

IBM Innovate 2010

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Innovate2010

The Rational Software Conference

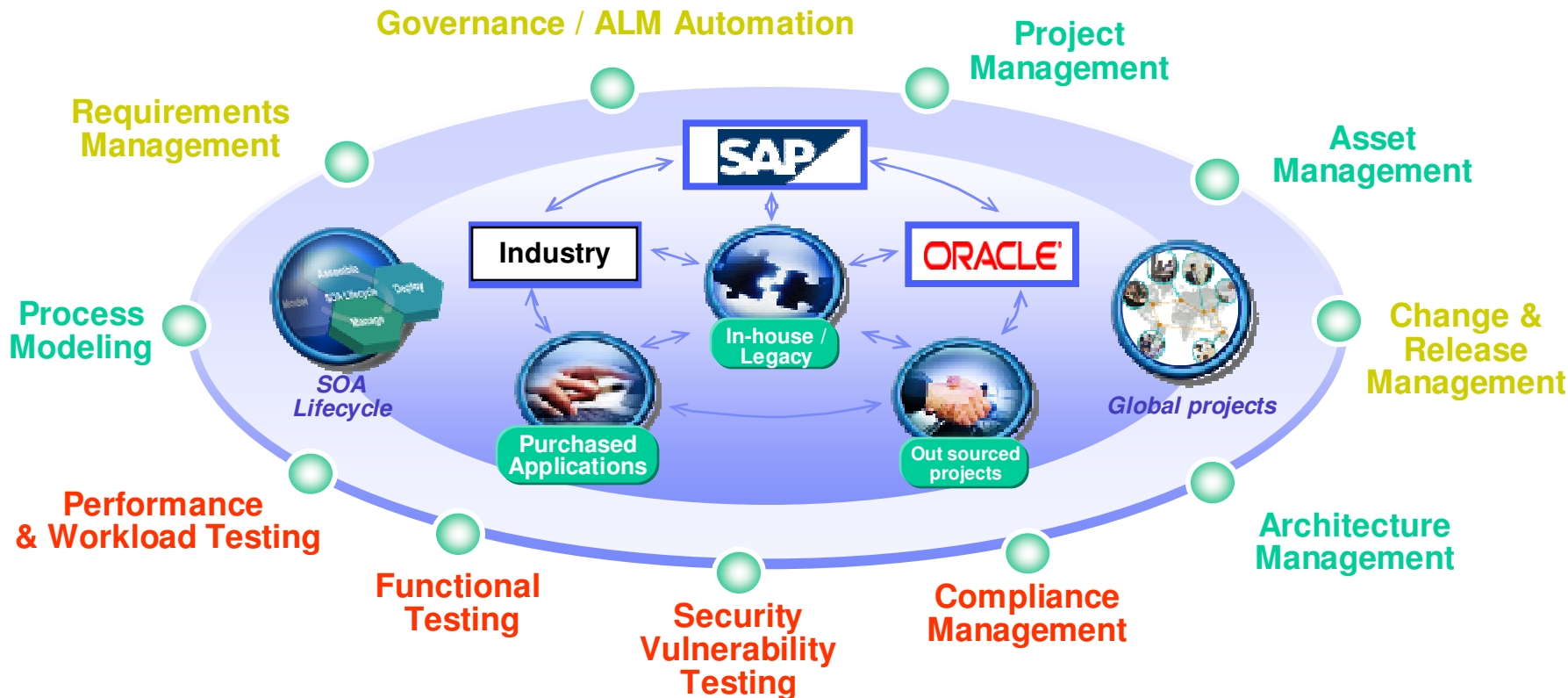
Let's **build** a smarter planet.

The premiere software and product delivery event.



Enterprise Software Delivery Challenges

Customers are taking an increasingly holistic approach to managing the lifecycle of purchased & in-house application projects



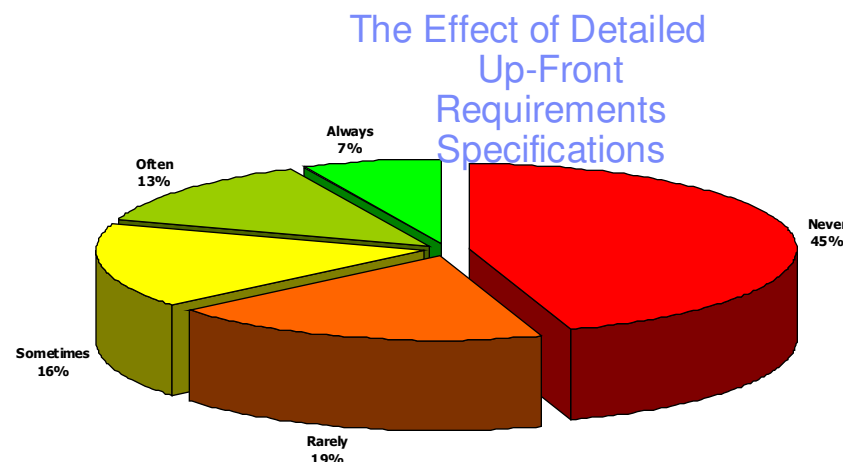
A consistent, integrated Application Lifecycle Management capability spanning complex application environments



Business Wants Up Front Estimates and Schedules Solution: Give them better visibility and control

- Your Stakeholders:
 - ▶ Want to enhance their ability to compete through systems which meet their actual needs
 - ▶ Want to minimize their financial risk by requesting that you provide a reasonable estimate up front
 - ▶ Don't trust your estimates, schedules, or ability to deliver to specification
 - ▶ Ask for detailed up front estimates, scope definition, and schedules because they don't expect better of you

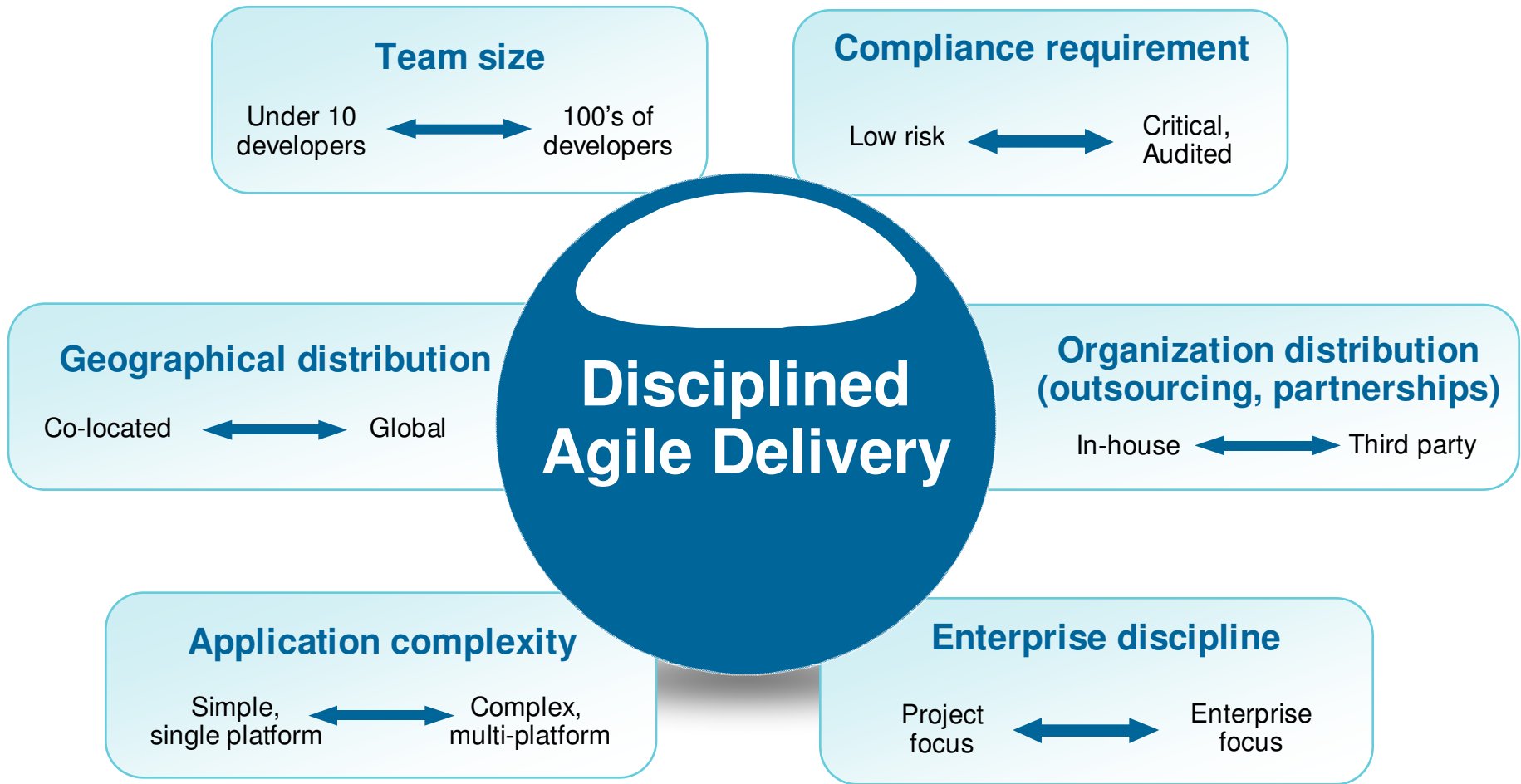
- Observations:
 - ▶ Defining the scope, schedule, and cost up-front increases project risk
 - ▶ Traditional "change management" approaches are little more than "change prevention" strategies
 - ▶ The real goal is to understand and then implement requirements, not document them



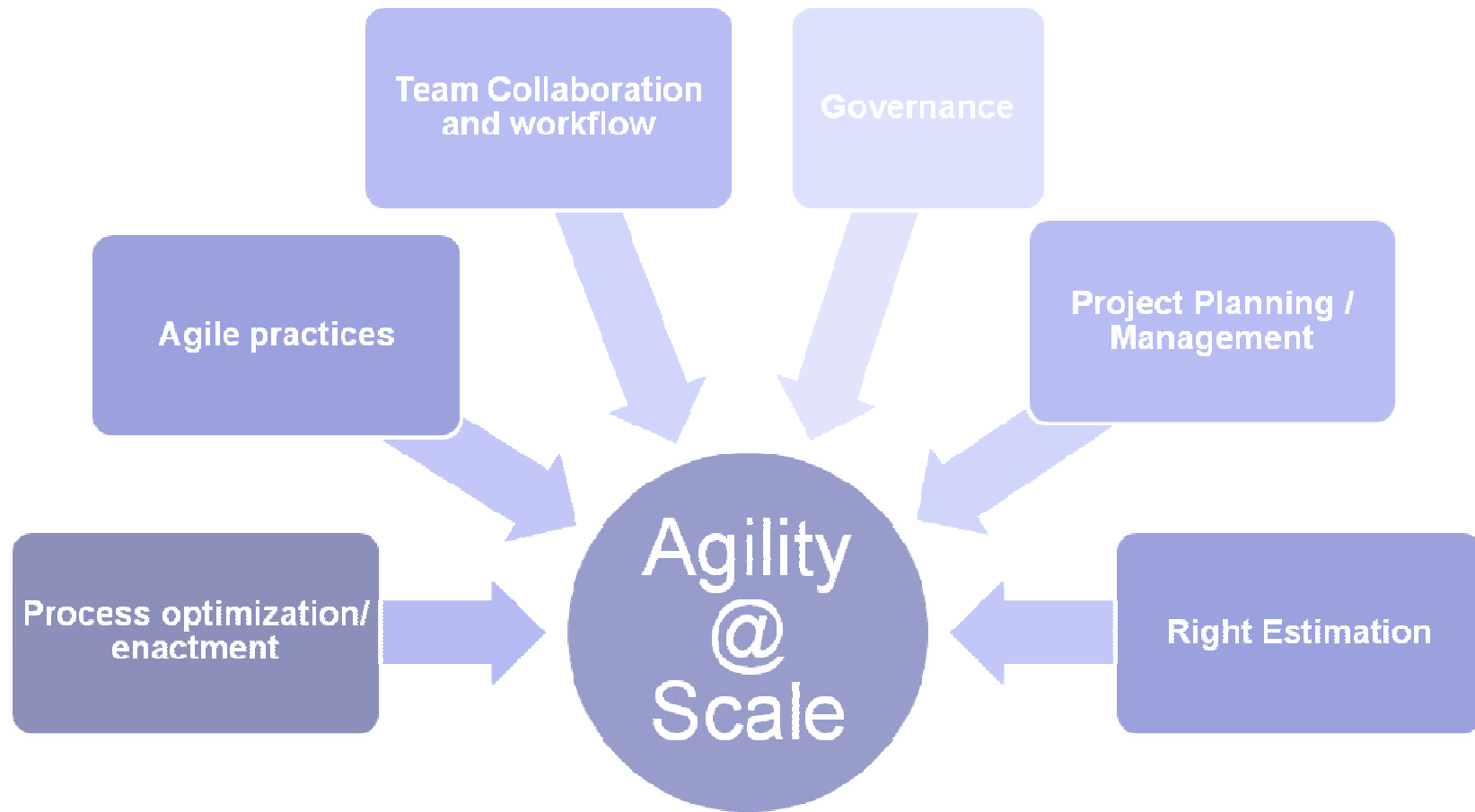
Source: Standish Group
Chaos Report v3



What is Agility at Scale?



Achieving Agility @ Scale

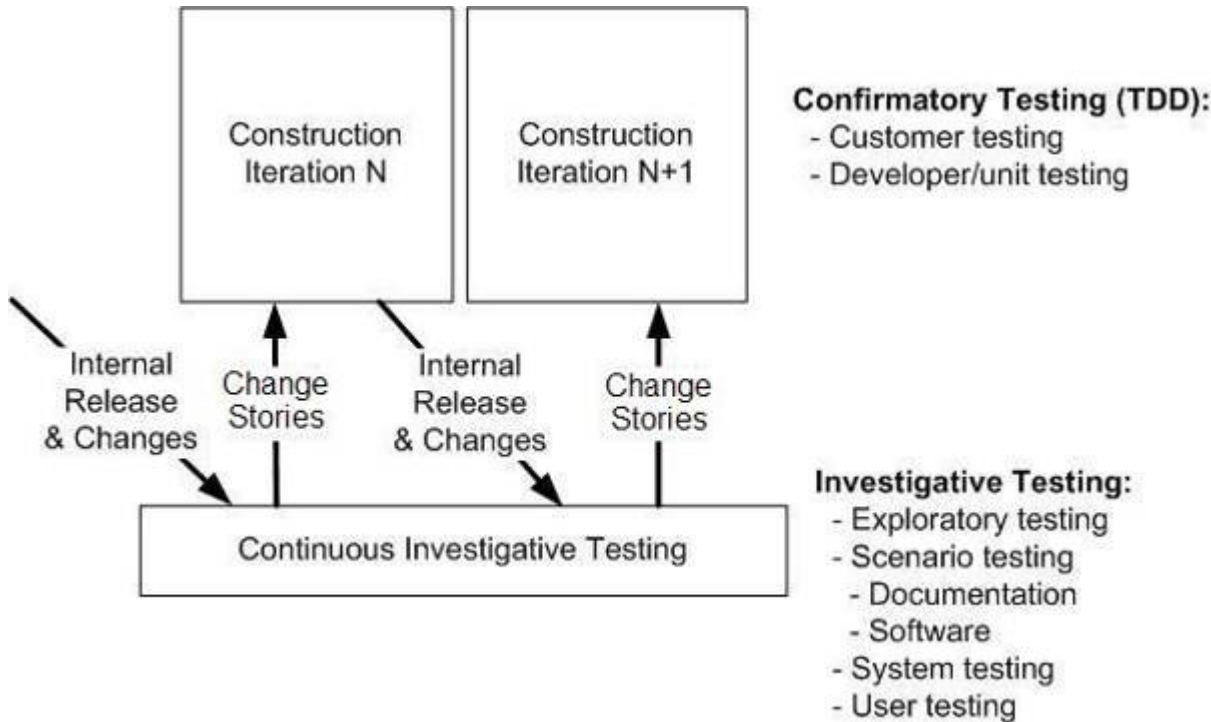


Being agile while testing

- Process automation
- In context team collaboration
 - ▶ Chat , shared repository, RSS feeds, team activity dashboard, search assets, reuse
- Integrated requirements and change tracking
- Reporting dashboard to track progress, coverage, Improvements
- Flexible test management, execution and reporting
- Agile Process automation e.g. Scrum



Scaling TDD: Comprehensive Agile Testing



TDD is a form of confirmatory testing

TDD is a great start, but it's not the full testing picture

Effective agile teams push their working builds to an independent test team on a regular basis for investigative testing

Change stories must be prioritized and put back on the team's work stack

Defects == Requirements

Source: January 2007 Dr. Dobb's Magazine



Cut risk and cost

Collaborate seamlessly to reduce rework and the cost of bugs with integrated processes aligned to business goals

Customer Speak!

Unify the team through real-time, in-context collaboration

A single, dynamic quality contract provides clear and accountable direction



*"Some large projects have found that **41%** of all defects have their origin in bad requirements."**

Avoid disruption and achieve better business stability and project delivery predictability

Achieve quality objectives by understanding and controlling sources of risk



I just got a budget cut, what testing should I eliminate? What impact will it have on application production quality?

Lower the cost of delivering quality solutions

Orchestrate across teams with ALM integration for maximum transparency and traceability of assets



*"Testing consumes **20%** to **40+**% of the average software application life cycle effort"**

*Source: IBM



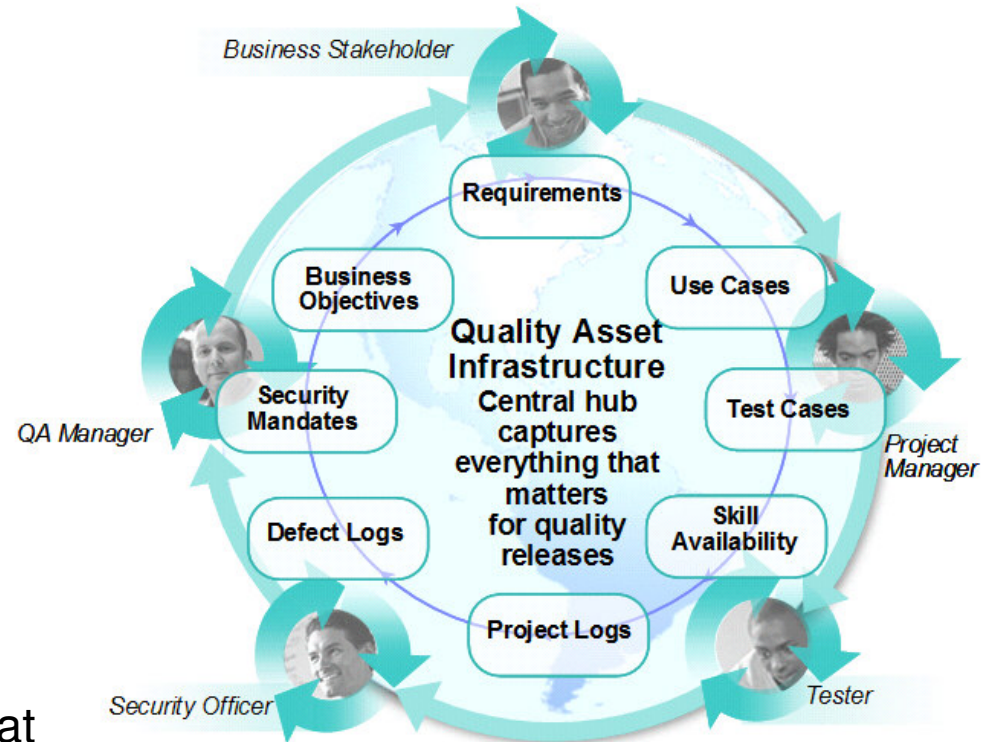
Unify the team through real-time, in-context collaboration

A single, dynamic quality contract provides clear and accountable direction

- Unify the entire team with a shared view of quality assets
 - ▶ Central location for assets (e.g., business objectives requirements, resources, platform, exit criteria)

- Comprehensive dynamic planning and updates
 - ▶ Integrated process workflow, not artifacts drives team activities, hand-offs, reviews/approvals and sign-offs

- Know what others are doing and what others expect of you
 - ▶ Task management for individuals and team



Comprehensive dynamic planning and updates

Process flow, not artifacts drives team activities

Other Test Plans

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DOCUMENT HISTORY
TABLE OF CONTENTS

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Word based Test Plan

Test Plan Tree

Rational Quality Manager Plan

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Summary

Business Objectives

Test Objectives

Review and Approvals

Requirements

Application Security

Test Iterations

Sizing

Environments

Test Team

Quality Goals

Entry Criteria

Exit Criteria

Test Cases

Attachments

Show All Sections

- Live dynamic documentation
- Defines test process and strategy
- Defines responsibilities
- Activity based versus hierarchy
- Business level reporting against quality objectives

Requirements driven testing

Knowing what to test

View Requirements ¹³

View Builder
Show Requirements that match the attributes in the View Builder:

Group by: Ungrouped

Type Filter Text

10 Items per page Previous | 1 - 10 of 14 | Next

<input type="checkbox"/>	Status	ID	Task	Name	Description	Owner
<input type="checkbox"/>	🟡	5	🟡🟡🟡🟡	Data entry - change customer details	Confidential information for an existing account cha...	Coral Chen
<input type="checkbox"/>	🟡	2	🟡🟡🟡🟡	Data entry - customer details	The system shall accurately capture basic custome...	Coral Chen
<input type="checkbox"/>	🟢	Accepted	🟡🟡🟡🟡	Process mortgage increase - main path	The system shall process a valid mortgage increase...	Amber Alvarez
<input type="checkbox"/>	🟡	7	🟡🟡🟡🟡	Forward mortgage to secondary approval	Ownership transfer of a mortgage increase request...	Dusty Dixon
<input type="checkbox"/>	🟡	9	🟡🟡🟡🟡	View status of mortgage increase request	The system shall promptly and accurately display th...	Fem Farnow
<input type="checkbox"/>	🟡	6	🟡🟡🟡🟡	Update mortgage application status	The system shall correctly update the status of a m...	Bligeet Blue
<input type="checkbox"/>	🟡	4	🟡🟡🟡🟡	Cancel an application	The system shall reliably cancel and archive a suspen...	Elin Eggplant
<input type="checkbox"/>	🟡	15	🟡🟡🟡🟡	Spelling accuracy and professionalism	Basic banking words like "amortization" shall be spelle...	Amber Alvarez
<input type="checkbox"/>	🟡	10	🟡🟡🟡🟡	Display customer information	The system shall correctly display all customer acco...	Helen Higgins
<input type="checkbox"/>	🟡	13	🟡🟡🟡🟡	Process mortgage request - interest amount	The system must reject an increase request that is...	Amber Alvarez

Previous | 1 - 10 of 14 | Next

- Requirements tracking built into the test management tooling
- Customizable attributes enable you to track what is important to your team
- Real-time impact analysis of requirements changes
- Traceability of test results to user needs

Know you are testing the right things

Collaborative risk based testing

Risk management and prioritization

The screenshot displays the 'Classics Java Test Plan' interface. It includes a 'Test Cases' table with columns for ID, Risk Assessment, and Suspect. A 'Risk Assessment' panel shows a 'very high' status with five orange circles. A 'My Risk' section allows users to rate the risk (from very low to very high) and add comments. A 'Community Risk' section shows a bar chart where 'Very low' is selected at 1 (100%). A table on the right lists test cases with columns for Theme, Weight, and Modified date.

ID	Risk Assessment	Suspect
12	○○○○○	vsme
15	○○○○○	A
16	○○○○○	C
17	○○○○○	A
18	○○○○○	A
19	○○○○○	C

Theme	Weight	Modified
Functiona...	20	1 minu...
Functiona...	100	1 minu...
Functiona...	100	1 minu...
Functiona...	100	1 minu...
Functiona...	100	1 minu...
Functiona...	100	1 minu...

- Risk assessments captured in Test Plan and Test Cases
- Collaboration planning of risk mitigation strategy

- Test Case will contain a risk failure score and a risk priority score
- Documented risk related decisions

Base project decisions on qualitative risk analysis

Speed time to market

Automations reduce human error and improve operational efficiency

Customer Speak!

Ramp up productive teams day-1

Productivity boosters automate repetitive, mundane tasks for rapid ROI



*“Testing can account for 30% to 50% of maintenance efforts”**

Optimize lab efficiency and asset utilization

Save on test lab overhead, infrastructure and duration costs



*“Testers are spending 40% of their time building test environments”**

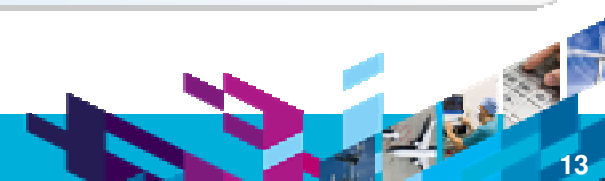
Leverage investments in existing tooling and infrastructure

Consolidate and reduce costs with support for heterogeneous environments and business partner offerings



“We should reuse requirements and test artifacts and save time and money”

*Sources: *IBM, ** Standish Group

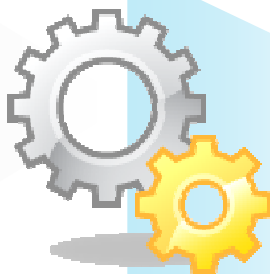


Test coverage optimization

Focus resources on testing the right combinations

Test Configurations

- 4 languages
- 4 browser types
- 5 databases
- 5 application servers
- 400 Combinations!



**Pairwise
Optimizations**

Test the right 20 combinations

OS	Browser	Protocol	CPU	DBMS
XP	IE	IPv4	Intel	MySQL
XP	Firefox	IPv6	AMD	Sybase
XP	IE	IPv6	Intel	Oracle
OS X	Firefox	IPv4	AMD	MySQL
OS X	IE	IPv4	Intel	Sybase
OS X	Firefox	IPv4	Intel	Oracle
RHEL	IE	IPv6	AMD	MySQL
RHEL	Firefox	IPv4	Intel	Sybase
RHEL	Firefox	IPv4	AMD	Oracle
OS X	Firefox	IPv6	AMD	Oracle

Configuration awareness

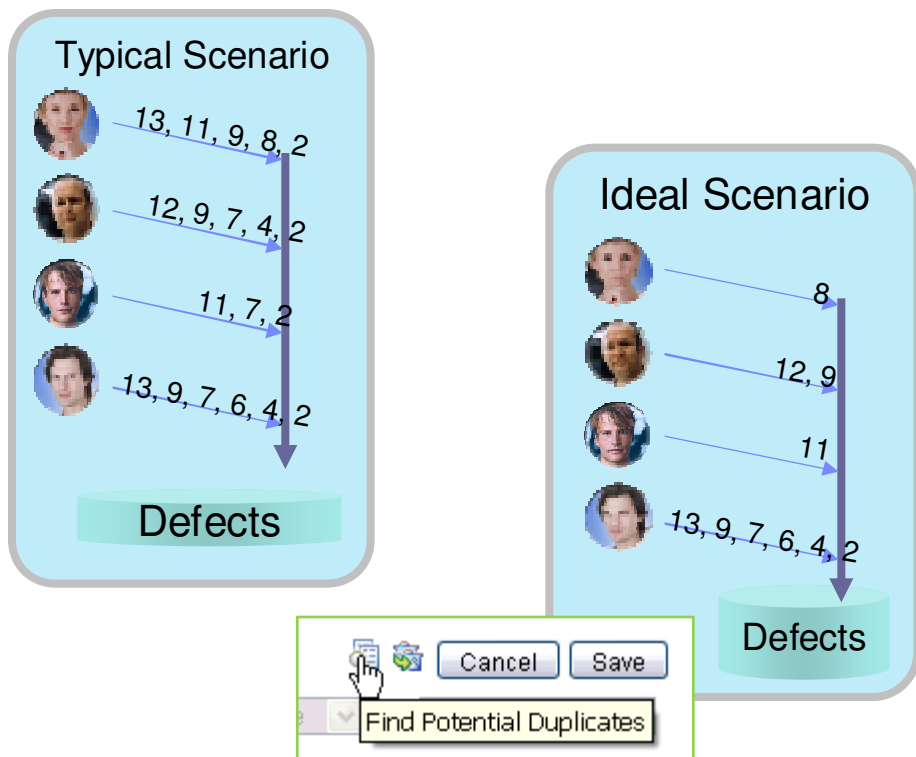
Test Platform Environment Management

- Focus your environment coverage
- Document your environment coverage
- Gain agreement across the project

Test the right cases instead of everything. Plan optimal execution

Duplicate defect detection

Improve visibility and tracking of defects



	Developing repeatable industry test solutions			Advanced Defect Analysis
Asset	Test cases copied	Manual scripts copied	Manual scripts Reuse	Prevent & block duplicate Defects
Quantity	343	350	1,393	905
Hours saved	167	175	696	1,755*
Value	\$16,690	\$17,514	\$69,633	\$175,452
Total			\$103,387	\$175,452

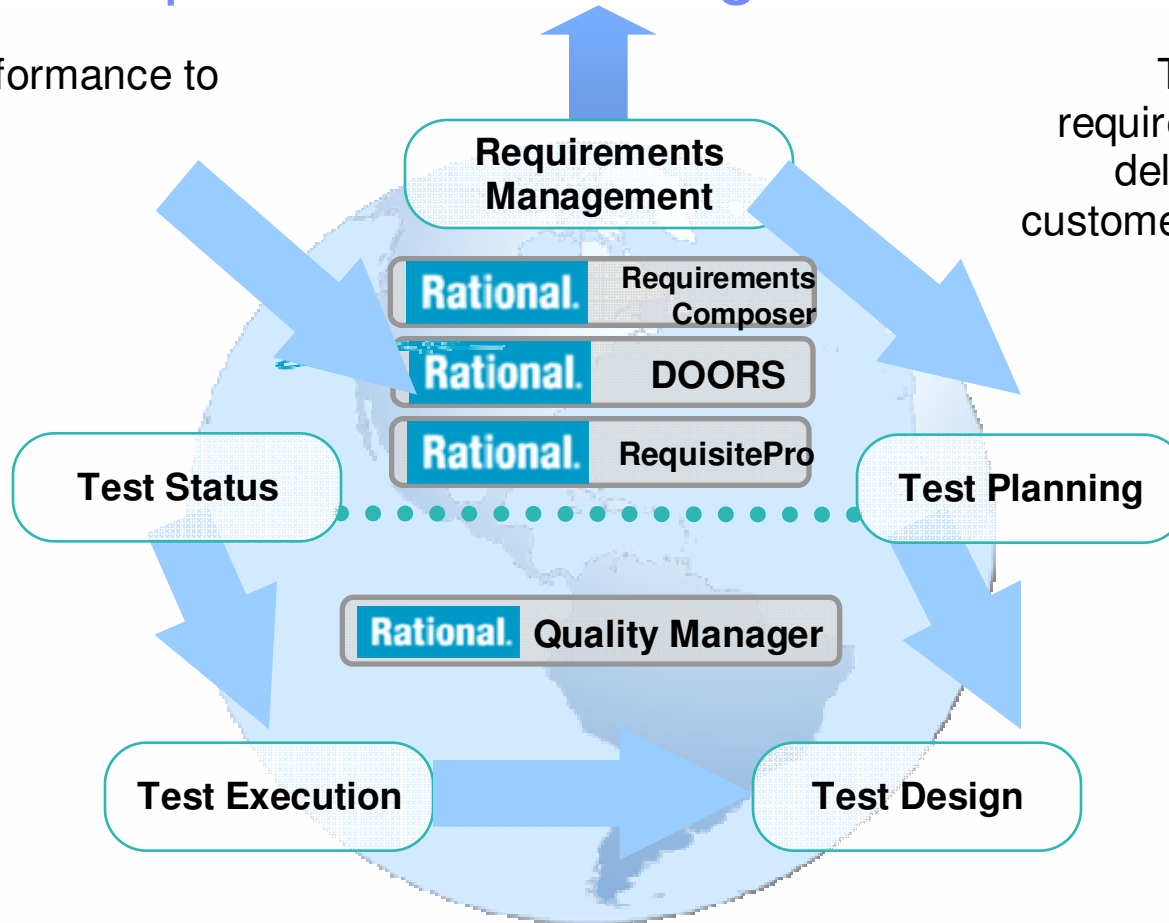
Source: GBS Test Practices study, 2005-2008, over 846 projects

Reduce project cost and time from duplicates rework

Integrated Requirements Management

Quality is conformance to requirements

Tests based on requirements ensure deliverables meet customer expectations



Process Automation and Increased Focus
 The test team is working against the right set of requirements



Integrating Requirements with IBM Rational Quality Manager

“Tests based on requirements ensure deliverables meet customer expectations”

1. Plan Tests Early

- Plan tests for each requirement as the requirement is written.

2. Conduct Tests Early

- Perform tests as early as possible in the development process.

3. Relate Tests to Requirements

- Trace tests back to the requirements they are design to check.

4. Relate Defects to Requirements

- Trace defects back to the requirements that they show are not satisfied.

5. Measure Progress against Requirements

- Set targets and measure the progress of testing in terms of those requirements that are shown to be satisfied or are not satisfied.

Integrated Manual test authoring and execution

Step	Description	Expected Results
1	Start Classics Application	This window should appear.
2	Select a CD. User browses to Schubert and selects String Quarter	
3	Order the selected CD. Press the Place Order Button. The Place Order Window appears with Schubert as a selected item.	
4	Insert CC Number	
5	Validate Trent Cuplin	
6	Press the	
7	Press the OK Button	
8	OK Button	

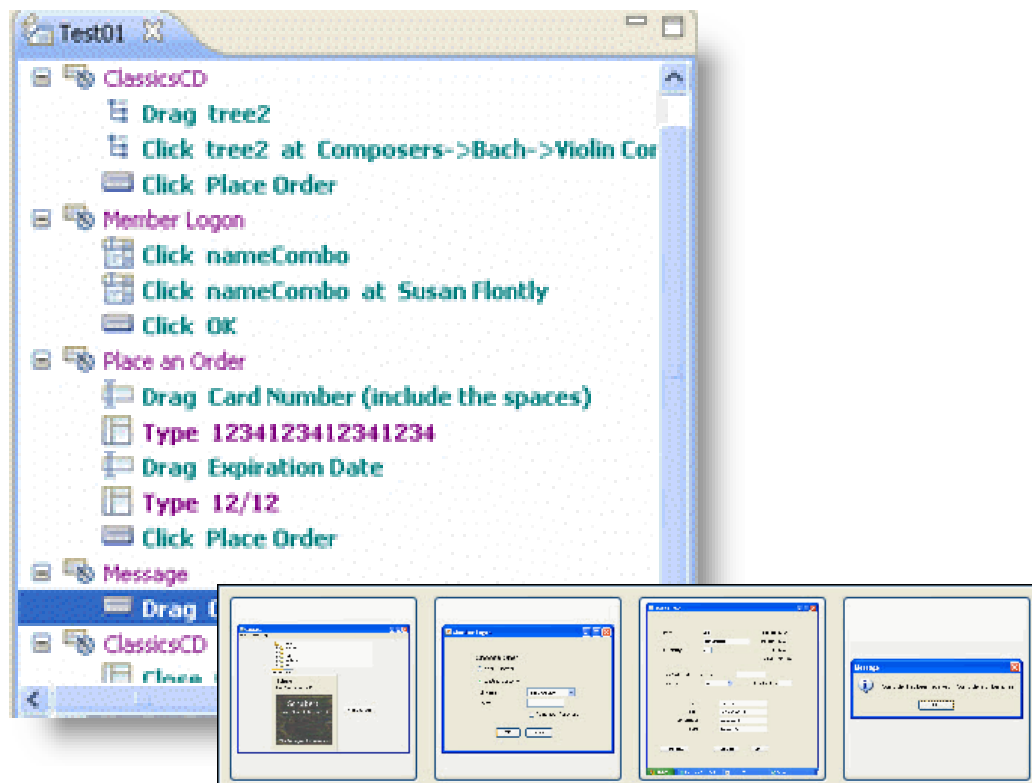
#	Type	Result	Description
1	Pass	Passed	Select a cd and click Order button
2	Pass	Passed	Verify the login window displays
3	Pass	Passed	Select new customer radio button and select OK button

- Manual test author and execute
 - ▶ Step by step capture and execution of manual tests
 - ▶ Assisted data entry
 - ▶ Keyword support for integrated manual and automated testing
 - ▶ Rich defect capture during execution, including screenshot and attachments
 - ▶ Simple intuitive interface for quick test execution

Maximizing efficiency of manual testing

Integrated Functional and Regression test execution

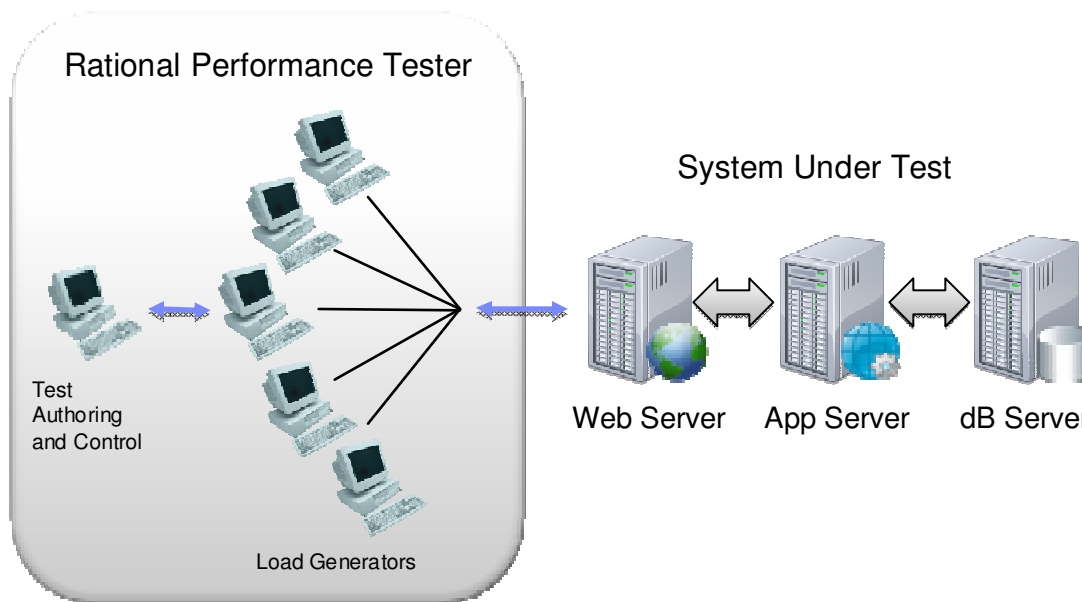
1. Increase repeatability through automated test playback
2. Test more critical functions faster with automation
3. Automatically deploy your test environment and schedule the execution of your test Suites
4. Track and communicate progress and regressions throughout the testing lifecycle



Accelerate test execution and deepen test coverage through automated test execution

Integrated Performance test execution

1. Capture and track Business SLAs in your test plans
2. Create realistic user workloads that exercise the key business transactions
3. Deploy the environment and schedule execution of your workload
4. Identify the root cause of performance problems
5. Communicate results and areas of non-compliance to the stakeholders

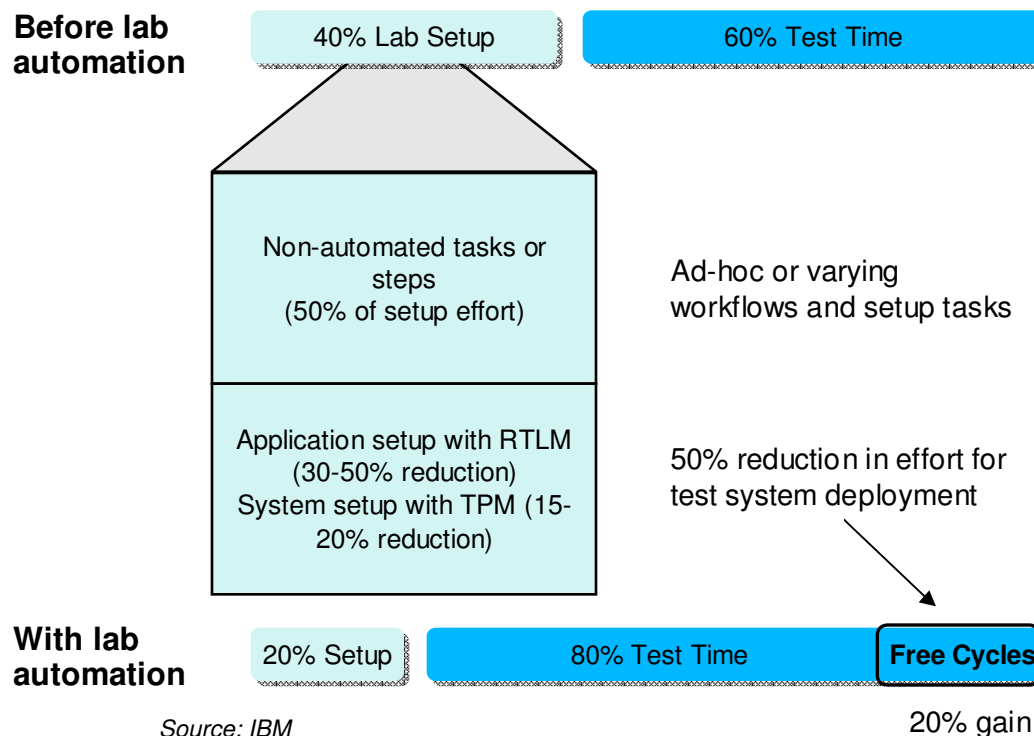


Comprehensive test planning, authoring, and analysis to identify and manage the risk of application performance failures

Test lab automation and management

Insight and control over the test lab

- Manage
 - ▶ Verify that I have the resources required to fulfill my test plan
- Deploy
 - ▶ Deliver the configurations my teams require for test
- Optimize
 - ▶ Analyze patterns to minimize cost and maximize utilization



Work smarter, save on test lab overhead infrastructure and duration costs

Make confident decisions

Manage to business objectives. Anywhere. In real-time with automated data collection and analysis for custom quality reports and dashboards

Customer Speak!

Make informed decisions and proactive change with real-time analysis and actionable reporting

Measure and manage quality, project and team status performance and results



*"77% of managers are aware of bad decisions made due to lack of access to accurate information"**

Achieve project quality objectives each and every time

Complete traceability across quality assets



"We can do better, but don't know what's not working, how bad it is, or where to start."

Confidently deliver incremental quality improvements

Manage, measure and improve quality software delivery capability with a proven, repeatable approach



*"2/3 of executives make more than half of their decisions based on 'gut feel' rather than verifiable information"**

*Source: Business Week



Assess and measure against Organizational policies

System Test Plan Test Plan Overview | View Snapshots Discard

Originator: ADMIN Action: Select Action State: Draft

Quality Objectives

Defines the overall metrics for what constitutes a quality product.

Objective	Expected	Actual Value	Status	Comment
Number of Open Sev1 Defects	= 0	0	Successful	

Select Quality Objectives

Name	Description	Condition	Target
Number of Blocked Execution Records	Objective stating that no Execution Records can be Blocked.	=	0
Percentage of Blocked Execution Records	Objective stating that only a small percentage of Execution Records can be Blocked.	<	10
Number of Failed Execution Records	Objective stating that no Execution Records can be Failed.	=	0
Percentage of Failed Execution Records	Objective stating that only a small percentage of Execution Records can be Failed.	<	10
Execution Record Pass Rate.	Objective stating that the Pass rate must meet a certain percentage.	>	80

- Assessing status
 - ▶ Standard Objectives
 - ▶ Reuse across Test Plans
 - ▶ All working toward same objectives
 - ▶ Measures against business objectives

Drive continuous and measured improvement

Make confident decisions with effortless reporting

Closed Loop Analysis & Reporting



- Customizable reports and dashboards
 - ▶ Reduce escalating cost of information gathering
 - ▶ Reduce risk by identifying trends before they become issues
 - ▶ Raise enterprise visibility and transparency to reduce costs and risk
 - ▶ Measures the effectiveness of processes and practices to improve organizational and business outcomes

Make the right decisions at the right time

Make informed decisions and proactively change with real-time analysis and actionable reporting

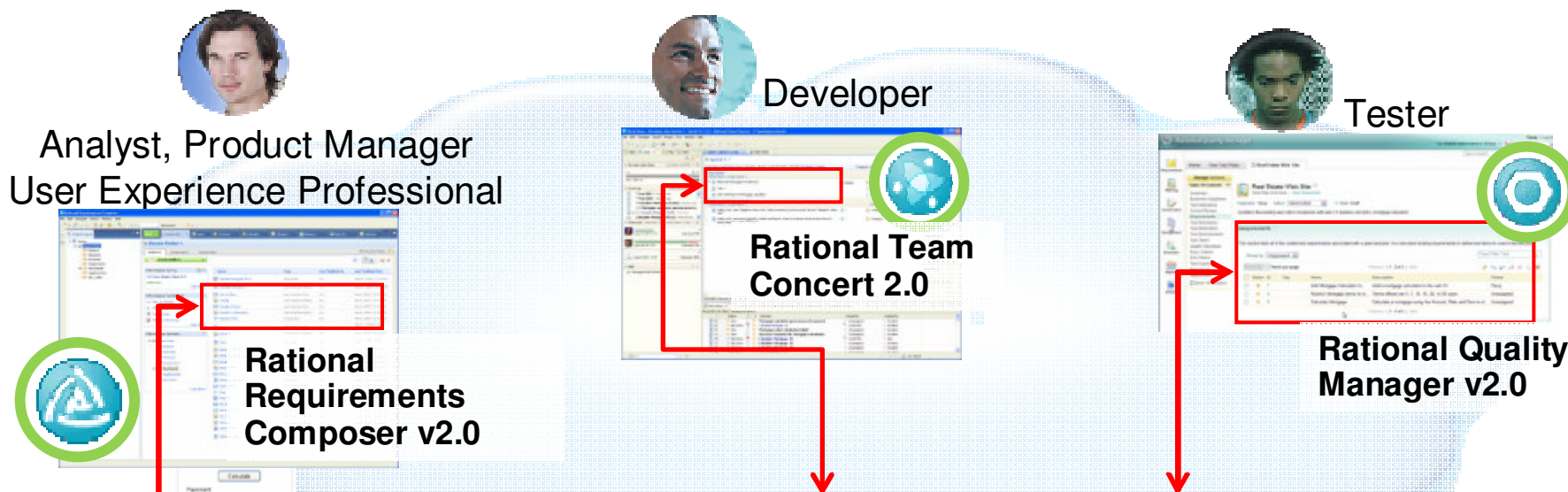
Measure and manage quality, project and team status performance and results

- Measure quality process and project outcomes
 - ▶ Real-time intelligence based on IT industry best-practice metrics, dashboards and models
- Inform quality decisions and drill into issues
 - ▶ Alerts and automated analysis focuses owner to take action on root causes
 - ▶ **52** out-of-the-box, customizable Cognos test management reports
- Take real-time action on relevant quality and project data
 - ▶ Proven business intelligence backbone automates collection and analysis to improve lifecycle productivity



Align development and test activities with business value

Break down role-based information silos for better project execution



Analyst, Product Manager
User Experience Professional

Developer

Tester

Rational Requirements Composer v2.0

Rational Team Concert 2.0

Rational Quality Manager v2.0

Name	Implemented By	Validated By	Type
<ul style="list-style-type: none"> Agle Planning of Change Requests 	<ul style="list-style-type: none"> Story 61: CQ: this is a sample work item Story 45: CQ: JSON (JavaScript Object No... Story 45: CQ: JSON (JavaScript Object No... 	<ul style="list-style-type: none"> Test Case 49: SMA4.2.Source.2009.09.06... 	Use Case
	<ul style="list-style-type: none"> Story 45: CQ: JSON (JavaScript Object No... Story 36: Provide C/ALM compact renderin... 	<ul style="list-style-type: none"> Test Case 33: Architectural Direction Test Case 36: Collaborative ALM Test Case 38: Save Selection As Story Test Case 43: R 	Document

Analysts define and validate scenarios; analyze and organize requirements

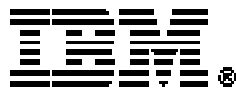
User Experience Professionals elaborate work items in storyboards and other artifacts

Developers create, prioritize and track work items according to business value

Testers create test plans, and report test results against requirements

Rational Quality Manager Open Ecosystem Today

Rational. software



Tivoli. software

Automated Testing

- Rational Functional Tester
- Rational Performance Tester
- Rational Service Tester for SOA Quality
- Rational AppScan Tester Edition
- Test RealTime
- Rational Robot
- Rational Rhapsody

Builds, WorkItems and Defects

- Rational ClearQuest
- Rational Team Concert
- Rational BuildForge

Reporting

- Rational Insight

Provisioning

- Tivoli Provisioning Manager (TPM)
- Tivoli Service Request Manager
- TADDM

Requirements

- Rational Requirements Composer
- Rational ReqPro
- Rational DOORS



RapidRep



Supporting bidirectional integration with the Jira change management system



DeviceAnywhere[™]
by Mobile Complete

Managing mobile applications testing across a global handset test environment



Certify



Quick Test Professional
LoadRunner



TMAP Process



Enabling greater quality and productivity with automated SOA governance support



Accelerating test cycles with virtual machine management and execution

Questions





Learn more at:

- [IBM Rational software](#)
- [Rational launch announcements](#)
- [Rational Software Delivery Platform](#)
- [Accelerate change & delivery](#)
- [Deliver enduring quality](#)
- [Enable enterprise modernization](#)
- [Ensure Web security & compliance](#)
- [Improve project success](#)
- [Manage architecture](#)
- [Manage evolving requirements](#)
- [Small & mid-sized business](#)
- [Targeted solutions](#)
- [Rational trial downloads](#)
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