

Collaborative Lifecycle Management

Rational. software

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The demand for Application Lifecycle Management (ALM)

- **Traceability of relationships between artifacts**

“Managing dependencies between high-priority change requests and ongoing application development efforts sometimes seems like it isn’t humanly possible.” (US healthcare company)

- **Automation of high level processes**

“We had a consulting company define a methodology for us. We still have it on a shelf somewhere. A process needs to live in the tools we use if it’s ever going to be followed.” (Transportation company)

“Automating our build-deploy-test processes would probably save each of our developers about an hour a day.” (Financial services firm)

- **Reporting provides visibility**

“We do progress reporting the same way we’ve been doing it for 40 years. It’s all manual: weekly status meetings, progress reports, demonstrations. We’d love to get test results from nightly builds posted somewhere instead of having to run people down to ask them whether things are working yet.” (Bank)



ALM Algebra

A software project can still fail if:

- ▶ Project managers expertly manage schedules
- ▶ Analysts diligently capture business requirements
- ▶ Developers write quality code
- ▶ Testers run thousands of tests

But these activities do not correspond to each other, or to the needs of the business

Requirements

Modeling

Coding

Change management

Configuration mgt

Build

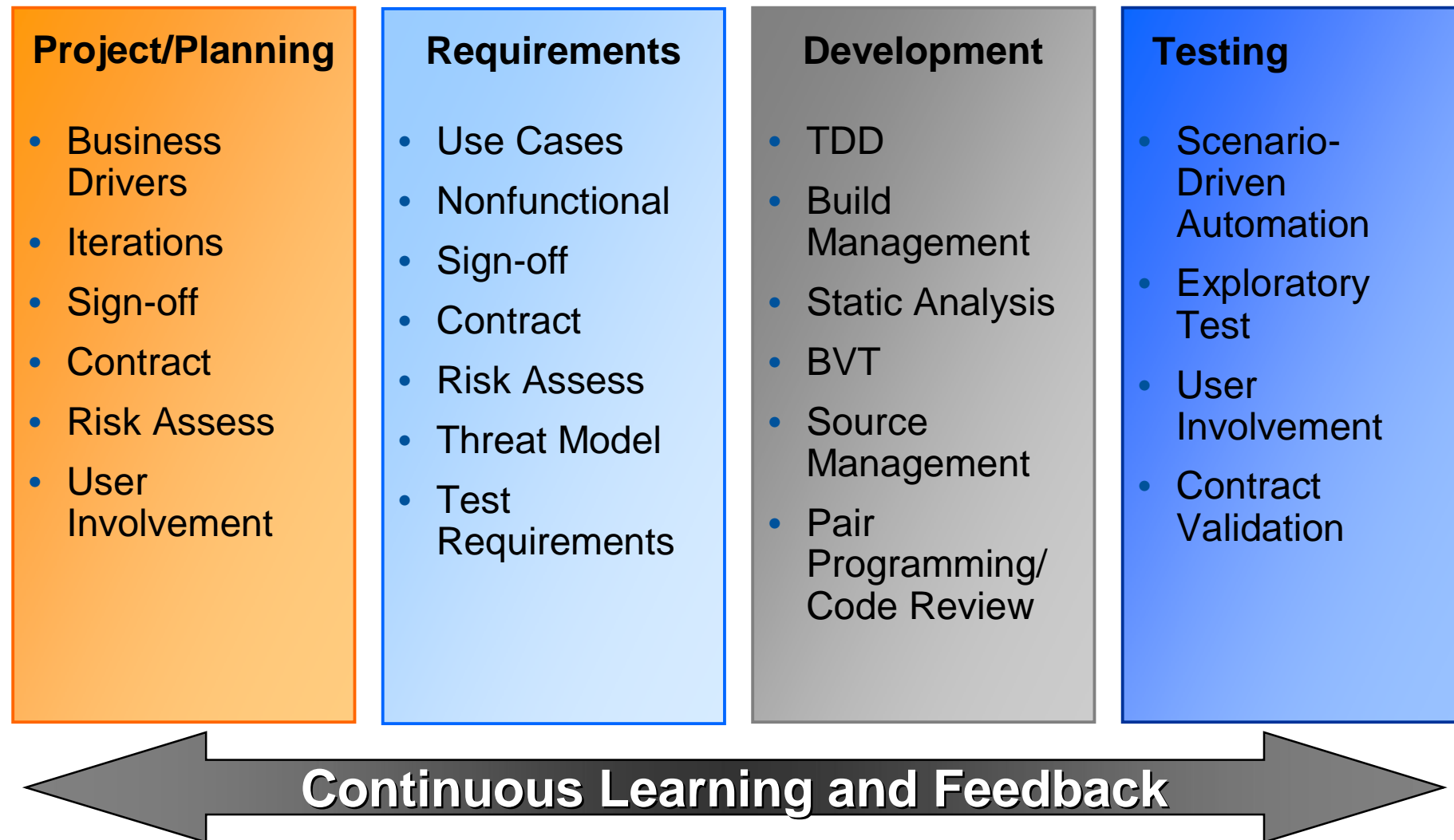
Testing

Project management

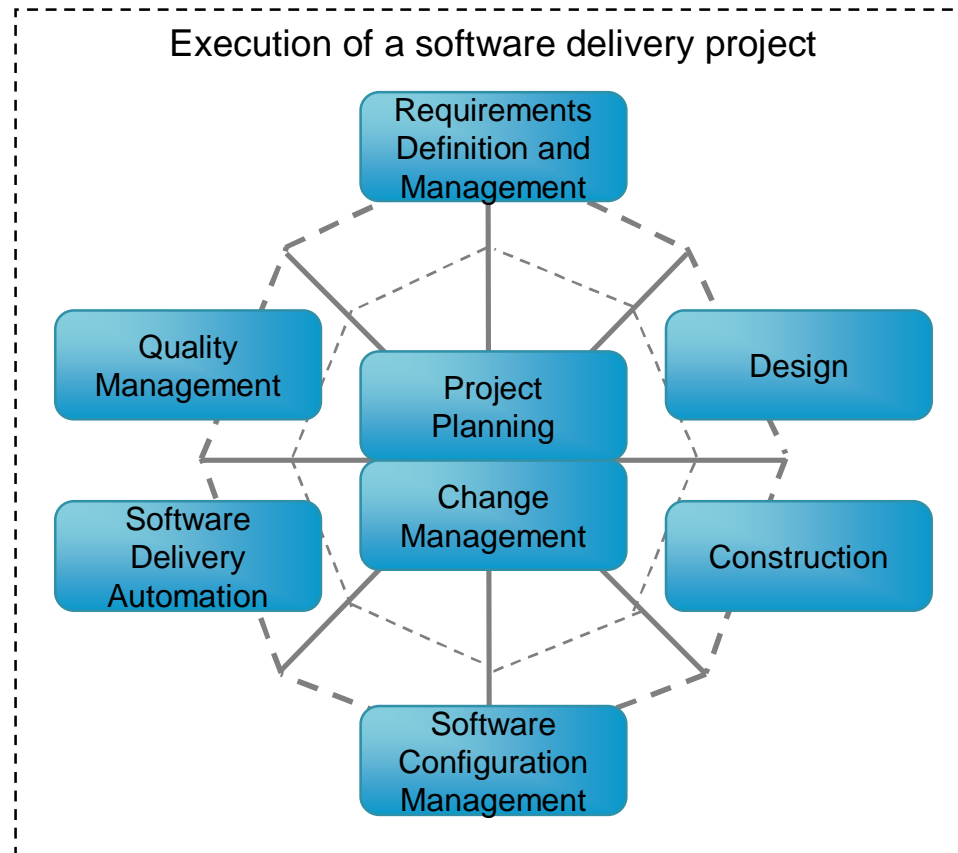
Application Lifecycle Management



ALM is about connecting the disciplines



ALM Capabilities



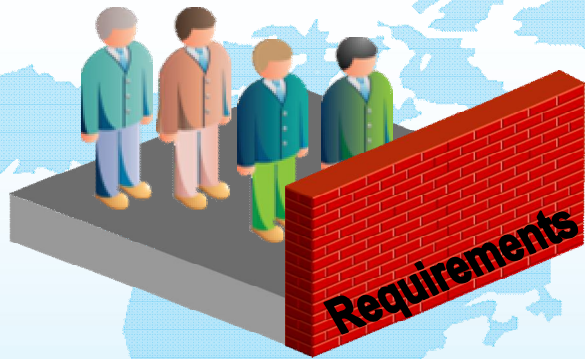
COLLABORATE
Achieve common goals by optimizing how people work together

AUTOMATE
Increase efficiency and predictability automating non-creative tasks

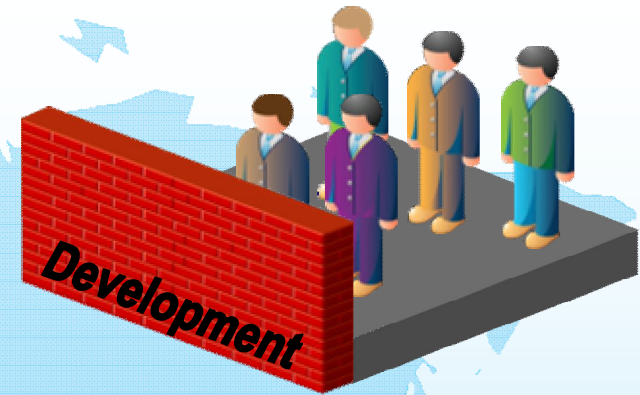
REPORT
Continuously improve by measuring and steering progress in real time

– For Managing Agile delivery of IT applications including Java, RIA, WebSphere, Enterprise Modernization, Mobile Applications and more...

Yet barriers to effective software delivery remain and expand



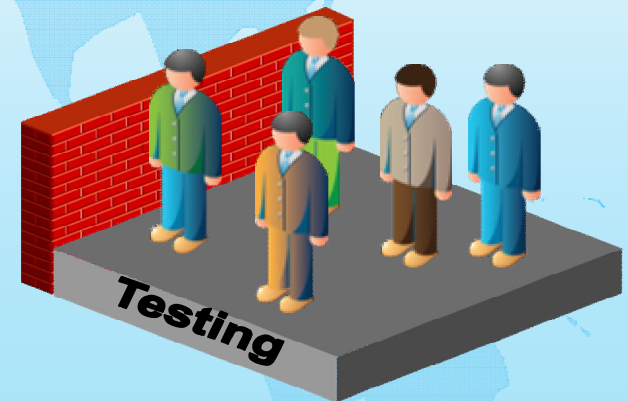
“Only 34% of software projects are deemed successful, costing \$300B annually”¹



“Only 22% of executives felt that their IT and business strategy were tightly integrated”²



Requirement-induced delays cost US businesses over \$30B annually.”³



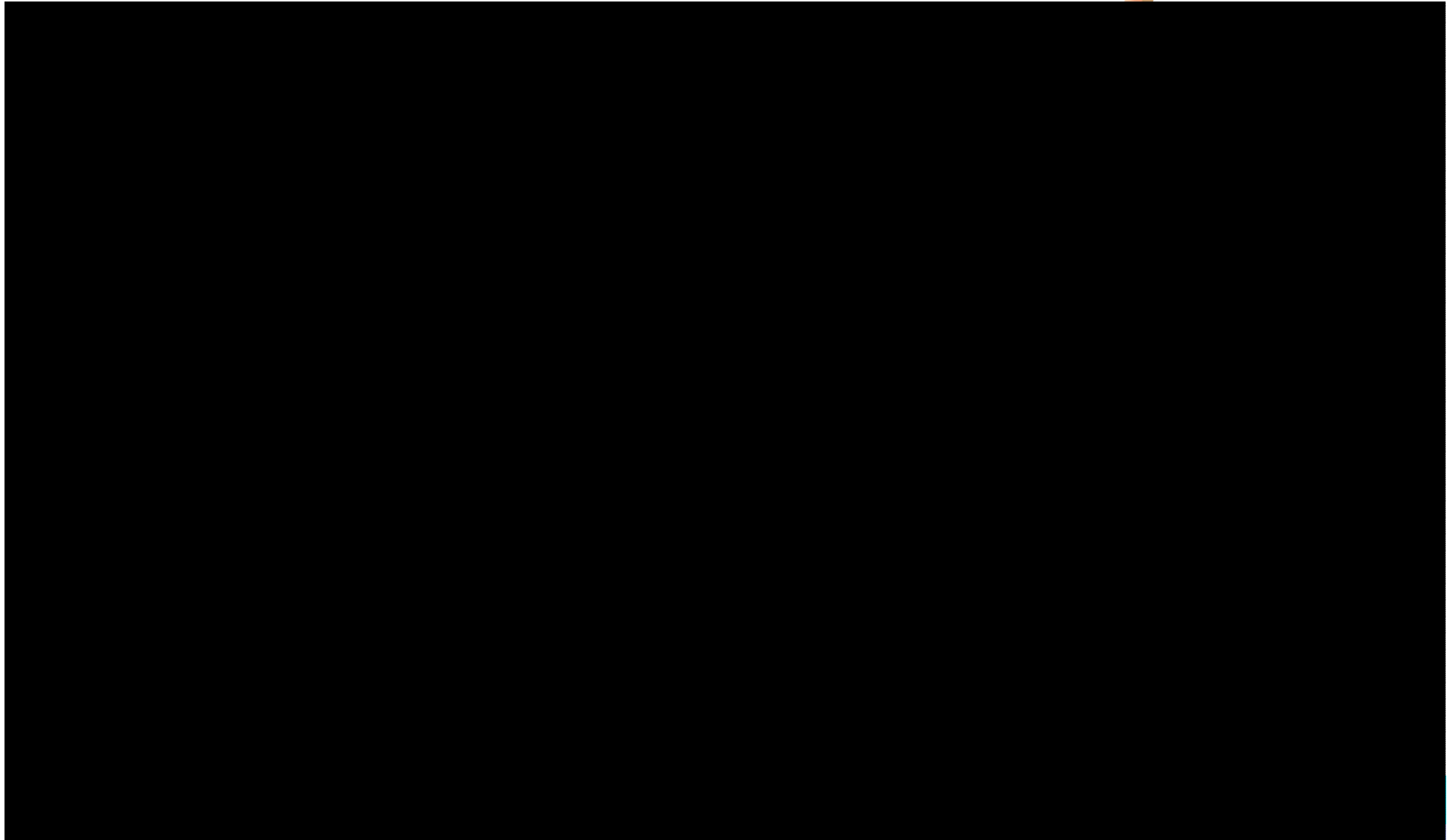
¹ CHAOS Chronicles v 12.3.9, The Standish Group, June 30, 2008

² Roger Roberts, Johnson Sikes, "IT's Unmet Potential", *McKinsey Quarterly*, November 2008

³ US Dept. of Congress, Planning Report, 2002



Collaborative Lifecycle Management transforms software delivery



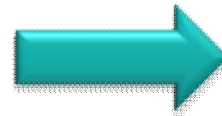
What is required to deliver end-to-end visibility across teams, tools and projects?

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



Imperative 1: Real-Time Planning

Priority	Created Date	Days Open	Assignee	Changed Date	Days Since Last Update
75	4/6/2009 8:34 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
76	4/6/2009 8:34 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
247	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
189	4/16/2009 6:59 AM	12	12 Jim Boyle	5/12/2009 8:31 AM	6
383	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
385	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
389	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
396	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
399	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
402	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
403	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
404	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
400	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
401	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	6
202	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
203	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
206	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
207	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
73	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
82	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
86	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
87	2/4/2009 8:11 AM	24	24 Aileen	5/12/2009 8:31 AM	6
200	2/4/2009 7:41 AM	24	24 Aileen	5/12/2009 8:31 AM	6
188	4/16/2009 6:59 AM	12	12 Jim Boyle	5/12/2009 8:31 AM	6
187	4/16/2009 6:59 AM	12	12 Jim Boyle	5/12/2009 8:31 AM	6
188	4/16/2009 6:59 AM	12	12 Jim Boyle	5/12/2009 8:31 AM	6
190	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
384	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
386	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1
388	5/4/2009 6:25 AM	12	12 Jim Boyle	5/19/2009 8:20 AM	1

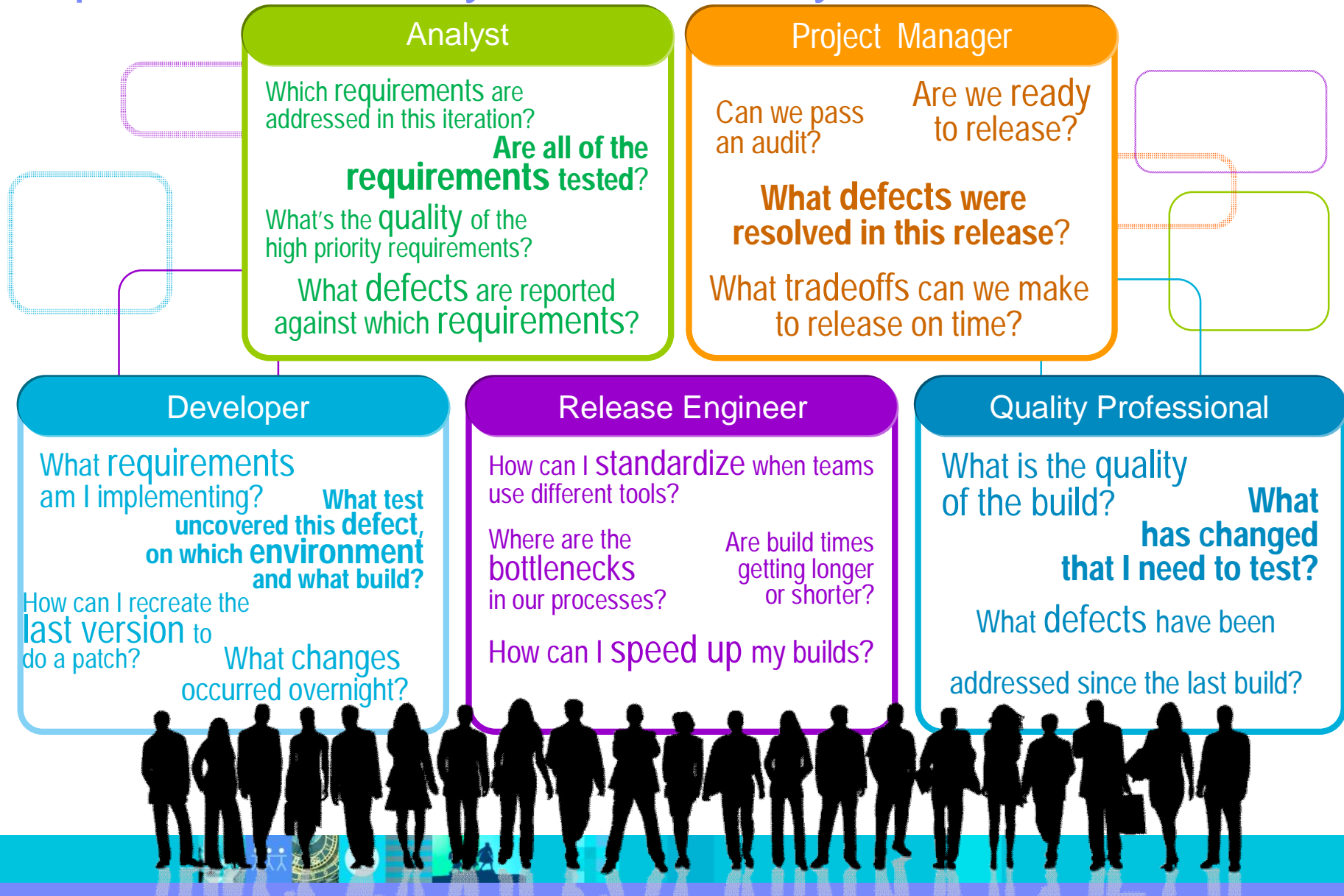


- Plans live outside of ALM environment
- Manual, error-prone updates
- Separate from team activities and assignments
- Disconnected from metrics on past team experiences

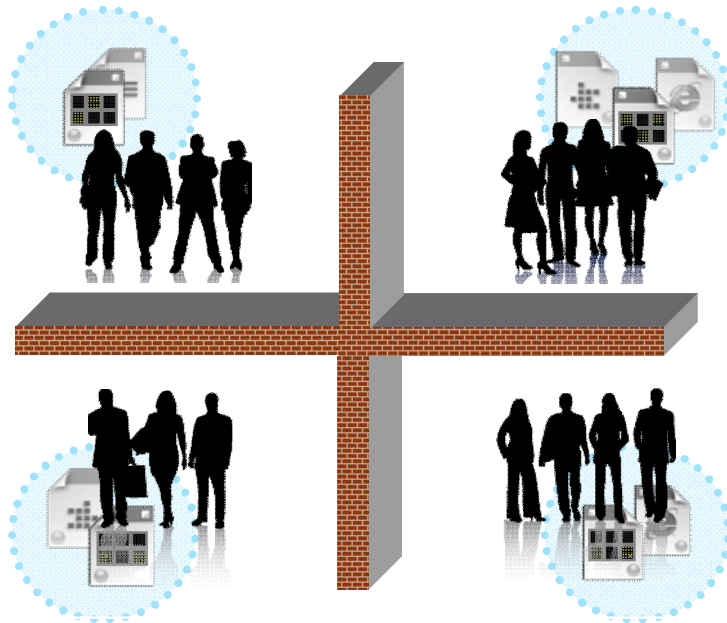
- Plans fully integrated with execution
- Continuous planning through project dashboards
- Instantly see the impact of changes to delivery dates
- Easily instantiate project plans into individual and team activities



Imperative 2: Lifecycle traceability



Imperative 3: In-Context collaboration

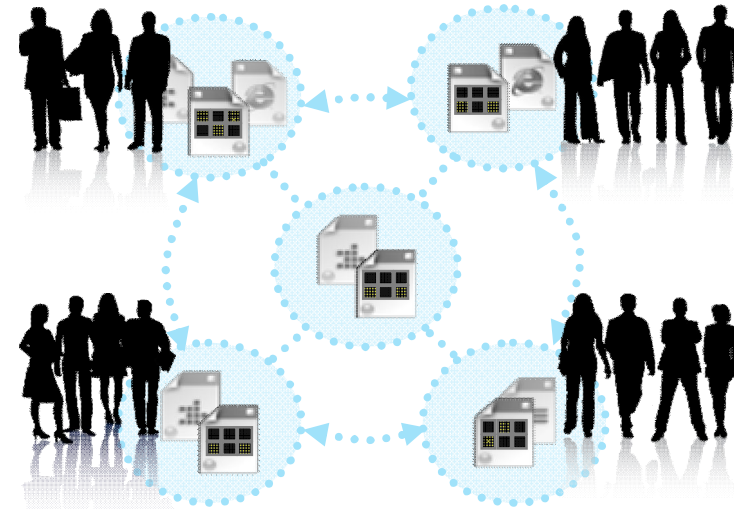
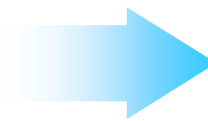


Don't

Create an environment of silo'd teams and disconnected data that is hard to access by other members of the team.

Manually collect status reports

Rely on email discussions.



Do

Unified teams share linked data. Use lifecycle queries to answer more meaningful questions such as "Which requirements are affected by defects?"

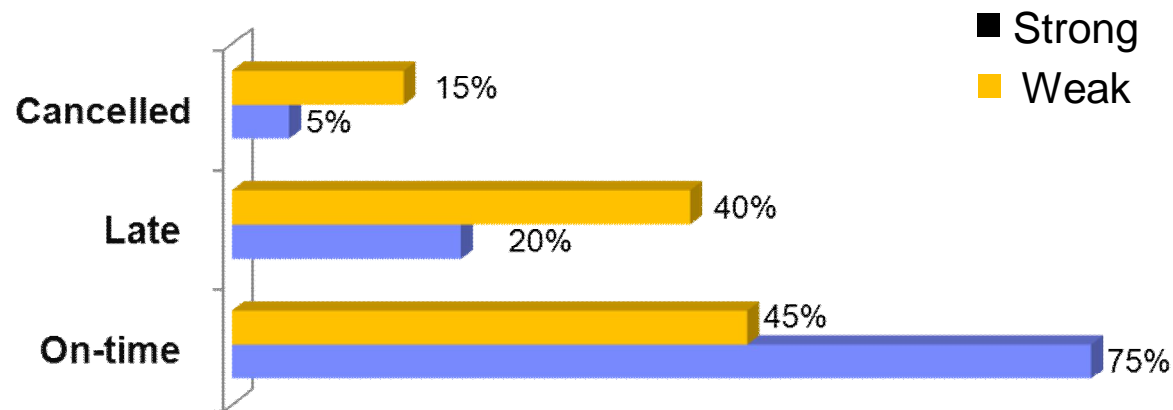
Collaboration is also about knowing what is going on without having to ask. Dashboards and lifecycle queries provide real-time status of the team's progress.

All discussions in work items integrated on the plan.

Imperative 4: Development Intelligence

How important is measurement?

Statistical outcomes: Projects with strong versus weak measurement practices



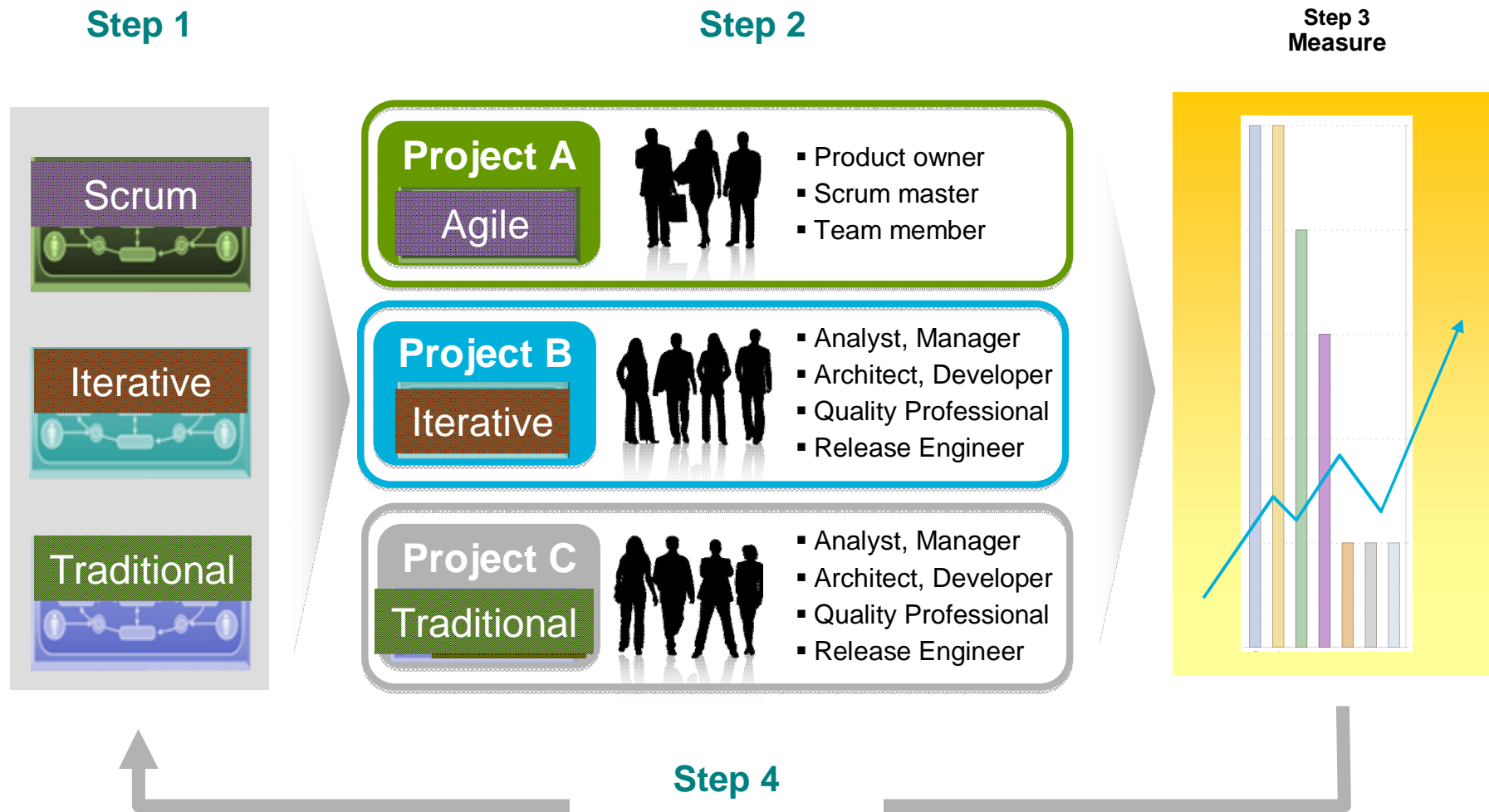
Fortune 500 firms with:

- Quality measures: 45%**
- Productivity measures 30%**
- Complete measures: 15%**

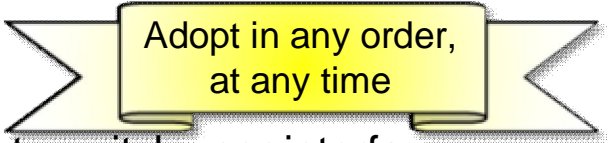
Source: Capers Jones, Measurement, Metrics and Industry Leadership, 2009 and Software Engineering Best Practices, McGraw Hill, 2010



Imperative 5: Continuous process improvement



Design Principles for Collaborative Lifecycle Management

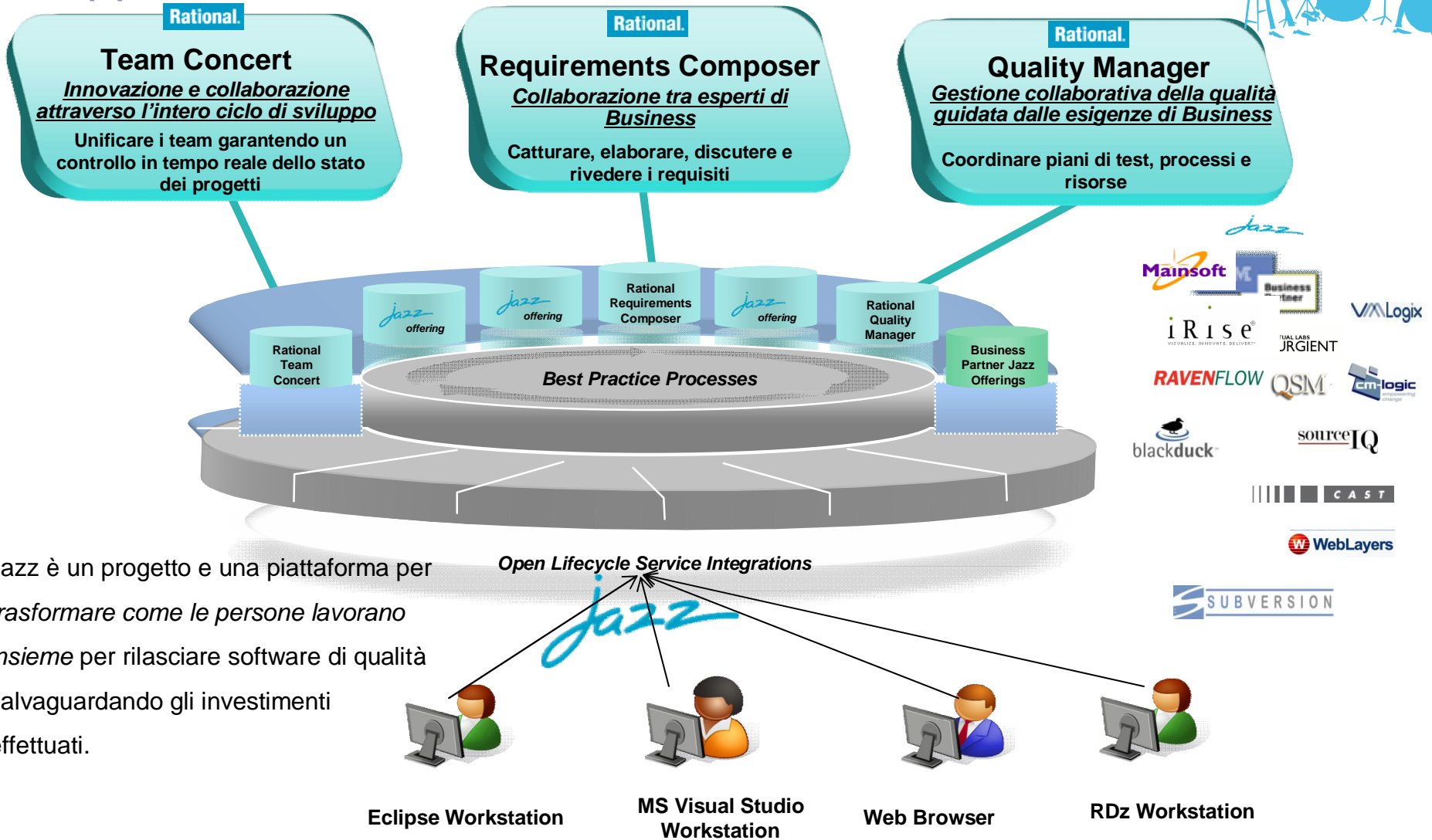


Adopt in any order,
at any time

- Provide role specific user interfaces
 - Collaborate in the context of your tool - reduce the need to switch user interfaces
 - Federated applications – integrated and centralized user experience
- Create 'webs' of lifecycle artifacts
 - Link data don't duplicate it
 - Establish links as a side effect of working with the tools
- Enable transparency for everyone
 - Integrate views from different applications
 - Create 'mash-ups' dashboards
 - Report on the whole project
- Be flexible and open
 - Support incremental adoption
 - Support the ability to Add or Subtract products as needed
 - Open integrations support a heterogeneous mix of tools across the lifecycle.
 - Support heterogeneous mix
 - Support Open-Services for Lifecycle Collaboration, Open Social
- Where possible, self-host on what we sell



Jazz: la piattaforma che trasforma il modo di sviluppare software



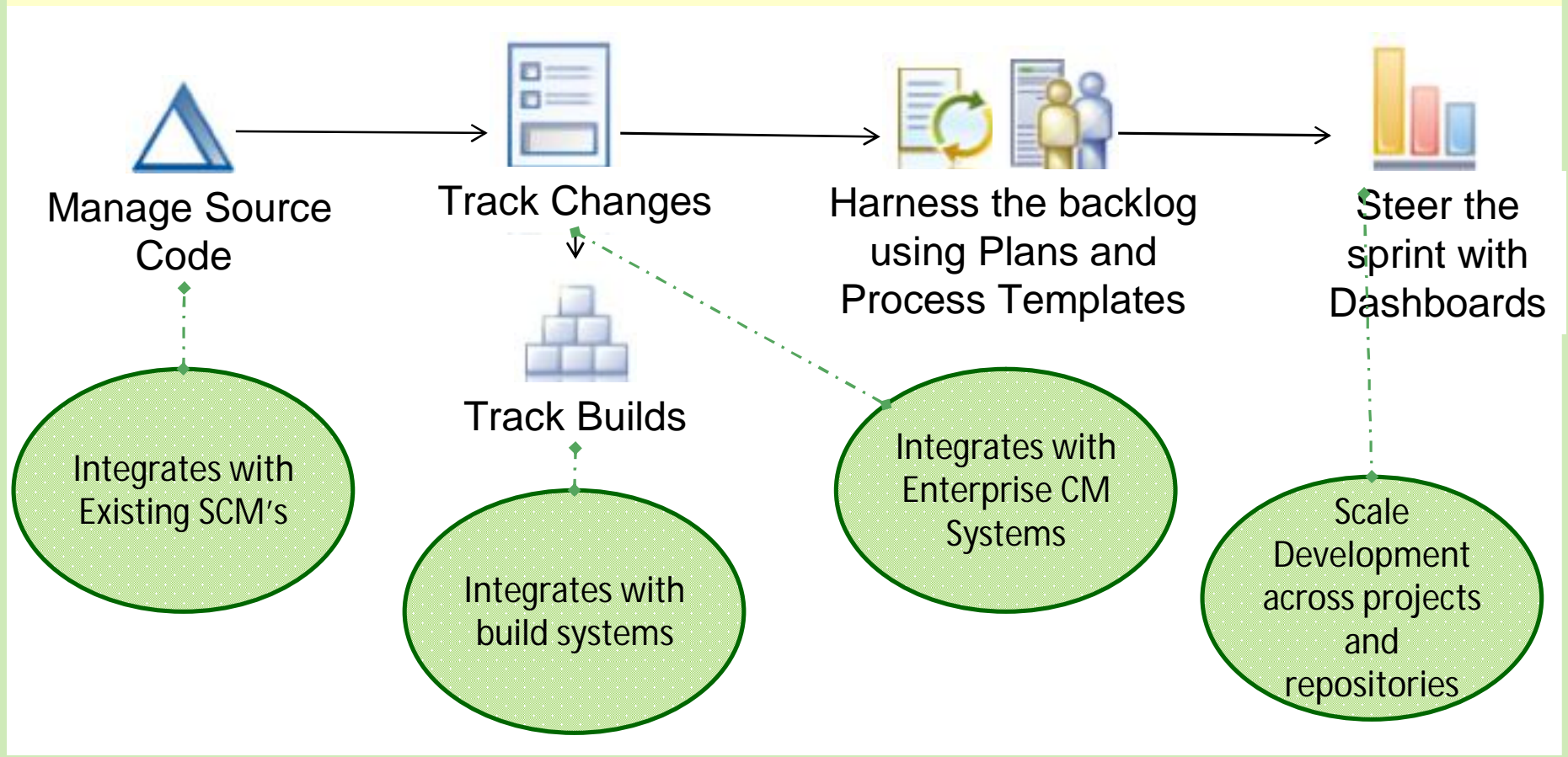
Jazz è un progetto e una piattaforma per trasformare come le persone lavorano insieme per rilasciare software di qualità salvaguardando gli investimenti effettuati.



Adopting Agile Development with Rational Team Concert

- Quality of releases improves 12%*
- Project governance improvements of 12%

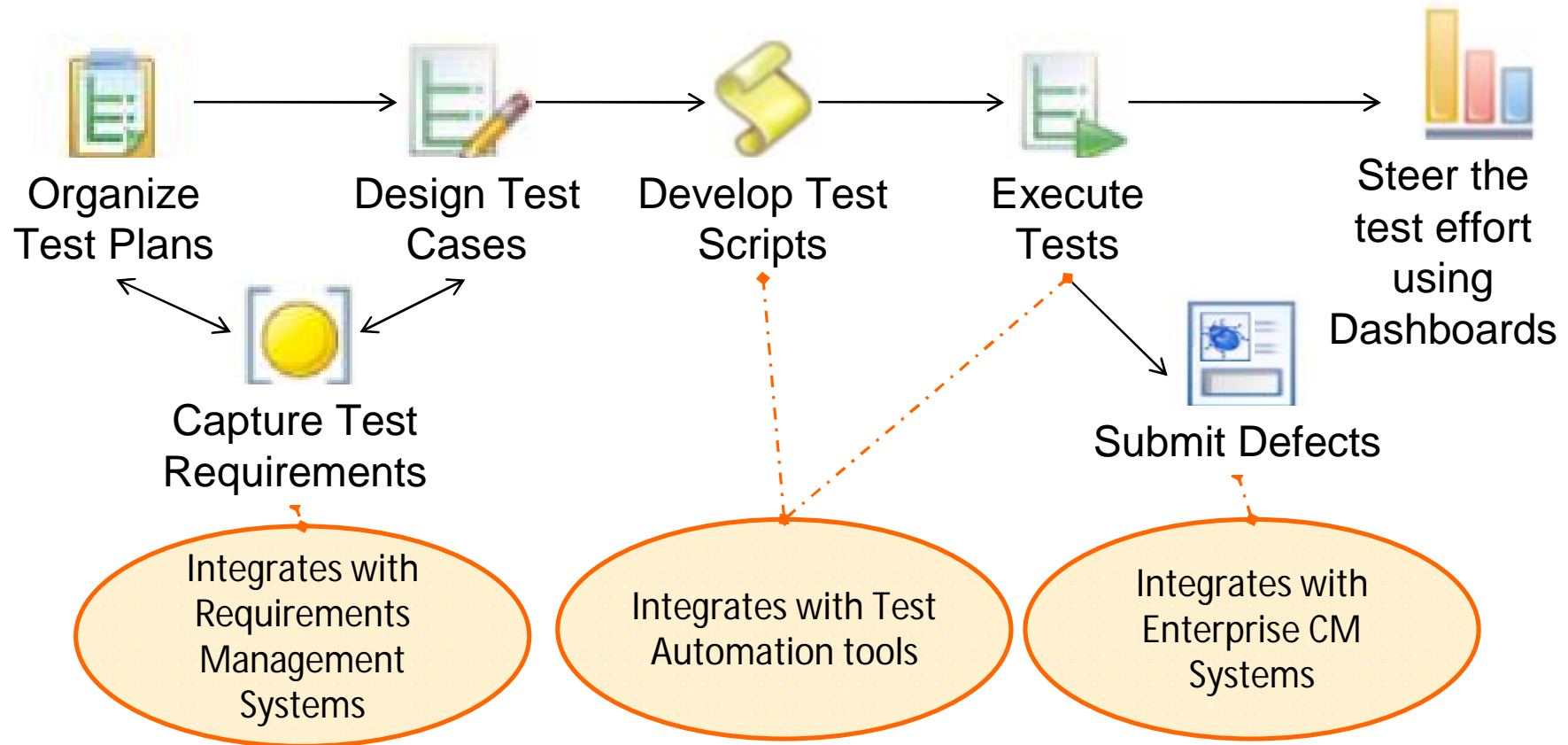
- Team productivity increases of up to 50%
- Team collaboration performance up 25%*



* Based on IBM customer surveys

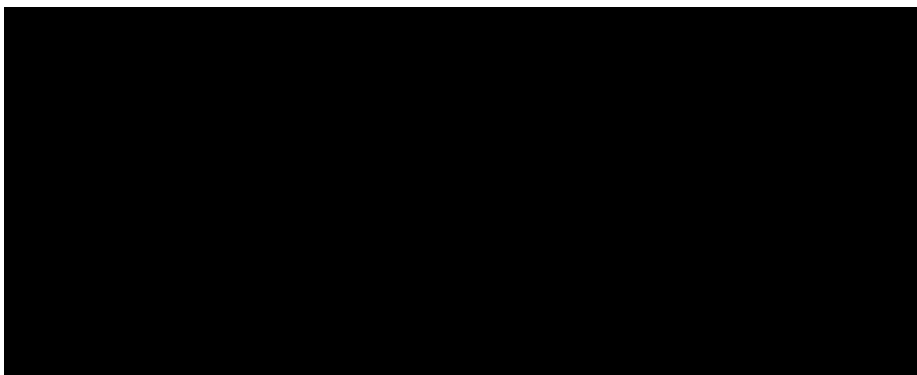
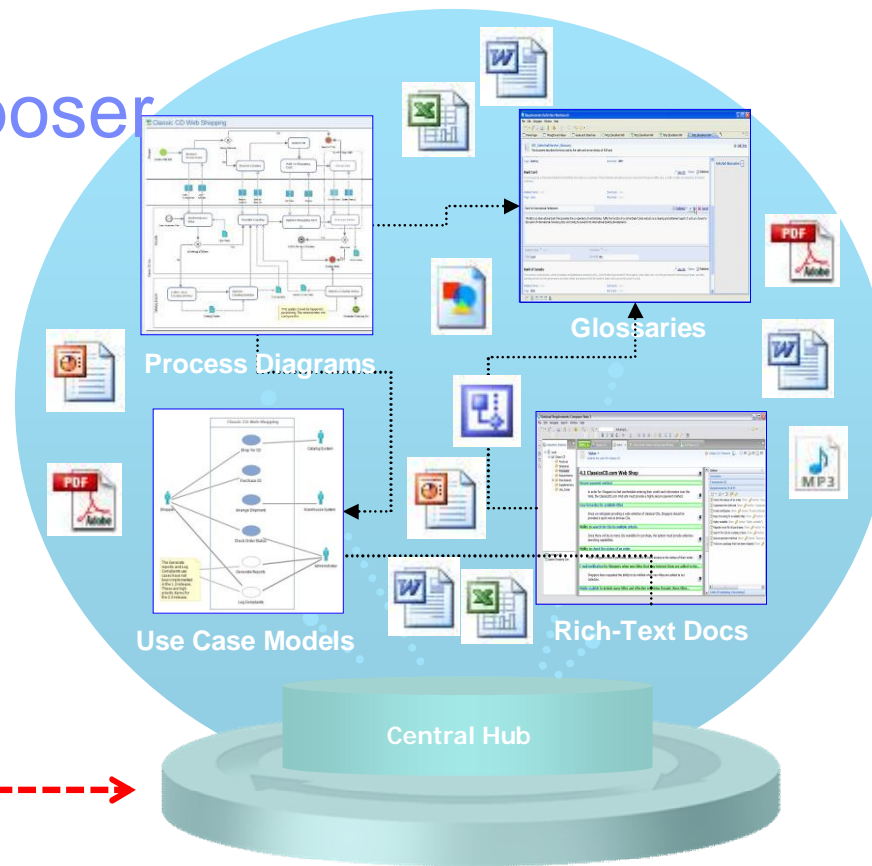
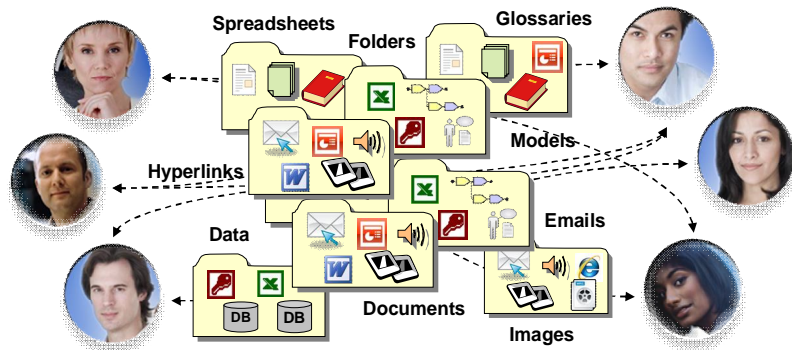
Manage Quality with Rational Quality Manager

- Average cost of a defect found in production \$241,000/defect
- Save average of 696 hours by reusing scripts*
- Save an average of 1755 hours by preventing and blocking duplicate defects*



Rational Requirements Composer

Move beyond Office and homegrown tools



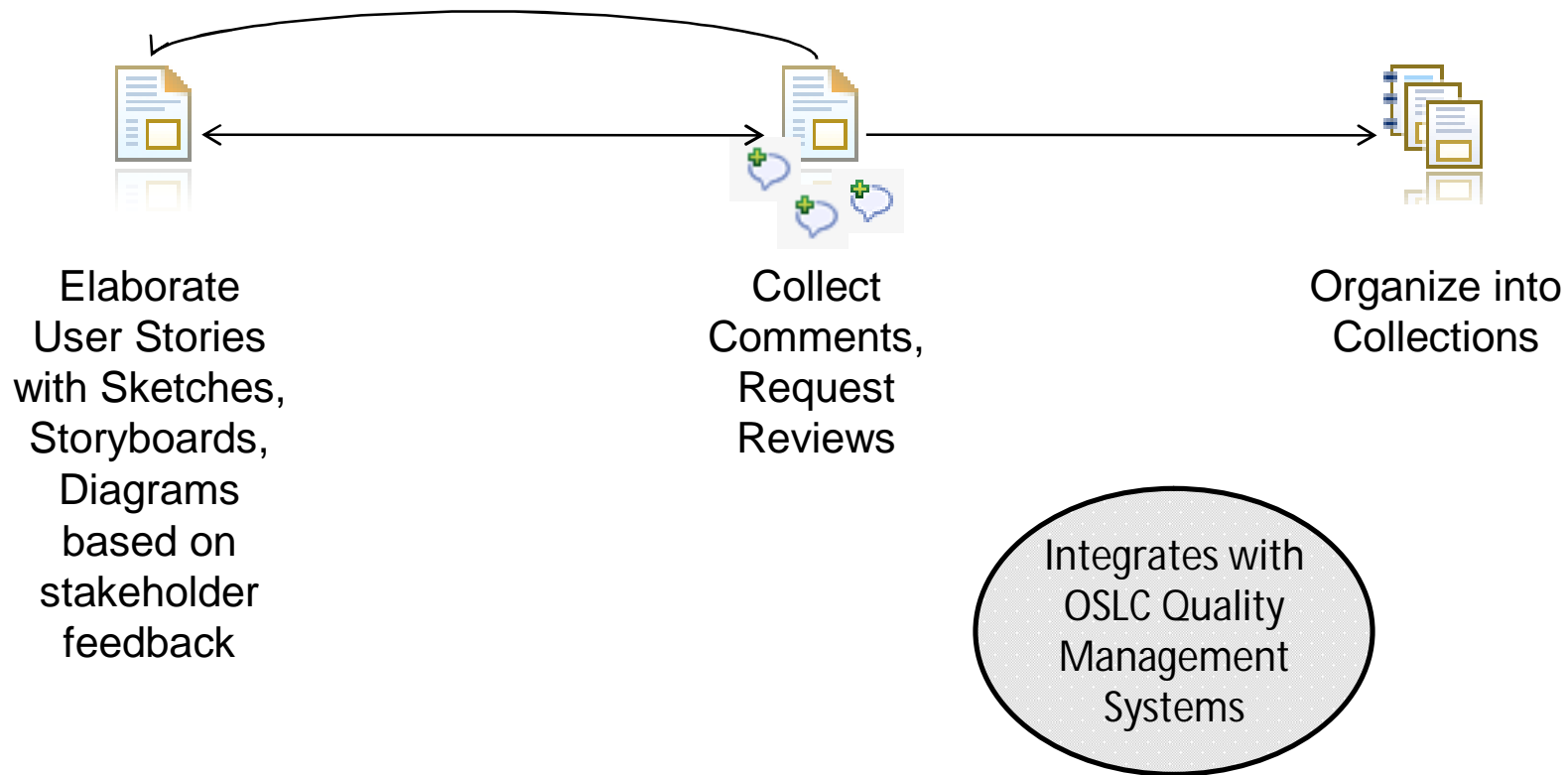
“The vast array of options linking artifacts sensibly with one another [in RRC] give it a definite benefit over using older, document-based approach to defining requirements ... This product is clearly a step up from our current methodology.”



- Randy Haven, IBM Global Business Services

Detail User Stories with Rational Requirements Composer

- Increase average on time performance by 161%*
- Reduce time overruns by 87%*
- Improve the percentage of projects that deliver the functionality needed by the business by about 75%*

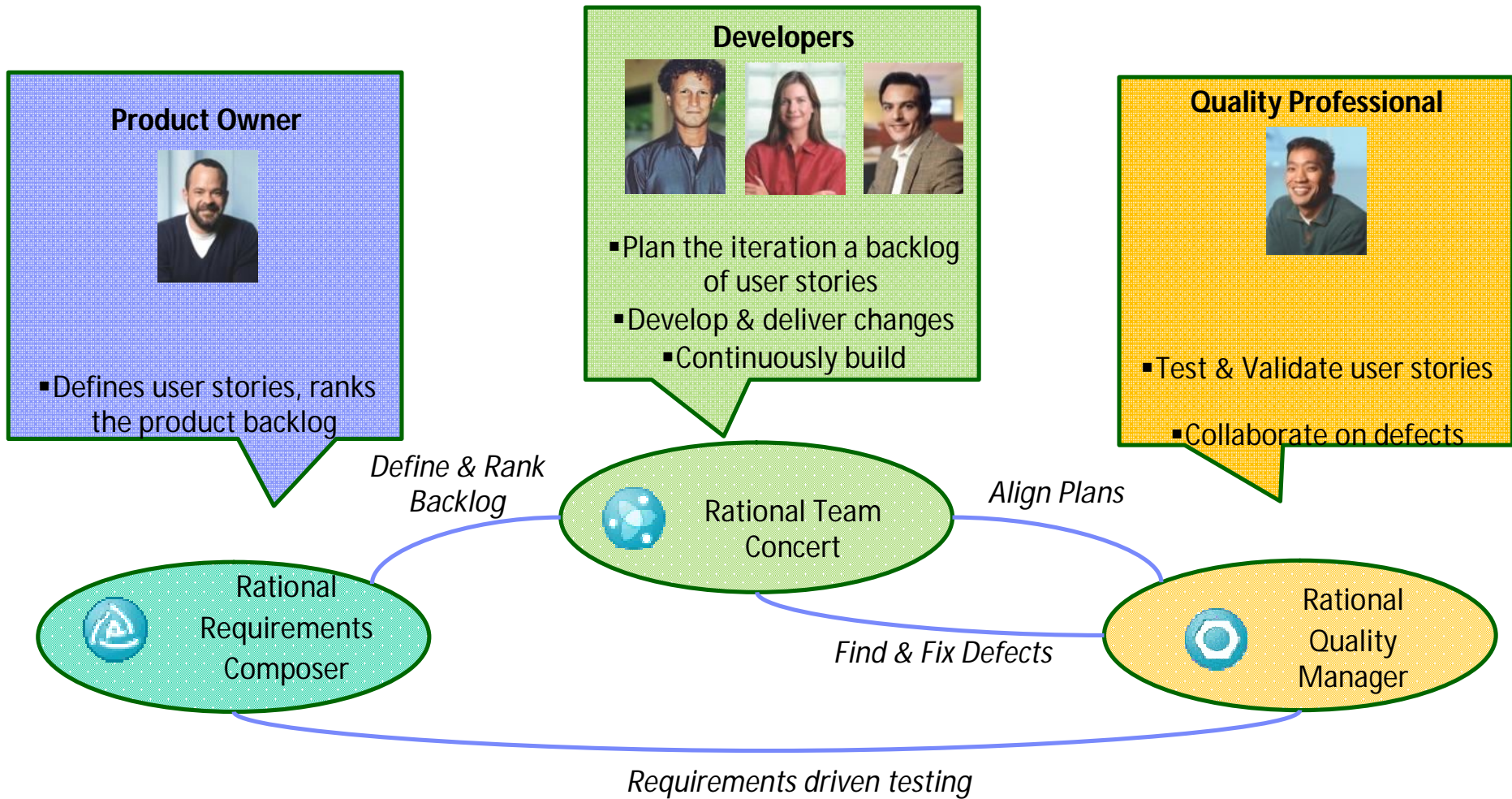


Source: IAG Consulting, September 2009, Business Analysis Benchmark measuring Requirements Maturity levels



Collaboration across Agile teams

Adopt in any order,
at any time





Plan Collaboration improves value & time to delivery

- ✓ Creating a shared vision delivers what the stakeholders want
- ✓ Ensuring coverage improves quality for the release and each sprint
- ✓ Whole team buy-in improves team trust, efficiency and focus

1: JKE Banking Release 1

Name
1: JKE Banking Release 1

State
Approved

Description
Defines testing for the Release 1 of JKE Banking. Significant capabilities being added in Release 1 include the Money that Matters initiative whereby account holders can elect to redirect dividends from their investments to causes needing assistance.

Details
Originator: tammy Updated: 9/21/10
Calculated Risk: ○○○○○○ Project Area: JKE Banking
Community Risk: ○○○○○○ Team Area:

JKE Banking Release 1

Test Plan Overview | Snapshots | History

Originator: Tammy Owner: Tammy Action: Select Action State: Approved

Description: Defines testing for the Release 1 of JKE Banking. Significant capabilities being added in Release 1 include the Money that Matters initiative whereby account holders can elect to redirect dividends from their investments to causes needing assistance.

Development Plan List

Linked development plans

Release 1.0 Backlog [Release 1.0]

Owner: JKE Banking
Iteration: Release 1.0 (9/6/10 - 10/17/10)

4278 pts 100%

Summary
Release 1.0 Backlog

49: Release 1 Planning

Showing 18 Artifacts

ID	Name	Artifact Type	Last Modified By	Last Modified Date
5	Allocate dividends by amount and frequency	User Story Elaboration	cp	Sep 20, 2010 8:39:57 PM
8	Dividend allocated by percentage			
11	Customers can nominate an organization for the program			
12	Donor Dividend Allocation Criteria			
13	Donors Deposit			

49: Release 1 Planning

Project: JKE Business Recovery Matters
Created On: Sep 20, 2010 8:39:46 PM
Modified On: Sep 21, 2010 4:17:12 PM
Modified By: cp

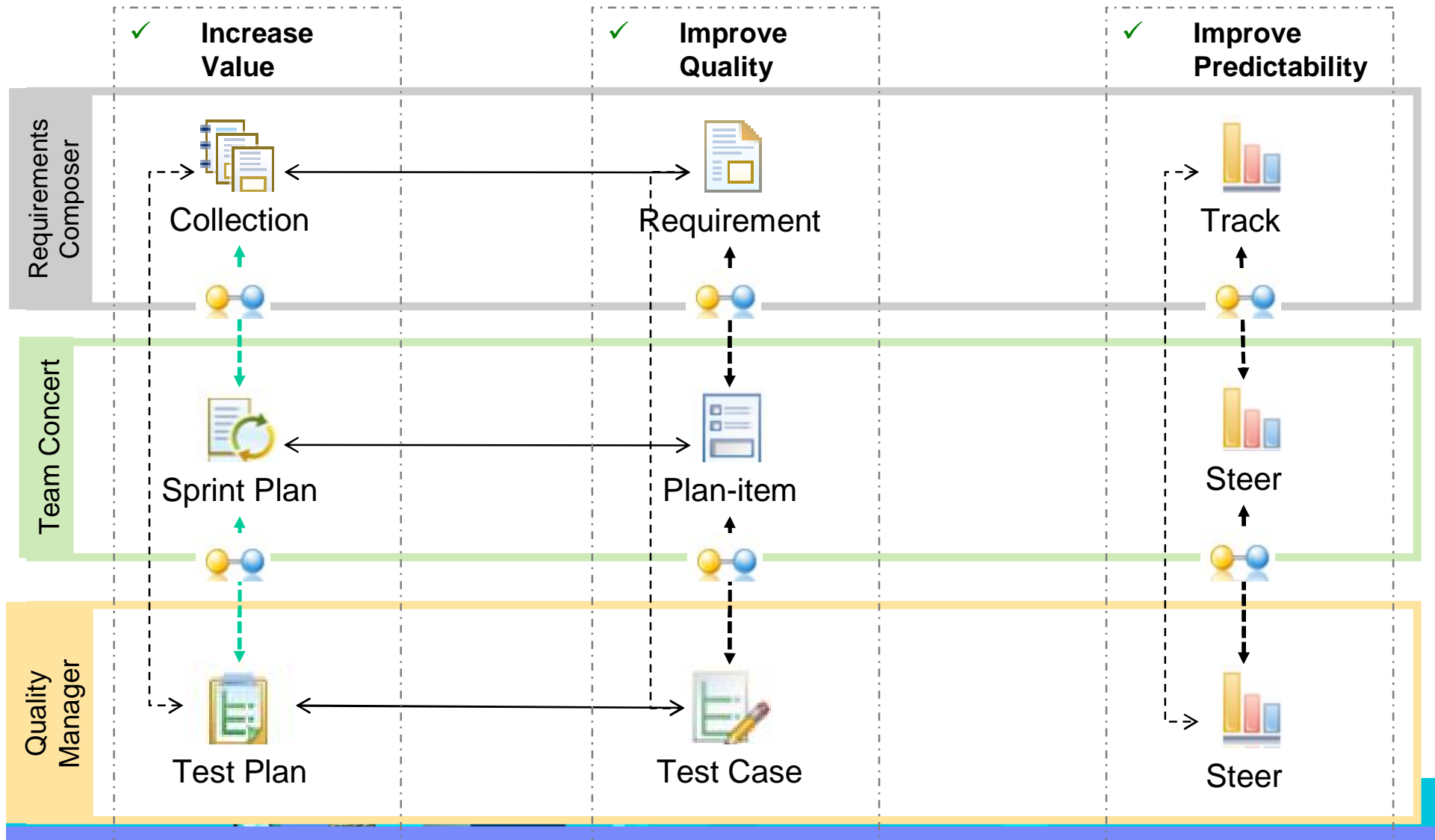
Owner: JKE Banking
Iteration: Release 1.0 (9/6/10 - 10/17/10)

4278 pts 100%



Adopt in any order

Collaborate on Product Backlogs and Sprint Plans



Plan Item collaboration improves quality

- ✓ Story points include test effort
- ✓ Everyone knows what's being developed when and by whom.
- ✓ A Story is 'done' when associated tests have passed

Work Items >

Story 67

Summary: Donor Dividend Allocation Criteria

Overview | Acceptance | Links | Approvals | History

Attachments

Add File: Browse

No Attachments.

Links

Add: Related

- Children
 - 49: Implement - Donor Dividend Allocati...
- Implements Requirement
 - Document 12: Donor Dividend Allocation C...
- Tested By Test Case
 - 16: Donor Dividend Allocation Criteria

16: Donor Dividend Allocation Criteria

Name	State
16: Donor Dividend Allocation Criteria	Draft

Description

Details

Weight:	1	Updated:	9/20/10 8:42:29 PM EDT
Originator:	tanuj	Trigger:	
Calculated Risk:	○○○○○	Activity:	
Community Risk:	○○○○○	Project Area:	JKE Banking

Show More

12: Donor Dividend Allocation Criteria

Requirement: Donor Dividend Allocation Criteria

Brief Description

Donors should have the ability to choose allocation options for their dividends to a cause. These options can include:

- Dividend Allocation By percentage
- Dividend Allocation By amount
- Define frequency of allocation

Applicable Roles

Overview | Comments | Links (7)

- 45: Donation by Amount
- 23: Frequency of dividend transfer
- Link To (1)
 - 17: Donor
- Link From (1)
 - 30: Business Recovery Matters Vision
- Implemented By (1)
 - 67: Donor Dividend Allocation Criteria

67: Donor Dividend Allocation Criteria

Status Summary

New Donor Dividend Allocation Criteria

Details

Type: Story

Filed Against: JKE/BRM

Story Points: 5 pts

Progress:

Team Area: Business Recovery Matters / JKE Banking

Creation Date: September 10, 2010 8:42 PM

Quick Information

- Subscribers (1): B
- Children (1): 49
- Implements Requirement (1): 1
- Tested By Test Case (1): 1

Description

Donors should have the ability to choose allocation options for the



Defect collaboration reduces cost

- ✓ 4-clicks to submit a defect with all of the information needed to reproduce the defect
- ✓ Test execution is recorded and linked to test case
- ✓ Test execution be linked to build
- ✓ Defects are linked to Test Executions
- ✓ Developer can navigate the links

Execution Result
Result Overview | History

Action: State: Draft

ID: 5
Actual Result: **Failed**
Host Name: Local Computer
Owner: cp

Test Plan: 3: JKE Banking Sprint 2
Test Milestone:
Test Case: 1: Frequency of dividend transfer
Test Script: Allocate Dividends to a Single Cause
Test Data: Unassigned
Build: Unassigned
Weight: 1

Start:
End:
Total:

Defects

Blocking Status	Summary
<input type="checkbox"/>	Defect 76: Failing Test Case "Frequency of dividend tran...

76: Failing Test Case "Frequency of dividend transfer"

Status	Resolution	Summary
New		Failing Test Case "Frequency of dividend transfer"

Details

Type:	Defect	Tags:	
Filed Against:	JKE/BRM	Owned By:	Unassigned
Severity:	Normal	Priority:	Unassigned
Found In:	Unassigned	Planned For:	Unassigned
Team Area:	Business Recovery Matters / JKE Banking	Estimate:	
Creation Date:	September 29, 2010 10:22 AM	Time Spent:	
Created By:	cp	Due Date:	Unassigned

Quick Information

- Subscribers (1): c
- Affects Test Execution (1): 1
- Affects Plan Item (1): 1
- Affects Requirement (1): 1
- Tracks Test Case (1): 1
- Tracks Test Plan (1): 1

Description
Test Plan: JKE Banking Sprint 2

Defect 76

Summary: * Failing Test Case "Frequency of dividend transfer"

Overview | Links | Approvals | History

Attachments

Add File:

No Attachments.

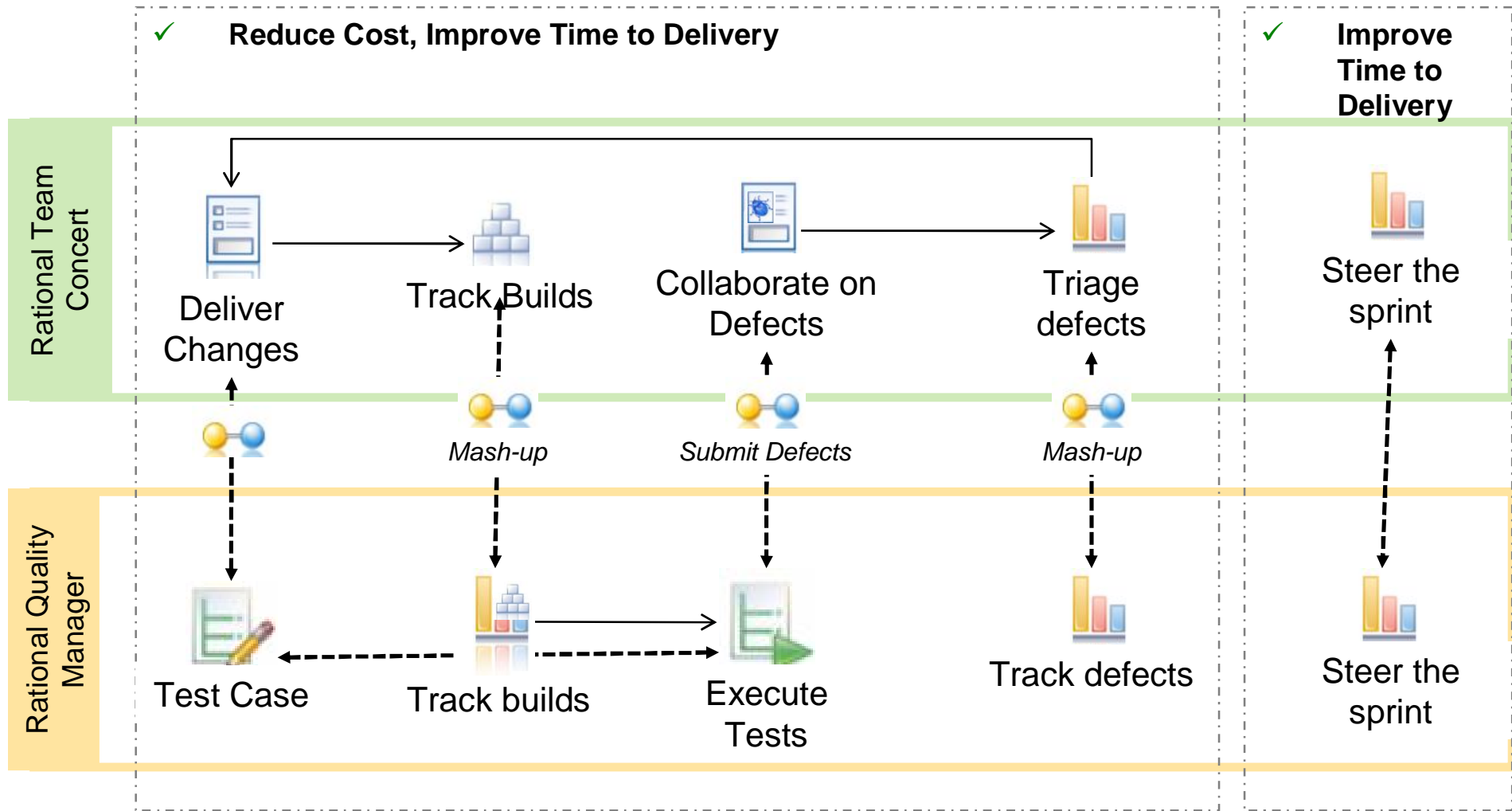
Links

Add:

- Affects Requirement
 - Document 23: Frequency of dividend transfer
- Related Test Case
 - 1: Frequency of dividend transfer
- Affects Test Result
 - 5: Frequency of dividend transfer
- Related Test Plan
 - 3: JKE Banking Sprint 2
- Affects Plan Item
 - 52: Frequency of dividend transfer

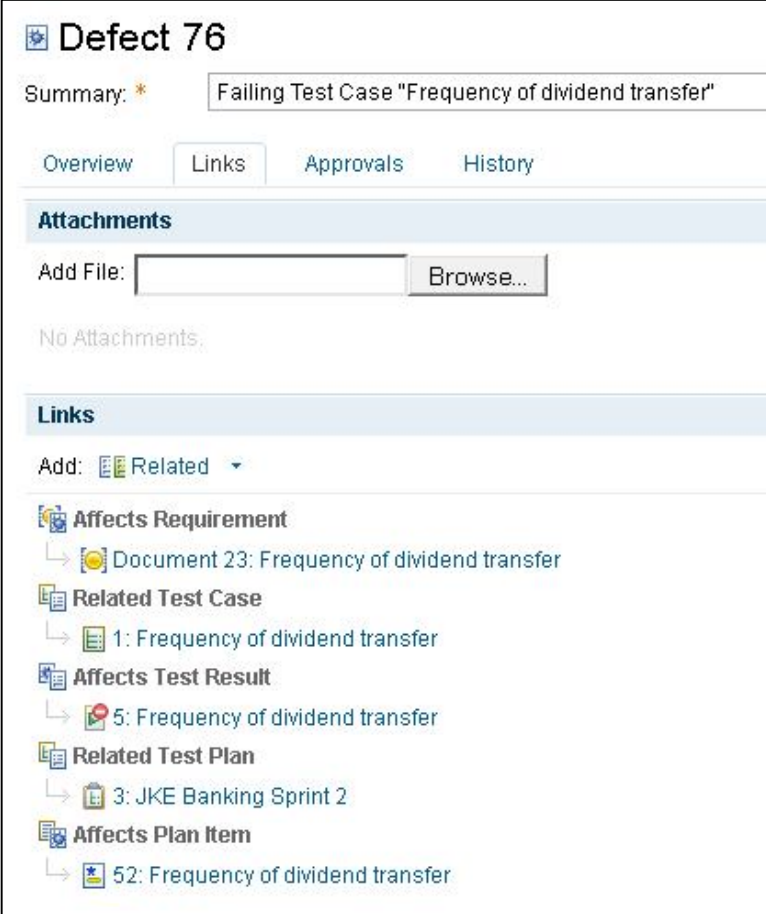


Collaborate throughout a Sprint



Linked data is visible on all artifacts

- All roles can view the links on their artifacts.
- Each user has their own perspective and user interface for viewing links.
- Create, delete, navigate links on artifacts
- Example: Developer sees the relationships on a defect



The screenshot displays the 'Defect 76' interface. At the top, the title 'Defect 76' is shown with a small icon. Below it, the 'Summary' field contains the text 'Failing Test Case "Frequency of dividend transfer"'. There are four tabs: 'Overview', 'Links', 'Approvals', and 'History', with 'Links' being the active tab. Under the 'Attachments' section, there is an 'Add File:' label, an empty text input field, and a 'Browse...' button. Below this, it says 'No Attachments.'. The 'Links' section has an 'Add:' label followed by a dropdown menu currently set to 'Related'. Below the dropdown, there is a list of linked artifacts, each with a small icon and a right-pointing arrow:

- Affects Requirement**
 - Document 23: Frequency of dividend transfer
- Related Test Case**
 - 1: Frequency of dividend transfer
- Affects Test Result**
 - 5: Frequency of dividend transfer
- Related Test Plan**
 - 3: JKE Banking Sprint 2
- Affects Plan Item**
 - 52: Frequency of dividend transfer



Lifecycle Queries reveal traceability gaps

- Show which RTC plan items implement which RRC requirements

Plan items implementing requirements

Show All Previous | 1 - 8 of 8 | Next

Type	Id	Summary	Status	Priority	Severity	Modified Date	Implements Requirement
	29	Common User Access (CUA)	➔ New			1 minute ago	Common User Access (CUA) (122)
	28	View CD Details	➔ New			2 minutes ago	View CD Details (133)
	27	Scalability	➔ New			2 minutes ago	Scalability (151)
	26	Response Time	➔ New			2 minutes ago	Response Time (142)
	25	Localization (L10n)					Localization (L10n) (123)
	24	Internationalization (I18n)					Internationalization (I18n) (141)
	23	Globalization (G11n)					Globalization (G11n) (126)
	22	Easy browsing for available titles					Easy browsing for available titles (143)

Localization (L10n) (123) details:

- RRC CD Collection Project One Requirements
- Comments (0) Links (1)
- Open Item

Mash-up Dashboards keep teams up to date

Dashboard: Marco Cassice's Dashboard > General - IBM Rational Team Concert - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Rational Team Concert

Marco Cassice | Log Out

Marco Cassice's Dashboard

General

Defects blocking Testers (1)

68: Failing TestJUnit Swing UI improvements: failed color not correct

JUnit Team Event Log (100 new)

JUnit 4.4 m2 Test Candidate (67) Yesterday

Implement a JUnit test launcher (74) Yesterday

Implement launch config (76) 5 days ago

Implement Dialog (75) 5 days ago

Convert the Swing UI to SWT (73) 5 days ago

Implement unit test (77) 5 days ago

Failing TestJUnit Swing UI Improvements: failed color not correct (68) Last Week

Change color for passed progress bar and icons (65) Last Week

Change color for failed progress bar and icons (66) Last Week

Change color for passed progress bar and icons (72) Last Week

Page 1 of 2

JUnit Team Members (4)

Bill Cassavelli teamlead

Jason Mitchell contributor

Markus Kent contributor

Tanuj Padur tester

Current JUnit Team Plans (3)

Current Iteration: 4.4 M2 Iteration Plan

4.4 M2 Iteration Plan

JUnit Release Plan

JUnit Team Builds

Succeeded: junit I20081024-1601 24 Oct 2008

Succeeded: junit I20081024-1439 24 Oct 2008

Tags changed: junit I20081023-1438 23 Oct 2008

Recently High Severity (17)

65552: Consistency with regards to Error Messages

Recently Changed Requirement Artifacts

Vision Dec 4, 2008 4:52 PM

Eligibility Subsystem Dec 4, 2008 4:35 PM

Balance of Account Dec 4, 2008 3:59 PM

Supplemental Dec 4, 2008 11:05 AM

Initial Account Opening Sketch Dec 3, 2008 10:38 AM

Developers have insight into requirements in Rational Requirements Composer

✓ Developers, Testers and Business Analysts can customize dashboards to suit their needs

✓ Add widgets from other CLM tools to stay up to date with each others work

