



IBM Innovate 2012

Effective Test Planning and Execution Using IBM Rational Quality Manager

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IBM Software

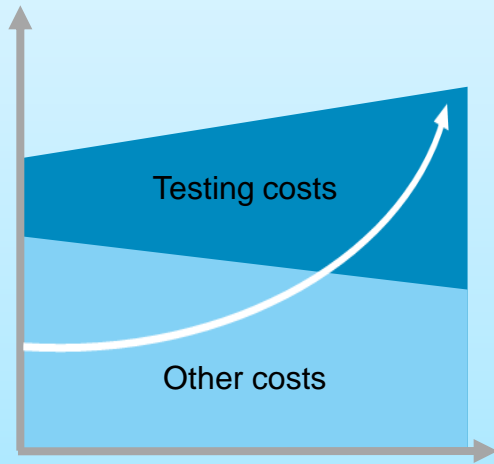
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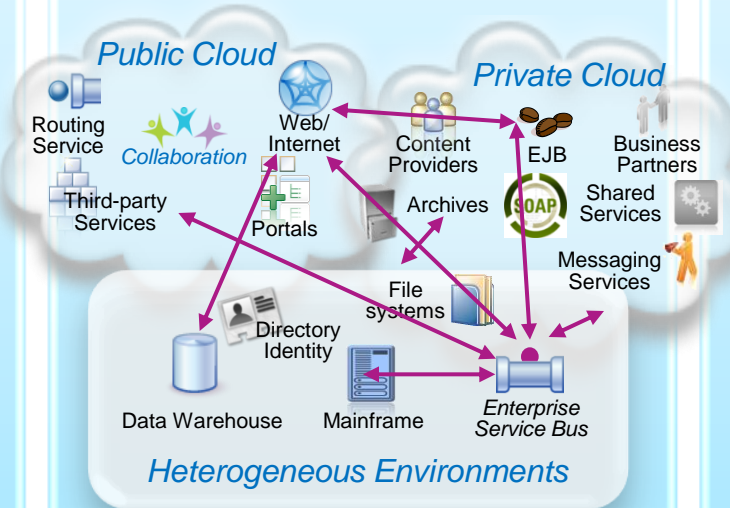
Next  NOW!

Cost, complexity and velocity make today's quality paradigm impractical

Increasing Cost of Quality



Increasing Development Complexity



Balancing Quality and Speed



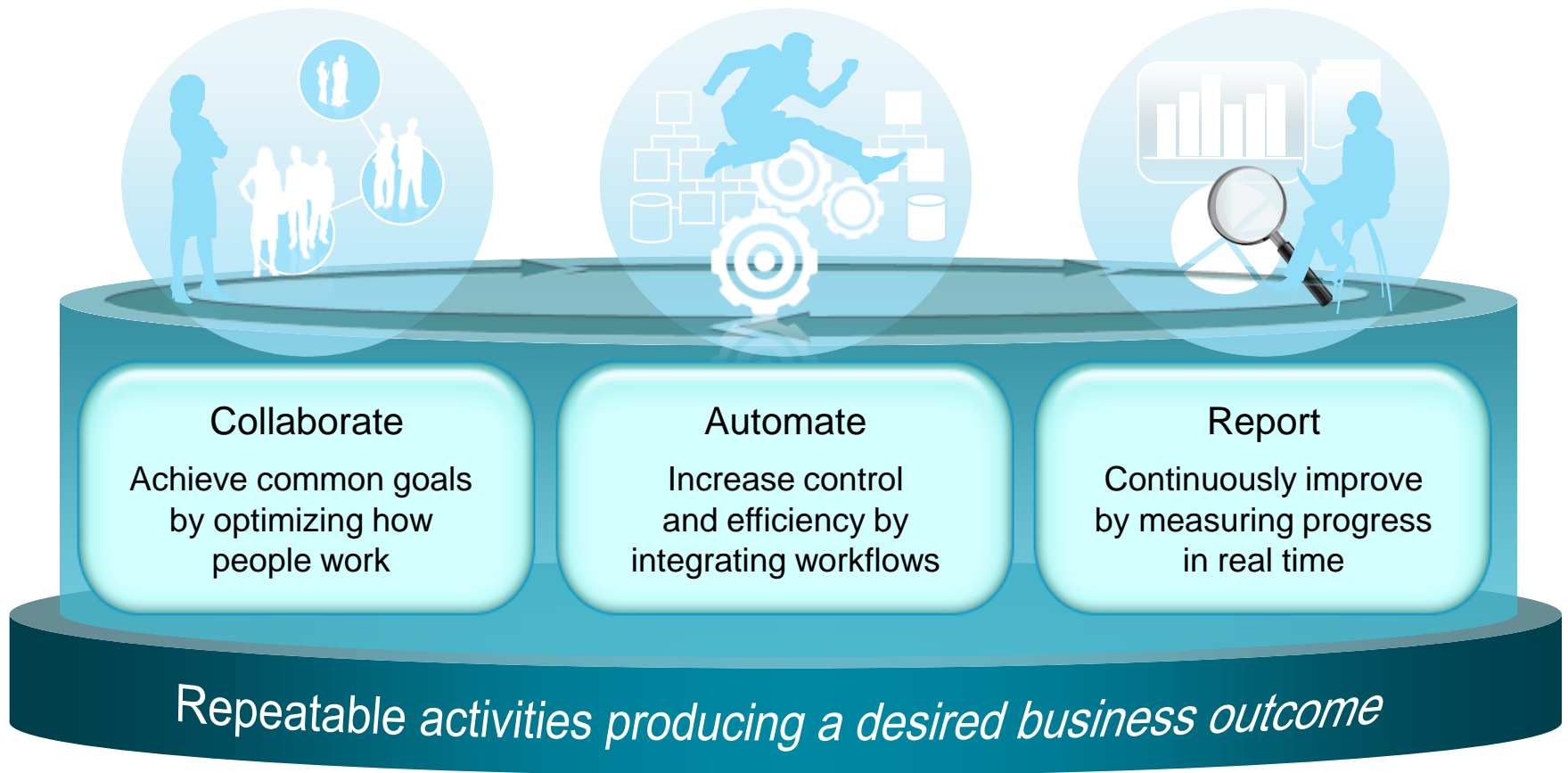
Outsourcing **labor** is no longer a sustainable model as global wages are increasing

Product and application **complexity** and size are increasing

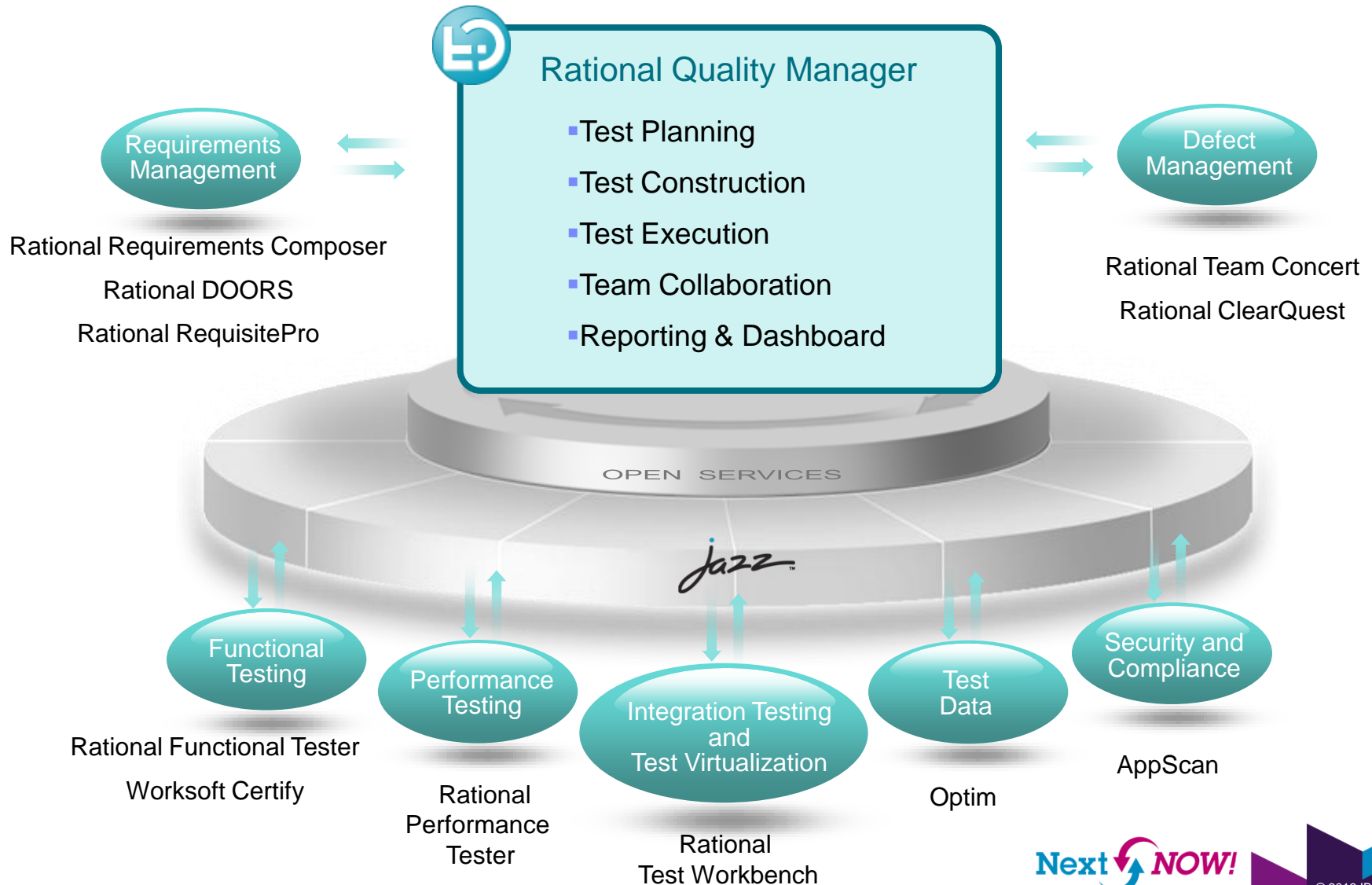
Productivity is inhibited as test teams can no longer keep up with agile development

* Source: <http://www.sei.cmu.edu/about/message/>

Successful businesses will manage software and systems delivery as a robust business process



Rational Quality Manager: Central Hub for Quality Management



Rational Quality Manager: A Closer Look

Test Planning

- Comprehensive test plan
- Shared objectives
- Scope, Timeline, Resources
- Risk assessment

Test Construction

- Requirement driven testing
- Test environments coverage
- Manual test authoring
- Test lab management

Test Execution

- Manual test execution
- Use test automation tools
- Record test results
- Submit & track defects

Team Collaboration

- Process enactment and enforcement
- Review and approval
- Task management
- Rapid team member on-boarding

Reporting & Dashboard

- Status and progress tracking
- Customizable live dashboard
- Real-time metrics and reports
- Compliance and quality audit



Build Quality in with team collaboration

Customer Speak!

Unify the team through real-time 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."***

Minimize scrap and rework with lifecycle traceability

Assess changes in scope, delivery date, objectives, etc. in minutes using impact analysis



Requirements change all the time: What tests should I eliminate, re-run?

Take noise out of the system and foster greater collaboration

Reduce friction between developers and testers with more efficient handovers, reduced effort, streamlined information



*"Close to 60% of the defects are duplicates"
"Our team spends a lot of time installing builds to discover issues"**

* Source: IBM

Comprehensive Test Plan to aim the same goals

Manage Sections

Overview

Summary

Business Objectives

Test Objectives

Formal Review

Requirement Collection Links

Development Plan Links

Risk Assessment

Test Schedules

Test Estimation

Test Environments

Quality Objectives

Entry Criteria

Exit Criteria

Test Suites

Test Cases

Resources

Attachments

Show All Sections

- Test Plan customizable to specific process or qualification standards
- Clearly defined quality objectives, responsibilities, scope, timeline, ...
- Reviewed and approved by the whole team
- Connected to actual test activities to reflect up-to-date status

System Test Plan Discard

Test Plan Overview | View Snapshots

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

Build the right tests efficiently

- Automate requirement driven testing
- Get stakeholders and developers help through review and approval
- Reuse existing test cases or test scripts when appropriate
- Optimize test environments coverage

Reconcile all the requirement collections

Requirements that don't have any test coverage
Please select the requirements that would like to have the test coverage in this test plan

Show All Items per page Previous | 1 - 4 of 4 | Next

- Summary
- 198: Validate Loan term and amount
- 72: Support dividend processing via mobile devices
- 162: Donors Deposit Money in a Pooled Assistance Fund
- 65: Dividend processing payment is a one time transaction.

Previous | 1 - 4 of 4 | Next

Test Environments

Work Item: Create

Lists the various environments supported and tested by this test plan. You can add various platforms such as browsers, databases, operating systems and other items. This list is then used to generate test environments.

Platform Coverage Test Environment

Type Filter Text

Show All Items per page Previous | 1 - 3 of 3 | Next

Type	Attributes
Application Server	Tomcat 6.0, WAS 6.1, WAS 7.0
Browsers	Firefox 2.0, Internet Explorer 7, Safari 3.0
DataBase	SQL Server 2000, SQL Server 2005, SQL Server 2008

Previous | 1 - 3 of 3 | Next

Next > Cancel

Minimize scrap and rework through lifecycle traceability

- Proactively respond to gaps as they surface through out the project
- Issues can be quickly highlighted and resolved
- Assess impact of changes: requirements, sprints, schedule, etc.
- Understand which defects block which tests and get notified when fixed

BRM Sprint 2 (1.0) Plan * ?

26 items: 23 open, 3 closed | Ends in: 3 days

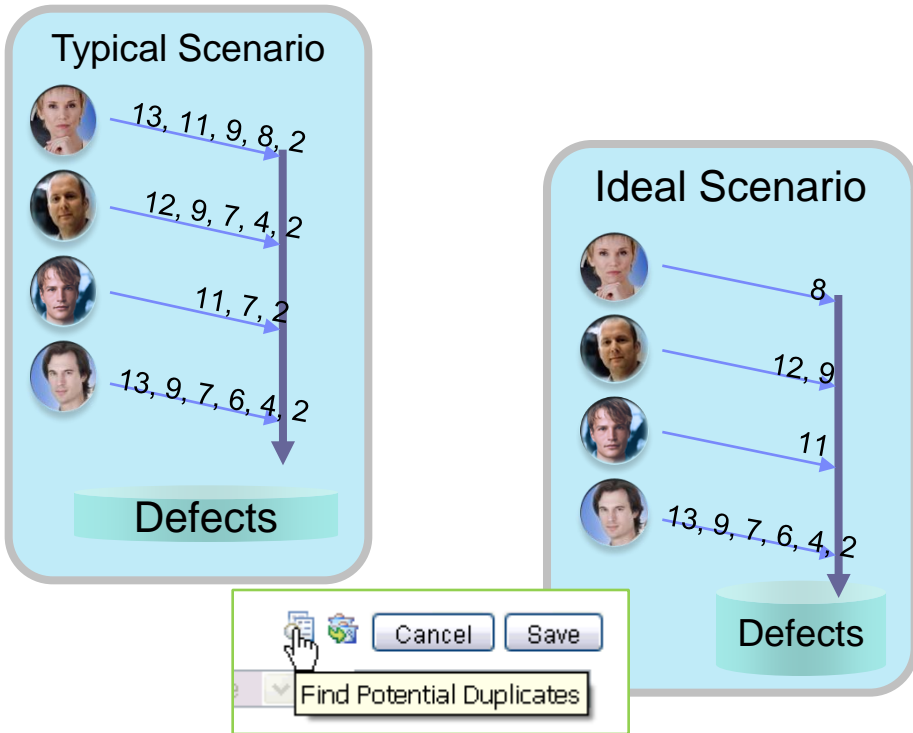
Plan Details [Edit](#)

Planned Items ? [Links](#) [Snapshots](#) [Dashboard](#) [Notes](#)

View As: **Traceability** (17 items filtered) [Add Work Item](#)

Actions	Summary	Owned By	Implements Requirement	Tested By Test Case	Affected by
	Requests sent in form of email	Unassigned	Requests sent in form of email	--	--
	Frequency of dividend transfer	Unassigned	--	Verify dividend transfer frequency	--
	Organization must provide justification for why funds are neec	Marco	Organization must provide justification for why funds are ne	Organization must provide justificatio	--
	Organizations can Apply	Marco	Organizations can apply	Organizations can Apply	--
	Organization must identify how much money is desired	Marco	Organization must identify how much money is desired	Organization must identify how much	Links (2)
	Donor Dividend Allocation Criteria	Deb	Donor Dividend Allocation Criteria	Donor dividend allocation conforms t	--
	Organizations may apply with an initial request	Bob	Organizations may apply with an initial request	Organizations may apply with an initi	--
	JKE Charity Coordinator will respond to request in the websit	Marco	JKE Charity Coordinator will respond to request in the web	JKE Charity Coordinator responds to	425: Rur
	Customers can Nominate an Organization	Marco	Customers can nominate an organization for the program	Customers can Nominate an Organi	--

Reduce friction: Streamline defect submission



- **4-clicks to submit a defect**
automatically linked to impacted artifacts
- **Test results are recorded** and linked to test cases, and associated requirements
- Defects are automatically matched to existing defects to **eliminate duplicate defects occurrence**
- **Everyone has visibility** into the defects, their impact, and the action taken to resolve them

Manage risk with smarter testing

Customer Speak!

Focus your testing effort on the right 20%
Assess and monitor risk associated with requirements and test cases to prioritize activities



*"80/20 rule applies: 80% of test cases rarely identify defects"**

Apply automation where it matters
Use analytics to better manage your investment in automation and maximize its return on investment



*"We have 50,000 automated tests. We don't quite understand what we should maintain"**

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?

*Source: Business Week

Optimize testing effort through risk management and prioritization

- 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

The screenshot displays the 'Classics Java Test Plan' interface. A modal window titled 'Risk Assessment' is open, showing the following details:

- Risk Assessment:** 5 orange circles, labeled 'very high'.
- My Risk:** Rate this: 5 orange circles, labeled 'very low'. Includes a 'Comment here' text box.
- Community Risk:** A bar chart showing the distribution of risk levels:
 - Very high: 0 (0%)
 - High: 0 (0%)
 - Neutral: 0 (0%)
 - Low: 0 (0%)
 - Very low: 1 (100%)
 - average: 5 orange circles, labeled 'very low'

The background interface shows a 'Test Cases' table with columns for ID, Risk Assessment, Suspect, and Name. A table of themes is also visible on the right side of the screen.

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...

Accelerate Manual Testing

- Capture concise and unambiguous test scripts
- In-line images clearly guide the users through execution and expected results
- Reuse test steps across multiple scripts via keywords
- Reduce human error thanks to assisted input data and comparison

Manual Steps ?

Step	Description:	Expected Results	Validates
1	select the "Jazz Community Site" window		
2	select the "Rational Quality Manager - Projects - Jazz Community Site" window		
3	select the "New Work Item - Change and Configuration Management" window		
4	click the "Conditions" link		
5	drag the "com_ibm_team_workitem_web_ui_internal_view_queryeditor_Attribute" html		
6	click the "is" textbox		
7	click the "Run" button		

Keyword View ?

Clipboard ?

Type Filter Text

Steps

- Insert New Step Above
- Insert New Step Below
- Insert New Step(s) via Recording
- Reporting Step
- Add to Clipboard
- Remove Step
- Link to any Requirement
- Remove Requirement Links from step

Click to add step

Make confident decisions

Customer Speak!

Take informed decisions and make 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

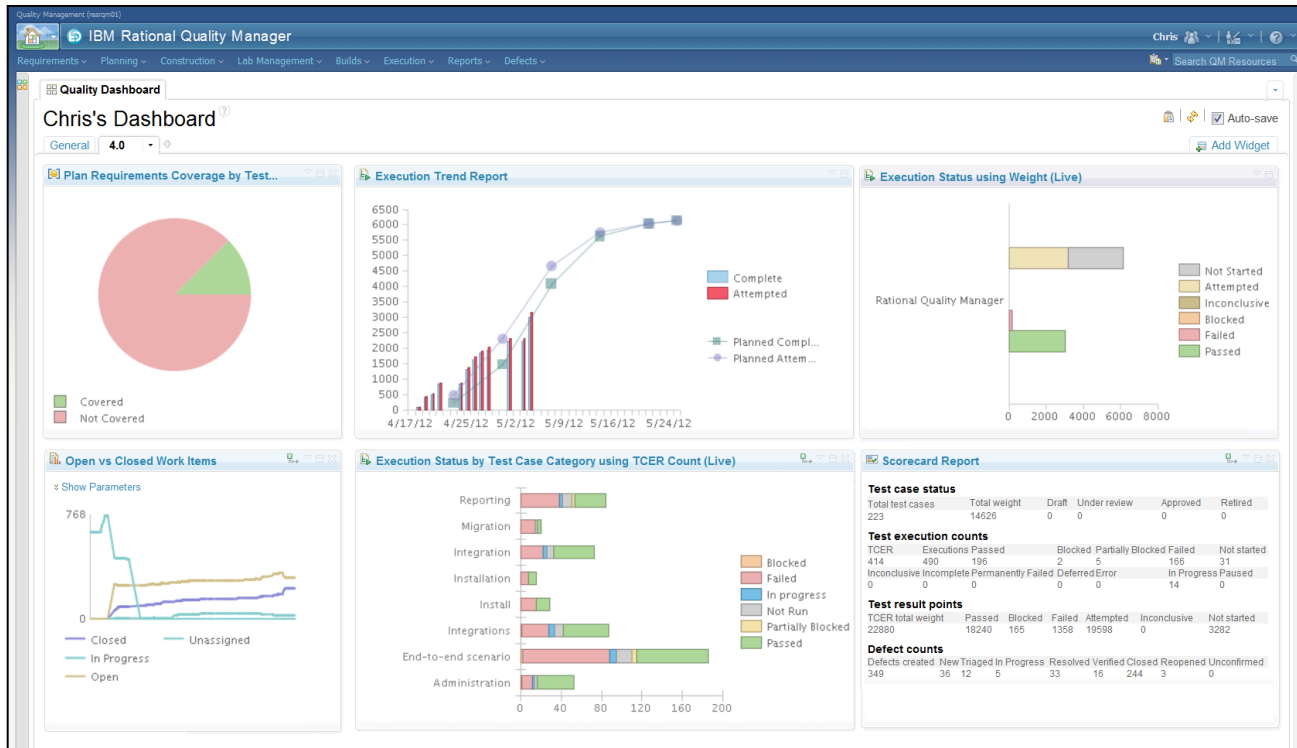


*"2/3 of executives make more than half of their decisions based on 'gut feel' rather than verifiable information"**

*Source: Business Week

Take informed decisions with real-time dashboard

- Quickly identify and respond to issues thanks to accurate and real-time status
- Raise enterprise visibility and transparency to reduce costs and risk
- Reduce escalating cost of information gathering
- Reduce risk by identifying trends before they become issues



Assess and measure against Organizational policies

System Test Plan ?
 Test Plan Overview | [View Snapshots](#)

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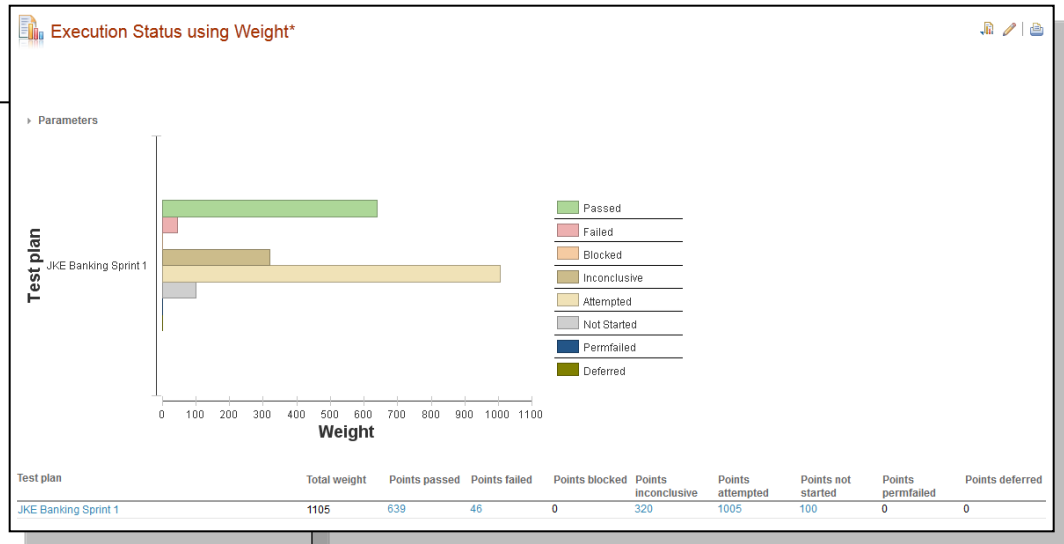
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- Standard Objectives
- Reuse across Test Plans
- All working toward same objectives
- Measures against business objectives

Drive continuous and measured improvement

- Real-time intelligence based on IT industry best-practice metrics and models
- Proven business intelligence backbone automates collection and analysis to improve lifecycle productivity
- Measures the effectiveness of processes and practices to improve organizational and business outcomes



Rational Quality Manager Open Ecosystem



Rational. software

Tivoli. software

Automated Testing

- Rational Functional Tester
- Worksoft Certify
- Rational Performance Tester
- Rational Service Tester for SOA Quality
- Rational AppScan Tester Edition
- Rational Test RealTime
- 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 DOORS
- Rational RequisitePro



Quick Test Professional LoadRunner



Supporting bidirectional integration with the Jira change management system



WIND RIVER

Embedded SW Testing



GREENHAT

Accelerating test sandbox creation through service virtualization



Managing mobile applications testing across a global handset test environment



Model-based test generation



Telecom Test Automation



Summary: Rational Quality Manager

▪ Collaborate

Bridge the gap between technical and business communities through shared access to enterprise documents, workflows and collaboration solutions.

▪ Automate

Make it easy for individuals and teams to "do the right thing" and "do things right" by automating team process and workflow.

▪ Report

Track and measure progress across multiple teams, tools and geographies by leveraging the real-time instrumentation of the software lifecycle.



Helping customers improve the value and performance of their investments in software as strategic business assets



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