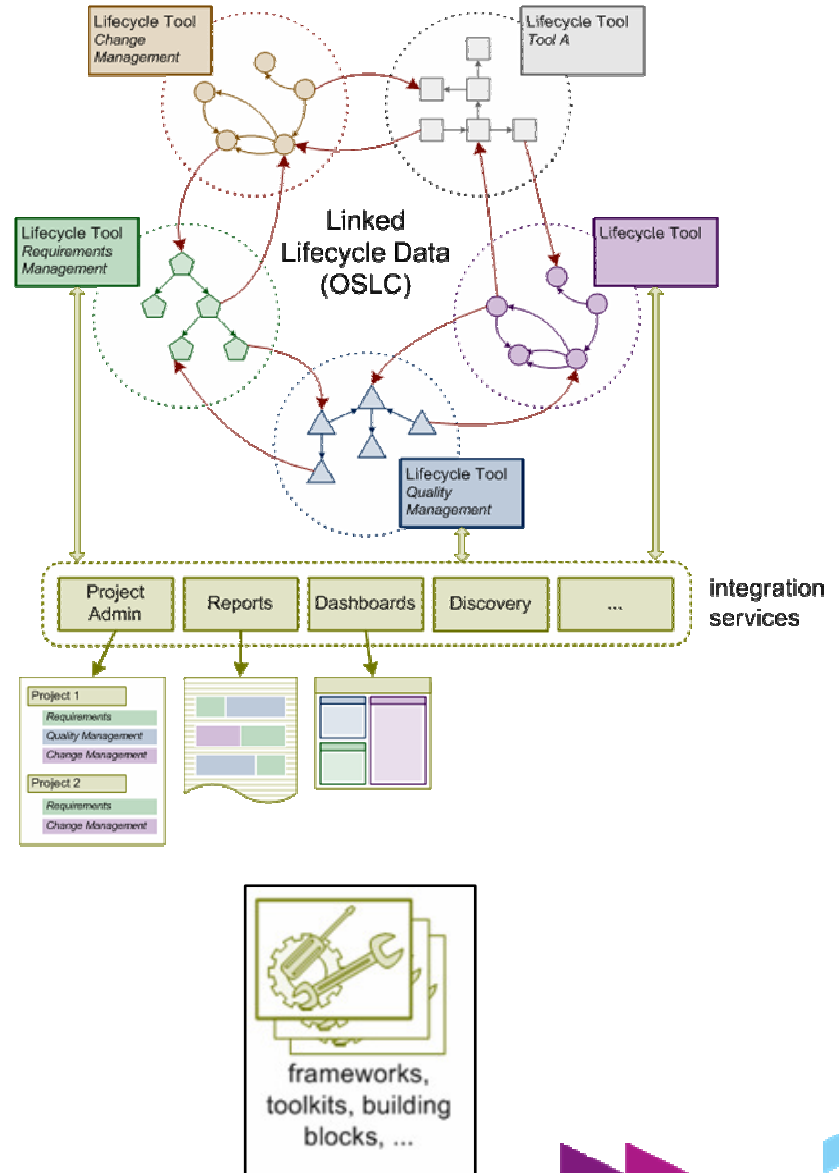
- Project Lyo
  - ▶ Eclipse project just approved
  - ▶ Provides an OSLC SDK
  - ▶ Enables consistent approach to building OSLC consumers & providers
  - ▶ Eclipse Lyo (OSLC SDK -- libraries, test suites, samples) driven by and utilized in creating 3<sup>rd</sup>-party OSLC adaptors (key for BPs)

Eclipse Lyo as baseline code for integration adapters

# The Jazz platform

Jazz architecture

Application frameworks and toolkits



# The Jazz architecture overcomes limitations of the past

## ✓ Open choice and rich integration

**Uniform Resource Identifiers**

“I can link virtually any resource to virtually any other resource, regardless of where the resource lives!”

**Standard Interfaces**

“Each tool can evolve independently without breaking integrations!”

**Open Standards for the Lifecycle**

“Each domain can create standards without having to wait on the others or get the whole industry to agree!”

Open Services for Lifecycle Collaboration  
open community. open interfaces. open possibilities

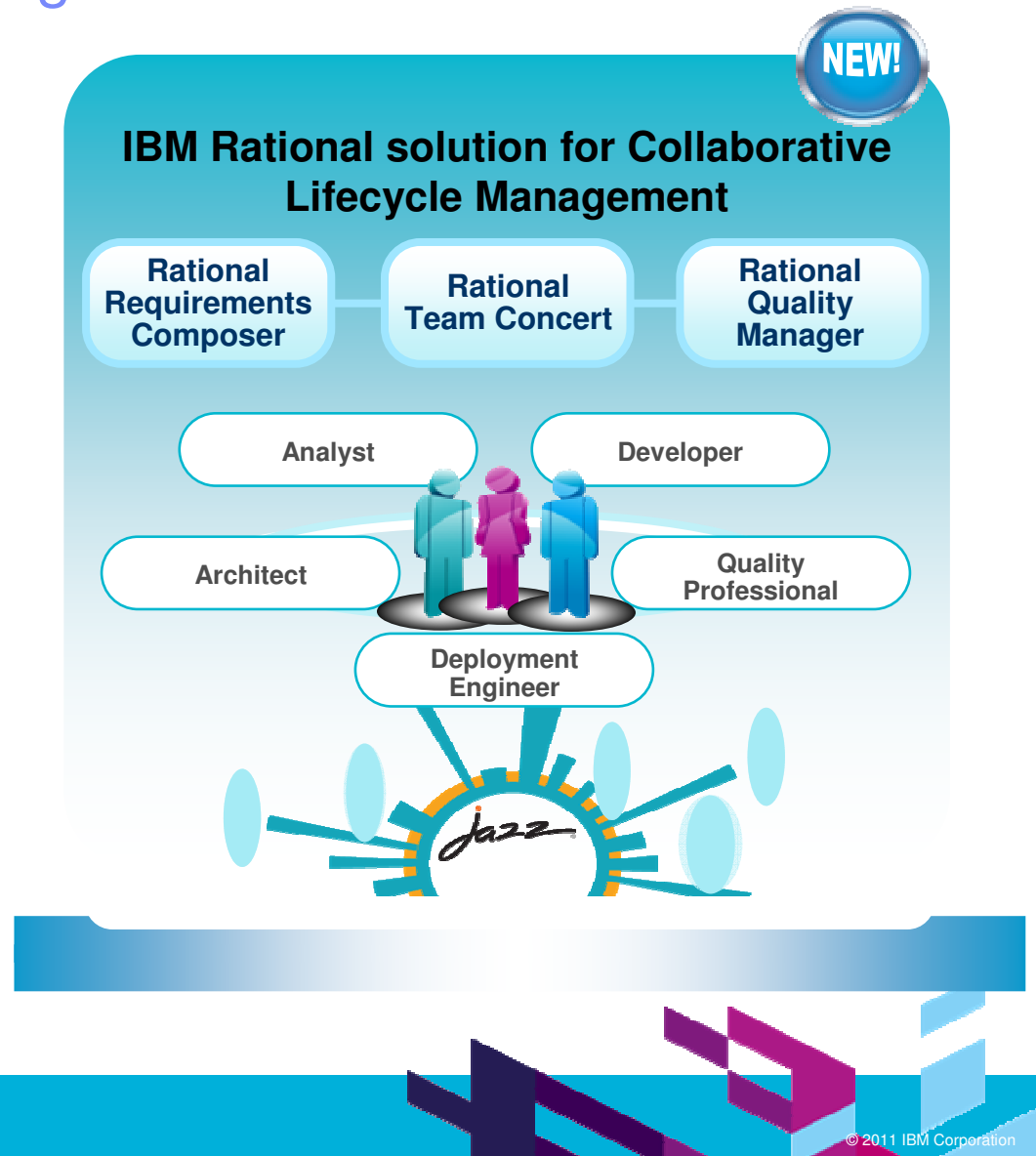
**Integration Services**

“Each vendor can evolve their tool to exploit the services that are valuable to customers like me!”

## ✓ Evolutionary and incremental adoption

## Jazz products comprise the IBM Rational solution for Collaborative Lifecycle Management

- real-time planning
- lifecycle traceability
- n-context collaboration
- development intelligence
- continuous improvement



## Business Value of Jazz



### Integrate

- Integrate across Rational, third-party, & in-house tools
- Enable better traceability across the lifecycle

### Collaborate

- Enact more integrated and collaborative workflows & processes
- Improve scalability via globally distributed teams

### Optimize

- More consistent user experience simplifies adoption
- Realize lower TCO resulting from unified tool administration

*How do these business values extend beyond the Rational CLM products?*

## Agenda

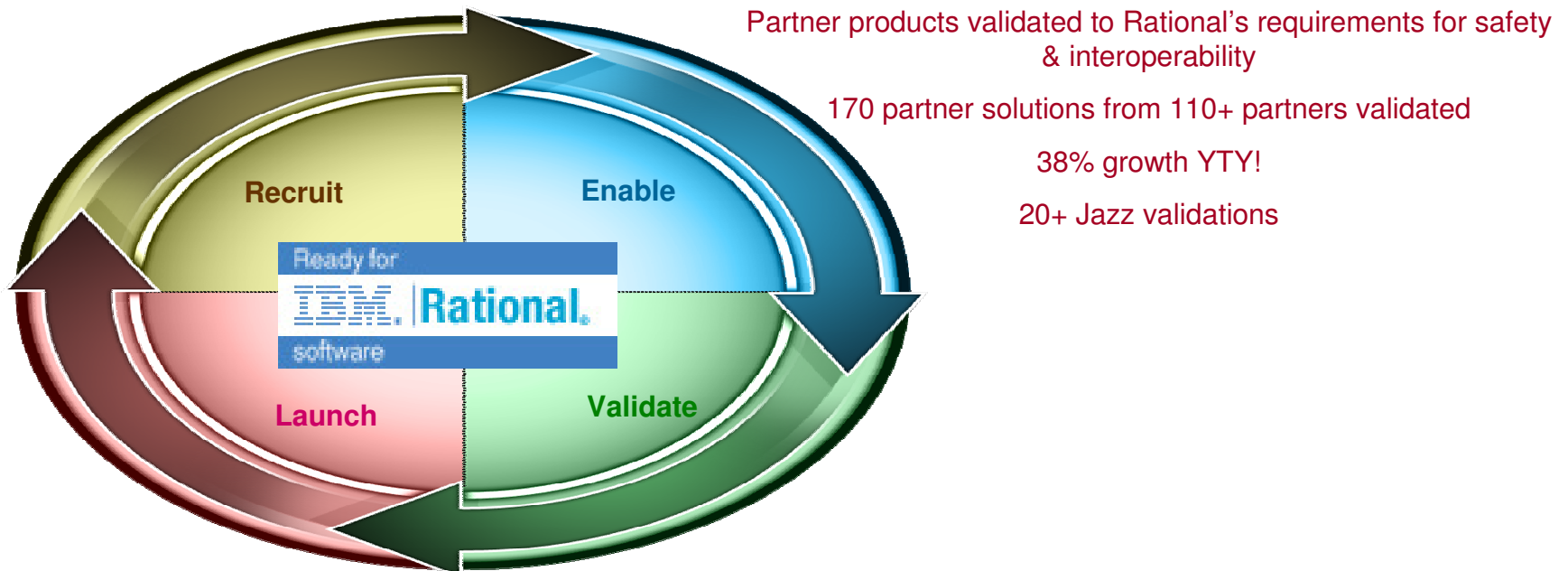
- Scope of the problem
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## The Ready for Rational software offering

- Ready for IBM Rational Software Business Partner Solution Catalogue
  - <http://www.ibm.com/developerworks/rational/downloads/ready.html>
- EMAIL: [drowe@us.ibm.com](mailto:drowe@us.ibm.com)
- Ready for IBM Rational Software offering details for ISV's
  - <http://www.ibm.com/isv/rational/readyfor.html>





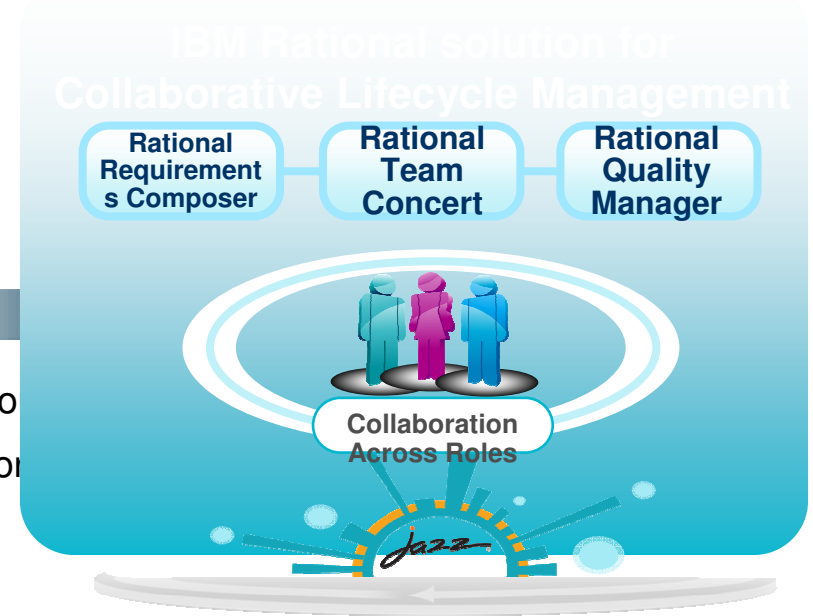
## MSP Connect for Rational Team Concert (RTC)

- Ascendant Technology offers Rational Team Concert integration technology and services that enable productivity in MSP established environments for Initial replication of work break down structure from Microsoft Project to RTC and ongoing synchronization of project status reducing duplication of efforts .
- Provides productivity for project teams
  - Reduced duplication, fewer errors, automatic synchronization

Microsoft Project

Task Name	Sizing	Duration	Plan Start	Plan Finish	Start	Finish	Actual Start	Actual Finish
CSD 20	139.98d	76.57d	NA	NA	Mon 4/10	Tue 7/25	Mon 4/10	NA
Amelian	9d	22d	NA	NA	Mon 4/24	Tue 5/23	Mon 4/24	NA
d1989 - bind() failed UTP	1d	143d	NA	NA	Mon 4/24	Tue 4/25	NA	NA
d2224 - default mems hot fix	1d	1d	NA	NA	Mon 5/1	Mon 5/1	Mon 5/1	Mon 5/1
d2224 UTP	0d	0d	NA	NA	Tue 5/2	Tue 5/2	NA	NA

Open Services for Lifecycle Collaboration (OSLC)



# Building on CLM V3: Ecosystem solutions add value

Ready for  
**IBM | Rational.**  
 software





Review code, status and get approvals without leaving Rational Team Concert environment

## CodeCollaborator

SmartBear CodeCollaborator is the only code review tool that's integrated with IBM Rational Team Concert (RTC) work items. The joint solution promotes Agile practices by providing a fast, convenient and pain-free way for developers to collaborate with each other on their code as well as other software development artifacts (schematics, documents, diagrams, etc.) within the RTC workflow.

*CodeCollaborator is integrated & validated  
"Ready for IBM Rational" for RTC V2 & V3,  
ClearCase and Synergy*





The most complete, extensible environment with maximum code reuse and per-device optimization

The **Worklight** Studio is an Eclipse based IDE that provides the most complete, extensible environment for building applications for multiple mobile devices. The integration with Rational Team Concert provides developers improved team collaboration, automated builds for multiple devices, and reduced development time





## ARCAD Software Extends Rational Team Concert Delivery for IBM i Systems

*ARCAD is a leader in solutions that manage change & modernize business applications in the IBM i world*

ARCAD Software, a leader in solutions that manage change and modernize business applications in the IBM i world, offers **ARCAD-Deliver Extension For Rational Team Concert** enabling companies using Rational Team Concert (RTC) to benefit from the full deployment capabilities of the ARCAD Software Release Management System. Users are able to deploy to multiple servers through an RTC post-build process, to automate the management, release and rollback of all built artifacts, thus providing huge potential increased productivity and time-to-market gains.

Ready for

**IBM | Rational.**

software

**WIND RIVER**

Full lifecycle quality management for embedded devices

The integration between Rational Quality Manager and **Wind River** Test Management provides bi-directional traceability between requirements and tests. Working on production binaries without any special debug information, Wind River Test Management allows users to discover un-tested requirements and automatically identify test suites that are impacted by requirements changes



## Spirent Communications extending Rational Collaborative Lifecycle Management reach

**Spirent Communications** has integrated its flagship test automation platform iTest with Rational Quality Manager and Rational Functional Tester. The result is a complete quality lifecycle management solution spanning business process, applications, services, and the underlying infrastructure of networking, storage, and computing equipment.

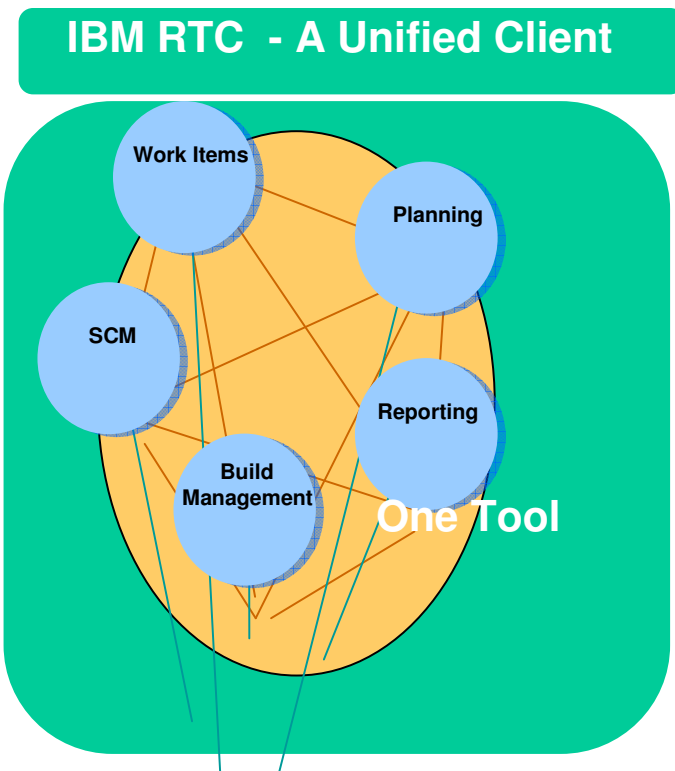






## Open Source License Obligations Management Integration with IBM Rational Team Concert

**Protecode's** Build Analyzer's integration with IBM's Rational Team Concert allows developers working in a collaborative environment to manage open source licenses at all stages of software development. Build Analyzer ensures that there is no unwanted third party code in a software product before it is shipped



## Agenda

- Scope of the problem
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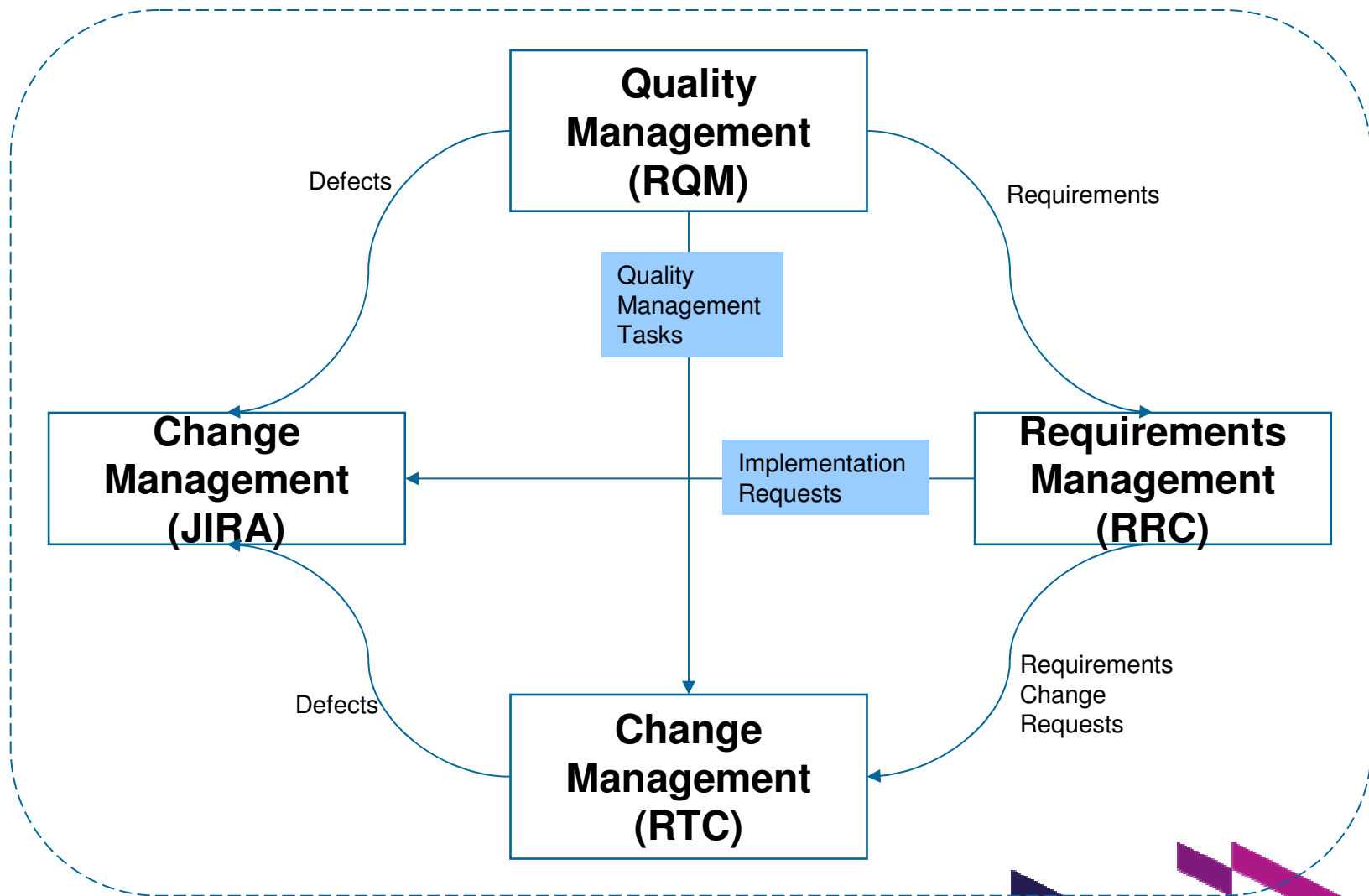


# The Jazz vision



## What might this mean?

CLM scenario JKE Banking + Outsourced Development Team



# What might this mean?

The screenshot shows a JIRA interface with a defect report for 'Cannot select multiple donors'. The report is categorized as a 'Bug' with an 'Open' status and a 'Blocker' priority. It is assigned to 'Bob' and reported by 'Tanuj'. The description states: 'Test Case: Verify dividend transfer frequency. Project Area: JKE Banking (Quality Management). When testing the function did not work. I was not able to assign to multiple donors'. The interface includes a sidebar with navigation options like 'Defects', 'Categories', and 'Previous Results'. A 'Show All Sections' checkbox is checked. The main content area has a search filter and a list of items. A 'Preview' toolbar is visible at the bottom of the main content area.

**Cannot select multiple donors**

**Details**

Type:	Bug	Resolution:	Unresolved
Status:	Open	Priority:	Blocker
Project:	JKE Banking (JIRA CM)	Component/s:	
Assignee:	Bob	Reporter:	Tanuj
Affects Version/s:	None	Fix Version/s:	None
Due:	Unassigned	Created:	5/27/11 12:50 PM
Updated:	5/27/11 4:52 PM		

**Labels**

**Description**

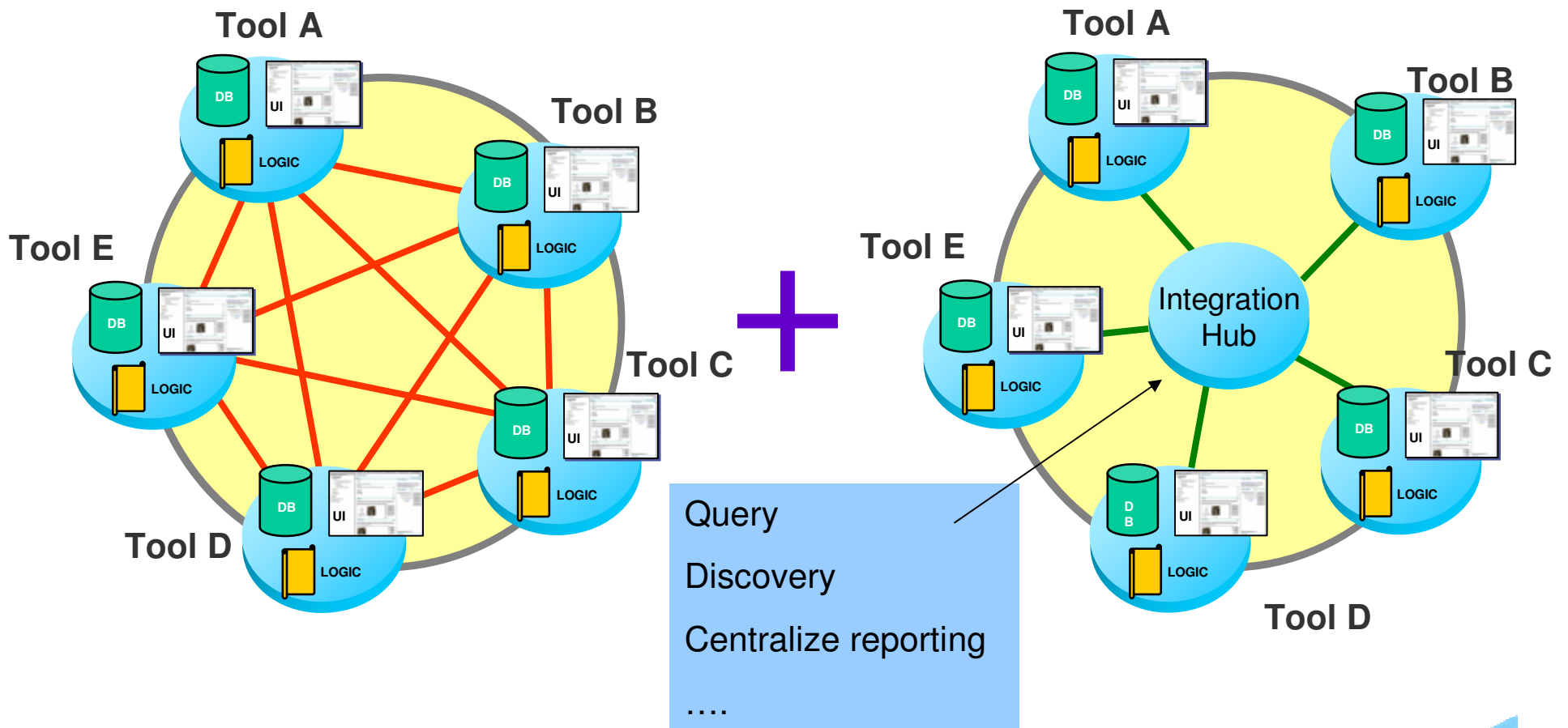
Test Case: Verify dividend transfer frequency  
Project Area: JKE Banking (Quality Management)

When testing the function did not work. I was not able to assign to multiple donors

**JIRA**

▼ Show More

# What else might this mean...an “integration hub”

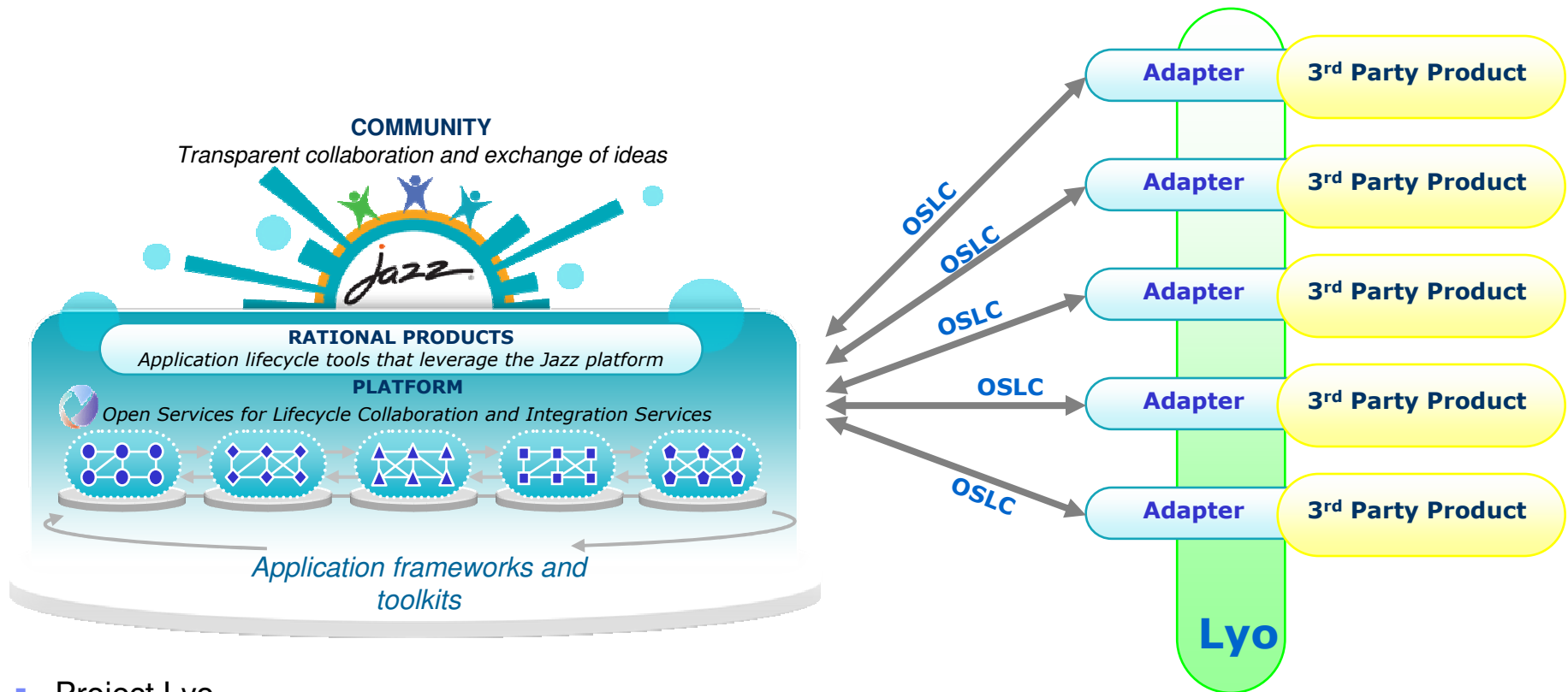


## How are we working toward this Jazz future?

- Technology to enable the vision
  - ▶ Identifying and building common services for Jazz-based products
  - ▶ Exploring the notion of an integration hub
  - ▶ Specification creation through OSLC, and reference implementation/SDK
- Developer community to contribute assets
  - ▶ Contributing to the community around open integration at open-services
  - ▶ Growing the developer contributions through Eclipse project
- Partners and lifecycle tools participation to diversify scenarios
  - ▶ Enabling business partner offerings
  - ▶ Supporting the OSLC Community
  - ▶ Prioritizing customers' tool-diverse environments

**We need you! To partner, to collaborate, and to share your feedback.**

# The IBM Rational Gearbox initiative



- Project Lyo
  - ▶ Eclipse project just approved
  - ▶ Provides an OSLC SDK
  - ▶ Enables consistent approach to building OSLC consumers & providers
  - ▶ Eclipse Lyo (OSLC SDK -- libraries, test suites, samples) driven by and utilized in creating 3<sup>rd</sup>-party OSLC adaptors (key for BPs)

Eclipse Lyo as baseline code for integration adapters



# Accelerating the growth and adoption of OSLC

## *Cross lifecycle integration scenarios implemented to open specifications*

- New version 2 specifications
  - For Change, Quality, Requirements, & Architecture Management
  - Aligning with W3C linked data
- New implementations
  - IBM Collaborative Lifecycle Management and Collaborative Design Management solutions
  - Several commercial and open source projects<sup>1</sup>
  - 6 new 'Ready for Rational' integrations since June 2010<sup>2</sup>
- New expansion into ALM and ISM integrations
  - Starting with integrations between help desk and lifecycle change management
  - Rational integrations with Tivoli Service Request Manager and Rational Team Concert
- Eclipse OSLC SDK Project to create reference implementations, test suites, and code libraries and samples



### Open Services for Lifecycle Collaboration

*Lifecycle tools integration inspired by the web.*

*"With OSLC's open and scenario-based approach, **businesses benefit** from the ability to **tie disparate tools together**. This collaborative approach gives our consultants the **flexibility** to make lifecycle tool choices based on **specific client project demands**."*

Randy Vogel, Accenture

•Growing number of published specifications for sharing and linking lifecycle data\*

•426 registered community members from 127 organizations and growing\*  
from: [open-services.net](http://open-services.net)

## Where to get more information

- jazz.net About page: <https://jazz.net/about/>
- jazz.net CLM project page: <https://jazz.net/projects/clm/>
- OSLC community: <http://open-services.net>
- Eclipse Lyo: <http://eclipse.org/lyo>
- Ready for Rational (Business Partners):
  - ▶ Partners: <http://www-304.ibm.com/isv/rational/readyfor.html>
  - ▶ Customers: <http://www.ibm.com/developerworks/rational/downloads/ready.html>

## What can I do RIGHT NOW?

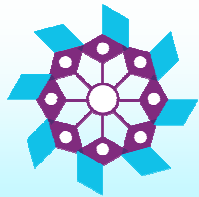
- Have a tool you wish we integrated with?
  1. Talk to your vendor.
  2. Encourage them to explore OSLC @ open-services.net.
  3. Ask them to contact the Ready for Rational program.
  4. Join jazz.net and participate in the transparent development.
  5. Participate in the Integrations Design Partner Program
  
- Plan to develop an integration yourself?
  1. Explore and learn about OSLC@ open-services.net.
  2. Consider the benefits of joining the community, and participating in the spec creation.
  3. Contribute your work through open-services.net and the Eclipse project.
  
- Willing to share more about your diverse tool use cases?
  - ▶ Take our survey! (Less than 5 minutes to complete!)
  - ▶ **<http://tinyurl.com/integrateSurvey>**

## Third Party Integrations Design Partner Program (DPP)

- Opportunity to Influence planning and design efforts around our solutions based on the Jazz Integration strategy which embraces OSLC
- Explore in detail your integration use cases for a given integration
- Share our evolving plans and demos
- Initiated August 2, 2011
- Continues indefinitely with integration focus areas rotating every ~ 3 months

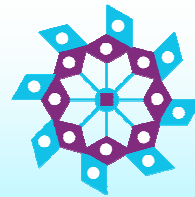
## Summary

- Rational's mission is to help customers transform their software and systems delivery process via three themes:



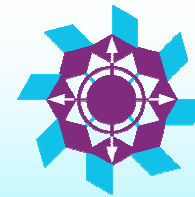
### Integration

*Integrate across the lifecycle*



### Collaboration

*Collaborate to unify teams and cultures*



### Optimization

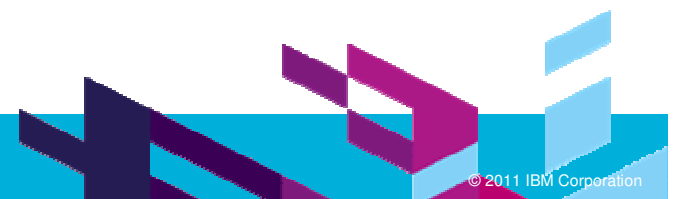
*Optimize business outcomes*

- Jazz offers a different and better way for integrating across the lifecycle
- IBM business partners extend the core Rational Collaborative Lifecycle Management solution to a broader set of value points
- Rational continues to evolve the Jazz platform to offer even more ways for integration and collaboration to drive better business outcomes

# QUESTIONS



[www.ibm/software/rational](http://www.ibm/software/rational)





[www.ibm/software/rational](http://www.ibm/software/rational)

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## APPENDIX: Additional Business Partner solutions





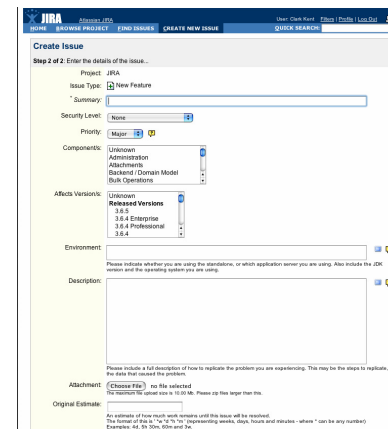
## JIRA Adapter brings Rational Team Concert to the JIRA community

### JIRA Connector allows users to

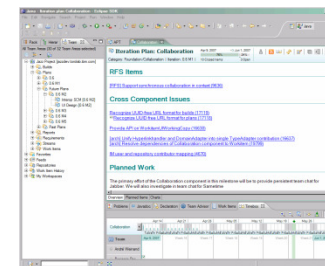
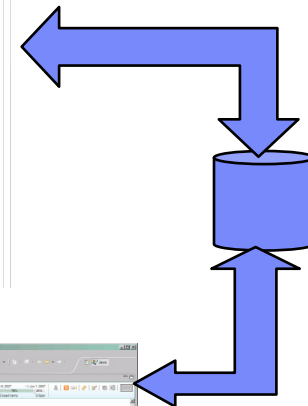
- Create records in either RTC/RQM or JIRA
- Update records in either RTC/RQM or JIRA
- Export all records from JIRA and import into RTC
- Bi-directional synchronization

Enables CMLogic's Migration Service offering around migration to RTC

JIRA



Bi-directional Synchronization



Team Concert





## Jazz Connect – IntelliJ

- IntelliJ Adapter enables Rational Team Concert to be used as the team environment for developers using the JetBrains IntelliJ IDE
  - use Team Concert's collaborative, agile change management and SCM features direct from the IDE
- IntelliJ users can:
  - View and Search work items
  - Assign work items
  - Create work items
  - Associate IntelliJ projects with Jazz workspace
  - Add files to Source Control
  - Checkout/Checkin/Commit/Uncheckout files
  - Manage change sets
  - Select work items during checkout/commit

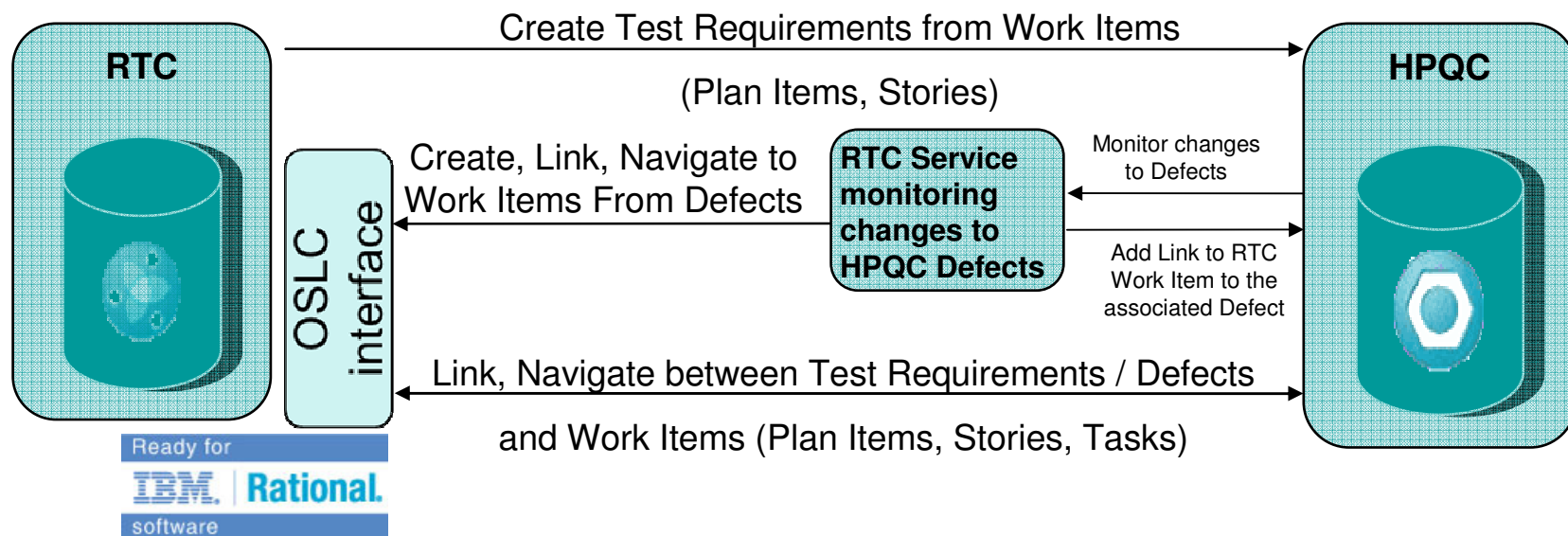
## BSD GROUP BSD Group allows graceful coexistence with HP Quality Center

- **Synchronizer enables productivity through bi-directional integration**

- Allows HP Quality Center (QC) defect records and workflows to be synchronized with Rational Team Concert (RTC)
  - RTC Planning manages the work associated with HPQC Defects
- Use RTC Plan or Story Work Items to populate HPQC test requirements
  - RTC Planning drives work for both Developers (Work Items) and Testers (Test Requirements)

- **NEW Bridge integration (separate from Synchronization capability above)**

- Development and Testing teams can collaborate and maintain traceability between test requirements, and plan items/stories
- Limited duplication of data between the systems





TeamWork with Rational Team Concert  
database change management solution

## Extends Rational Collaborative Lifecycle Management (CLM) for joint code/database change management

- Single point of management (and audit) for application source and database changes within RTC
- Single vocabulary to drill down into project tasks and impact analysis

(what was changed when feature X was developed or bug Y fixed – from code and database perspectives)

- Single process to achieve code and database deployment based RTC definitions

(activities and work items)

### Features of the joint Solution:

Correlate RTC projects with TeamWork projects

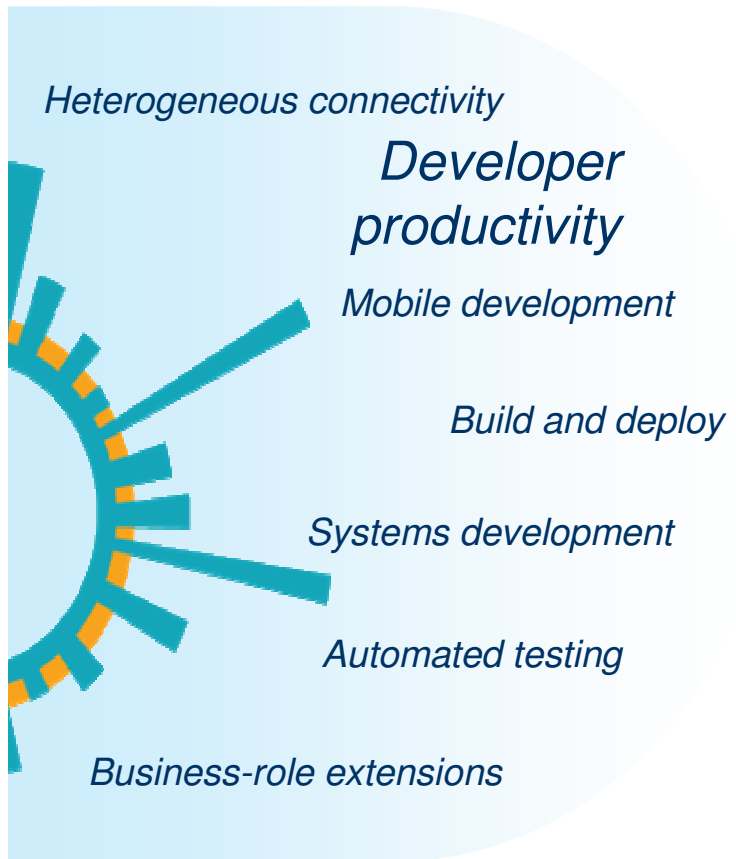
Link database changes/updates (TeamWork check-ins) with RTC activities

Save extended information about database activities within RTC

Deploy database modifications in tandem with RTC activities



## Building on CLM V3: Ecosystem solutions add value





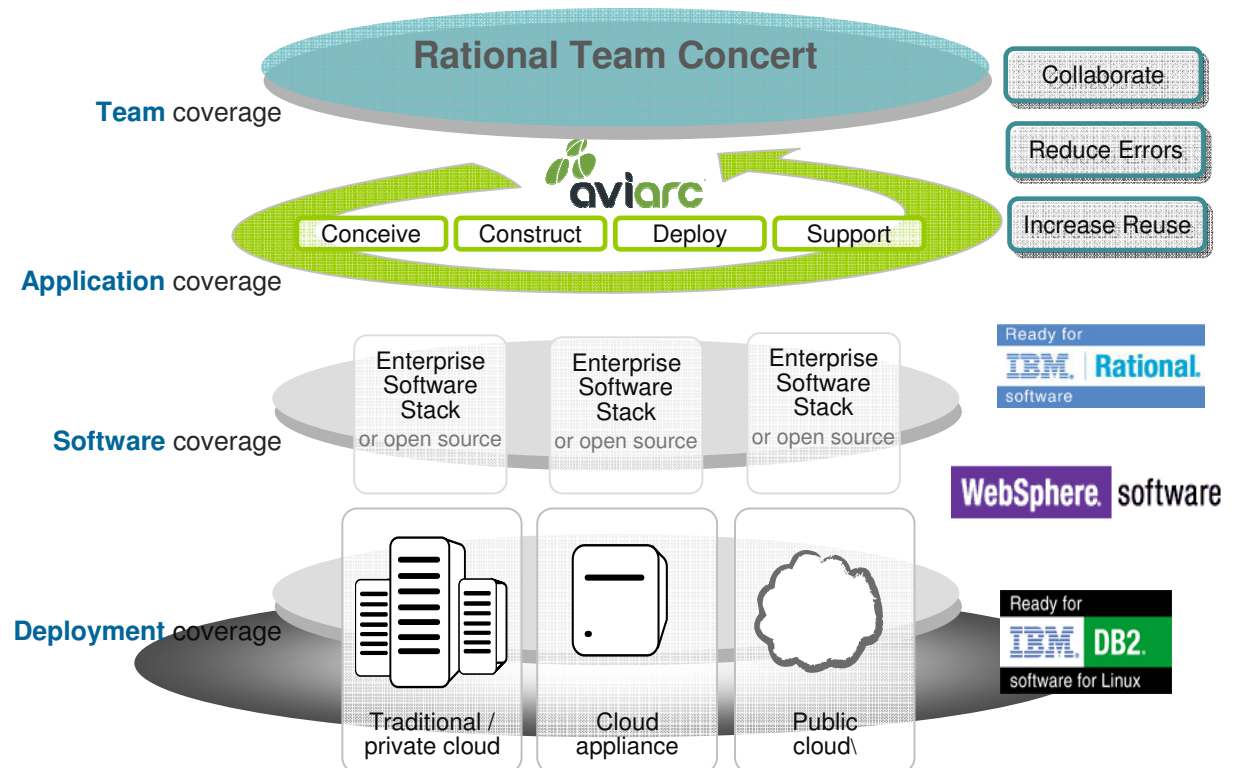
## IBM Rational Team Concert, Aviarc and Cloud

**Aviarc is a new paradigm; it allows the Business and IT to co-create custom software solutions in an entirely new way**

**Entirely Web 2.0 and browser based, it sets the benchmark that guarantees LOB software projects are always a success**

**Aviarc works seamlessly with Rational Team Concert to provide collaborative team support; the resulting Aviarc applications can be effortlessly moved between IBM's private and public cloud offerings, traditional on-premises offerings and the Smart Business platform.**

Complete coverage with IBM Rational Team Concert and Aviarc



## Rocket Gang Work Item Visualizer



- Quickly see context for all related work at multiple levels
- Supports agility at scale
- Extending support for links across Jazz servers (RRC-RTC-RQM)

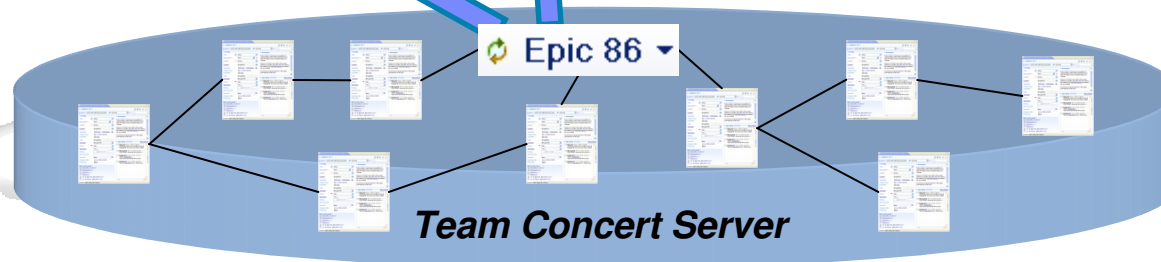
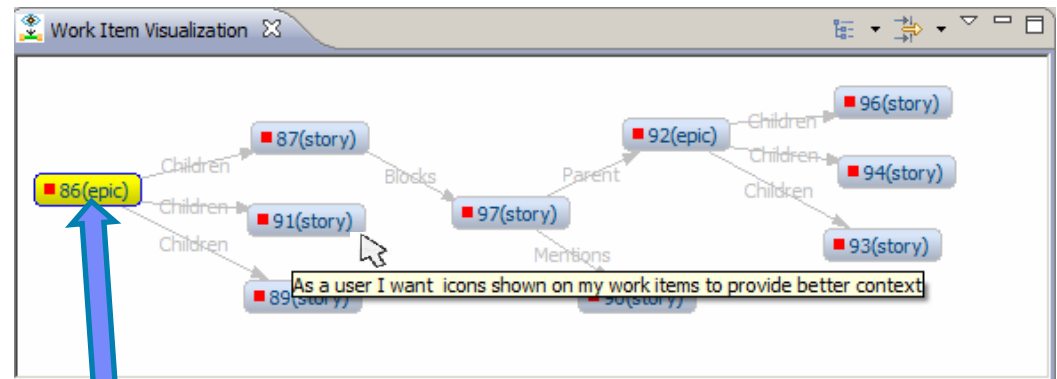
### Visualizer shows context for all related items

### RTC shows links for single item

Epic 86 ▾

**Quick Information**

- Subscribers (1): HK
- Children (3): 87, 89, 91

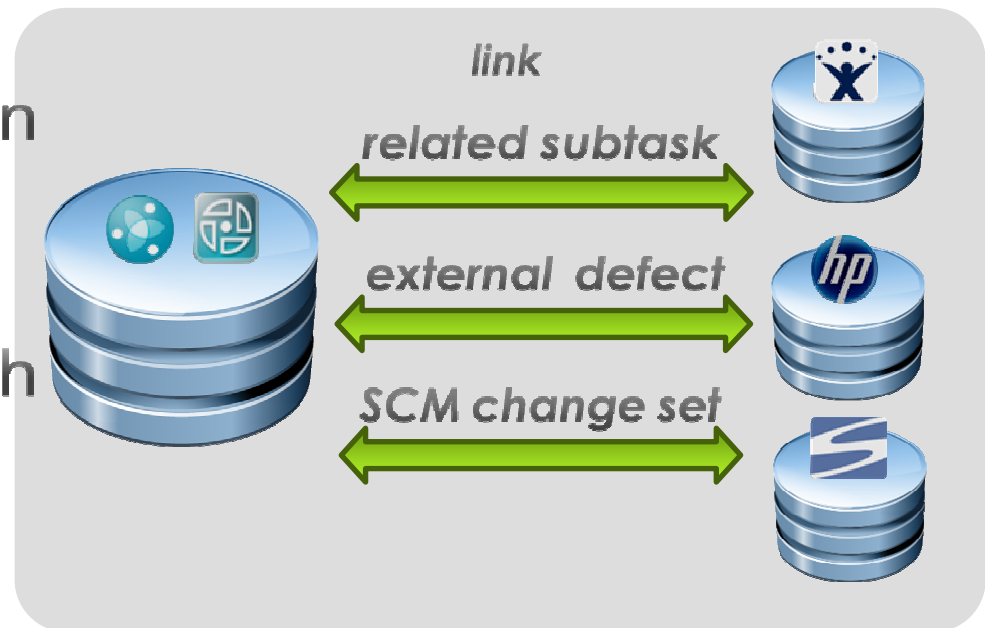
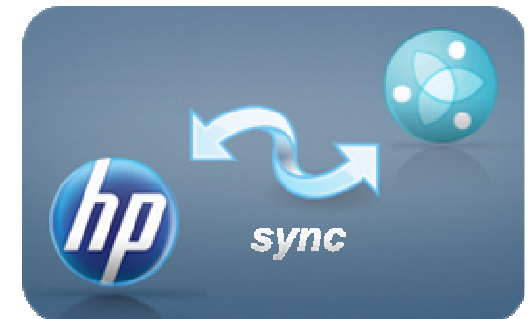


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 software



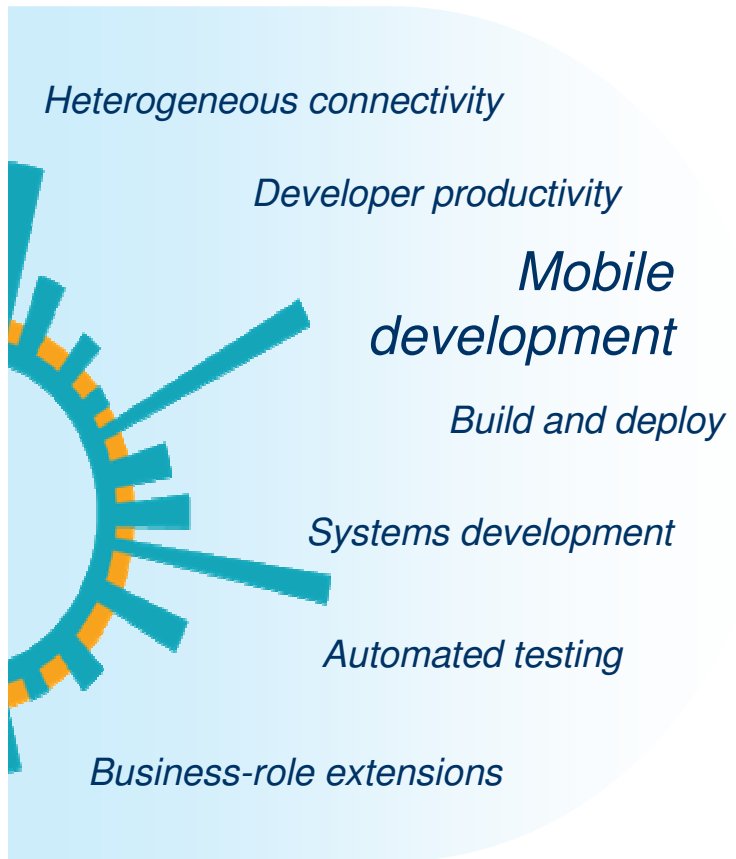
Connect RTC and ClearQuest to 50+ Developer Tools via Tasktop

- Full bi-directional synchronization between RTC and HP Quality Center
- Visibility and traceability across 50+ dev tools
- OSLC support
- Advanced IDE integration for RTC & ClearQuest
- Measurable developer productivity gains through Mylyn interface





## Building on CLM V3: Ecosystem solutions add value





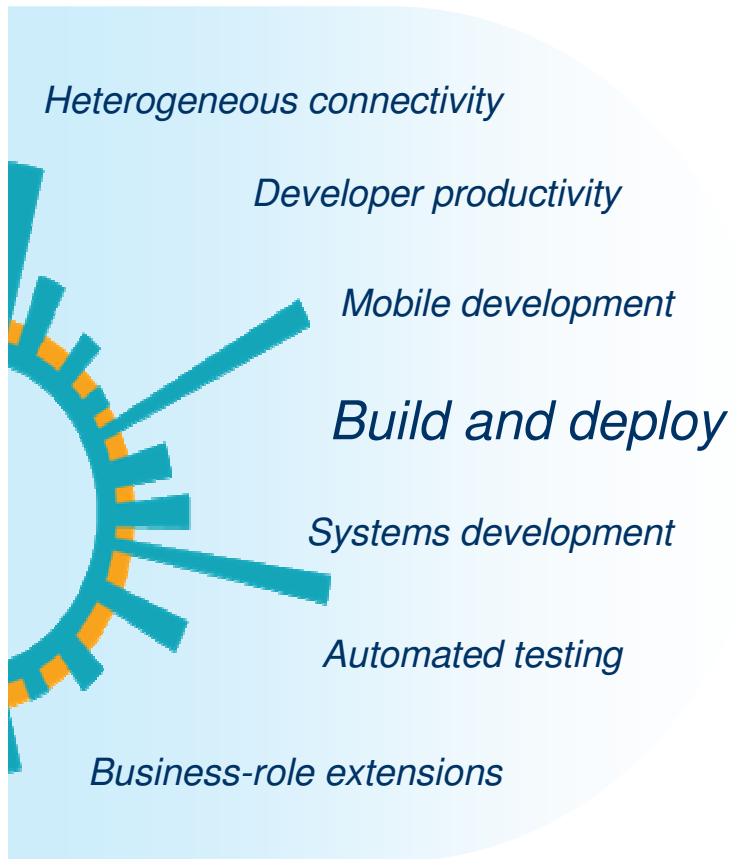
Mobile Application Testing.  
Any Device. Any Platform.  
Anywhere.



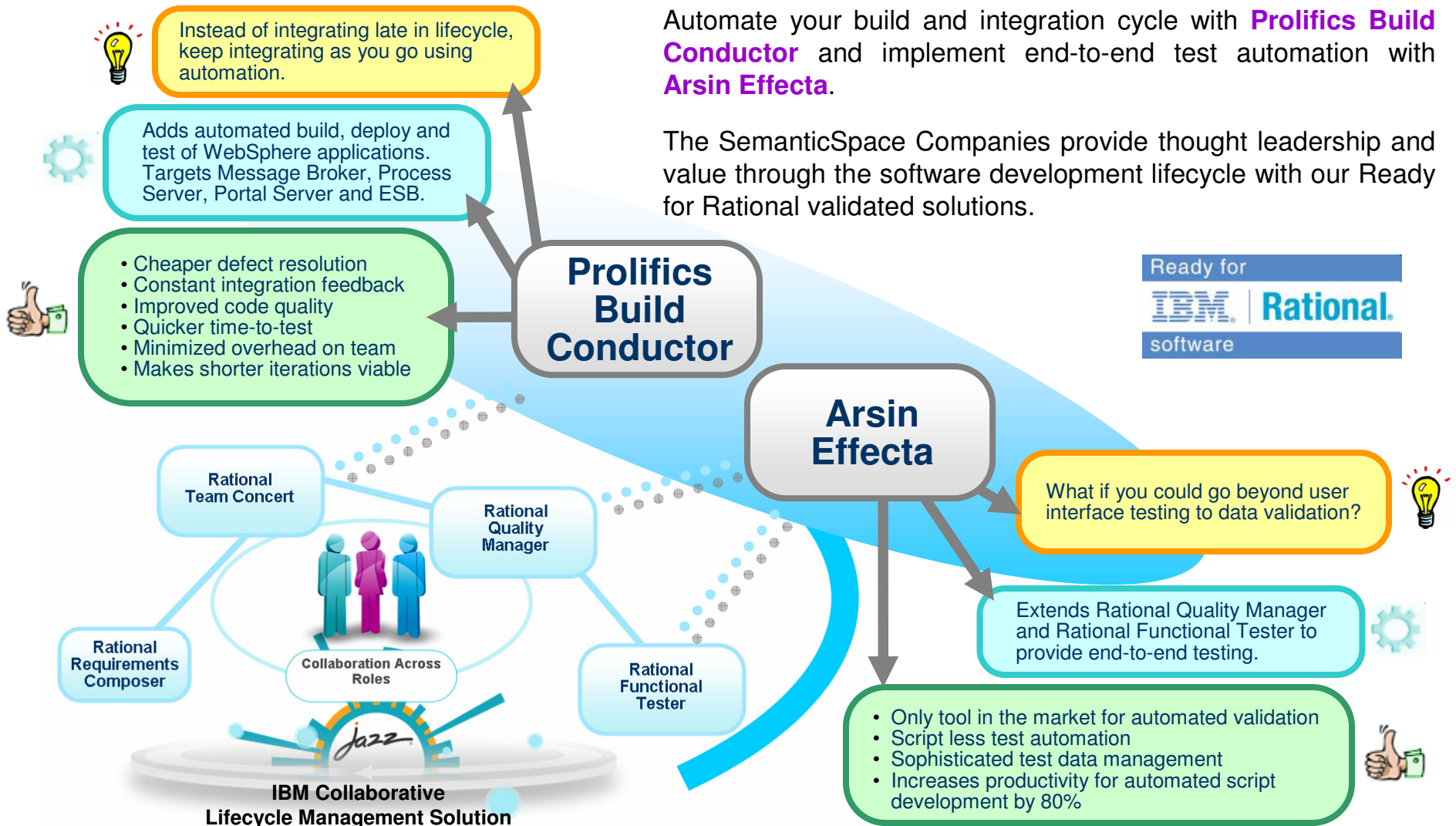
- The DeviceAnywhere and Rational Quality Manager integrated solution allows RQM users to test their applications on real mobile devices.
- Test case maintenance & execution scheduling is centralized within RQM.
- All results (script steps, test pass/fail results) are tracked by RQM and available through the RQM interface.
- Complex test scenarios, such as Mobile-2-Web, and Web-2-Mobile are fully supported.
- Users can interact with, create test scripts for, and automate running of these test scripts on real mobile devices



## Building on CLM V3: Ecosystem solutions add value



# Harmony across the Jazz Lifecycle: Automation from Development to Testing

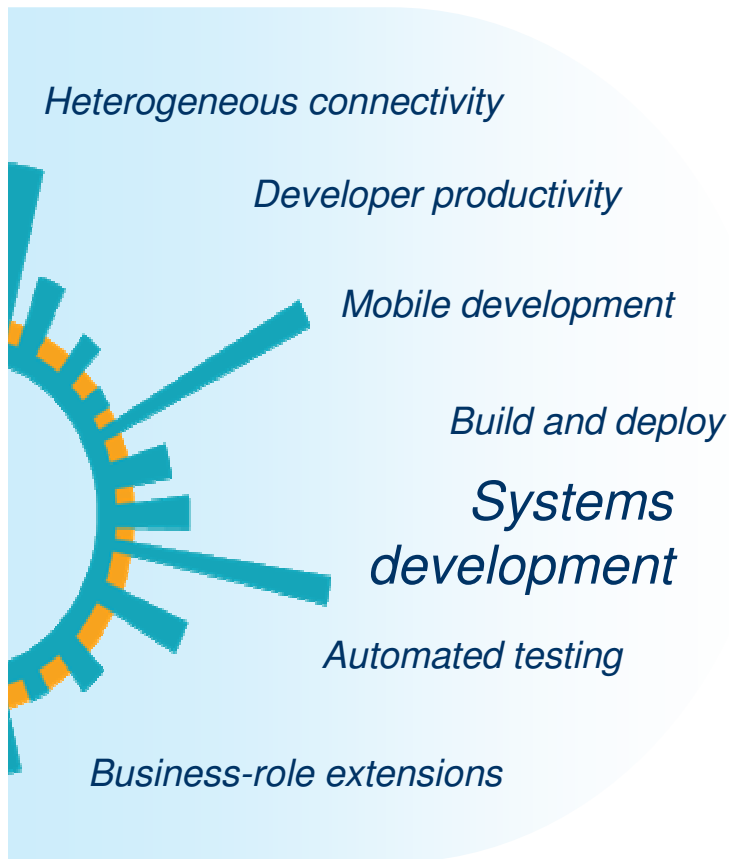


## Building on CLM V3: Ecosystem solutions add value

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software





# BigLever integrates the Gears Software Product Line (SPL) Lifecycle Framework™ with the IBM Rational solution for systems and software engineering

**Improve product line management**  
 IBM Rational Focal Point

**Manage requirements diversity**  
 IBM Rational DOORS

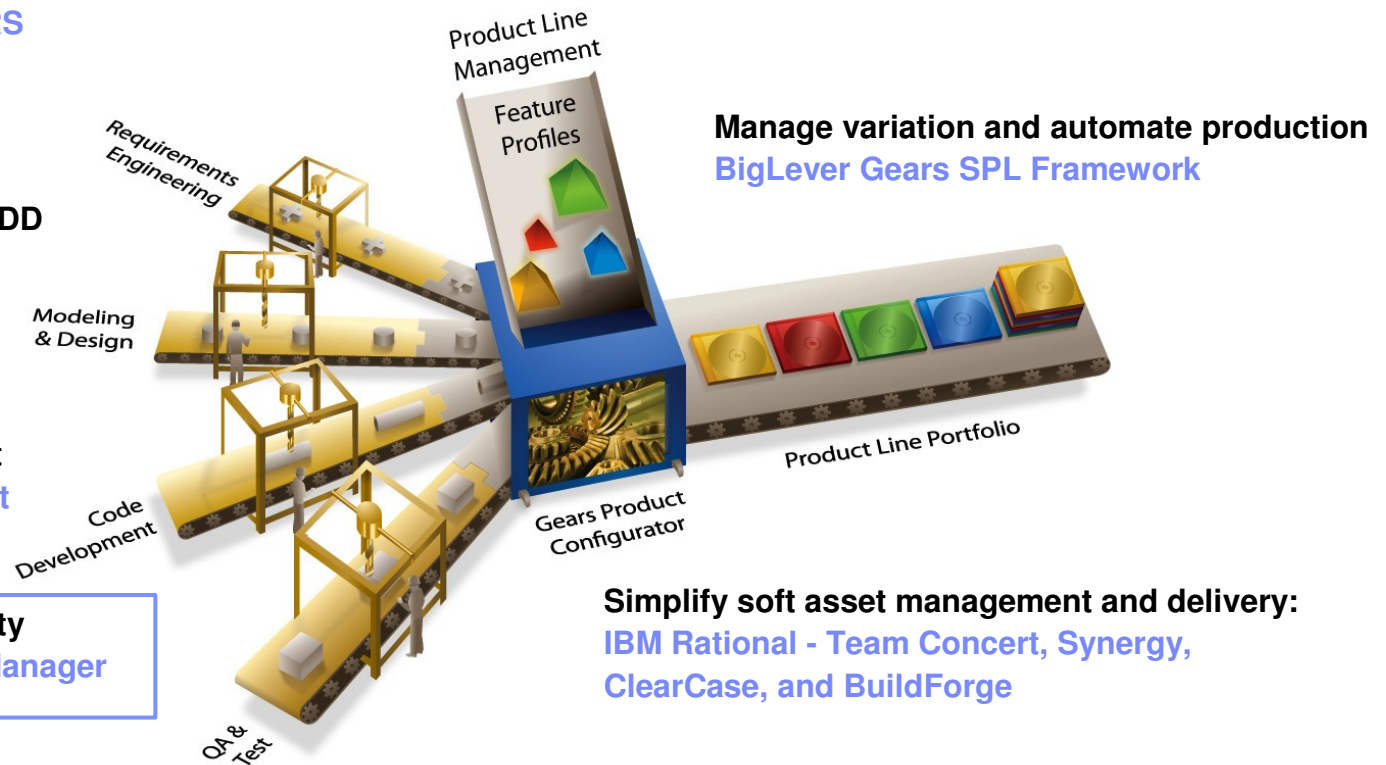


**Implement variants with MDD**  
 IBM Rational Rhapsody



**Collaborative development**  
 IBM Rational Team Concert

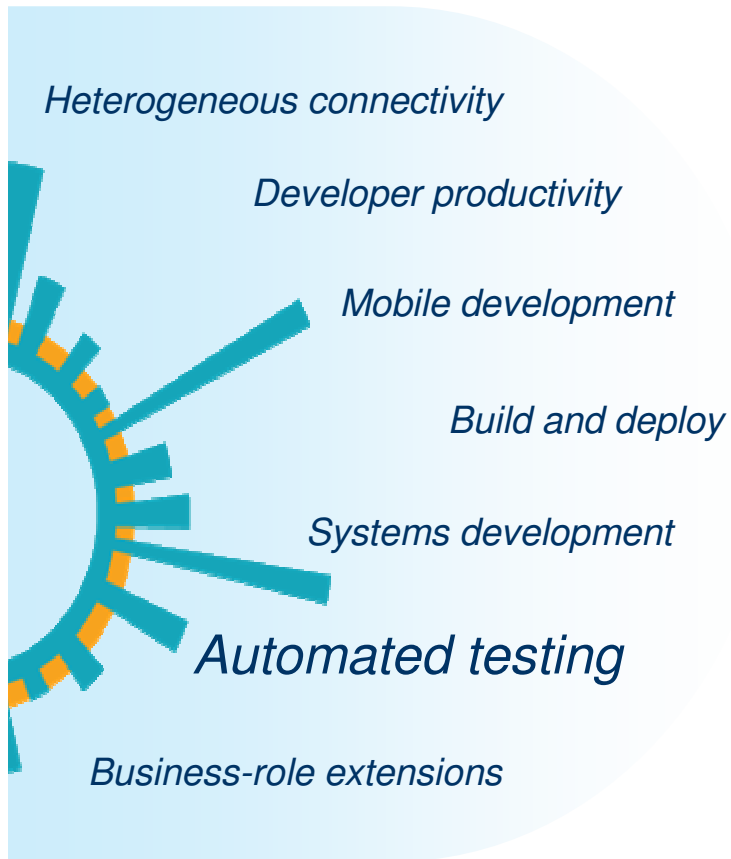
**Increase product quality**  
 IBM Rational Quality Manager



**Simplify soft asset management and delivery:**  
 IBM Rational - Team Concert, Synergy, ClearCase, and BuildForge

The Rational Quality Manager / Gears Bridge 2.0 solution enhances verification and validation capabilities to support product line diversity, consistently with other phases of the lifecycle

## Building on CLM V3: Ecosystem solutions add value



# WORKSOFT®

## IBM Collaborative Lifecycle Management & Worksoft Certify®

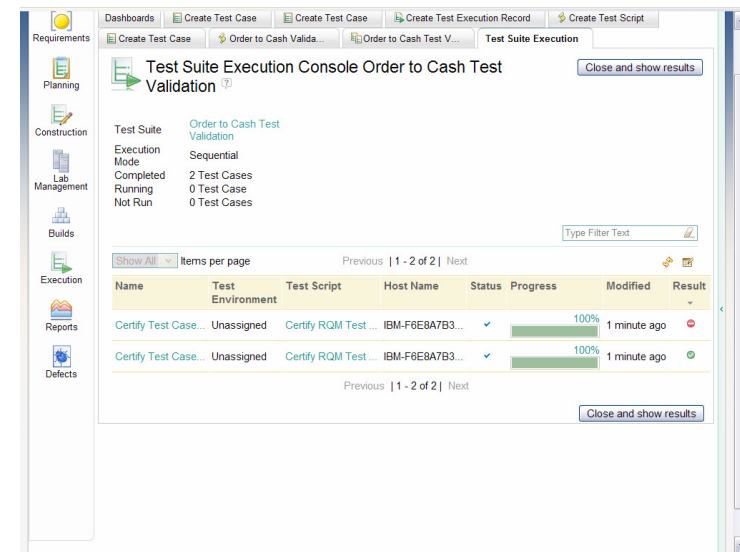
### Business benefit

- Test customizations before they go live
- Promote efficiency through re-use of automated tests and storyboards
- Enable traceability from requirements to test results



### Application Lifecycle Management capabilities

- Enterprise class test planning, test management and reporting features combined with industry leading test automation
- Develop, catalog and record test cases containing Worksoft Certify automated tests from a single platform
- Schedule and trigger Worksoft Certify tests directly from IBM RQM and bring back test results
- Direct integration to change requests and requirements through Rational Quality Manager

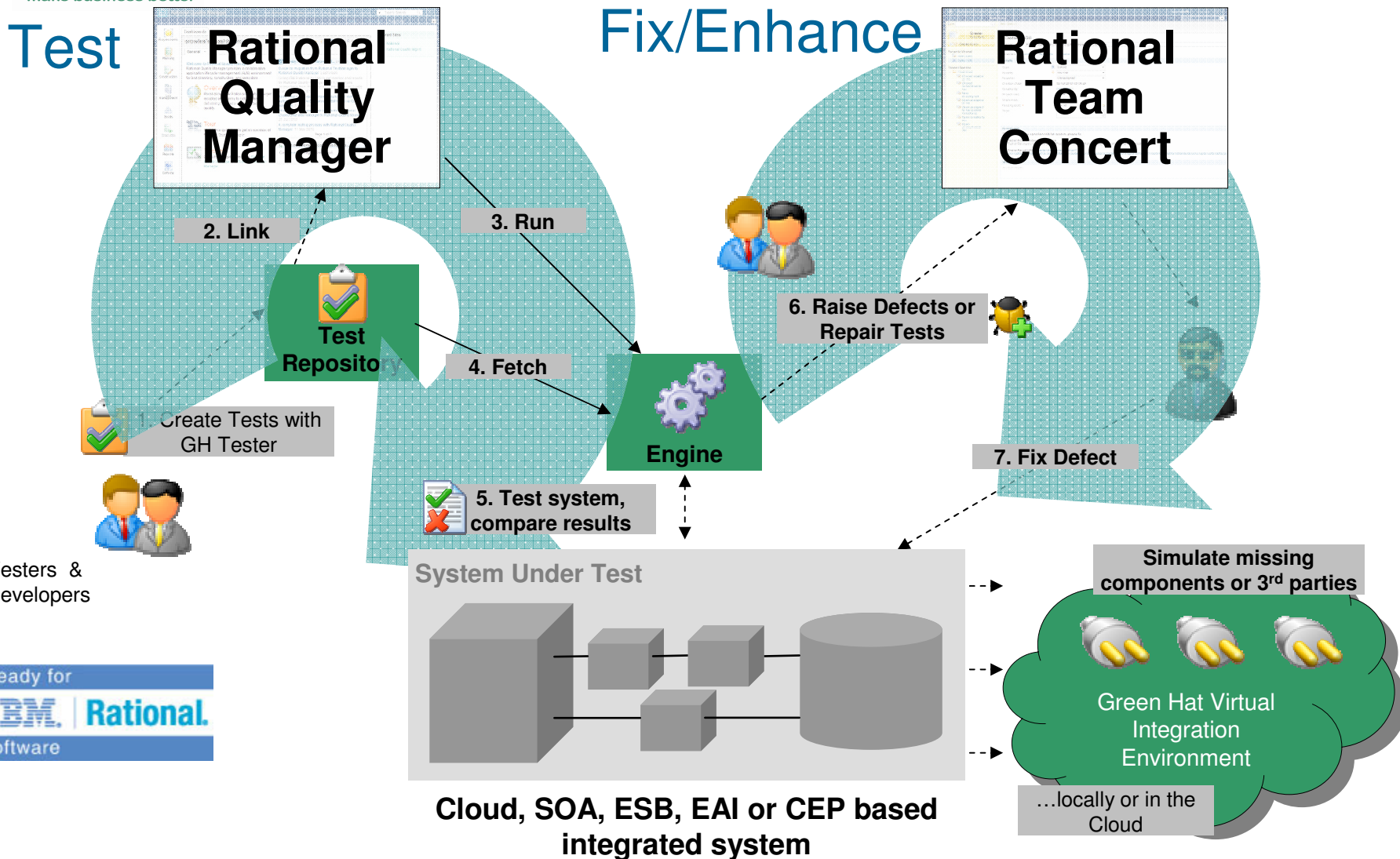






# GREENHAT- Rational Integration Architecture

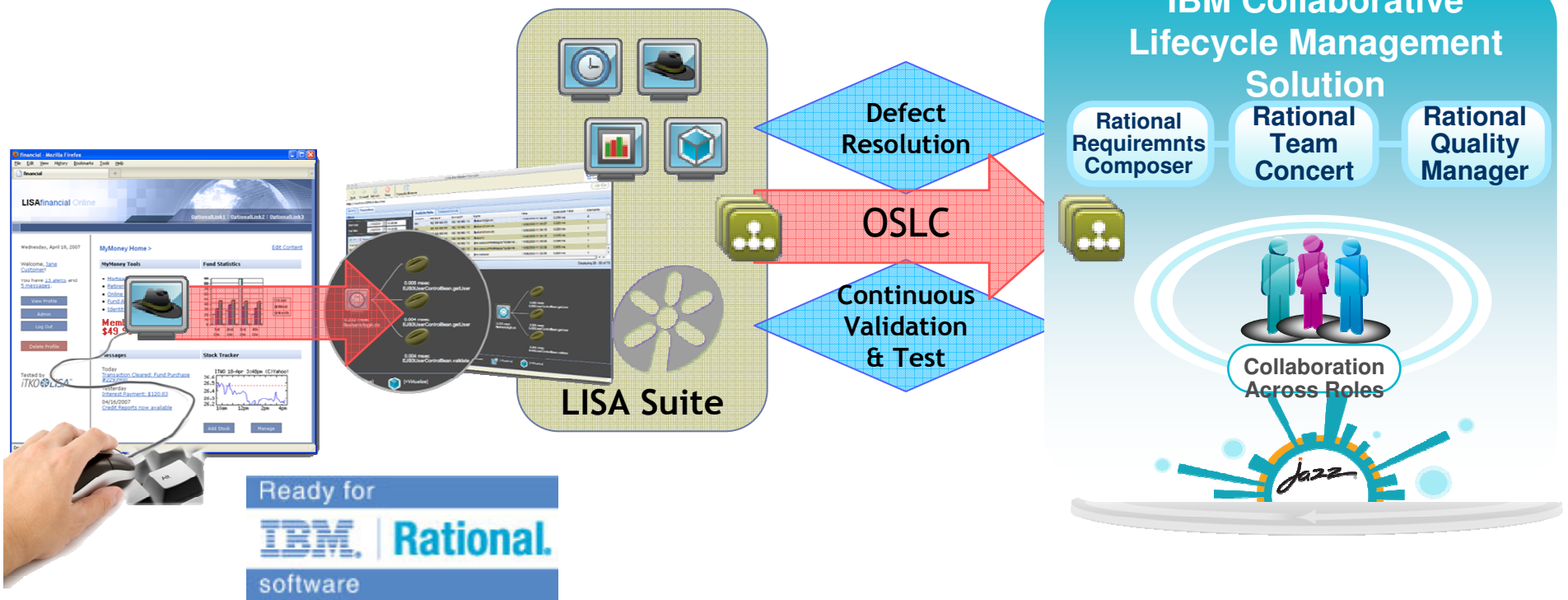
*Efficient lifecycle management for composite application*



## Integration with Rational CLM: Defect Collaboration, Test, Service Virtualization



- Create RTC work items or ClearQuest defects with detailed, multi-tier trace information from any LISA test
- Auto-generate Virtual Data Sets, Regressions, and Virtual Services for constraint-free resolution and transparency across services
- LISA integrates with Rational Quality Manager built on the Jazz platform to manage validation in ALM processes



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## Innovate with Model Based Testing from RSM to RQM and Beyond!

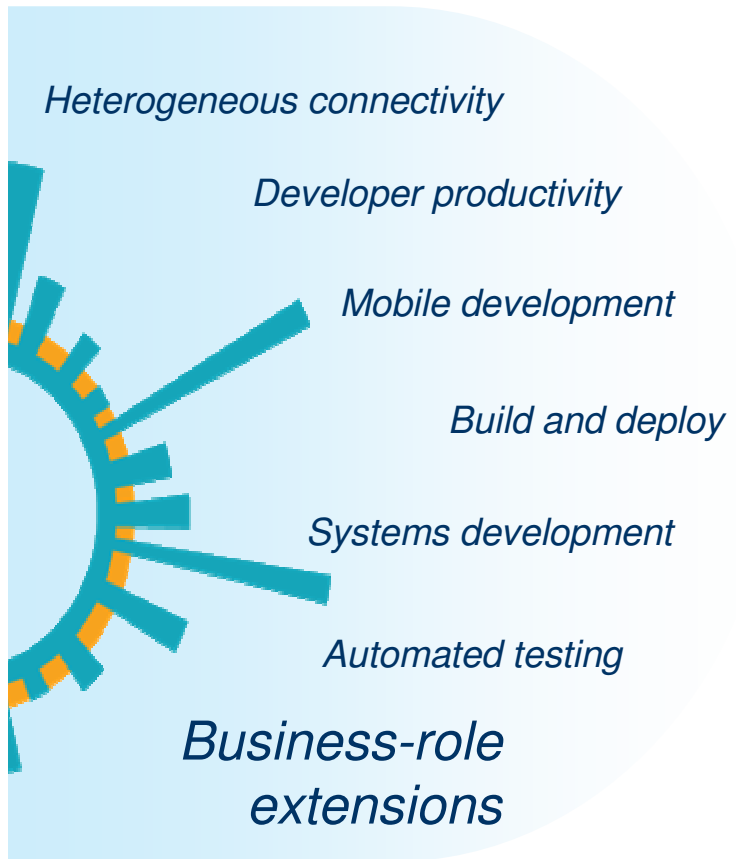
1. Model Based Testing is available through the integration of the Smartesting Center solution to RSM and Rational Quality Manager V3 offering
2. Model Based Testing offers a unique and highly efficient approach for functional testing thanks to test generation based on UML test models in Rational Software Modeller (RSM)
3. Test Managers and Testers can experience more agility and much more productivity in the test design phase while reducing the total test effort drastically

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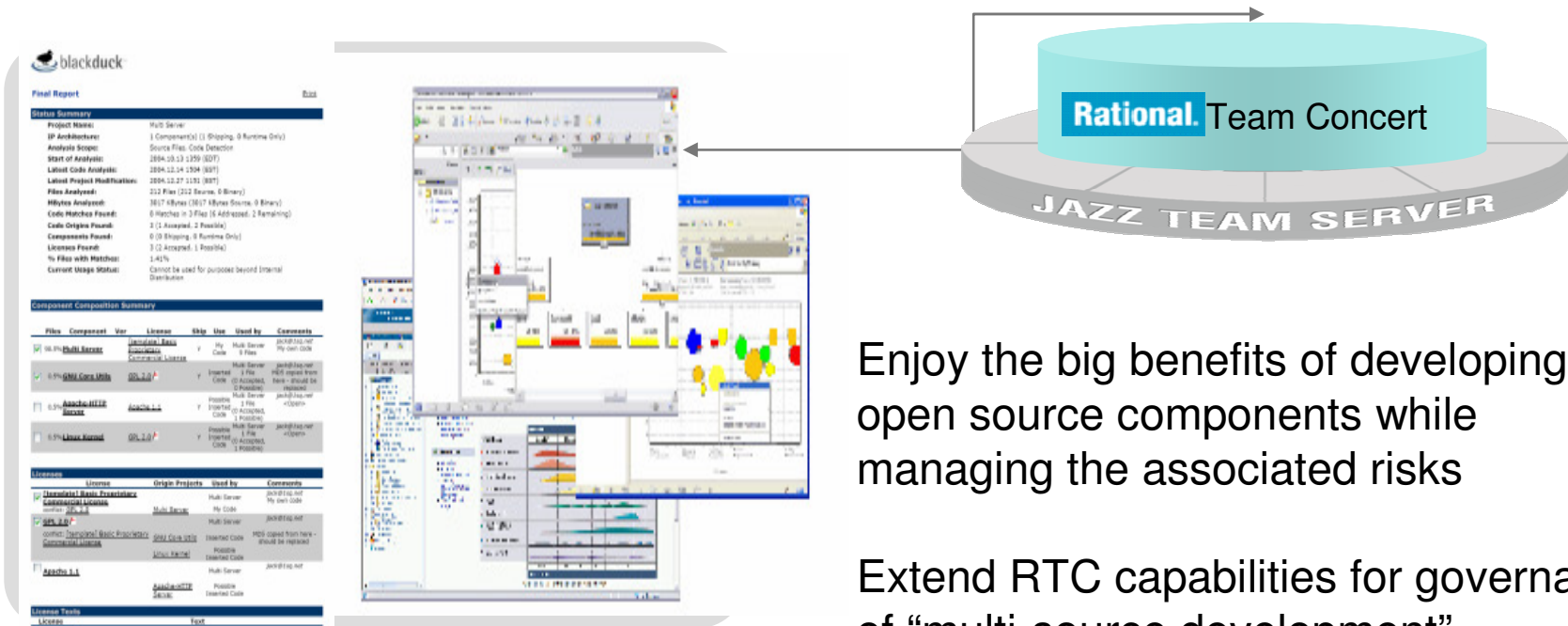
software

## Building on CLM V3: Ecosystem solutions add value





## Black Duck Protex Solution for RTC: Managed Use of Open Source Components



Enjoy the big benefits of developing with open source components while managing the associated risks

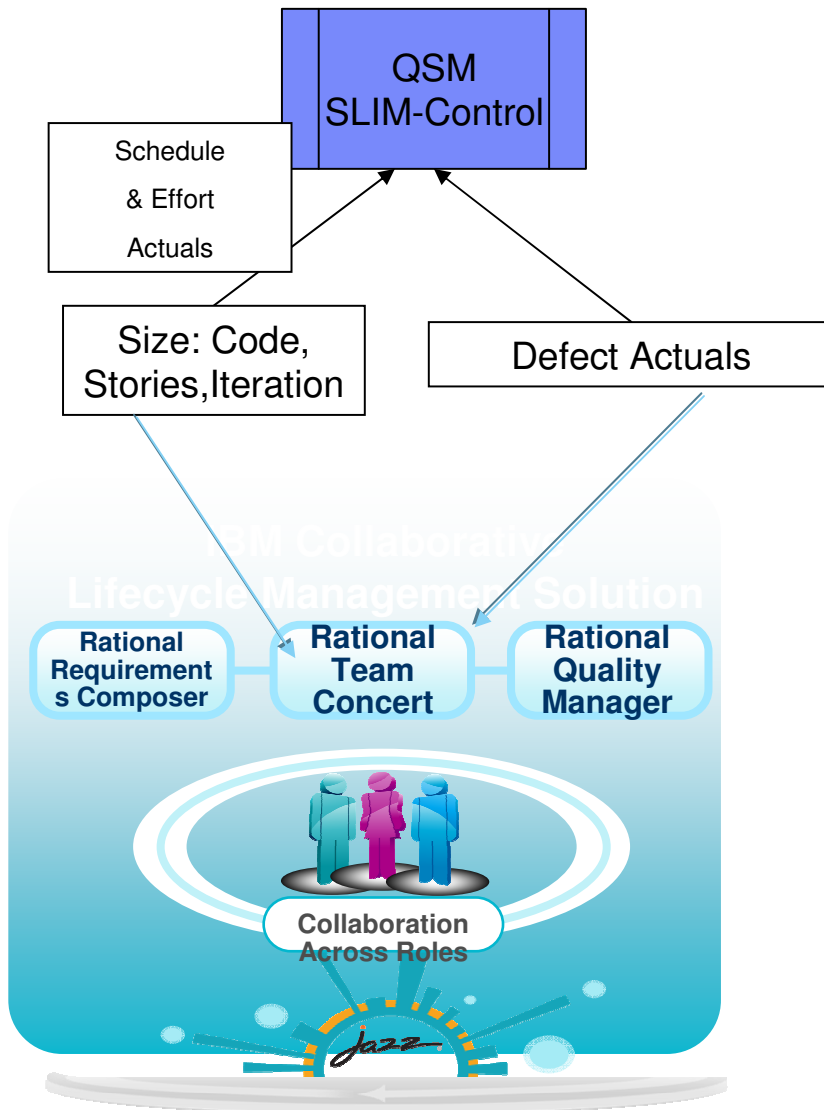
Extend RTC capabilities for governance of “multi-source development”

- Scanning for open source components as part of build
- Governance work item creation
- Software bill of materials generation





## QSM SLIM-Control Automates Rational Team Concert project forecasts



Actual Data Properties

Phases | Milestones | Metrics | Actual Data

Metric Name	05/02	06/02	07/02	08/02	09/02	10/02	11/02
Avg Staff (R&D)	7.00	2.00	1.00				
Avg Staff (C&T)	8.00	12.00	14.00	16.00	17.00	20.00	25.00
Avg Staff (P_Mnt)							
Cum Eff SLOC		0	3984	29548	61004	78621	109460
Defects Found (Moderate)				40	151	122	150
Defects Found (Serious)				35	50	41	50
Defects Found (Critical)				8	14	11	10
Earned Tasks	42	57	63	70	81	93	100

Plan value of Avg Staff (C&T) for 01/03 is 24.37, Forecast value is 26.84.

Notes for 01/03

**ACTUAL**

OK Cancel Help



## Planview OpenSuite for Rational Team Concert: Project Collaboration Across the Enterprise

### PLANVIEW ENTERPRISE



### IBM Rational Team Concert



- Coordinate Program and Project Management with Development Work
- Connect Operational Planning to Agile Execution

**W WebLayers** WebLayers Enhances Rational CLM with Lifecycle Policy Management

WebLayers interacts with the community to capture issues and enforce coding rules, best practices and other policies across the services lifecycle



**Pre-packaged Policy Libraries**  
 2000+ libraries across disciplines;  
 SOA, Java, .NET, Mainframe, etc.



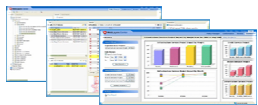
**WebLayers Center**

**COMMUNITY**

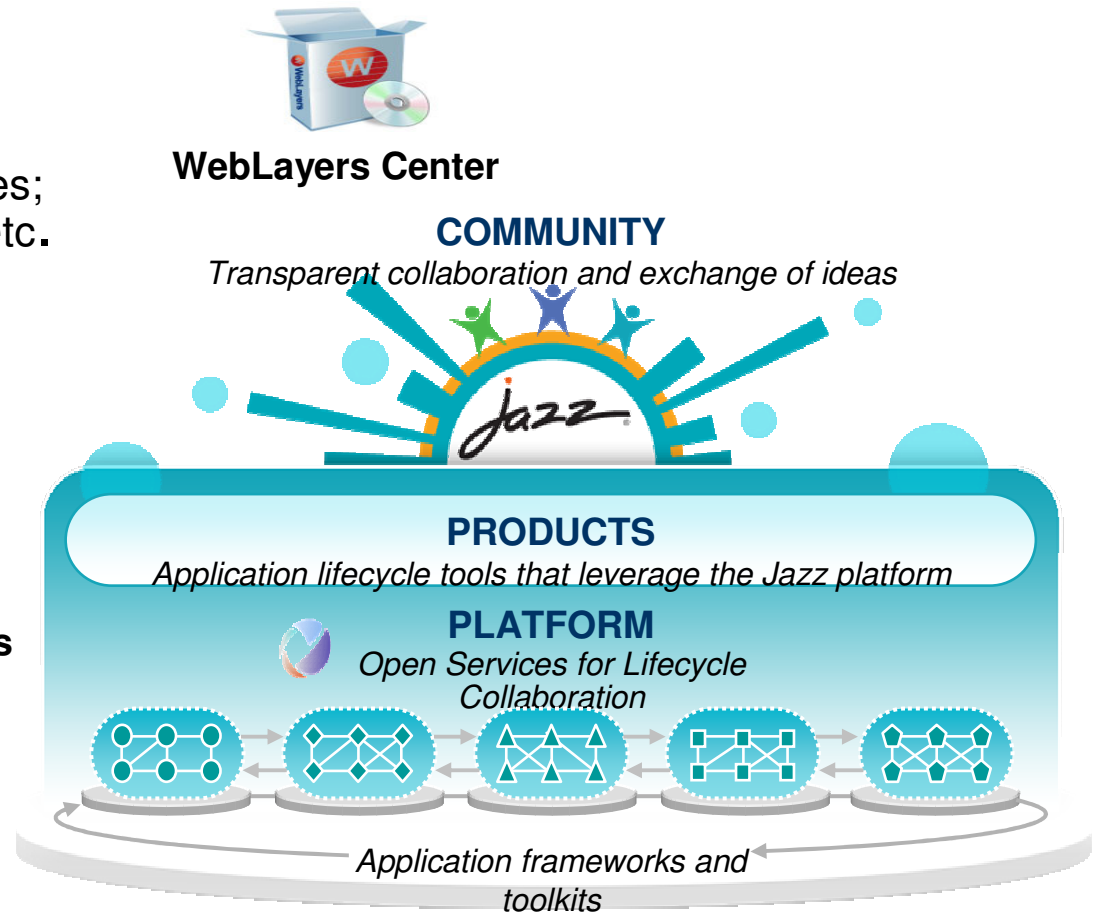
*Transparent collaboration and exchange of ideas*



**Governors**  
 Light weight agents



**WebLayers Applications**  
 Policy Manager  
 Conformance Center  
 Dashboard/Reporting







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