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Leaner software delivery with the aid of Rational Collaborative Lifecycle Management Solutions

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Japan)

- *What is Lean?*
- *Getting Leaner with Rational Collaborative Lifecycle Management solutions*

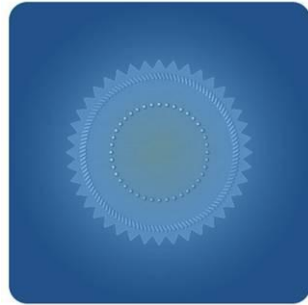
What is “Lean”

- **Muda** = “waste” (non-value-added activity)
- **Mura** = “unevenness” (variability in flow)
- **Muri** = “overburdening” (unreasonableness)
- **Lean** is a manufacturing & production practice that considers the expenditure of resources for any goal other than the **creation of value** for the end customer to be **wasteful**, and thus a target for elimination.
- “**value**” is defined as any action or process that a customer would be willing to pay for.
- Lean is centered around *preserving value with less work*.

Lean Software Development – The Key Principles



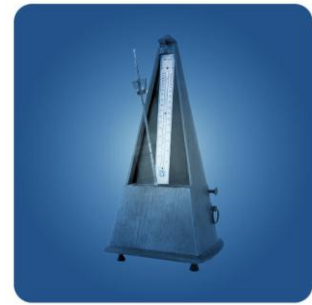
Eliminate Waste



Build Quality In



Defer Commitment



Deliver Fast



Amplify learning



Engage Everyone



Optimize the Whole

Principle #1: Eliminate Waste



Learn to *see* Waste



Internal Paperwork



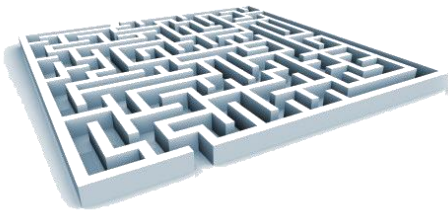
**Long Backlog =
Delivery Delay**



**Wait time = Lost
\$\$\$\$**



Red Tape



Complexity



Defects



Extra Features Drive Cost Exponentially

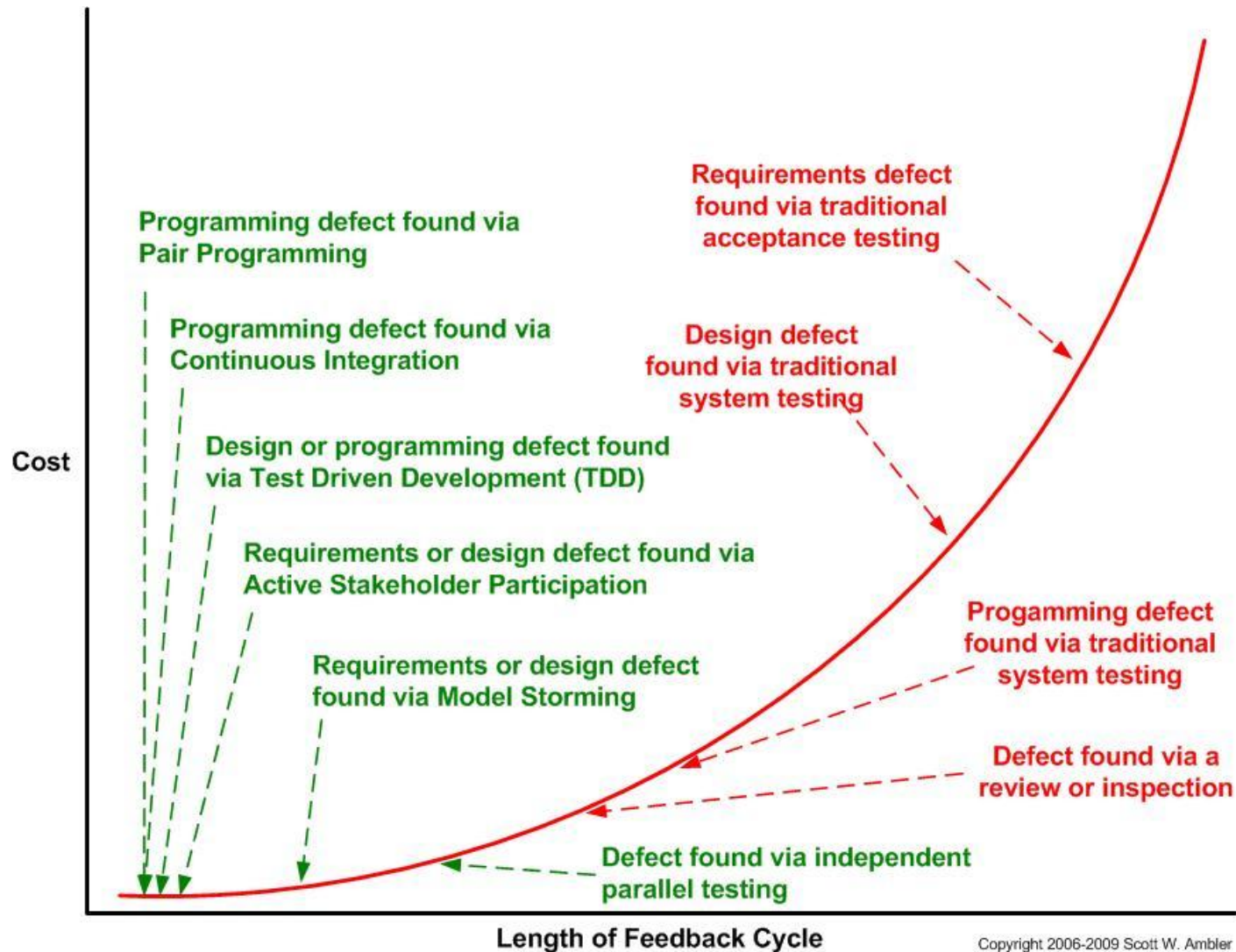
Learn to *reduce* Waste

- Minimize tracking by create a smooth flowing work system
- Rethink Authorization systems. Make “approvals” unnecessary or automated
- Ask yourself “Why am I really doing this?”

Principle #2: Build Quality In



Cost of not building Quality In



Copyright 2006-2009 Scott W. Ambler

Principle #3: Defer Commitment



It's Decision Time

A Pilot from Innsbruck

In Pilot training, we were taught how to make decisions in challenging situations:

1

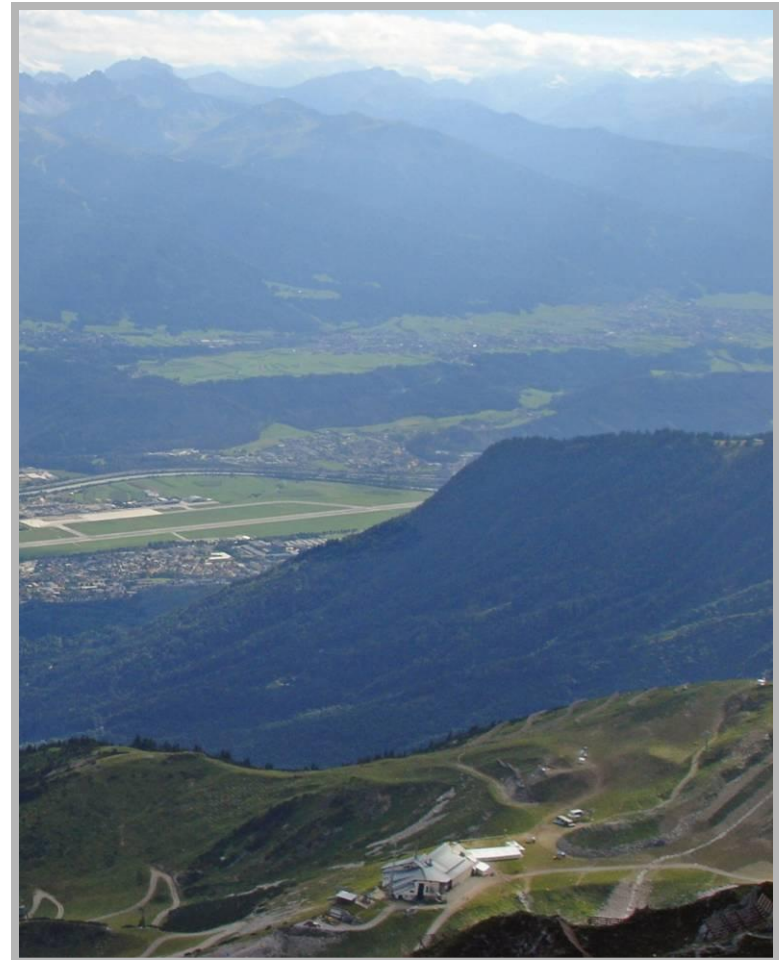
First decide when the decision will be made

2

Don't make the decision until that time: That is when you have the most information

3

Don't make the decision after that time: Because there are rocks in our clouds



Don't procrastinate: just decide at the last *Responsible* moment

- Share partially complete design information
- Organize for collaboration
- Develop a change oriented mindset
- You can't predict the future, so maintain flexibility, until uncertainty is removed
- Options are like trade offs, they aren't free and have a cost

Principle #4: Deliver Fast



How to deliver fast

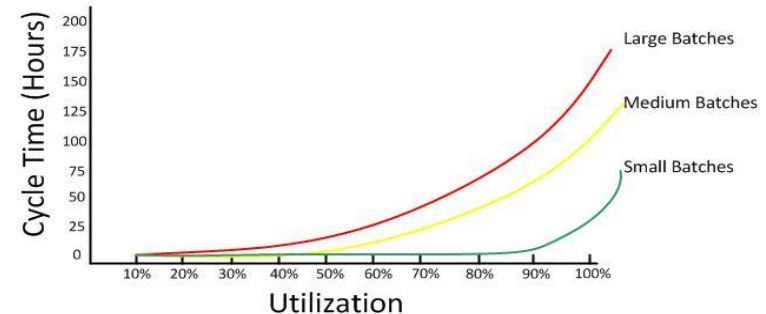
- The faster you deliver the longer you can delay decisions. Being able to make a change in a week, lets you wait to make a decision until that week.

Steady Rate of Arrival

- Practice a steady rate of arrival and control what comes into your queue.
- Releasing small packages of work, allows you to spread it evenly thorough the team
- Setting priorities and selecting work is critical
- Releasing work frequently is even more critical

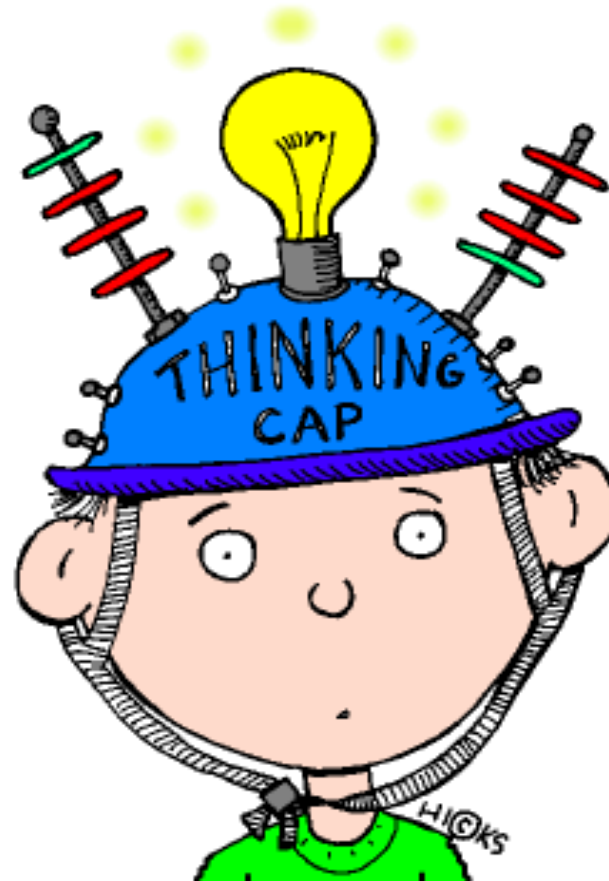
Steady Rate of Service

- Remove the variability from processing time
- Smaller work packages have less that can go wrong
- Parallel the processing of work to avoid bottlenecks
- Deliver consistently!



The larger the batch of work, the slower it will be completed, and the more utilization it will take.

Principle #5: Amplify Learning



Amplifying learning

- Introduce and increase feedback loops into the development process
- Run tests as soon as code is written, don't let defects accumulate
- Less Documentation, and more coding with real time feedback
- Forgo requirements gathering sessions for prototype reviews of UI
- Don't over study which tools are the best, take the top 3 and evaluate them
- Encourage and accept immediate customer response to your work

Principle #6: Engage Everyone



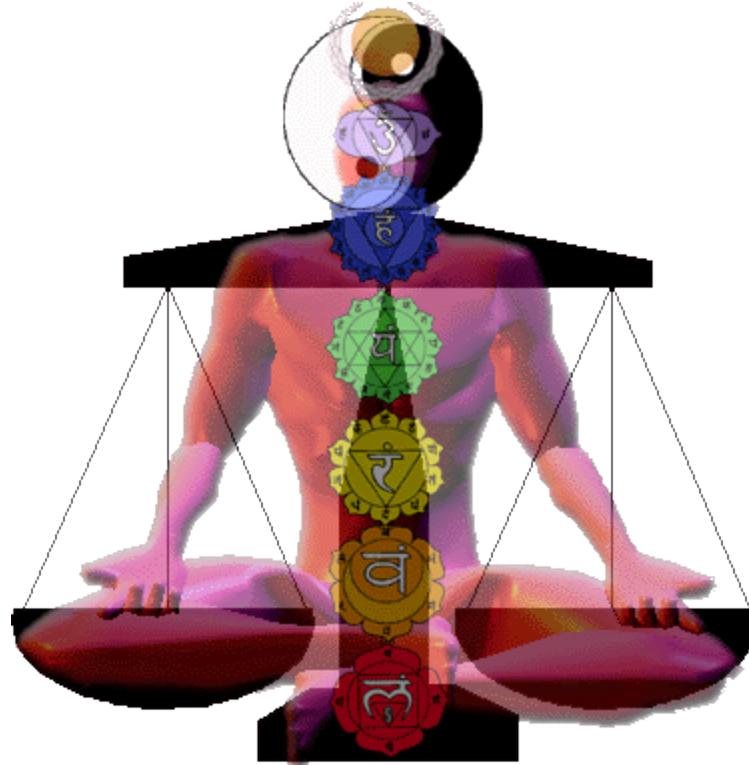
Self-Determination

- A mature organization focuses on learning effectively and empowers the people who do the work to make decisions.
- Let the team design their own working procedures
- Remember Management's role is coach, train, and assist the teams
- Managers need to improve as much as individual workers. A feedback loop is critical going both ways between managers and workers to drive improvement
- Let the team make it's own commitments
- Management's role is to provide support, resources, guidance, and protection

Empower the team through leadership

Managers	Leaders
Cope with Complexity	Cope With Change
Plan & Budget	Set Direction
Organize & Staff	Align People
Track & Control	Enable Motivation

Principle #7: Optimize the whole





Optimizing the Whole

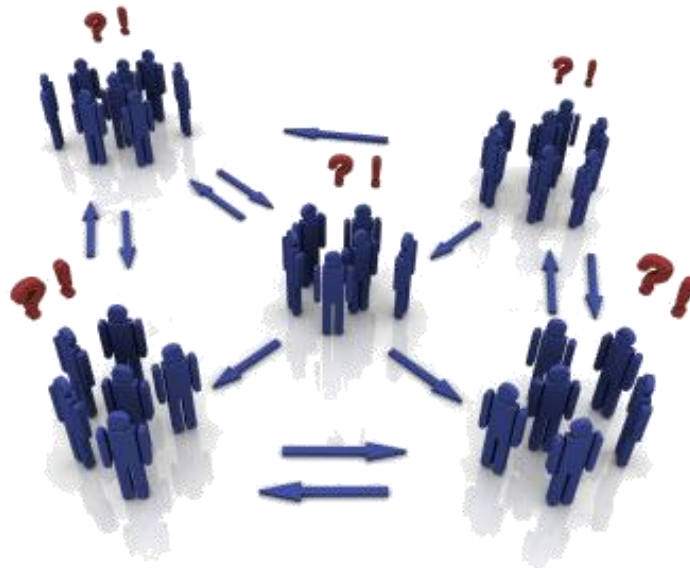
Consider the Airplane

- An engine wont fly at 10,000 m
- A wing or tail will fall from the sky
- Make the engine larger without changing anything else, and the plane will likely fall apart
- An airplane must be changed and managed as a system

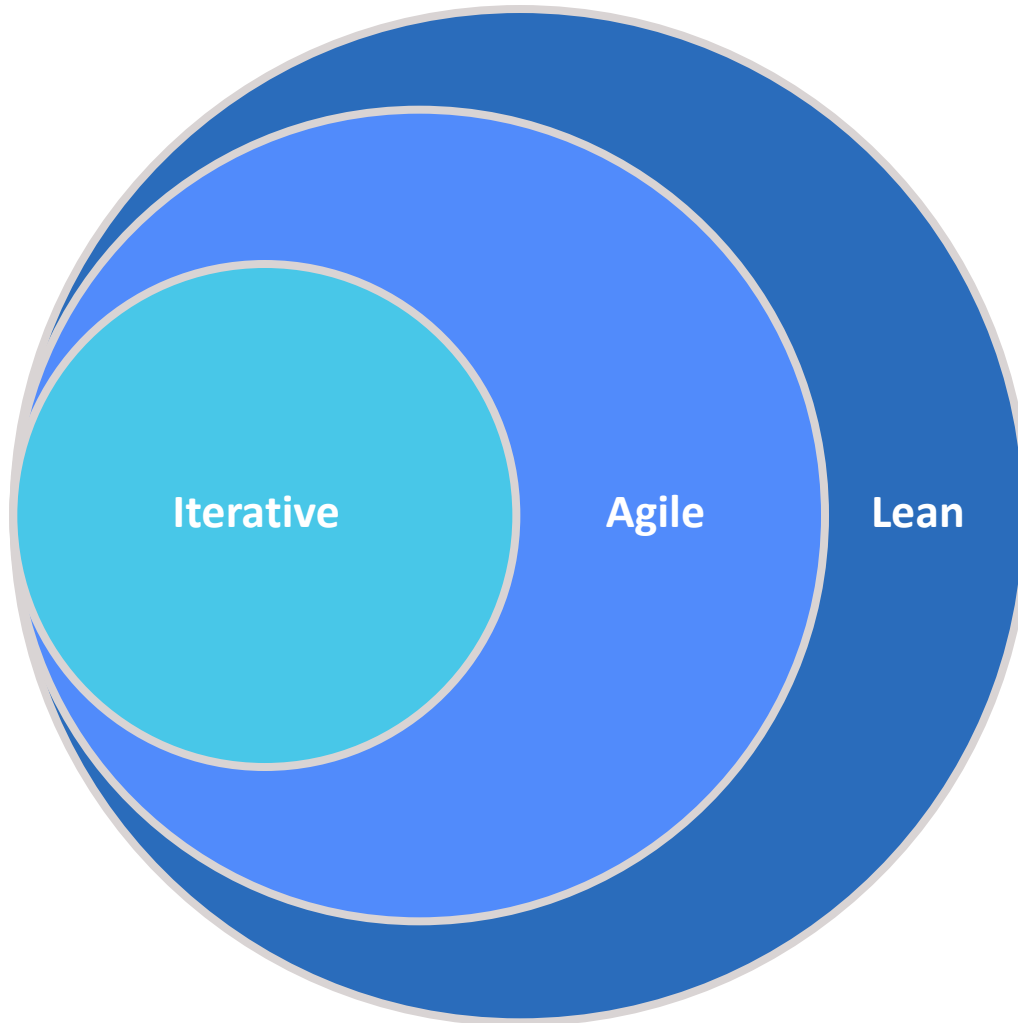


Systems Thinking is Often Counterintuitive

Drive cost out of each department	Eliminate waste between departments
Easy	Difficult
Often interferes with overall cost reduction	May not result in the lowest department costs



Iterative, Agile, Lean



Agile and Lean are complementary

• Agile

- A philosophy that concentrates on delivering things that have value to a customer
- Avoid things that have no value to the customer
- Don't believe in the "big detailed plan"



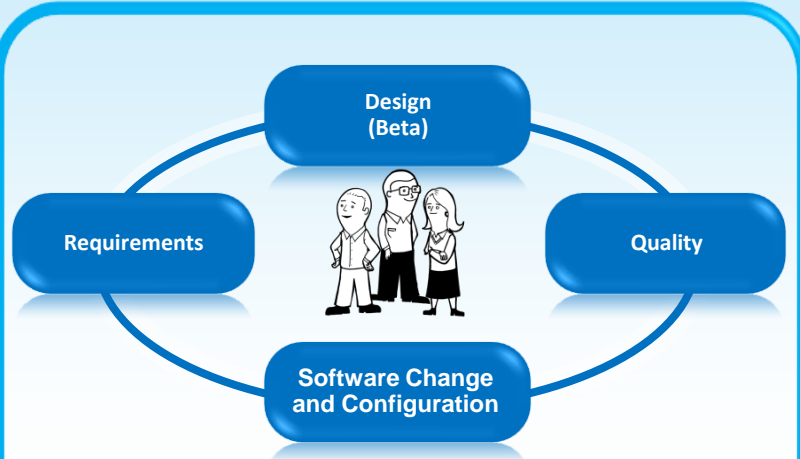
• Lean

- Started as a management approach for streamlining production.
- Avoid **all** waste
- Get the customer involved at the earliest opportunity



Getting Leaner with CLM

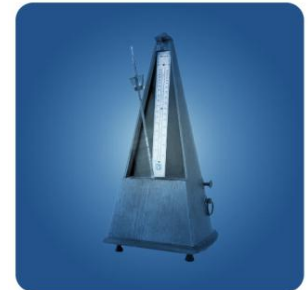
IBM Rational solution
for Collaborative Lifecycle Management



Architect & Engineer & Analyst & Developer & Quality Professional & Deployment Engineer

Open Lifecycle Integration Platform

Jazz



In-Context Collaboration always shows the latest



Comments (4)

- Bob to Deb, Marco 5 minutes ago (2 replies)

Percentage format - numer of decimal places

How many decimal places should we support for percent

Example: none - 16%, 1 decimal place 16.5%
- Marco to Bob, Deb 5 minutes ago

RE: Percentage format - numer of decimal places #1]

I checked the DB table. We did not take into account decimals for this percentage. If we are going to support decimals I need to know ASAP.
- Deb to Bob, Marco Now

RE: Percentage format - numer of decimal places #2]

Bob, is no decimal support acceptable to the business?
- Tanuj to Bob 1 minute ago

What is the minimum percentage?

Threaded discussions on requirements

View All Artifacts

Page size: 20

Highlight recently commented

ID	Name	Artifact Type	Last Modified By	Last Modified Date
44	Accounts Overview	Part	JTSAdmin	Mar 26, 2011 5:43:06 PM
50	Transaction History	Part	JTSAdmin	Mar 26, 2011 5:43:10 PM
53	Accounts Overview (Home Page)	Sketch	JTSAdmin	Mar 26, 2011 5:43:11 PM
55	Dividend Contribution - screen flow	Screen Flow	JTSAdmin	Mar 26, 2011 5:43:11 PM
60	Account Details	Part	JTSAdmin	Mar 26, 2011 5:43:13 PM
67	Dividend Contribution	Storyboard	JTSAdmin	Mar 26, 2011 5:43:15 PM
75	Donor must be registered user to access account details	Business Rule	JTSAdmin	Mar 26, 2011 5:43:19 PM
79	Donors will receive confirmation and receipt	Feature	JTSAdmin	Mar 26, 2011 5:43:21 PM
89	Dividend contribution - confirmation	Sketch	JTSAdmin	Mar 26, 2011 5:43:23 PM

Recent discussions highlighted on requirements

Work Items Tag Cloud Problems

Found 9 work items - Stories (current sprint)

Id	Status	P	Story Points	Summary	Owned By
55	New	13 pts	Frequency of dividend transfer	Deb	
59	Implemented	8 pts	Requests sent in form of email	Marco	
60	New	3 pts	Organization must identify how much money is desired	Marco	
62	New	1 pt	Organizations may apply with an initial request	Marco	
64	In Progress	2 pts	Customers can Nominate an Organization	Deb	
66	New	1 pt	Organization must provide justification for why funds are needed	Marco	
69	New	2 pts	Organizations can Apply	Deb	
70	In Progress	5 pts	Donor Dividend Allocation Criteria	Deb	
71	New	1 pt	JKE Charity Coordinator will respond to request in the website trigger...	Marco	

Unread work Items bolded for developers

Formal reviews drive agreement & prevent re-work



- ✓ Reviews & approvals ensures artifacts are reviewed and/or approved by key team members and capture compliance requirements.

Requirements



JKE Banking (Requirements) >
Approval

Participant's Review: In progress 0% completed Your role: Approver

Overall Review: Draft In progress 65% completed Pause Review

Due: Apr 18, 2011

Instructions to reviewers:
List of requirements for our second sprint. All comments have been resolved. Please review and approve requirements as written.

Participant	Type of Participant	Review results
<input type="checkbox"/> Bob	Approver	Done - 5 Approved
<input type="checkbox"/> Deb	Approver	Done - 5 Approved
<input type="checkbox"/> Marco	Approver	60% - 2 Approved, 1 Disapproved
<input type="checkbox"/> Tanuj	Approver	

Test Artifacts



18 : Dividend Allocation by Percentage
Test Case Overview | Snapshots | History

Originator: Tanuj Owner: Tanuj State: Under Review

Description: select a list of potential donations and enter percentages for each

Formal Review

List the people who will be reviewers and approvers of this content and define your roles.

View: All

Show All items per page Previous 1 - 4 of 4 Next

Review Type	Name	Status	Comments
<input type="checkbox"/> Approver	Bob	Pending	
<input type="checkbox"/> Reviewer	Sally	Pending	

Work Items



Task 41 *
Summary: Implement - Frequency of dividend transfer

Overview Links Approvals History

Approvals (1) - 1 pending

New: Approval

Type	Name	State	Due
Review	Check of algorithm to prevent transfer on weekend	Pending	Apr 18, 2011
	AI	Pending	
	Curtis	Pending	
	Tanuj	Approved	

Add Approvers...

Requirements collections focus teams on goals



Create Vision ▾

- ▶ Saved Filters
- ▶ Filter by Tag
- ▶ Filter by Attribute
- ▼ Filter by Folder
 - JKE Banking (Requirements)
 - Collections
 - JKE Business Recovery Matters
 - Business Rules
 - Features
 - Glossary
 - Non Functional Requirement
 - Processes
 - Reports
 - Stakeholder Needs
 - User Story Elaboration
 - Elaborated Stories
 - Roles - Actors
 - Storyboards
 - UI Sketches
 - JKE Enterprise Project
 - JKE Private Banking and Security
 - Project Meetings

View All Artifacts

Page size: 20 ▾

<input type="checkbox"/>	ID	Name	Artifact Type
<input type="checkbox"/>	16	Requests sent in form of hard copy mail	Feature
<input type="checkbox"/>	29	Customers can nominate an organization for the program	Feature
<input type="checkbox"/>	39	Organization must provide justification for why funds are needed	Feature
<input type="checkbox"/>	70	Donation by Amount	Feature
<input type="checkbox"/>	76	Organizations can apply	Feature
<input type="checkbox"/>	77		
<input type="checkbox"/>	78		
<input type="checkbox"/>	79		
<input type="checkbox"/>	81		
<input type="checkbox"/>	86		
<input type="checkbox"/>	88		
<input type="checkbox"/>	99		
<input type="checkbox"/>	108		
<input type="checkbox"/>	109		

Collections focus team for:

- ✓ Reviews
- ✓ Snapshots
- ✓ Implementation

JKE Banking (Requirements) > ... > Collections >

97: Release 1 Planning

Page size: 20 ▾

<input type="checkbox"/>	ID	Name	Artifact Type
<input type="checkbox"/>	32	Organization must identify how much money is desired	Feature
<input type="checkbox"/>	34	Frequency of dividend transfer	Feature
<input type="checkbox"/>	40	Allocate dividends by Percentage	User Story Elaboration
<input type="checkbox"/>	57	Dividend processing payment is a one time transaction.	Feature
<input type="checkbox"/>	58	Donor Dividend Allocation Criteria	Feature
<input type="checkbox"/>	61	Donors Deposit Money in a Pooled Assistance Fund	Feature
<input type="checkbox"/>	65	Allocate dividends by amount and frequency	User Story Elaboration
<input type="checkbox"/>	70	Requests sent in form of hard copy mail	Feature
<input type="checkbox"/>	82	Customers can nominate an organization for the program	Feature

Align planning across business, development and test teams



Change and Configuration Management (/ccm) One of the Client Access Licenses expires in 57 days

JKE Banking (Change Management) Bob

Project Dashboards Work Items Plans Source Control Builds Reports

Search Work Items

Release 1.0 Backlog

36 items: 31 open, 5 closed | Ends in: 24 days

Plan Details

Planned Items Links Snapshots Dashboard Notes

Add: Contributes To Plan

Actions	Link Type	
	Related Plans	
	BRM Sprint 2 (1.0) Plan	0/16
	Product Backlog	0/0 pts
	Implements Requirement Collection	
	97: Release 1 Planning	0/7 %
	Tested by Test Plan	
	3: JKE Banking Release 1	

✓ Linked to Requirement Collection

✓ Linked to Test Plan

Highlight planning gaps



BRM Sprint 2 (1.0) Plan Auto-Save Save

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

Link Type : value

Colors [v] gap | implementsRequirement:unset ?

Colors [v] gap | testedByTestCase:unset ?

Colors [v] Defect | affectedbyDefect:set ?

View As: Traceability

Traceability

Options

Sorting

Filter

Colors [v]

Colors [v] gap | testedByTestCase:unset ?

Colors [v] Defect | affectedbyDefect:set ?

+ More

Actions	Summary	Owned By	Implements Requirement	Tested By Test Case	Affected by Defect
gap	Requests sent in form of email	Unassigned	Requests sent in form of email	--	--
gap	Frequency of dividend transfer	Unassigned	--	Verify dividend transfer frequency	--
	Organization must provide justification for why funds are nee	Marco	Organization must provide justification for why fund	Organization must provide justification for	--
	Organizations can Apply	Marco	Organizations can apply	Organizations can Apply	--
Defect	Organization must identify how much money is desired	Marco	Organization must identify how much money is des	Organization must identify how much mc	Links (2): 1, 2
	Donor Dividend Allocation Criteria	Deb	Donor Dividend Allocation Criteria	Donor dividend allocation conforms to sl	--
	Organizations may apply with an initial request	Bob	Organizations may apply with an initial request	Organizations may apply with an initial re	--
Defect	JKE Charity Coordinator will respond to request in the we	Marco	JKE Charity Coordinator will respond to request in	JKE Charity Coordinator responds to onl	425: Running out of SW
	Customers can Nominate an Organization	Marco	Customers can nominate an organization for the pi	Customers can Nominate an Organizati	--

Improve quality and predictability



- ✓ Creating a shared vision delivers what the stakeholders want
- ✓ Whole team buy-in improves team trust, efficiency and focus
- ✓ Everyone knows what work is needed by whom and when.
- ✓ Traceability provides insight to knowing when you are DONE!

Developers understand the requirements, test criteria and test results

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 Allocation Criteria

Implements Requirement
Document 12: Donor Dividend Allocation Criteria

Tested By Test Case
18 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 8:42:28 PM EDT
Originator: tanuj Trigger:
Calculated Risk: ○○○○○ Activity:
Community Risk: ○○○○○ Project Area: JKE Banking



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)

46 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

Teams collaborate and clarify the details of requirements



Test Plans | JKE Banking Release

Donor Dividend Allocation Criteria
Test Case Overview | Snapshot

Originator: Tanuj Owner: Unassigned

Description: < Click here to enter a description

Development Items
Change management items that are assigned to this test case

Show All | Items per page

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): 18

Description
Donors should have the ability to choose allocation options for the



Testers define and execute tests cases with a clear understanding of requirements

Automated defect traceability



- ✓ 4-clicks to submit a defect automatically linked to impacted artifacts
- ✓ Test results are recorded and linked to test cases, and associated requirements
- ✓ Test results can be linked to software builds
- ✓ Everyone has visibility into the defects, their impact, and the action taken to resolve them



Testers execute tests and submit defects

Execution Result
Result Overview | History

Action: Select Action | State: Draft

Actual Result: **Failed**
Host Name: Local Computer
Owner: [User]

Test Part: JKE Banking Sprint 2
Test Case: Frequency of dividend transfer
Test Script: Misallocate Dividends to a Single Cause
Test Data: Unassigned
Build: Unassigned

Defects

Blocking	Status	Summary
<input type="checkbox"/>		

Defect 76
Summary: * Failing Test Case "Frequency of dividend transfer"

Overview | Links | Approvals | History

Attachments
Add File: Browse...

No Attachments.

Quick Information

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

Details

Filed Against	Filed By	Tag	Created By	Created
JKEBPM	Unassigned	Defect	Unassigned	Unassigned

Description
Test Part: JKE Banking Sprint 2



Developers can see the exact test failure without having to ask and remediate it

Actions	Summary	Owned By	Implements Requirement	Tested By Test Case	Affected by Defect
	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 nee	Marco	Organization must provide justification for why fund	Organization must provide justification for	--
	Organizations can Apply	Marco	Organizations can apply	Organizations can Apply	--
	Defect: Organization must identify how much money is desired	Marco	Organization must identify how much money is des	Organization must identify how much mo	Links (2): 1, 2
	Donor Dividend Allocation Criteria	Deb	Donor Dividend Allocation Criteria	Donor dividend allocation conforms to s	--
	Organizations may apply with an initial request	Bob	Organizations may apply with an initial request	Organizations may apply with an initial re	--
	Defect: JKE Charity Coordinator will respond to request in the we	Marco	JKE Charity Coordinator will respond to request in	JKE Charity Coordinator responds to on	425: Running out of SW
	Customers can Nominate an Organization	Marco	Customers can nominate an organization for the pi	Customers can Nominate an Organizati	--

Kaizen Events: retrospectives identify areas of improvement



- Tracking Retrospectives help team members to collaborate on improvements
 - Ranking of process improvements help to focus on where the team feels the biggest pain

The screenshot shows the 'JKE Banking (Change Management)' interface. A table lists retrospectives with columns for Id, Status, Summary, Filed Against, Planned For, and Actions. Item 31 is highlighted as 'Done'.

Id	Status	Summary	Filed Against	Planned For	Actions
77	New	Builds are not completing as frequent as before	Build	Unassigned	
32	New	Retrospective for Sprint 2	JKE	Sprint 2	
31	Done	Retrospective for Sprint 1			

The detailed view for item 31 shows:

- Status: Done
- Filed Against: JKE
- Planned For: Sprint 1
- Project Area: JKE Banking (Change Management)
- Resolution Date: March 26, 2011 5:44 PM
- Owned By: Marco
- Resolved By: Marco

Discussion (4 comments) Add Comment

Collapse All | Expand All

- Tanuj** Sep 1, 2011 1:22 PM
I have some concerns about late-in-the-cycle deliveries causing code charm. We had some challenges with the retesting required late in the sprint.
- Tanuj** Sep 1, 2011 1:24 PM
Should've also mentioned that it's been hard to find information on the right build for the fix and to understand where to find the latest good build.
- Deb** Sep 1, 2011 1:42 PM
@tanuj - I don't think we've had a lot of disruptive changes at the end of the sprint. Let's talk about this more in depth at the meeting tomorrow. I do agree @tanuj that tracking down build status has been too hard.
- Bob** Sep 1, 2011 1:45 PM
In the meeting, I'd like us to discuss some issues where requirements were not well understood and that required some things to be reworked during this sprint(which may contribute to @tanuj's impressions in comment 1). Hopefully, as a team we can come up with some ideas on reducing this confusion.

Kanban taskboards: Optimize the flow of work



Options
Columns

Display ▾
Kanban ▾
Open: --, Ready To Test: 3, Testing: 2, Closed: --
Count ▾

+ More ▾

Open	Ready To Test: 3 / 3	Testing: 0 / 2
<div style="background-color: #fff9c4; padding: 5px; margin-bottom: 5px; border: 1px solid #ccc;"> CompositeRunner.filter incorrect if child throws NoTestsRema </div> <div style="background-color: #fff9c4; padding: 5px; border: 1px solid #ccc;"> javadoc updates for @Ignore in 4.3 </div>	<div style="background-color: #fff9c4; padding: 5px; margin-bottom: 5px; border: 1px solid #ccc;"> assertThat signature does not match Matcher </div> <div style="background-color: #fff9c4; padding: 5px; margin-bottom: 5px; border: 1px solid #ccc;"> timeout doesn't work properly for >=2 cases in junit4.3? </div> <div style="background-color: #fff9c4; padding: 5px; border: 1px solid #ccc;"> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">*</div> assertEquals throws NPE while comparing null elements </div>	

Automate enforcement of “rules of the road”



The screenshot displays the Rational Team Concert (RTC) interface. On the left, the 'Project Area' configuration tree is visible, with 'Operation Behavior' selected. The main pane shows a table of operations, with 'Deliver (client)' highlighted. A 'Team Advisor' window is overlaid, showing a list of error messages: 'No Unused Imports', 'Clean Workspace', and 'Descriptive Change Sets'. A red error message states: 'Change set missing required comment or work item.' Below this, 'Quick Fix' options are listed: 'Associate Existing Work Item', 'Associate New Work Item', and 'Associate and Try Again (experimental)'. Another 'Team Advisor' window shows a successful 'Deliver' operation with a green checkmark and the message: 'Deliver: Checks whether the selected change sets are ready for delivery according to the team's development process.' Below this, it specifies 'Source Workspace: TC Workspace', 'Target Stream: Eval', and 'Result: no problems found'.

✓ Configurable Rules can be run to enforce team or organizational standards. Can be refined “on the fly” for an individual team for continuous improvements

✓ “Quick Fixes” can be specified to simplify corrective action. Out of the box processes include Scrum, iterative, formal or any process

Sophisticated SCM fosters small batch sizes



The screenshot displays the Eclipse IDE interface with several windows open. On the left, the 'Pending Changes' window shows two incoming and two outgoing change sets for the '3.0.0 Build Workspace'. The 'Change Explorer' window shows the workspace structure with files like 'EntityInfo.java' and 'readme.txt'. The 'Problems' window shows a table of merge conflicts:

Merges	Comment
	<No Commer
	renamed
	what
	new script


On the right, a diagram illustrates a Stream Hierarchy. At the top is the 'JKE Banking Integration Stream' (7 incoming, 4 outgoing, 1 incoming). Below it are 'RelEng Stream' (7 incoming, 0 outgoing, 1 incoming) and 'EEM Stream' (7 incoming, 1 outgoing, 1 incoming). The 'JKE Banking Integration Stream' is composed of 'Banking Logic', 'Build', 'C# UI', 'Database', 'Java UI', 'Prerequisites', and 'Web UI'. The 'RelEng Stream' and 'EEM Stream' are composed of 'Build' and 'Deb' components. Arrows indicate dependencies and build flows between these streams.

Get Started! Collaborative Lifecycle Management

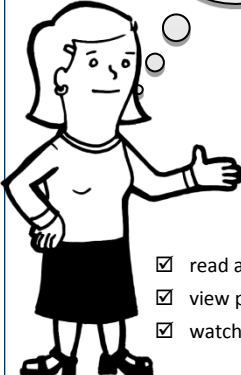


Free Downloads!

Get involved at jazz.net!



- read articles & blogs
- view presentations
- watch videos
- listen to podcasts
- see a project dashboard
- review the release plan



Interactive White Board



Short, simple way to share the
5 ALM imperatives
ibm.co/alm-everywhere

Try it out at jazz.net!

1 Download RTC, RRC or RQM for CLM

<https://jazz.net/downloads/rational-team-concert/>

Sample scenarios for CLM

https://jazz.net/wiki/bin/view/Main/MTM_Lifecycle_Welcome

Track our progress at jazz.net!

We openly develop our software with our own tools!

<https://jazz.net/projects/clm/>

Role-based Demo



VP of Development, a Business Analyst or Project Owner,
Agile Team Lead, Developer and Test Lead.

bit.ly/jazzCLMdemo

References

- M & T Poppendieck: [Lean Software Development](#)
- David J. Anderson: [Lean Software Development](#)
- Scott Ambler: [The Principles of Lean Software Development](#)



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