# Agile Test Management Practices

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**June 5–9** Orlando, Florida

# Agenda

- Agile
- Best Practices
- Conclusion

# Agenda

- Agile
  - What is Agile
  - Who’s doing it
  - Core principles
  - Can Agile scale?
- Best Practices
- Conclusion

“Agile development methodology and associated techniques are being used by over 9 million developers (64%) worldwide.”

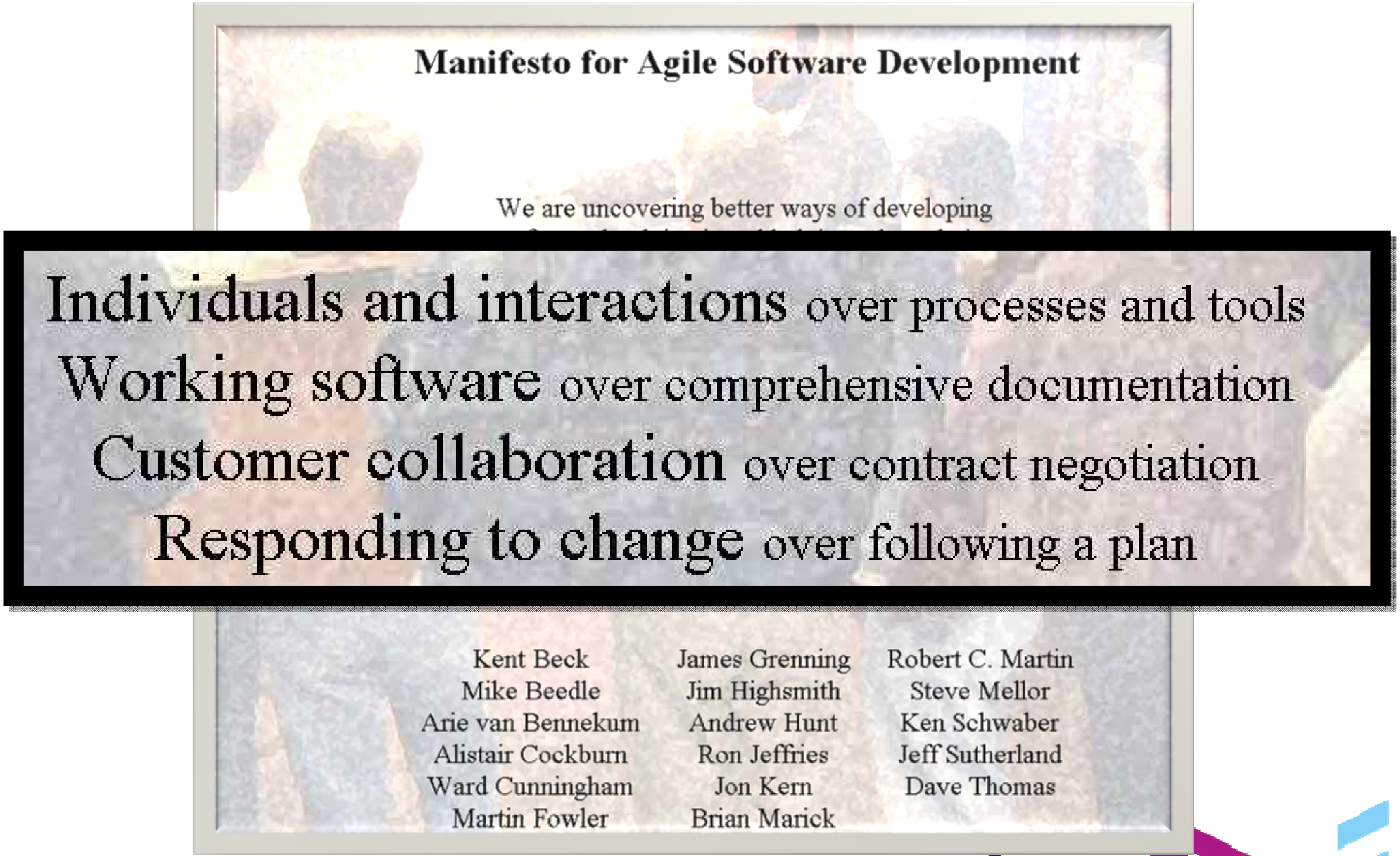
Source: *Evans Data Corporation, Global Developer Population and Demographics Report 2009, p.9

# What is Agile?

An iterative and incremental approach to software development which is performed in a highly collaborative manner by self-organizing teams within an effective governance framework, with "just enough" ceremony that produces high quality software in a cost effective and timely manner  which meets the changing needs of its stakeholders.

Source:http://www.ambysoft.com/essays/agileTesting.html

# Agile Principles



**Manifesto for Agile Software Development**

We are uncovering better ways of developing

**Individuals and interactions** over processes and tools

**Working software** over comprehensive documentation

**Customer collaboration** over contract negotiation

**Responding to change** over following a plan

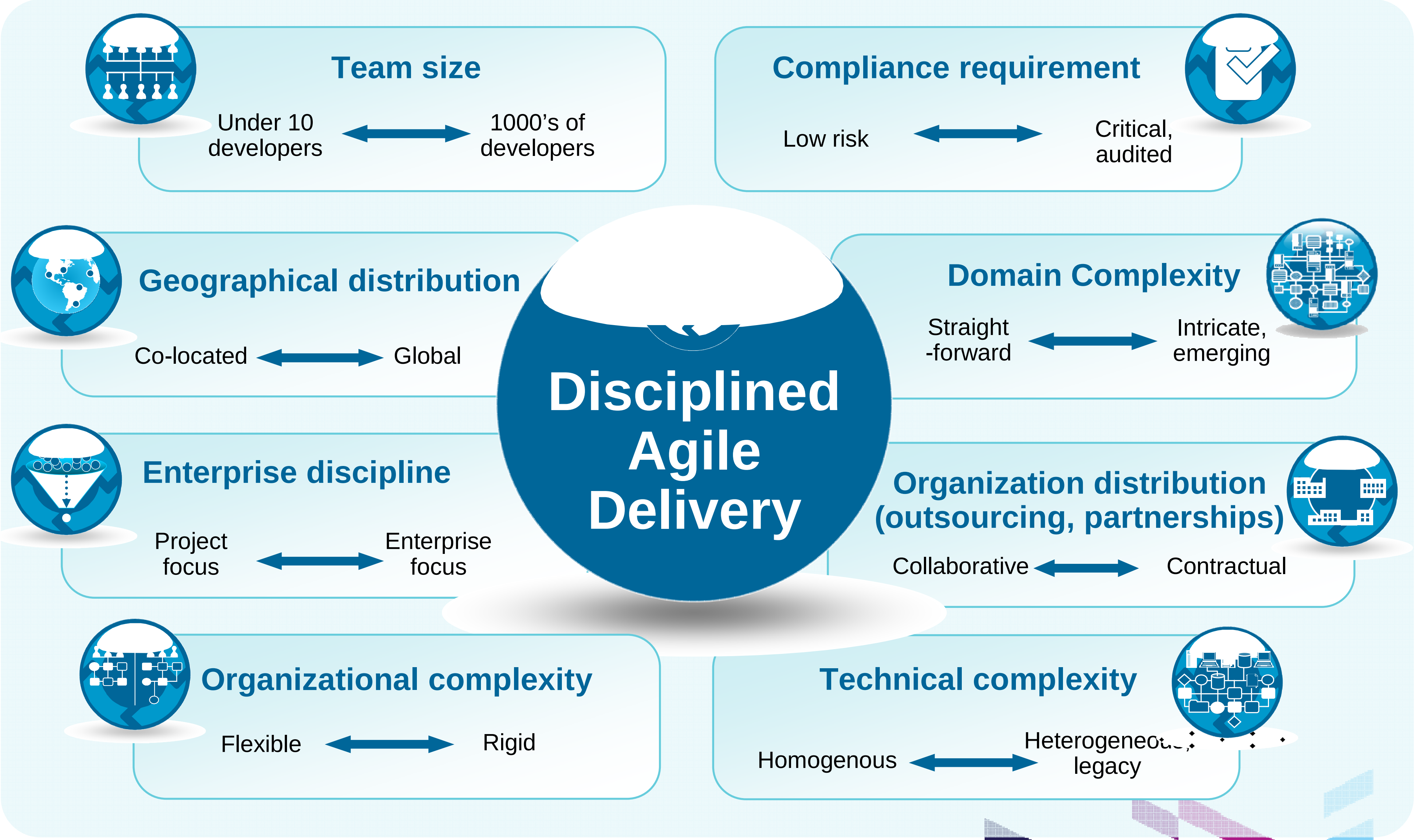
Kent Beck
Mike Beedle
Arie van Bennekum
Alistair Cockburn
Ward Cunningham
Martin Fowler

James Grenning
Jim Highsmith
Andrew Hunt
Ron Jeffries
Jon Kern
Brian Marick

Robert C. Martin
Steve Mellor
Ken Schwaber
Jeff Sutherland
Dave Thomas

www.agilemanifesto.org

# Scaling Factors that can affect Agile Teams



**Disciplined Agile Delivery**

**Team size**
Under 10 developers ↔ 1000's of developers

**Compliance requirement**
Low risk ↔ Critical, audited

**Geographical distribution**
Co-located ↔ Global

**Domain Complexity**
Straight -forward ↔ Intricate, emerging

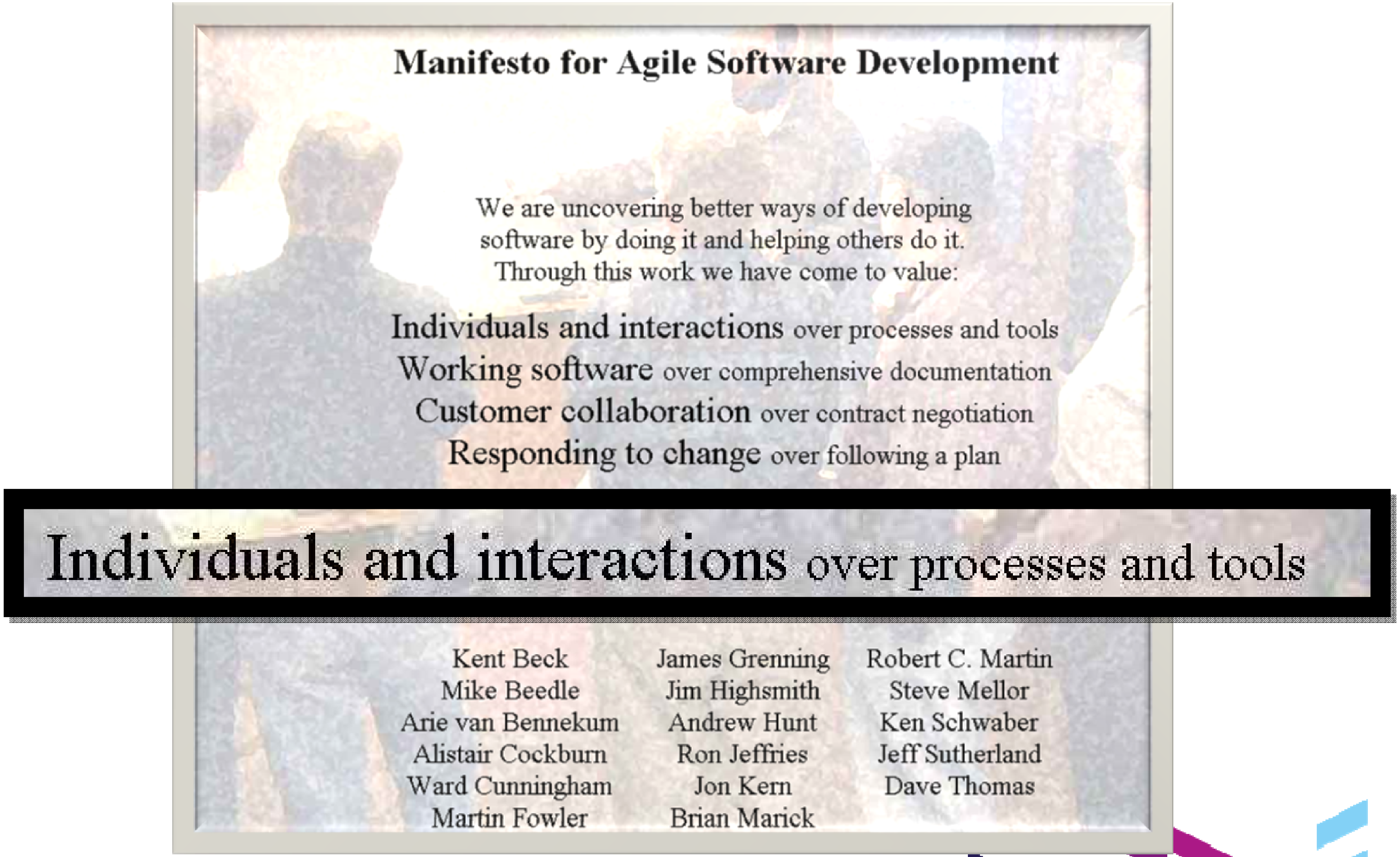
**Enterprise discipline**
Project focus ↔ Enterprise focus

**Organization distribution (outsourcing, partnerships)**
Collaborative ↔ Contractual

**Organizational complexity**
Flexible ↔ Rigid

**Technical complexity**
Homogenous ↔ Heterogeneous, legacy

# Agenda



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Individuals and interactions over processes and tools

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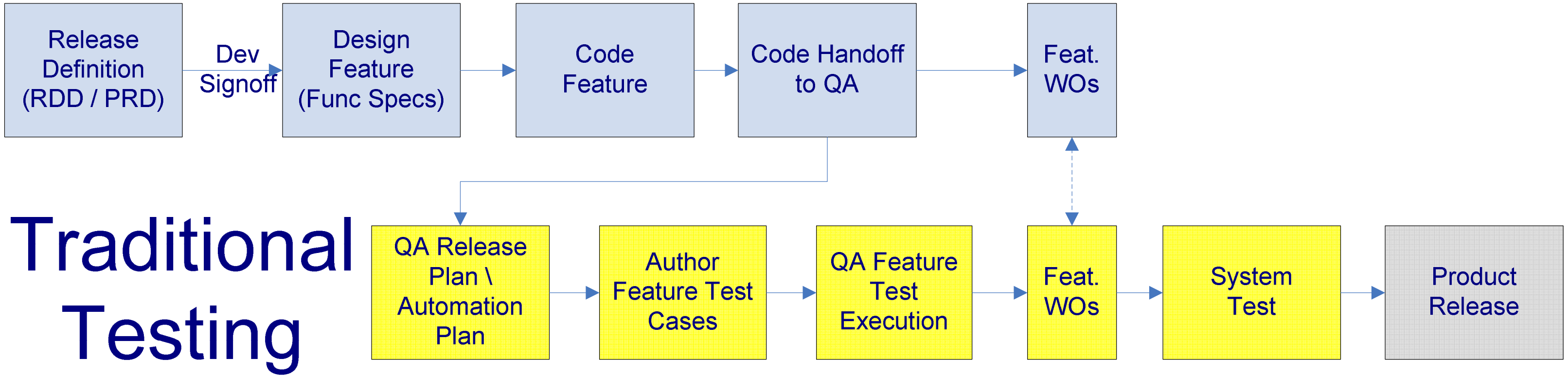
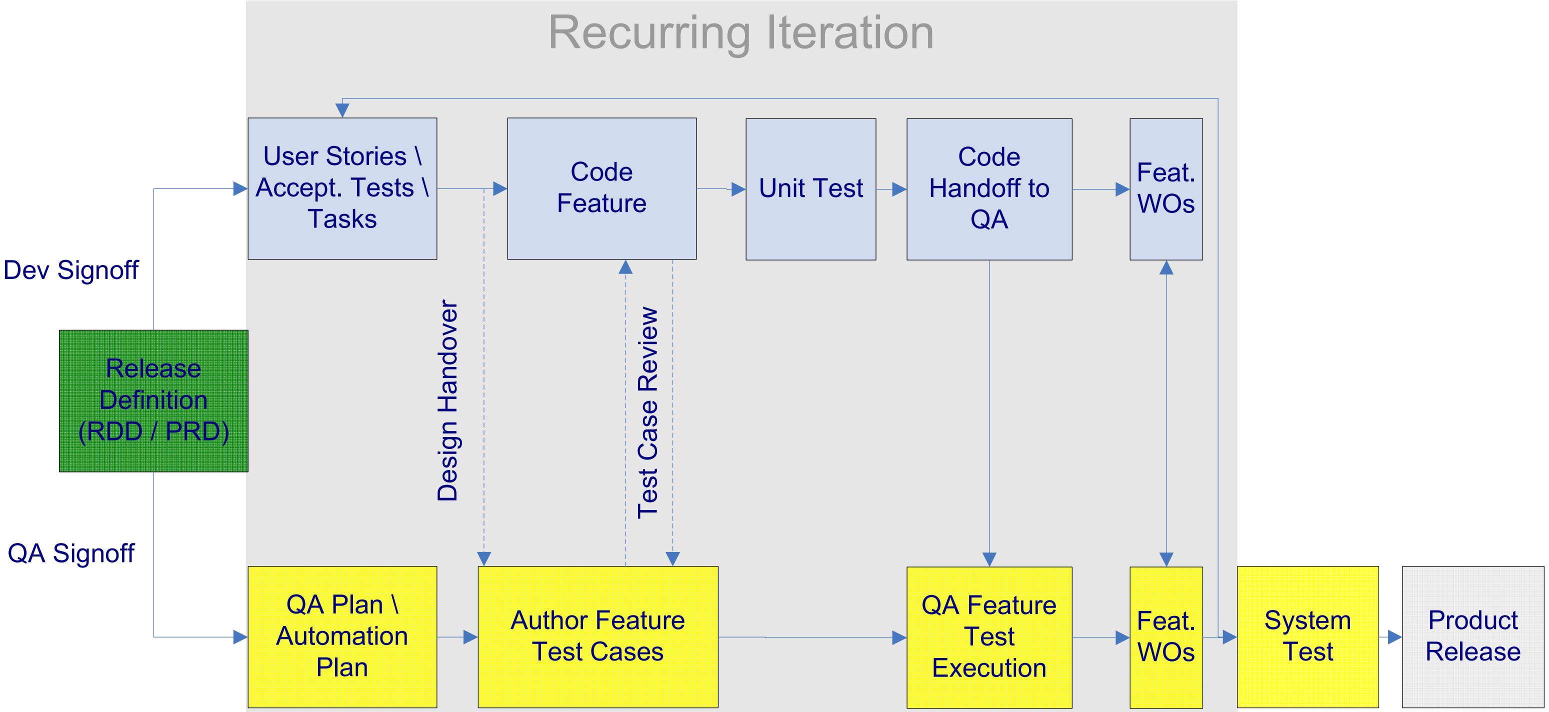
# Comparing Approaches to Quality: Traditional


Release Definition (RDD / PRD)
Dev Signoff
Design Feature (Func Specs)
Code Feature
Code Handoff to QA
Feat. WOs
Traditional Testing
QA Release Plan \ Automation Plan
Author Feature Test Cases
QA Feature Test Execution
Feat. WOs
System Test
Product Release

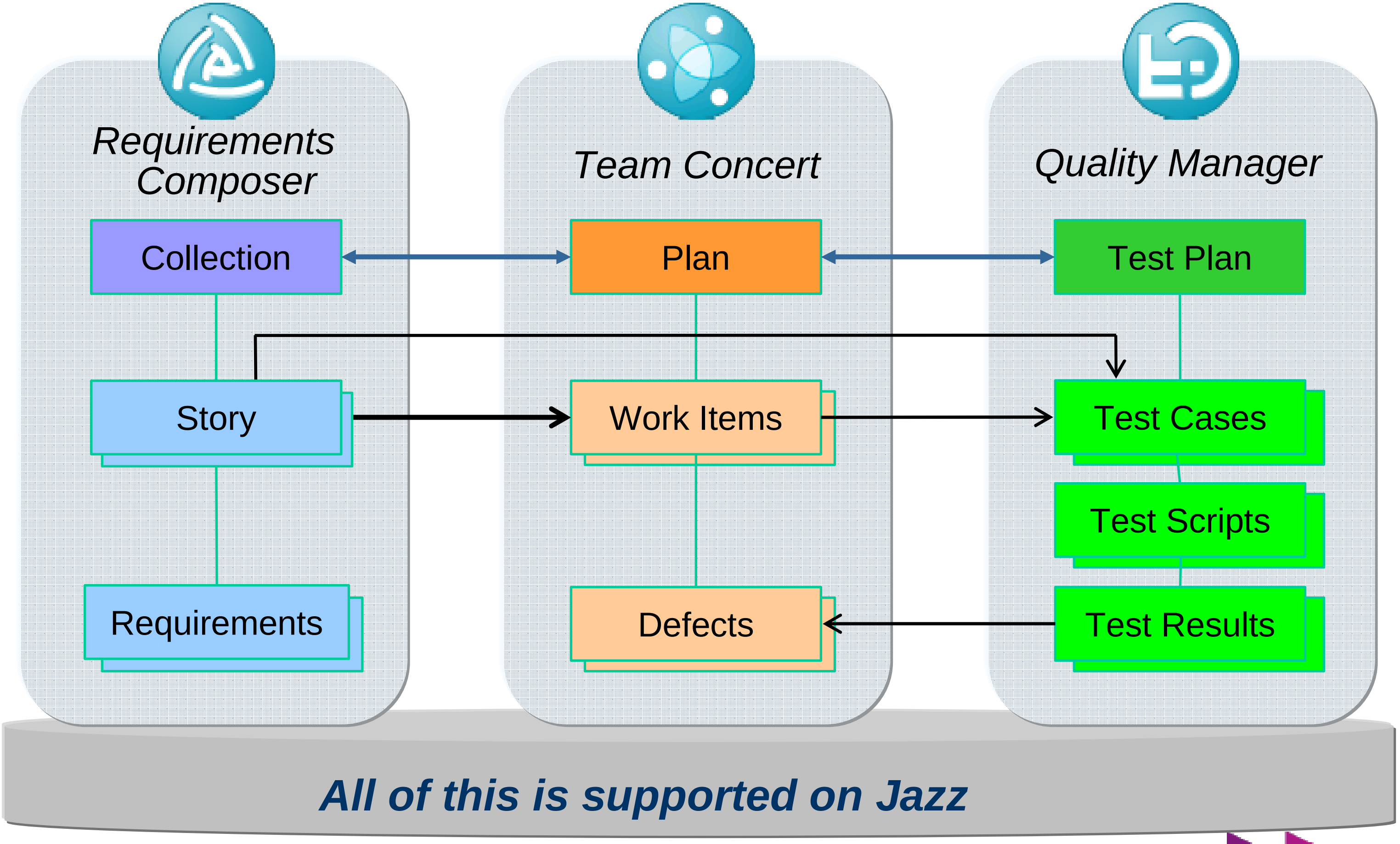
- **Linear, Sequential**
- **QA planning occurs late**
- **No collaboration on test plan**

# Comparing Approaches to Quality: Agile

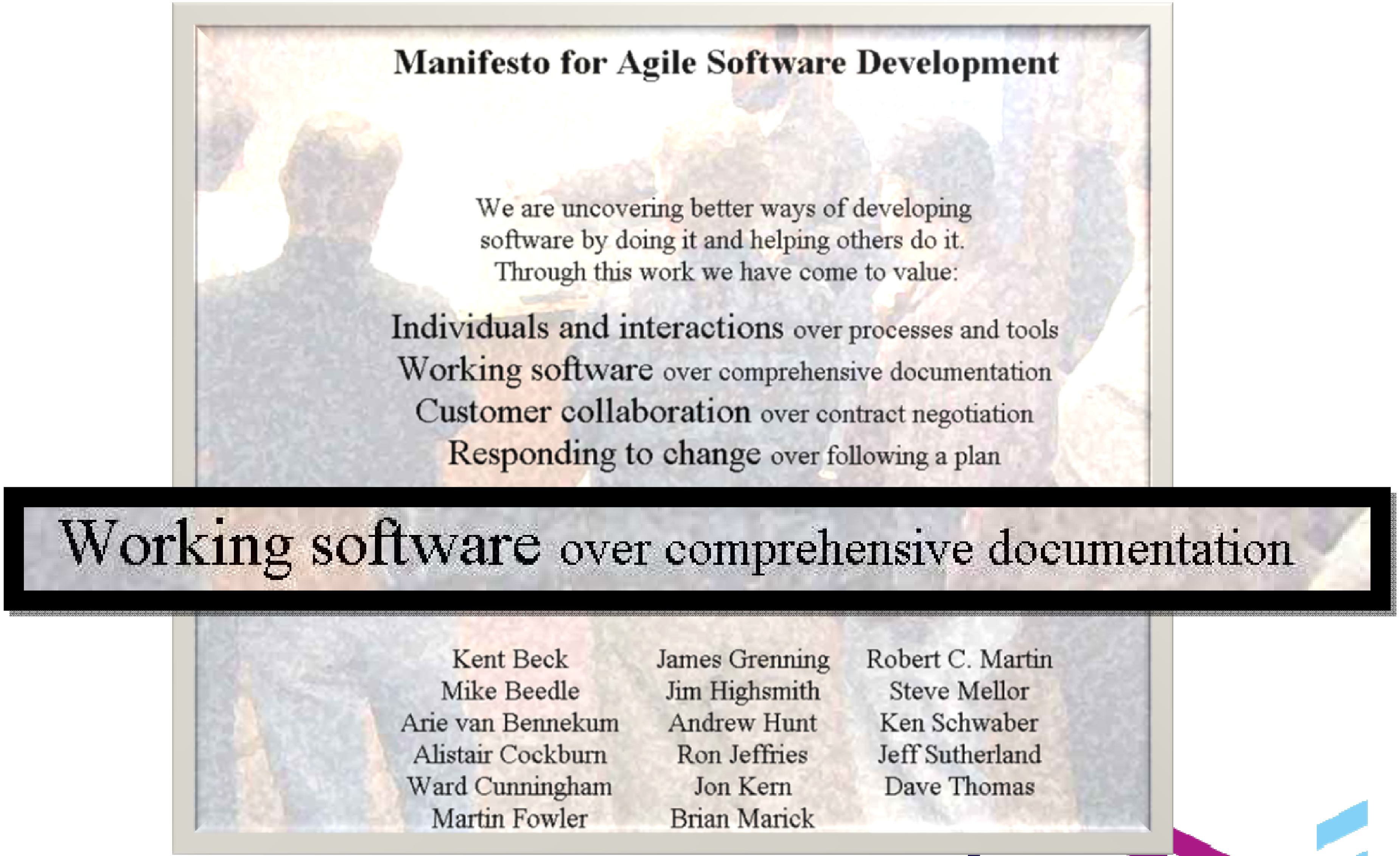


- **Continuous testing**
- **Continuous feedback**
- **Continuous progress**

# Individuals, artifacts and Interactions



# Agenda



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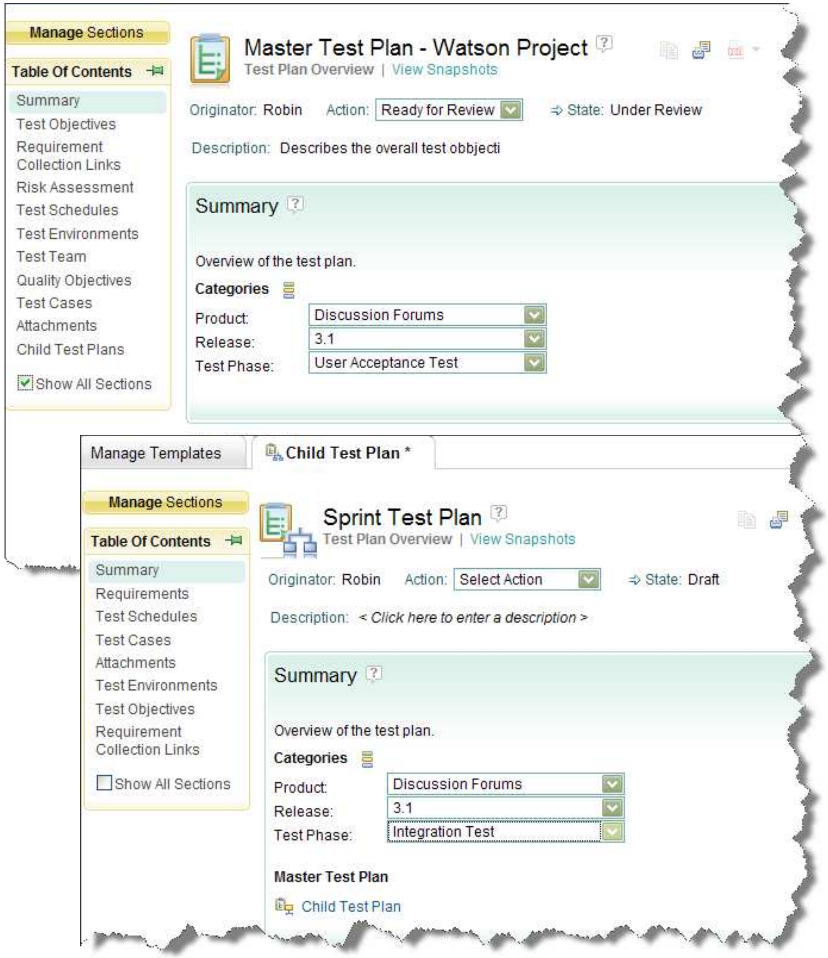
**Working software** over comprehensive documentation

| | | |
|---|---|---|
| Kent Beck | James Grenning | Robert C. Martin |
| Mike Beedle | Jim Highsmith | Steve Mellor |
| Arie van Bennekum | Andrew Hunt | Ken Schwaber |
| Alistair Cockburn | Ron Jeffries | Jeff Sutherland |
| Ward Cunningham | Jon Kern | Dave Thomas |
| Martin Fowler | Brian Marick | |

# Test Planning in Agile Testing

- Release Test Plan (the master test plan)
  - Communicate test strategy
  - Quality objectives
  - Resource estimates
- Iteration/Sprint Test Plan
  - Requirements validated during each Sprint
  - Test Schedule
  - Test Environments and Test Case
  - Reporting Overall Status
  - Defects, issues and tasks

***Keep it light!***



Manage Sections

Table Of Contents

- Summary
- Test Objectives
- Requirement Collection Links
- Risk Assessment
- Test Schedules
- Test Environments
- Test Team
- Quality Objectives
- Test Cases
- Attachments
- Child Test Plans

☑ Show All Sections

## Master Test Plan - Watson Project

Test Plan Overview | View Snapshots

Originator: Robin Action: Ready for Review State: Under Review

Description: Describes the overall test obbjecti

### Summary

Overview of the test plan.

**Categories**

Product: Discussion Forums

Release: 3.1

Test Phase: User Acceptance Test

Manage Templates | Child Test Plan *

Manage Sections

Table Of Contents

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- Test Cases
- Attachments
- Test Environments
- Test Objectives
- Requirement Collection Links

□ Show All Sections

## Sprint Test Plan

Test Plan Overview | View Snapshots

Originator: Robin Action: Select Action State: Draft

Description: *< Click here to enter a description >*

### Summary

Overview of the test plan.

**Categories**

Product: Discussion Forums

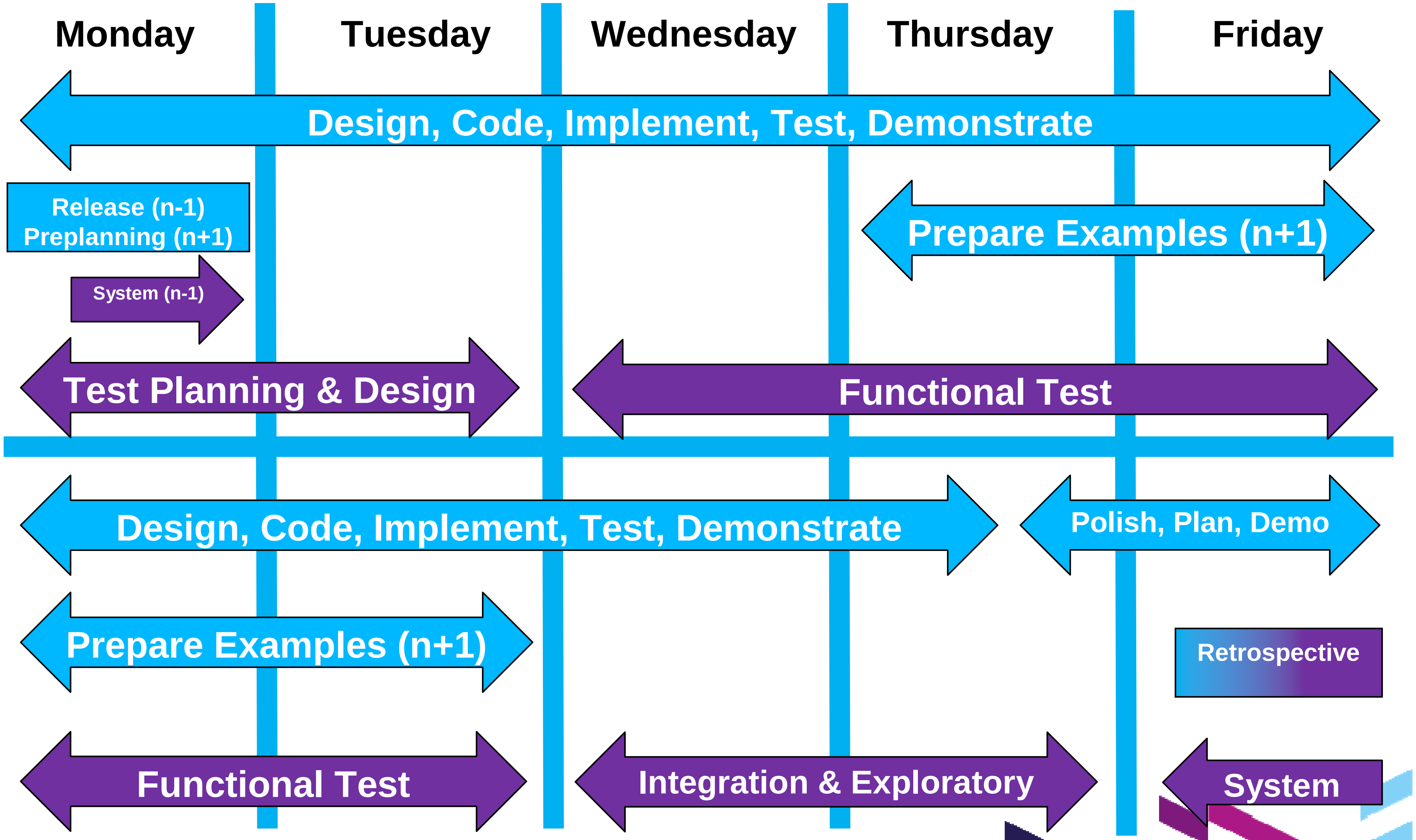
Release: 3.1

Test Phase: Integration Test

**Master Test Plan**

Child Test Plan

# Sample Two Week Iteration



Monday Tuesday Wednesday Thursday Friday

Design, Code, Implement, Test, Demonstrate

Release (n-1) Preplanning (n+1)

System (n-1)

Prepare Examples (n+1)

Test Planning & Design

Functional Test

Design, Code, Implement, Test, Demonstrate

Polish, Plan, Demo

Prepare Examples (n+1)

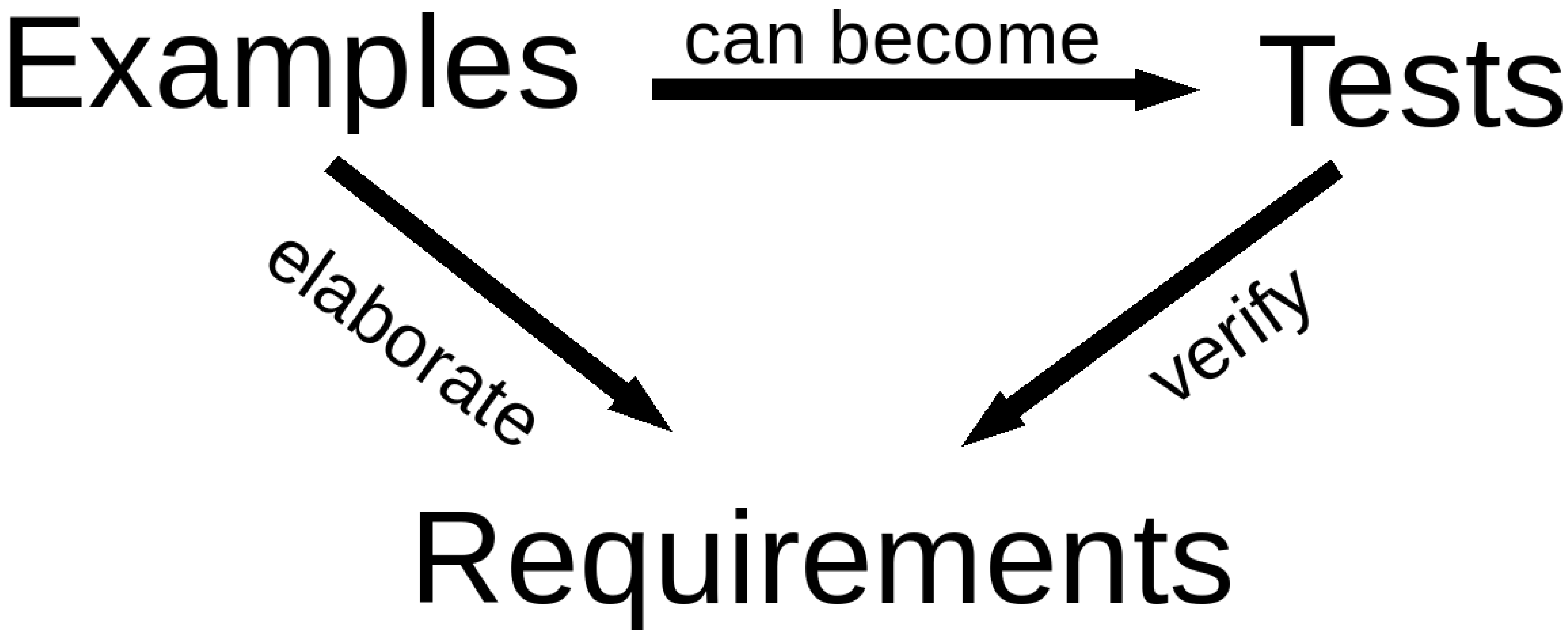
Retrospective

Functional Test

Integration & Exploratory

System

Adapted from: Gojko Adzic - gojko@gojko.net



Examples

can become

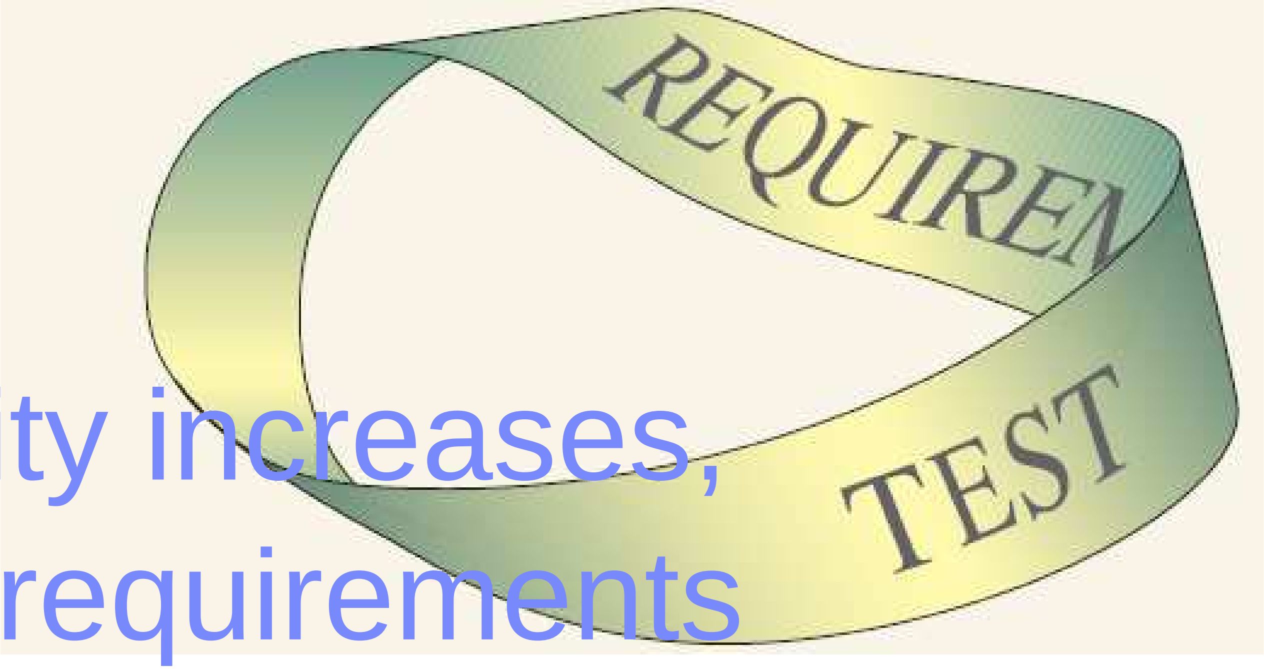
Tests

elaborate

verify

Requirements

Adapted from: Gojko Adzic - gojko@gojko.net



As formality increases, tests and requirements become indistinguishable.

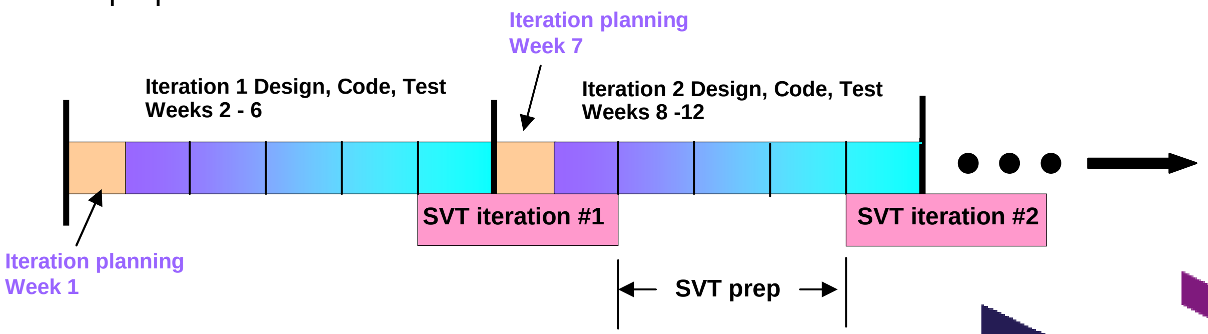
Robert C. Martin and Grigori Melnik
Tests and Requirements, Requirements and Tests: a Mobius Strip
IEEE Software January/February Issue 2008

Adapted from: Gojko Adzic - gojko@gojko.net

# IBM Rational System Verification Test Sample

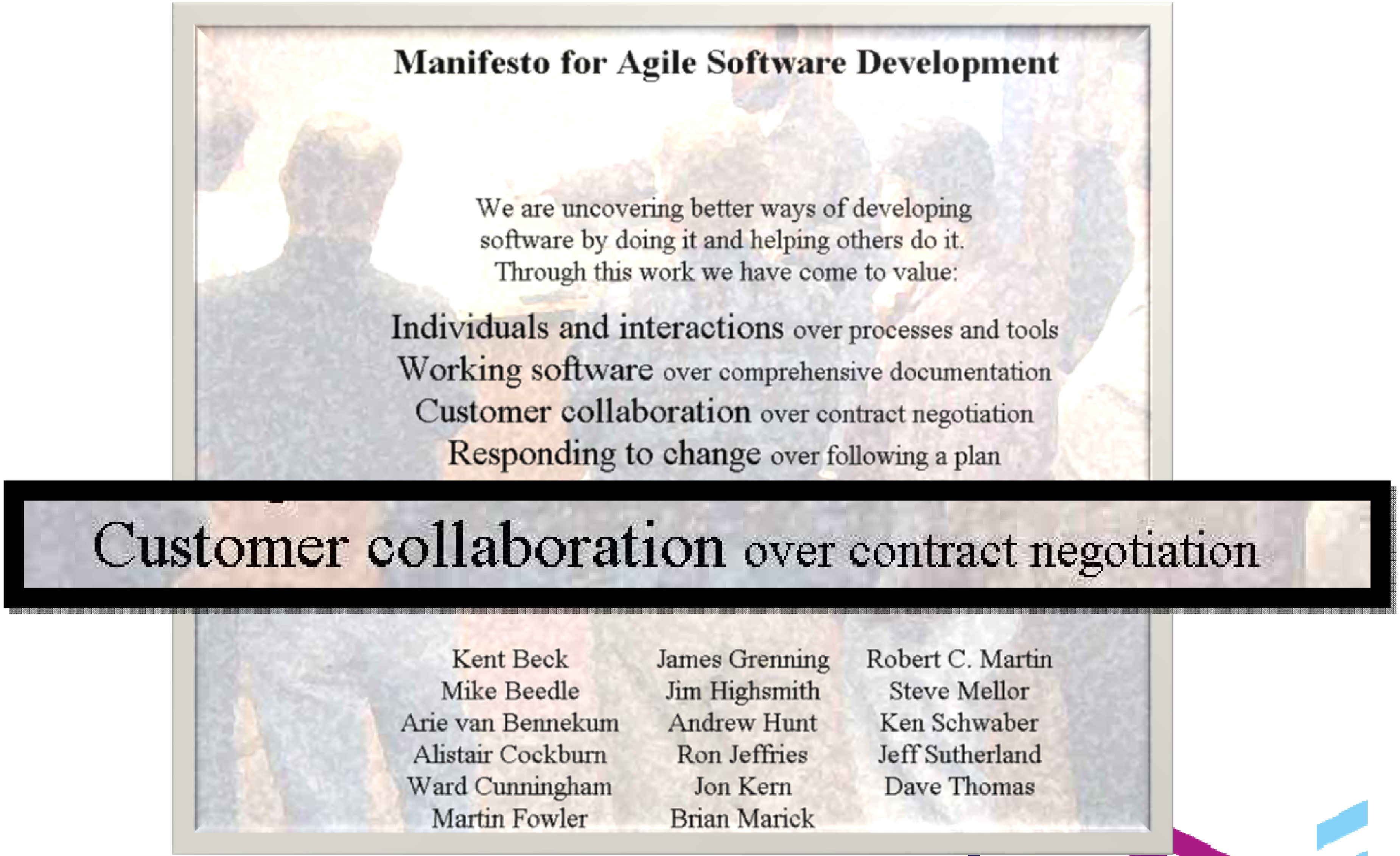
- Ensure the SVT test schedules for iterations and the final SVT phase are reflected in the overall project schedule

- Reach agreement with the development team on:
  - Which iterations will be system tested
    - There may be iterations that don't contain content requiring system-level testing at this
    - If the development iterations are very short (e.g. 2 weeks), combining iterations for SVT testing may be a much better choice
  - The duration of SVT execution on the planned iterations
    - A good rule of thumb is to plan the SVT duration to be approximately half the development iteration duration
    - Ensure there is adequate prep time in between the planned SVT testing on iterations
    - Example: For a 6 week development iteration, SVT would test 1 week prior to the iteration end (to add-value to the iteration before it is declared complete), and overlap 2 weeks into the next dev iteration. In this case, there will be 3 weeks available to prep for the next iteration



Source: Jeanette Gore, QM Agile SV  Test Lead

# Agenda



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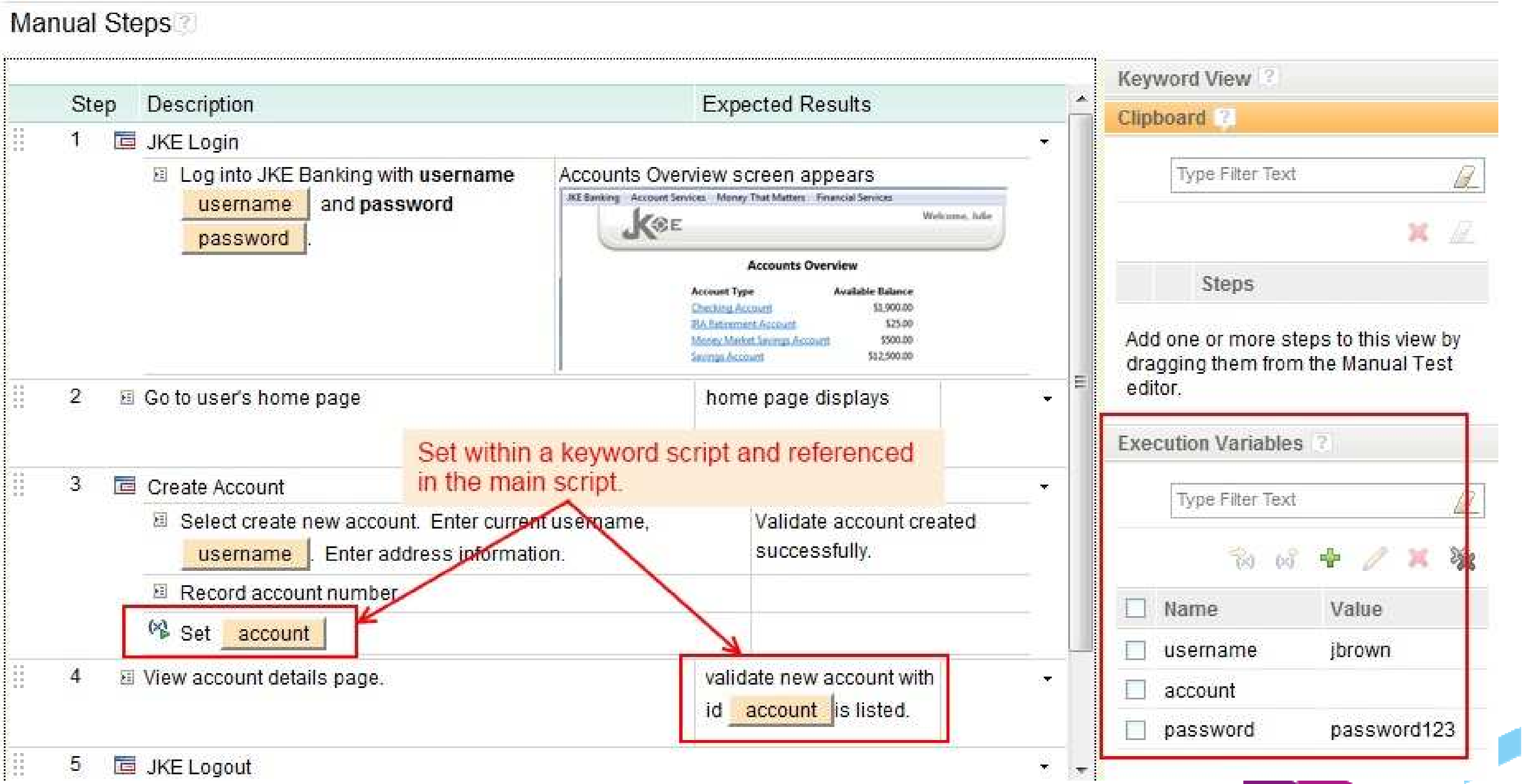
# Manual Tests Capture Acceptance Test Flow

- **Capture acceptance tests as manual tests. Leverage keywords to and execution variables to accelerate automation**



Manual Steps

| Step | Description | Expected Results |
|---|---|---|
| 1 | JKE Login | |
| | Log into JKE Banking with **username** username and **password** password . | Accounts Overview screen appears |
| 2 | Go to user's home page | home page displays |
| 3 | Create Account | |
| | Select create new account. Enter current username, username . Enter address information. | Validate account created successfully. |
| | Record account number. | |
| | Set account | |
| 4 | View account details page. | validate new account with id account is listed. |
| 5 | JKE Logout | |

JKE Banking · Account Services · Money That Matters · Financial Services

Welcome, Julie

Accounts Overview

| Account Type | Available Balance |
|---|---|
| Checking Account | $1,900.00 |
| IRA Retirement Account | $25.00 |
| Money Market Savings Account | $500.00 |
| Savings Account | $12,500.00 |

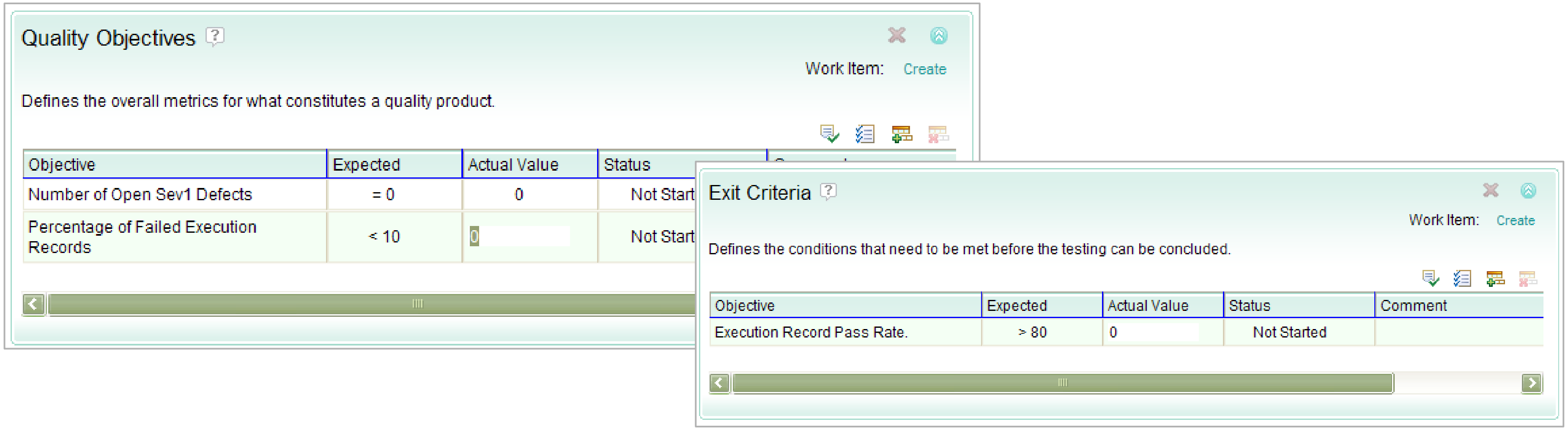
Set within a keyword script and referenced in the main script.

Add one or more steps to this view by dragging them from the Manual Test editor.

| | Name | Value |
|---|---|---|
| □ | username | jbrown |
| □ | account | |
| □ | password | password123 |

# Test planning in agile using Rational Quality Manager

- The agile test planning approach:
  - Allows an agile team to define "Done" for each sprint/iteration
  - Links testing activities to rest of team
  - Allows the whole teams to reuse test assets
    - Reduces amount of rework
  - Jazz tools can provide dashboards for better collaboration



Quality Objectives

Work Item: Create

Defines the overall metrics for what constitutes a quality product.

| Objective | Expected | Actual Value | Status |
|---|---|---|---|
| Number of Open Sev1 Defects | = 0 | 0 | Not Start |
| Percentage of Failed Execution Records | < 10 | 0 | Not Start |

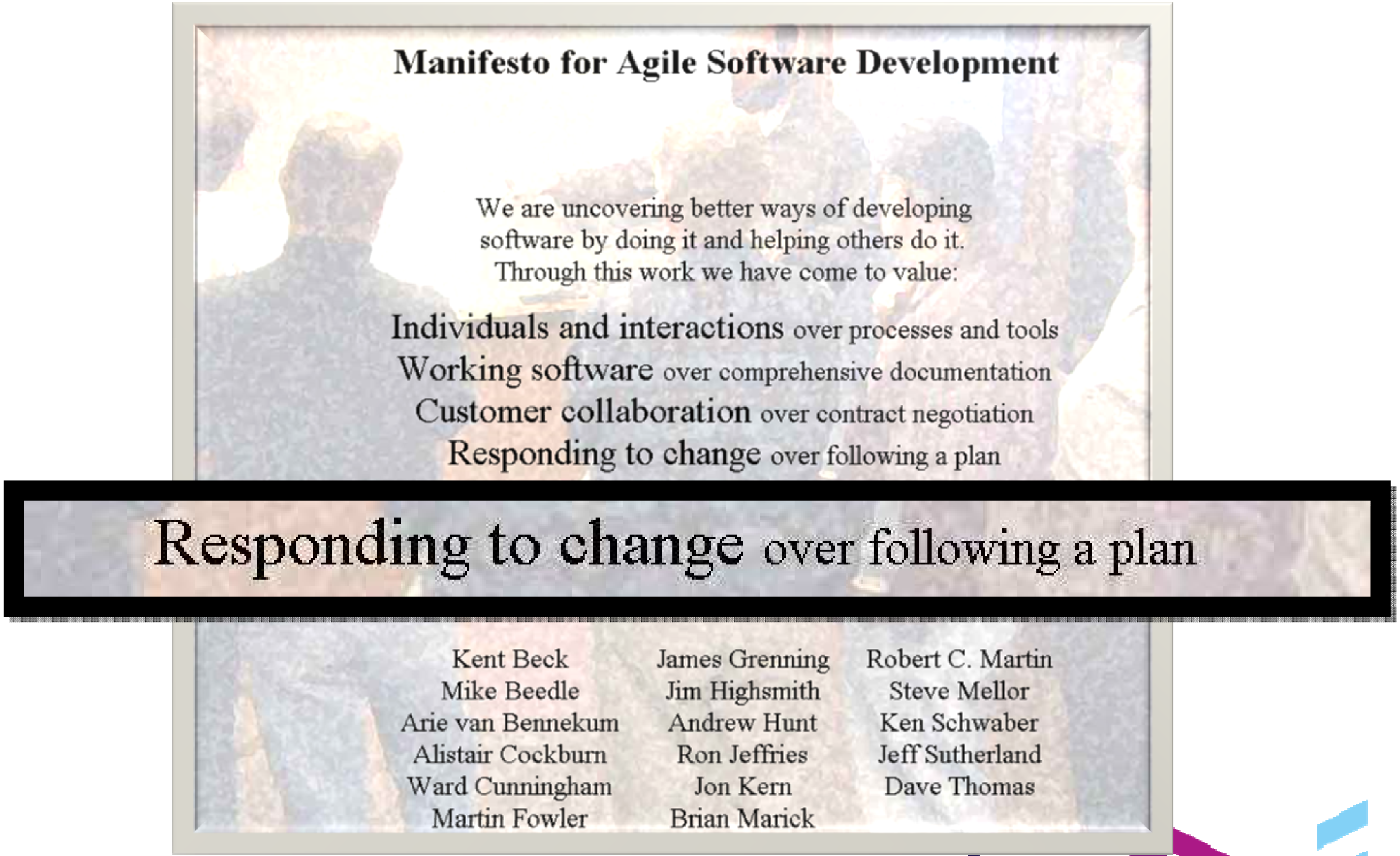
Exit Criteria

Work Item: Create

Defines the conditions that need to be met before the testing can be concluded.

| Objective | Expected | Actual Value | Status | Comment |
|---|---|---|---|---|
| Execution Record Pass Rate. | > 80 | 0 | Not Started | |

# Agenda



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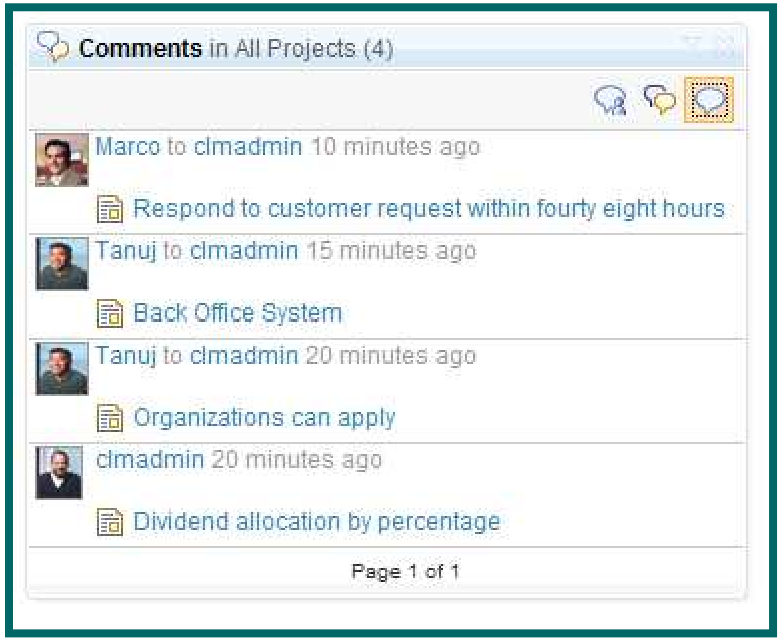
# Dashboards provide information without having to ask



**Comments** in All Projects (4)

Marco to clmadmin 10 minutes ago

Respond to customer request within fourty eight hours

Tanuj to clmadmin 15 minutes ago

Back Office System

Tanuj to clmadmin 20 minutes ago

Organizations can apply

clmadmin 20 minutes ago

Dividend allocation by percentage

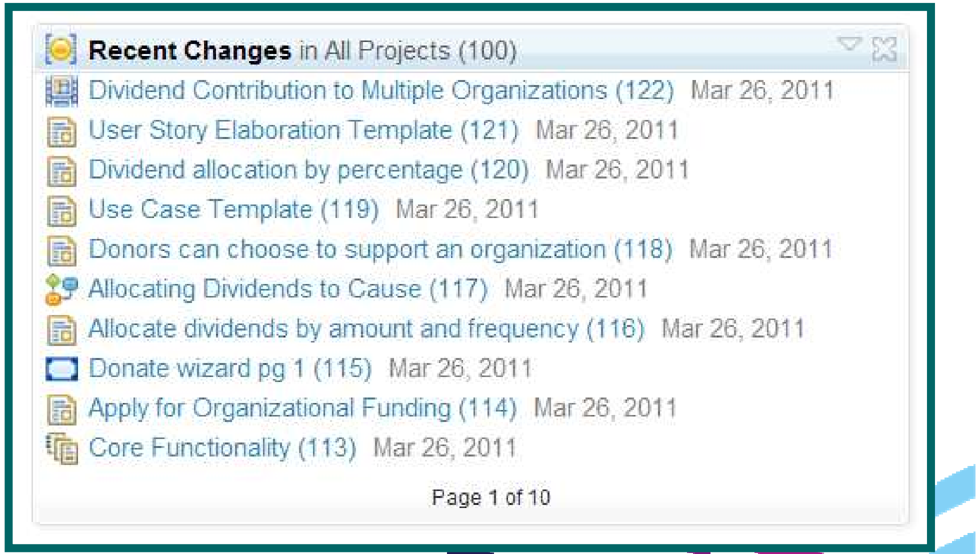
Page 1 of 1

## Comments and Discussions

**Feeds focused on Requirement comments focus stakeholders on changes and strip out the noise of attributes changes etc..**

## Any changes to a Requirement

**Feeds on all changes give project leads visibility into all requirements changes so that know exactly what is changing by whom and can access immediately assess the impact for the team.**



**Recent Changes** in All Projects (100)

Dividend Contribution to Multiple Organizations (122) Mar 26, 2011

User Story Elaboration Template (121) Mar 26, 2011

Dividend allocation by percentage (120) Mar 26, 2011

Use Case Template (119) Mar 26, 2011

Donors can choose to support an organization (118) Mar 26, 2011

Allocating Dividends to Cause (117) Mar 26, 2011

Allocate dividends by amount and frequency (116) Mar 26, 2011

Donate wizard pg 1 (115) Mar 26, 2011

Apply for Organizational Funding (114) Mar 26, 2011

Core Functionality (113) Mar 26, 2011

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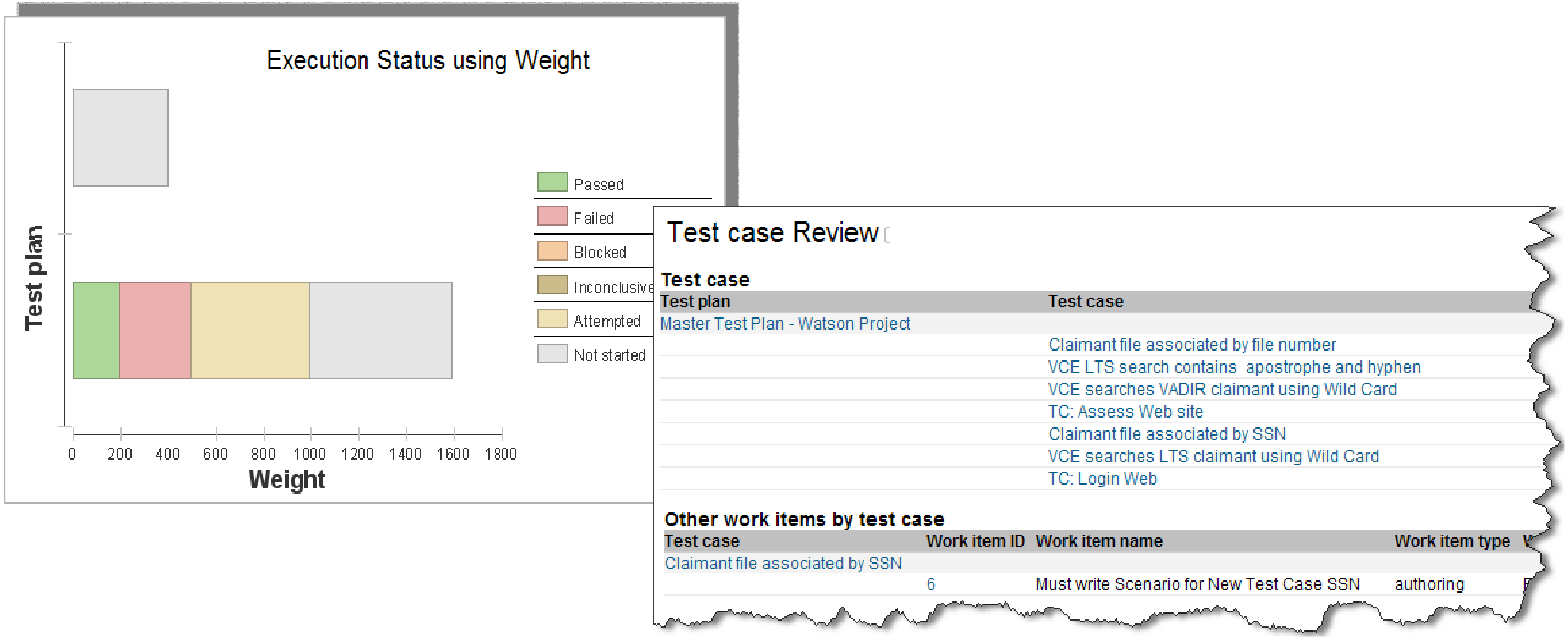
# Rational Quality Manager support for agile testing

- Testing in agile shows where you are at and where you are heading
  - Rational Quality Manager reports and dashboards provide real-time information during each iteration or sprint
  - Evaluating test results help the team identity additional areas to focus testing



Test case Review (

**Test case**

| Test plan | Test case |
|---|---|
| Master Test Plan - Watson Project | |
| | Claimant file associated by file number |
| | VCE LTS search contains apostrophe and hyphen |
| | VCE searches VADIR claimant using Wild Card |
| | TC: Assess Web site |
| | Claimant file associated by SSN |
| | VCE searches LTS claimant using Wild Card |
| | TC: Login Web |

**Other work items by test case**

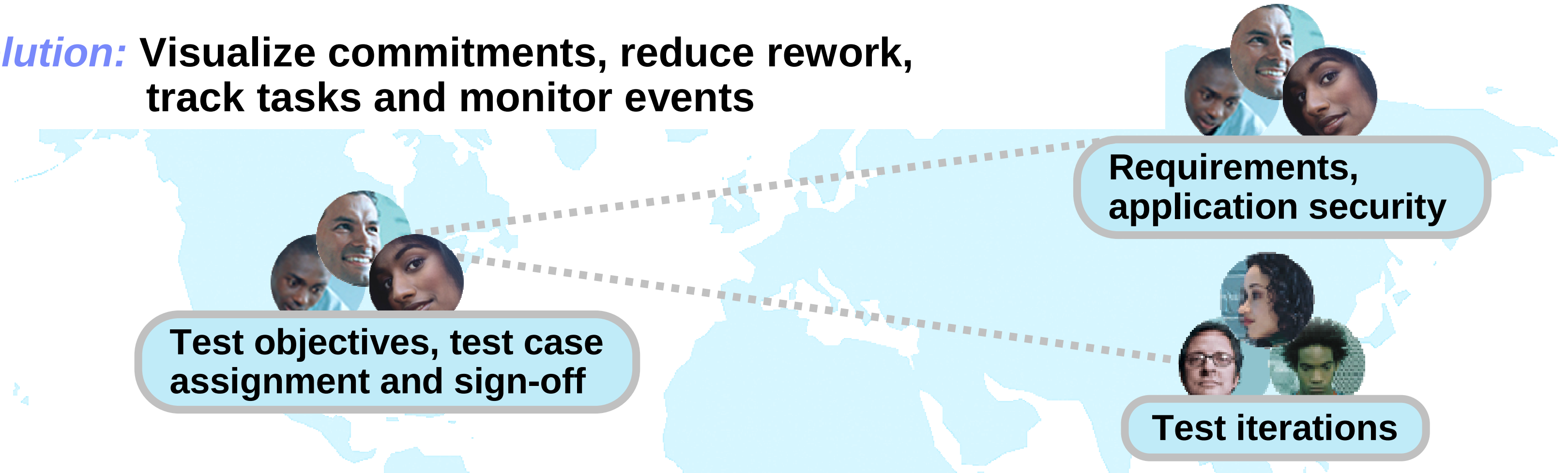
| Test case | Work item ID | Work item name | Work item type | W |
|---|---|---|---|---|
| Claimant file associated by SSN | | | | |
| | 6 | Must write Scenario for New Test Case SSN | authoring | F |

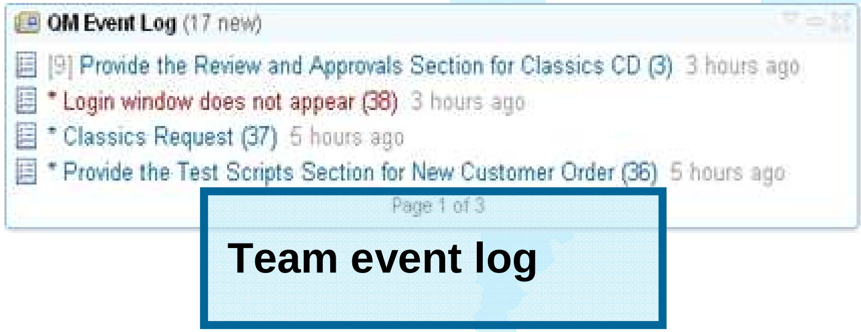
# Getting up to date work progress information

*Task management for individuals and the team*

***Challenge:*** **Assigning and coordinating test plan ownership and events across distributed teams**

***Solution:*** **Visualize commitments, reduce rework, track tasks and monitor events**


Requirements, application security
Test objectives, test case assignment and sign-off
Test iterations

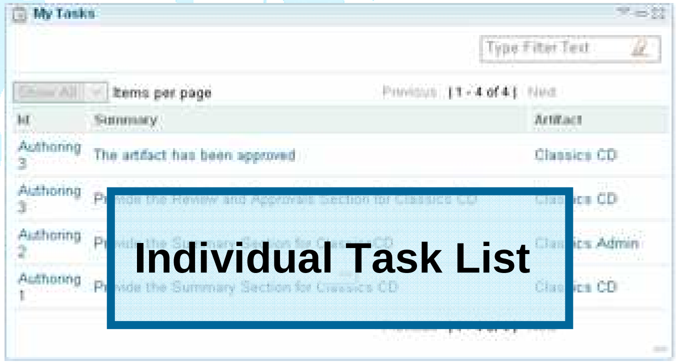


QM Event Log (17 new)

- [9] Provide the Review and Approvals Section for Classics CD (3) 3 hours ago
- * Login window does not appear (38) 3 hours ago
- * Classics Request (37) 5 hours ago
- * Provide the Test Scripts Section for New Customer Order (36) 5 hours ago

Page 1 of 3

**Team event log**



My Tasks

Type Filter Text

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

| Id | Summary | Artifact |
|---|---|---|
| Authoring 3 | The artifact has been approved | Classics CD |
| Authoring 3 | Provide the Review and Approvals Section for Classics CD | Classics CD |
| Authoring 2 | Provide the Summary Section for Classics CD | Classics Admin |
| Authoring 1 | Provide the Summary Section for Classics CD | Classics CD |

**Individual Task List**

***Know what to expect from others, know what others expect from you***

# Agenda

- Agile
- Best Practices
- Conclusion

# TL;DR

- Agile Test Management Practices
  - Expect and accept change
  - Minimize costs of change with quickness, lightness, and helping the team deliver demonstrable quality code
  - Provide online status on quality progress / reporting – broadcast change
  - Starts as early as possible, test as often as code becomes stable
  - Requires combination of manual and automated testing approaches to be effective
  - Focuses on meeting quality from the customer's perspective – acceptance tests
  - Testing measures "Done"

**TL;DR =**
**Too Long; Didn't Read**
**As often seen on reddit.com**

# Agile Test Management Practices

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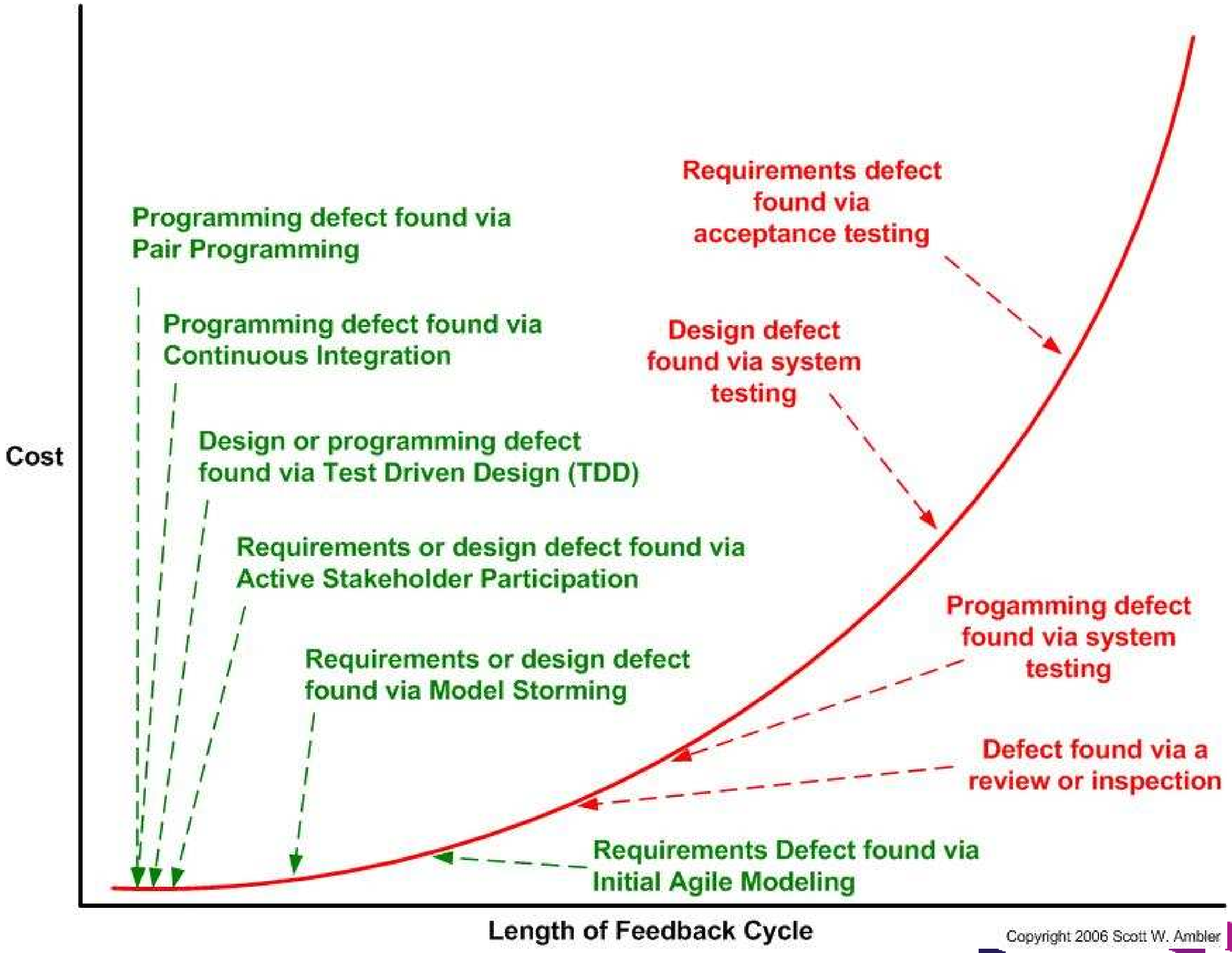
- A few left overs…

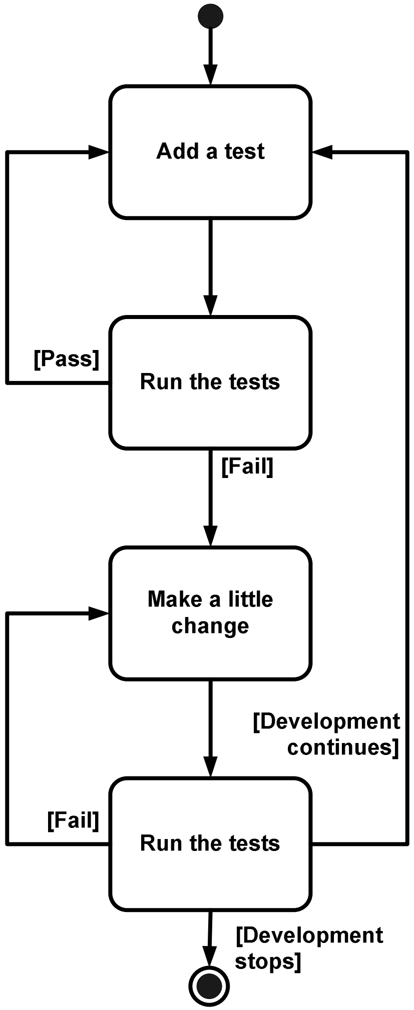
# The Cost of Change Curve



Copyright 2006 Scott W. Ambler

Source: www.ambysoft.com/essays/whyAgileWorksFeedback.htm

# Test First and Test Driven Development



- Automated acceptance testing drives your detailed requirements efforts
- Automated developer testing drives the detailed design of the system
- Tests form the majority of your detailed specifications
- This is the first time in IT history that developers are motivated to keep the specifications up-to-date

- If anything this new attitude towards quality makes Agile worthwhile for testers