爱开发 重创新 更智慧

Innovate2011

IBM Rational 软件创新论坛

Software. Everyware.

五岳登顶--走进软件交付的新时代

Rational 北方区技术经理
孙昕

Agenda

1. 应用生命周期管理(ALM)
2. IBM Rational协作生命周期管理
3. ALM的五大要素
4. 总结

软件开发生命周期关键领域

三个互有关联的领域包含了不同的时间线、流程与工具

决策
帮助制定战略决策

开发
帮助开发所决策的应用

部署
帮助部署开发的应用

集成、工具、改进
帮助监控整个过程，并实现不断的改进

软件开发生命周期关键领域

企业架构和组合规划

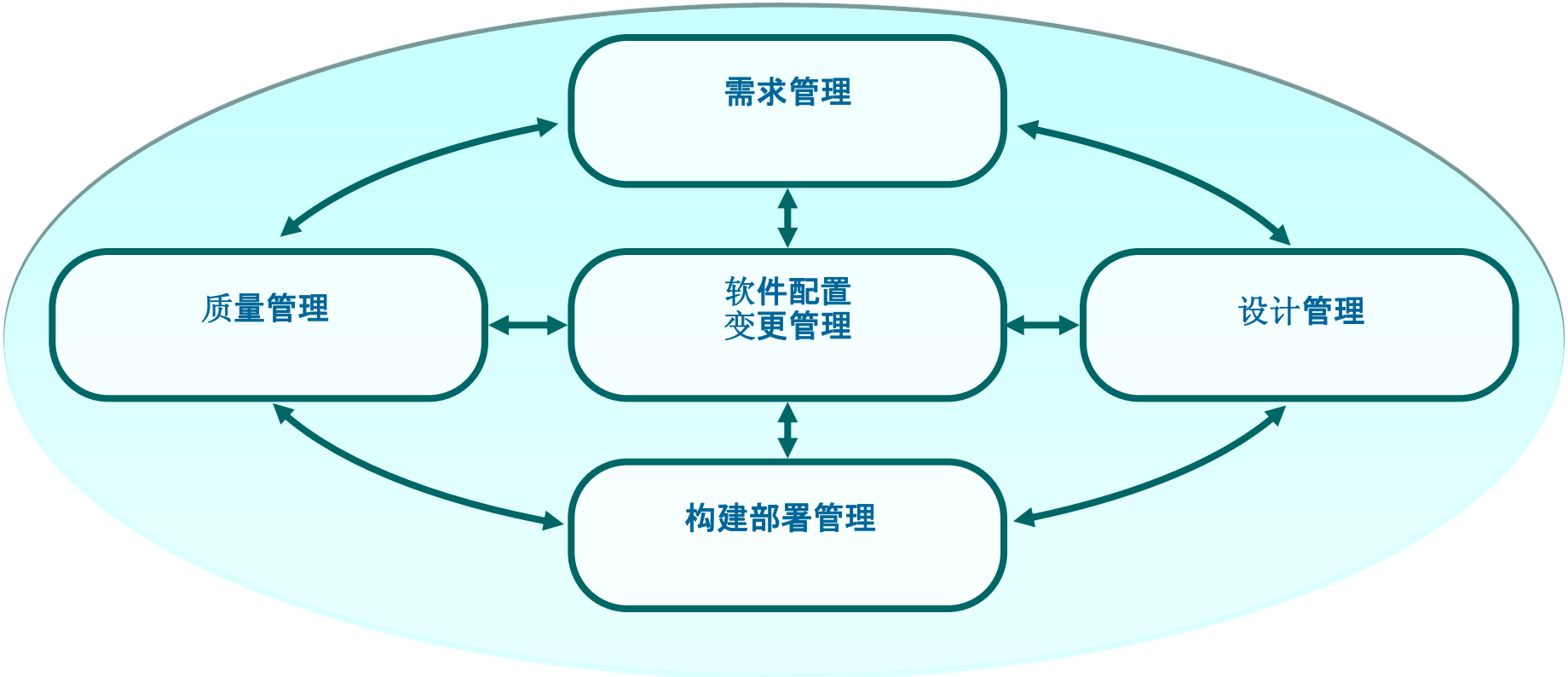
应用生命周期管理

部署规划 & 自动化

Measured Improvement

Rational应用生命周期

组件化、开放化、可扩展化



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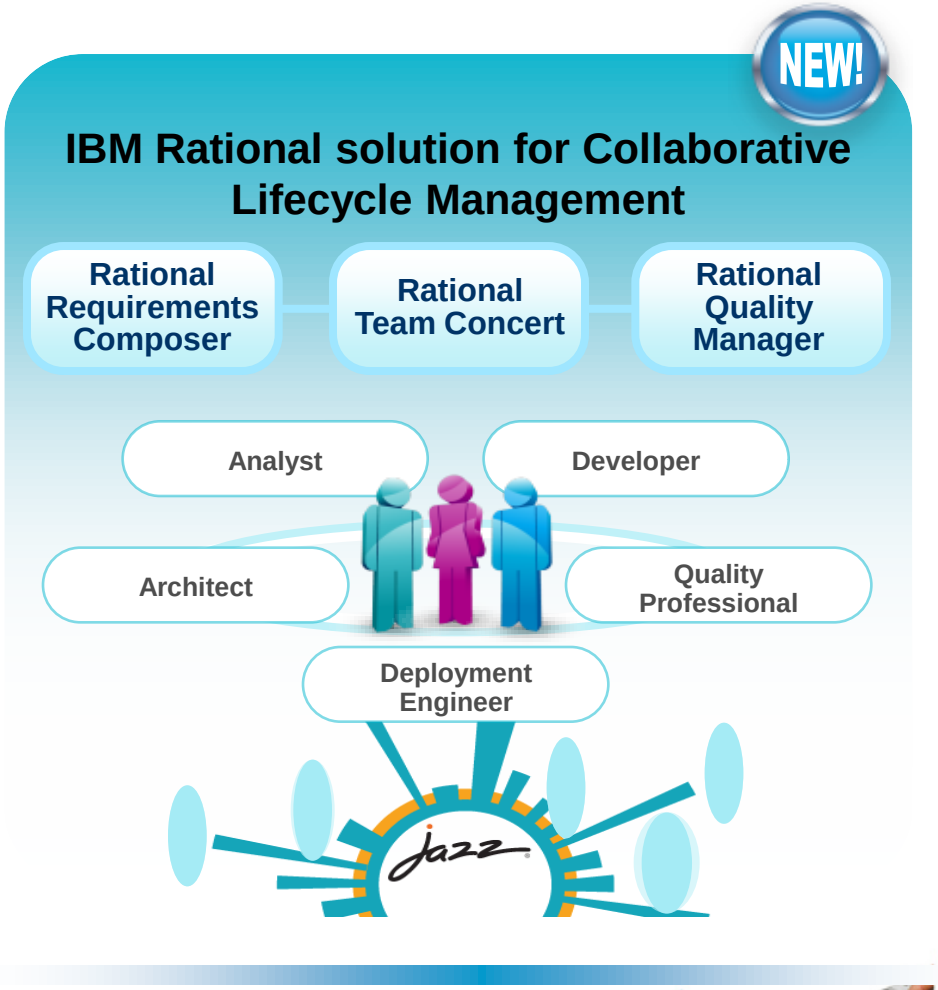
IBM Rational协作生命周期解决方案

每年提高4-6%的生产率

- **通过5大ALM的要素，优化团队**
  - 实时规划
  - 全生命周期追踪
  - 上下文协作
  - 智能化开发
  - 持续改进
- **快速启动**
- **按需扩展**
- **跨多平台多技术、支持已购开发**



Learn more at: https://jazz.net/projects/clm/

Jazz为软件以及系统交付提供了更开放的协作能力

Learn more at: https://jazz.net/about/

Open Services for Lifecycle Collaboration (OSLC)

跨越整个生命周期，实现数据连接与工具集成

工具之间资源与资产的共享存在着阻碍：

- 供应商、开源项目、内部工具
- 私有信息、格式与存储
- 数据与工具的依赖

Open Services for Lifecycle Collaboration

- 社区驱动 – specified at **open-services.net**
- ALM, PLM 以及开发协同能力的规格定义
- 基于Internet架构的灵感
  - 松耦合的集成，“just enough” 标准化
  - 通用资源格式与服务
- 行业内的发展繁荣

Learn more at: http://open-services.net/

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跨越团队、工具、项目中，需要什么才能实现端到端透明化管理？

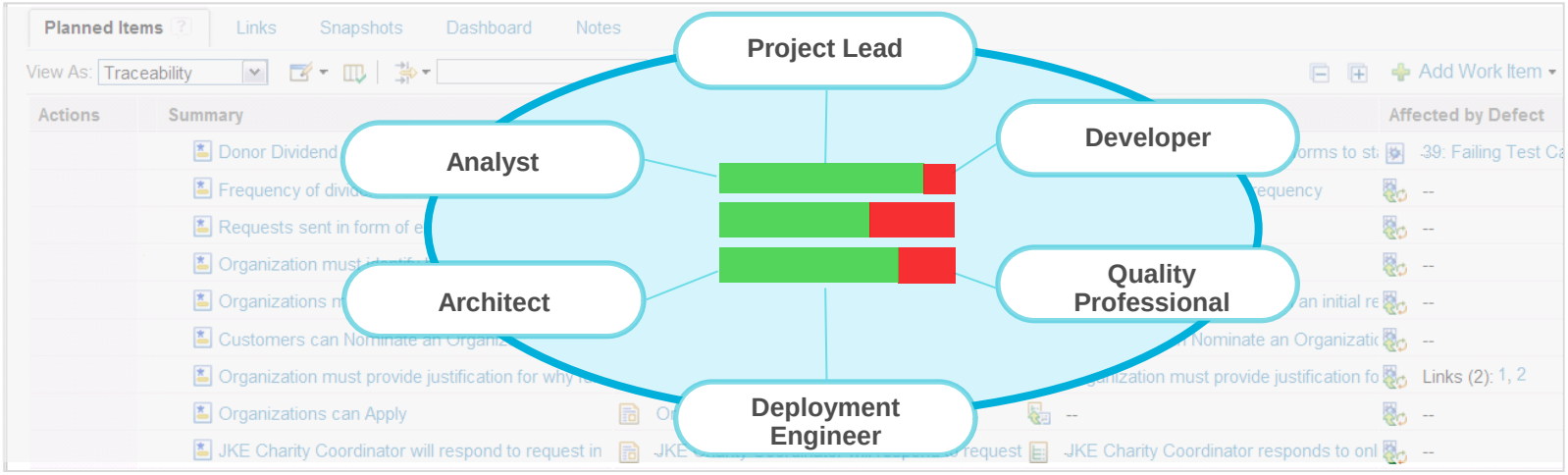
有效的生命周期管理的标准: ALM 要素

1. 实时规划
2. 全生命周期的追踪
3. 基于上下文的协作
4. 智能化开发
5. 持续改进

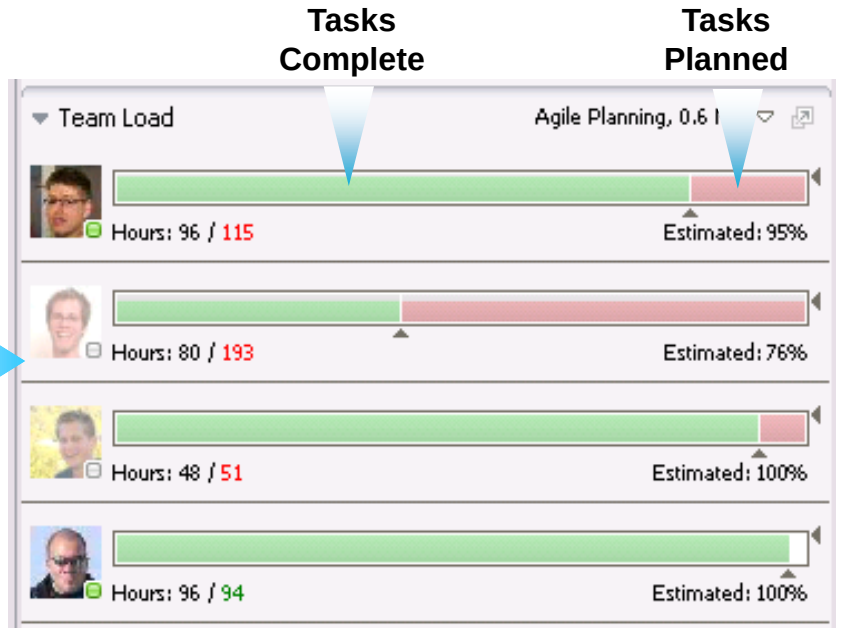
要素1：什么是实时规划?

实时规划改进了时间管理：

- 提供了**一个计划**，跨越了需求、开发、测试诸多阶段，保证团队了解整个项目的全貌
- **计划与执行相结合,**保证整个团队随时了解真实的项目状态
- 允许**每个成员参与**，保证了计划的及时性与准确性
- 帮助团队对意外事情做出**及时响应**，保证团队执行符合计划



要素1: 实时规划



Don't

计划脱离ALM的环境，需求、开发、测试计划等都是被分别管理，甚至不受管理。

依赖于人工。

计划与团队的活动以及分配的任务相脱离。

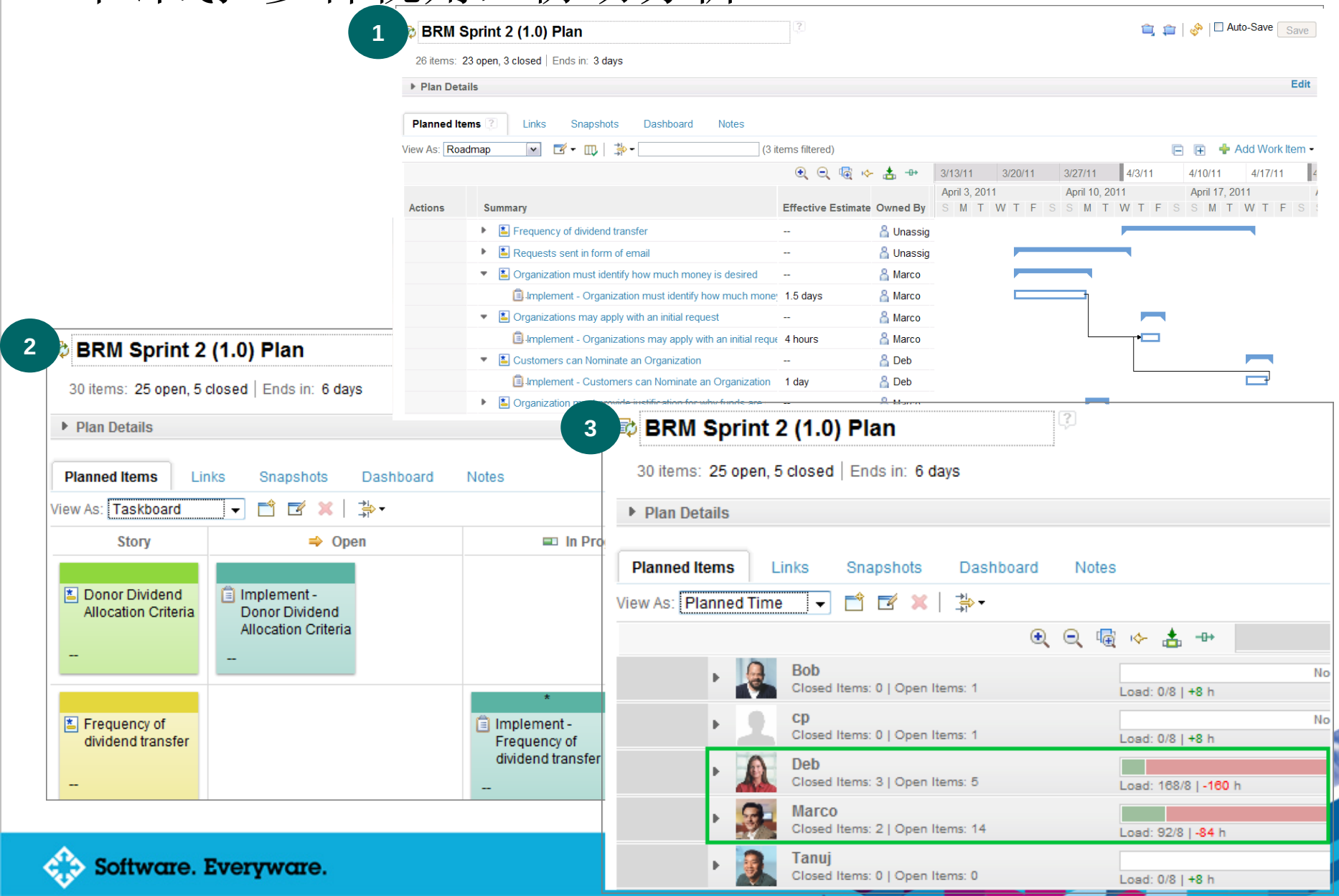
Do

计划贯穿整个团队，没有信息竖井。通过链接及时掌握从需求到开发和测试的计划。

使用查询和项目仪表板监控相应变更，从而持续的改进计划

计划与执行紧密结合，团队成员直接从工作任务上更新时间并反映到计划上，保证计划执行的准确性

一个计划- 多种视角，协助分析

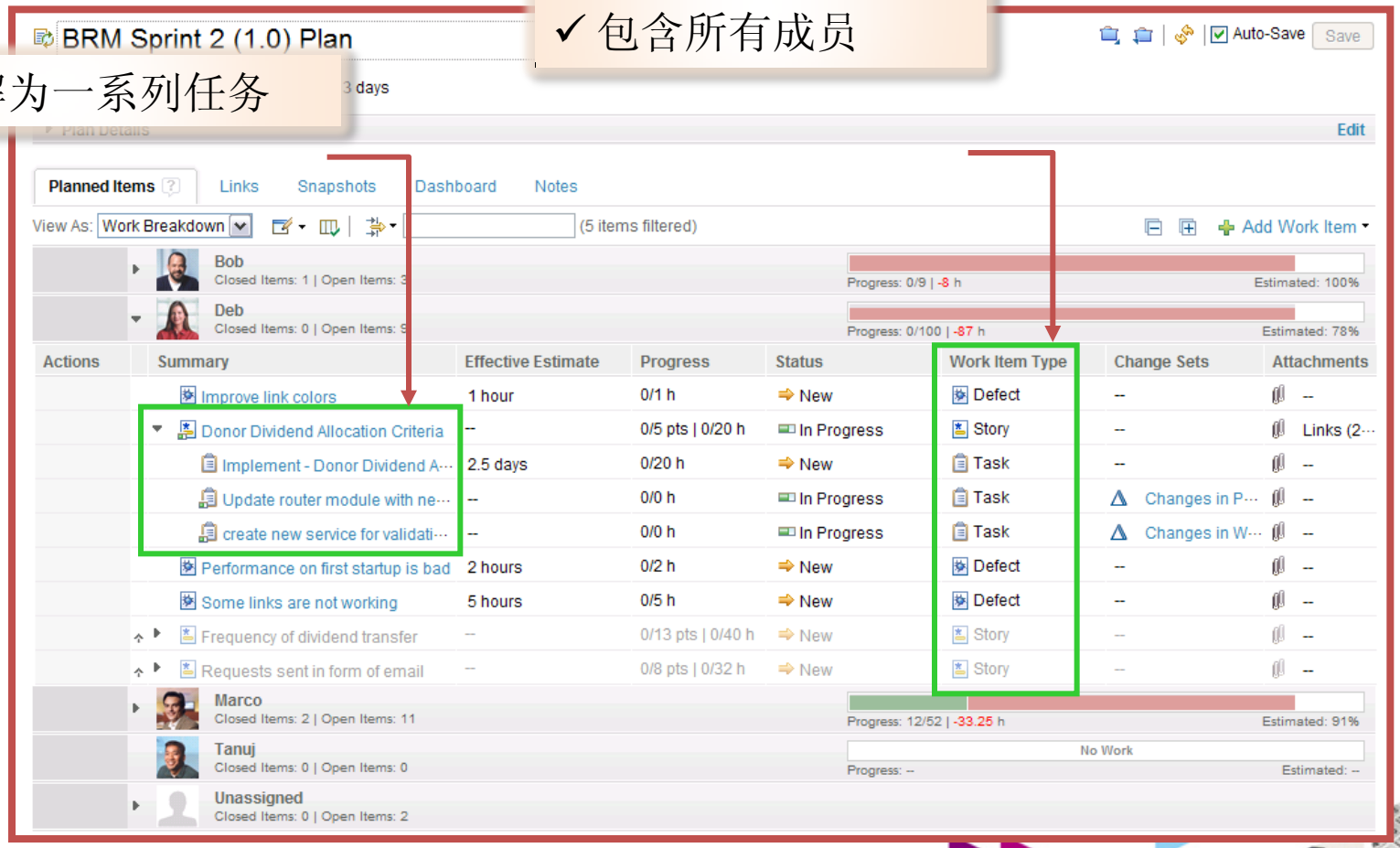


不同颗粒细度的计划

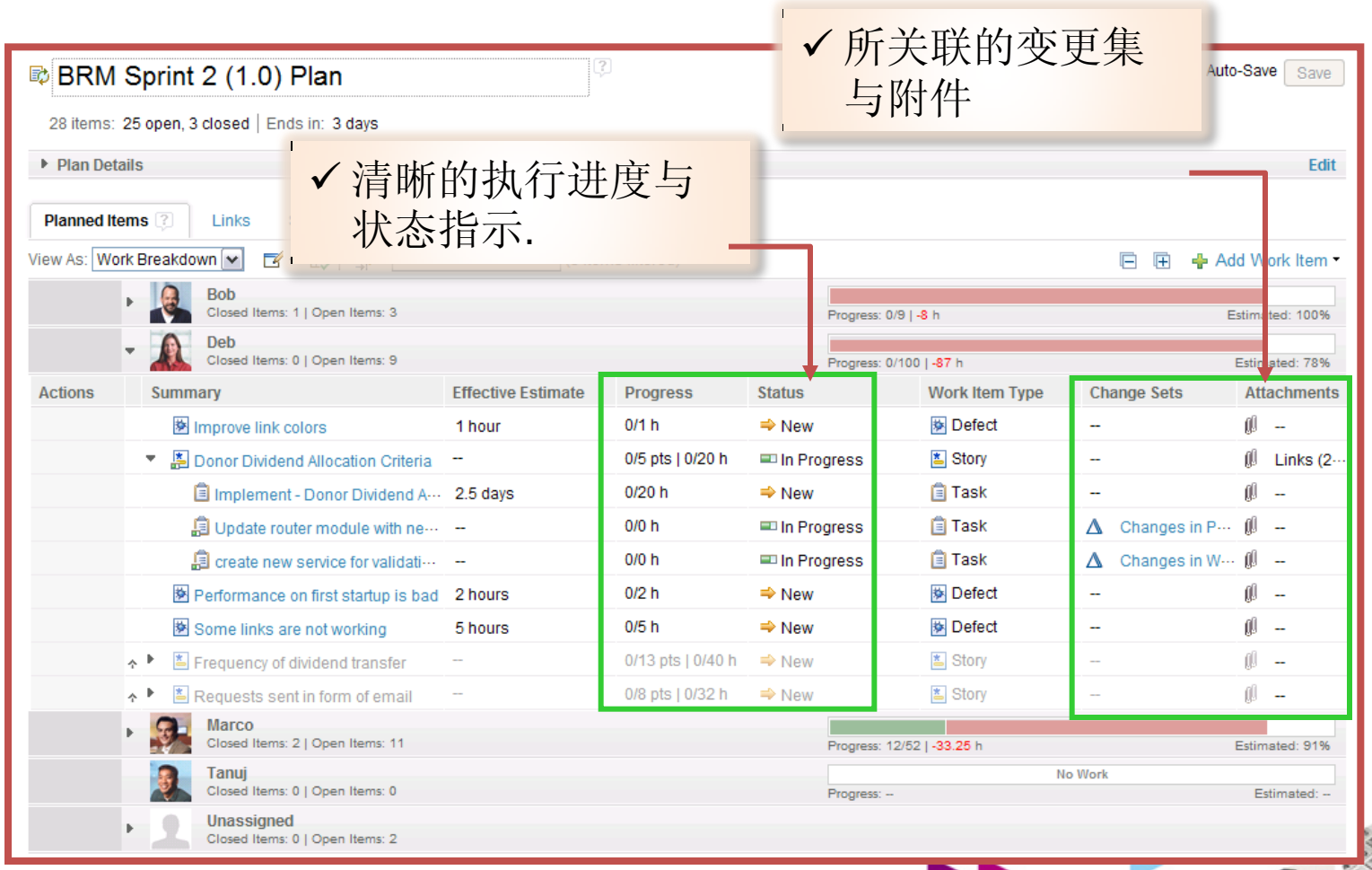
- 人人参与计划

✓ 计划包含所有工作
✓ 包含所有成员

✓ 故事分解为一系列任务

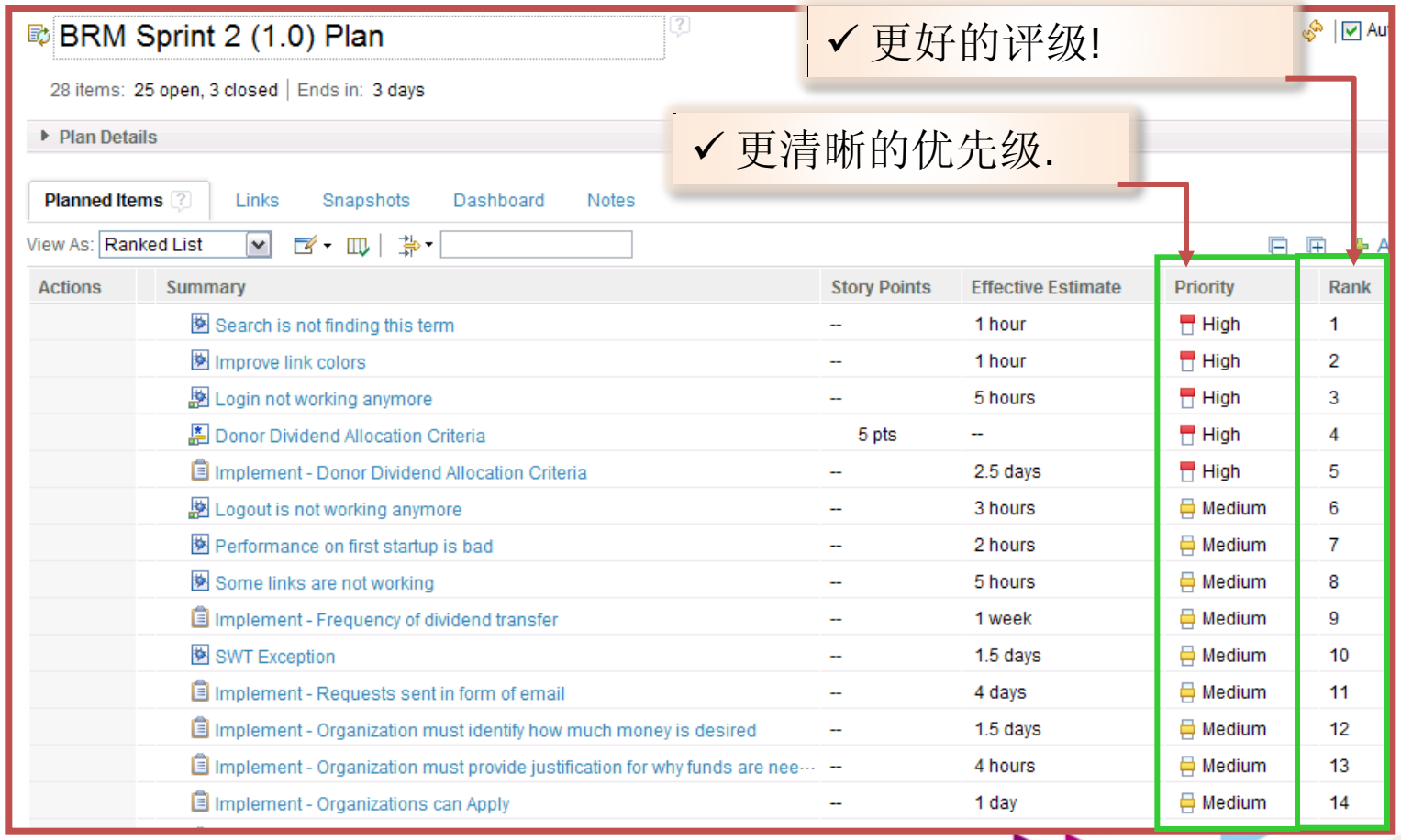


- 交付物和工作产品作为结果展现
  计划与执行相结合



优先级提高团队效率

- 团队清楚的了解目标



BRM Sprint 2 (1.0) Plan

28 items: 25 open, 3 closed | Ends in: 3 days

Plan Details

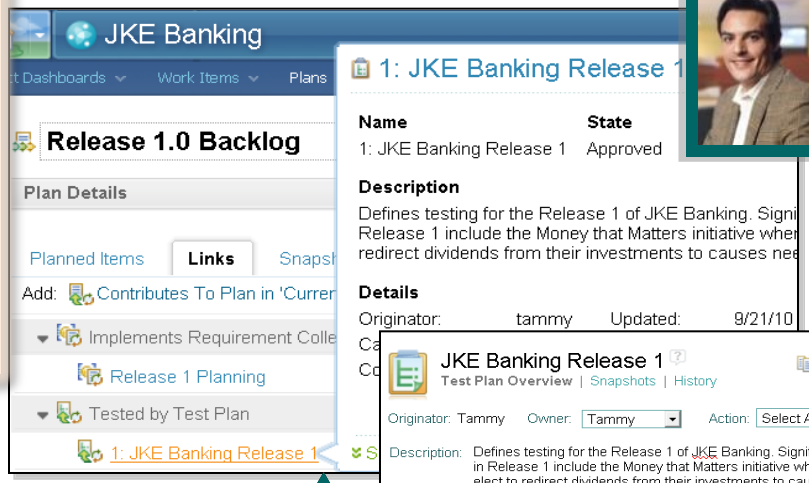
Planned Items | Links | Snapshots | Dashboard | Notes

View As: Ranked List

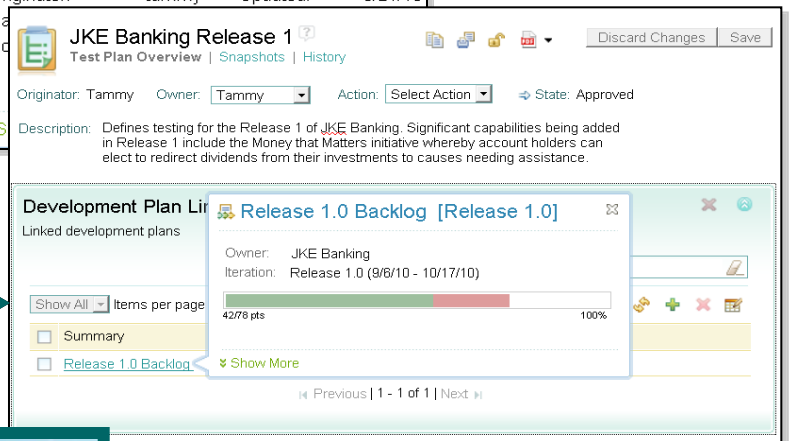
Actions	Summary	Story Points	Effective Estimate	Priority	Rank
	Search is not finding this term	--	1 hour	High	1
	Improve link colors	--	1 hour	High	2
	Login not working anymore	--	5 hours	High	3
	Donor Dividend Allocation Criteria	5 pts	--	High	4
	Implement - Donor Dividend Allocation Criteria	--	2.5 days	High	5
	Logout is not working anymore	--	3 hours	Medium	6
	Performance on first startup is bad	--	2 hours	Medium	7
	Some links are not working	--	5 hours	Medium	8
	Implement - Frequency of dividend transfer	--	1 week	Medium	9
	SWT Exception	--	1.5 days	Medium	10
	Implement - Requests sent in form of email	--	4 days	Medium	11
	Implement - Organization must identify how much money is desired	--	1.5 days	Medium	12
	Implement - Organization must provide justification for why funds are nee···	--	4 hours	Medium	13
	Implement - Organizations can Apply	--	1 day	Medium	14

计划保证按时交付

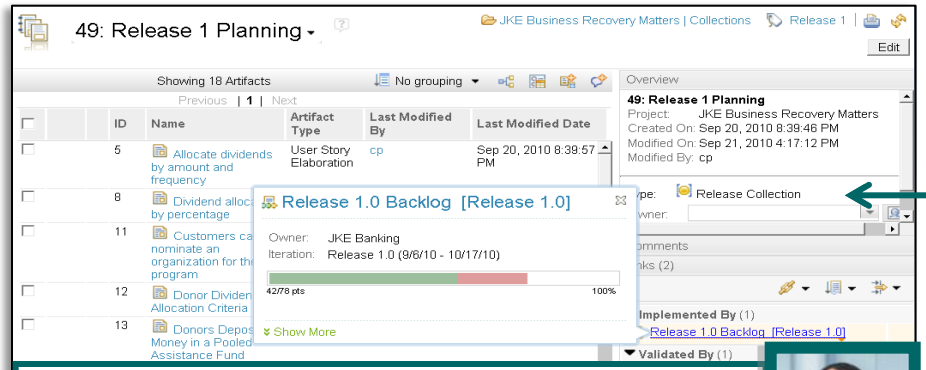
- ✓ 避免无效的投入– 开发是准确的基于需求。
- ✓ 质量保障 – 测试团队清楚的了解什么需求以及功能还没有被测试验证过。
- ✓ 整个团队的认同增进的团队的信任，提高了效率与关注度

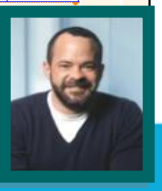


开发者理解业务需求和测试工作量



Testers understand Sprint Plans and business expectations





Requirements owners clarify the business needs in a collection

测试实时规划能力

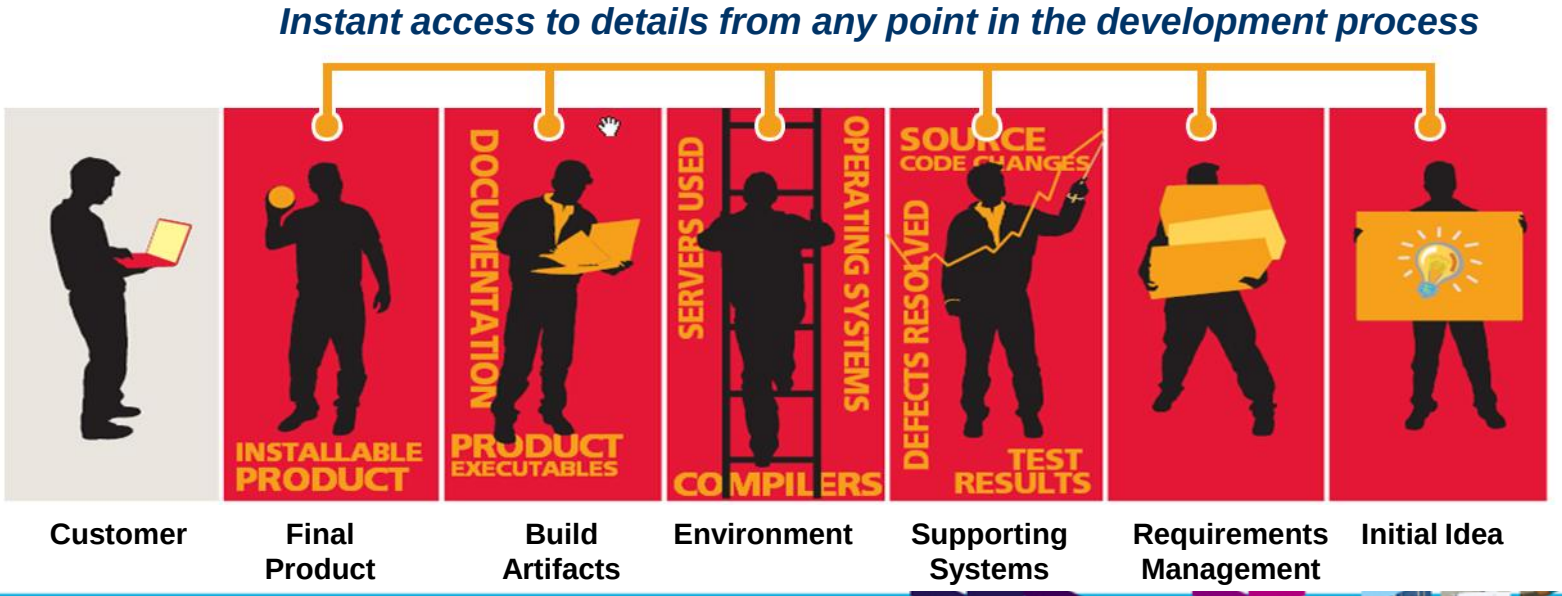
你的团队能...?

- 跨越整个团队进行计划?
- 适应瀑布、迭代、敏捷多种不同开发方法?
- 计划与执行紧密结合?
- 迅速察觉变更对项目范围和资源的影响?

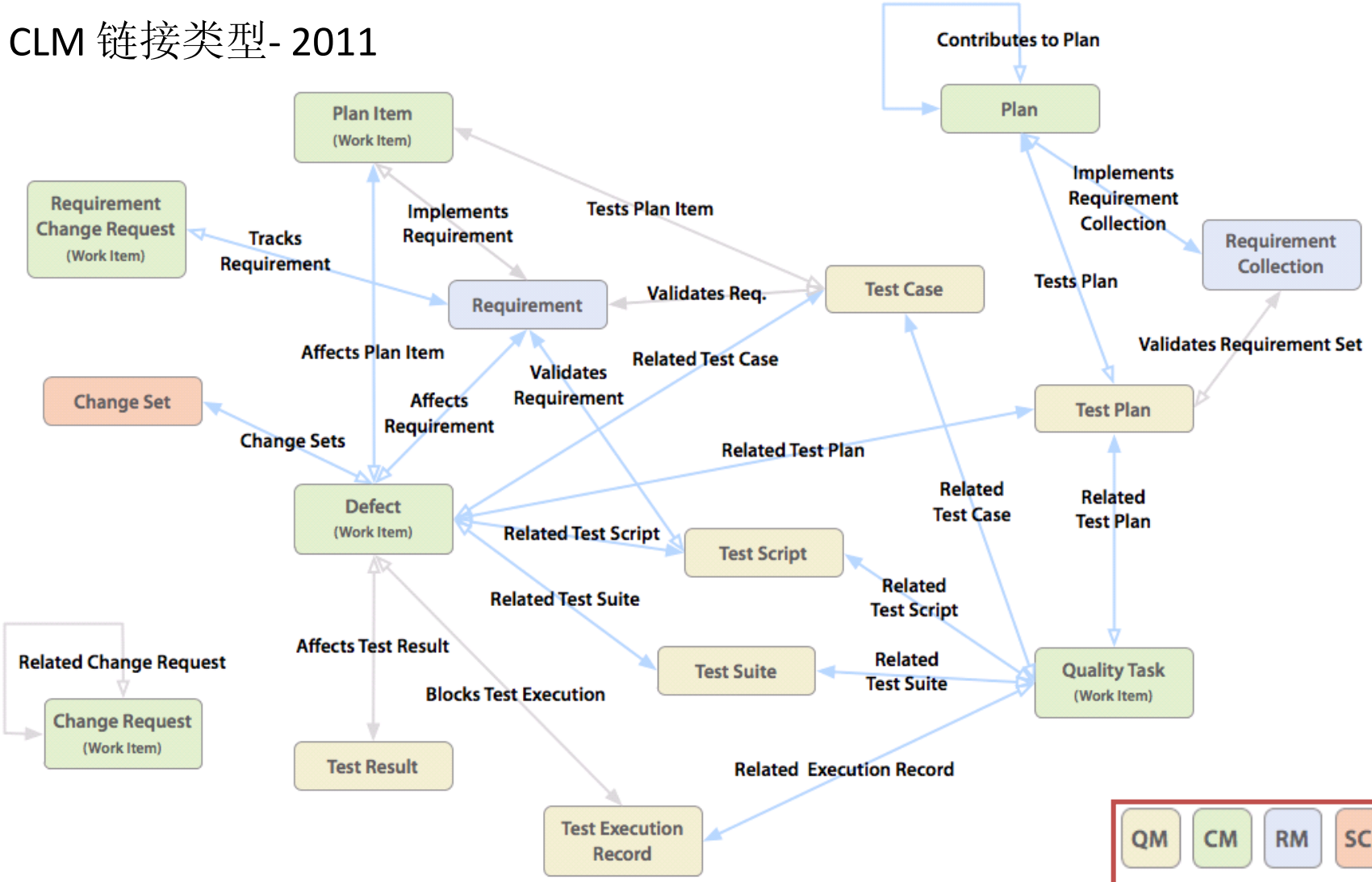
要素2：什么是全生命周期追踪?

全生命周期追踪提高了质量:

- 建立软件资产之间的**关联关系**
- 帮助识别与减少工件之间关系的缺失,确保**覆盖率**
- 提供可视化能力，确保计划项的**完整性**
- 提供方便的访问途径，可以快速访问**相关联的工件，**确保团队的统一视图
- 提供了透明化管理，保障每个人能给予业务优先级进行**准确的决策**

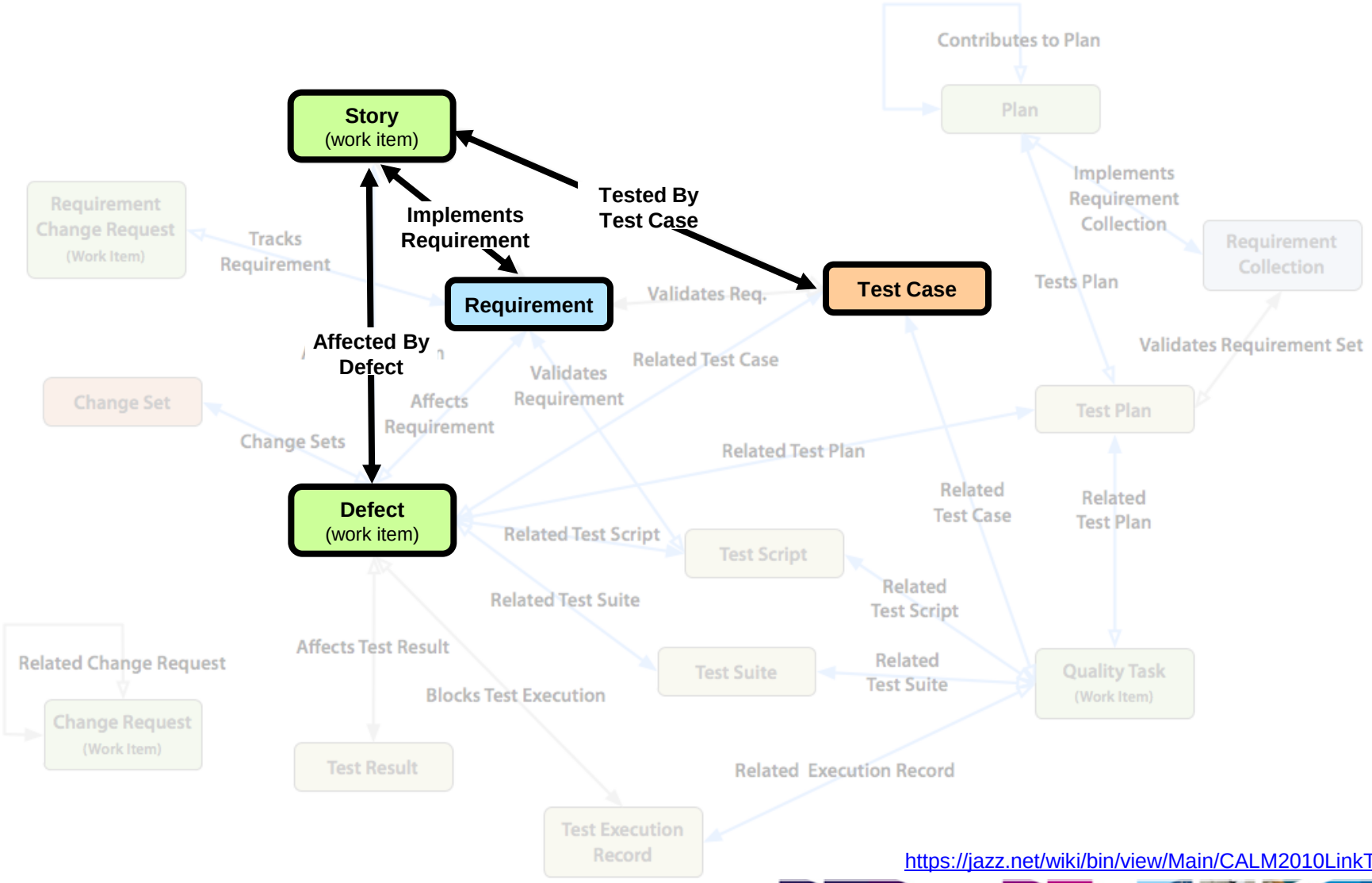


CLM 链接类型- 2011



Learn more at: https://jazz.net/wiki/bin/view/Main/CALM2010LinkTypes

SCRUM 流程模板

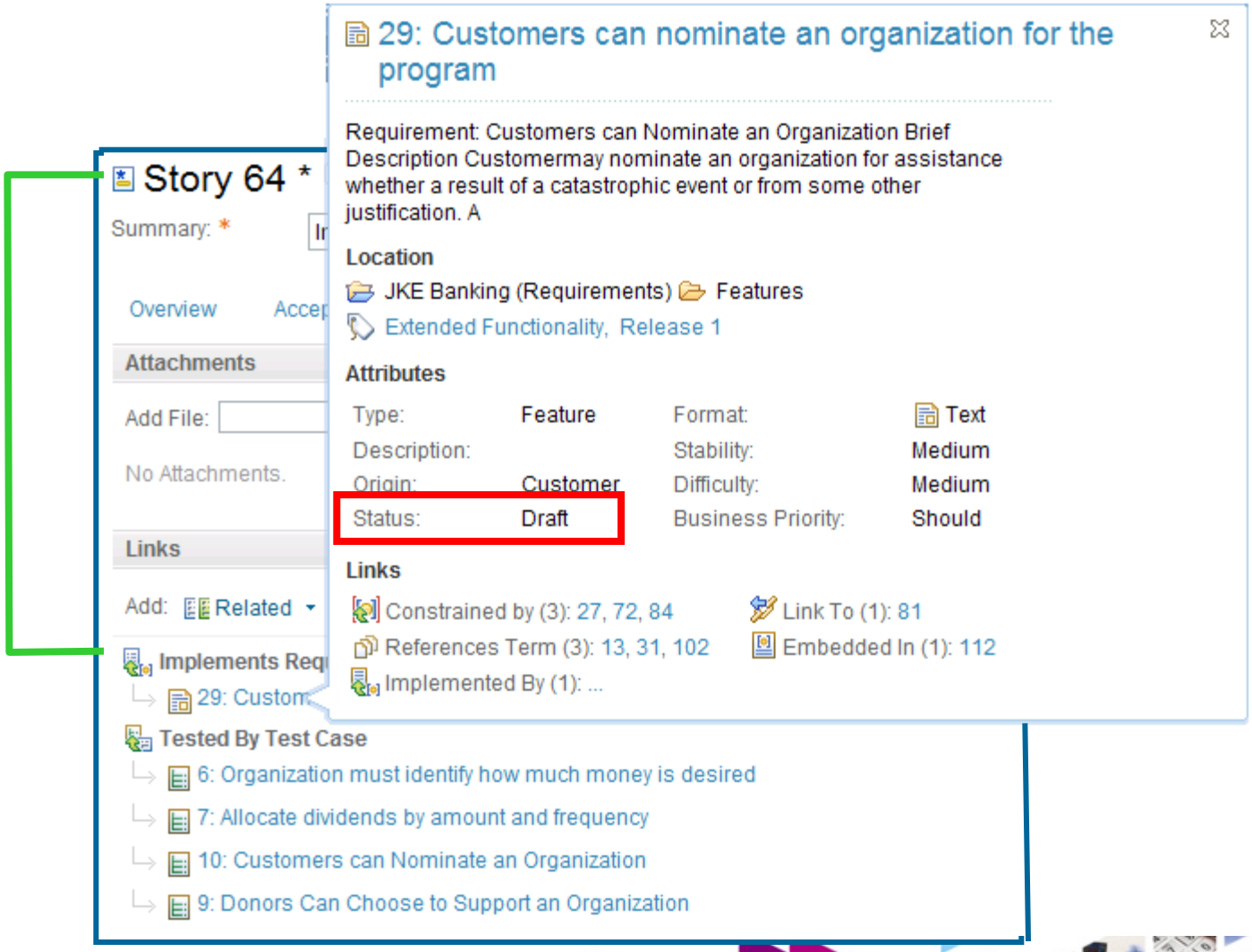


https://jazz.net/wiki/bin/view/Main/CALM2010LinkTypes

对所需实现的需求，开发者拥有透明化、可视化的能力

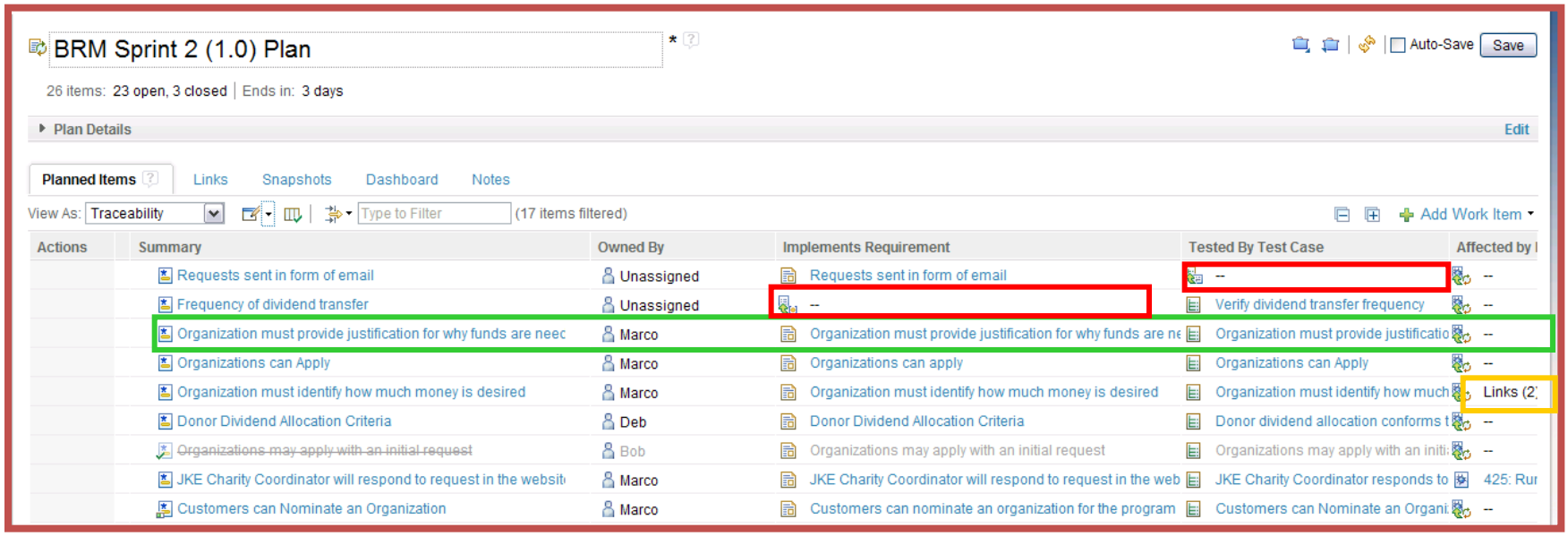
对于开发者

- ✓ **Rich Hovers技术提高了更快速精准的信息定位能力.**
- ✓ **链接提供了需求相关联的有价值信息**



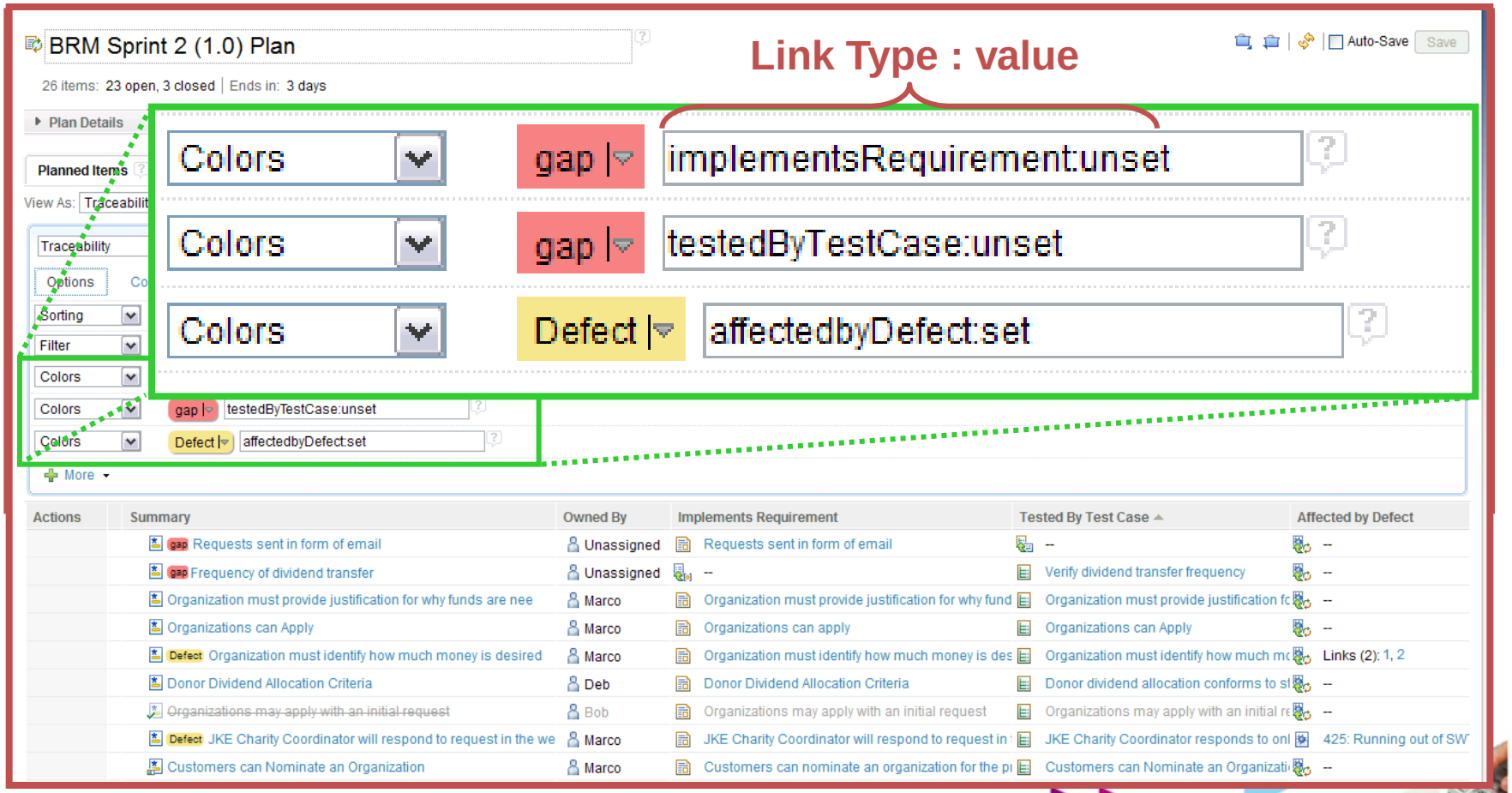
团队主管可以查看完成性与覆盖率

- 主动的针对项目中存在的不完整性进行相应
- 快速的关注和解决问题



团队主管可以查看完成性与覆盖率

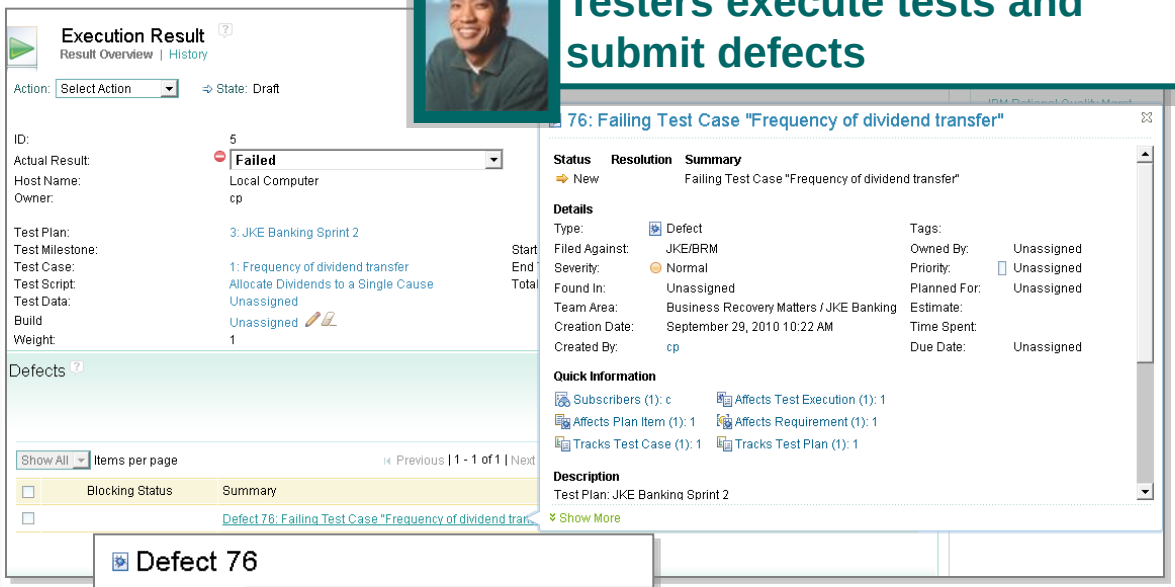
根据需求剪裁可追踪视图

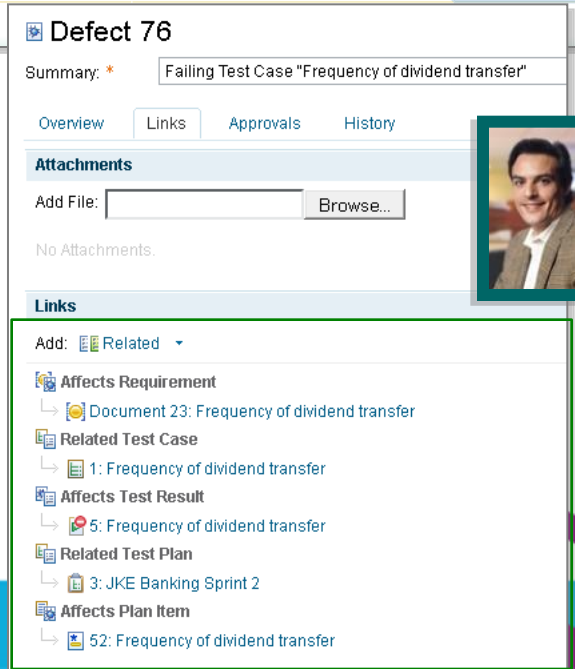


自动化缺陷追踪能力，降低成本、提高质量

- ✓ 四步点击就可以提交缺陷，并自动化管理受影响的工件
- ✓ 测试结果被记录，链接到测试用例，并关联到相应的需求
- ✓ 测试结果被链接到软件的构建版本上
- ✓ 团队成员能够洞察缺陷本身，以及影响范围，从而采取更好的解决方案

Testers execute tests and submit defects





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

测试你的全生命周期追踪能力

你的团队是否回答这些问题？

Analyst

Which requirements are addressed in this iteration?

Are all of the requirements tested?

What's the quality of the high priority requirements?

What defects are reported against which requirements?

Project Manager

Can we pass an audit?

Are we ready to release?

What defects were resolved in this release?

What tradeoffs can we make to release on time?

Developer

What requirements am I implementing?

What test uncovered this defect, on which environment and what build?

How can I recreate the last version to do a patch?

What changes occurred overnight?

Release Engineer

How can I standardize when teams use different tools?

Where are the bottlenecks in our processes?

Are build times getting longer or shorter?

How can I speed up my builds?

Quality Professional

What is the quality of the build?

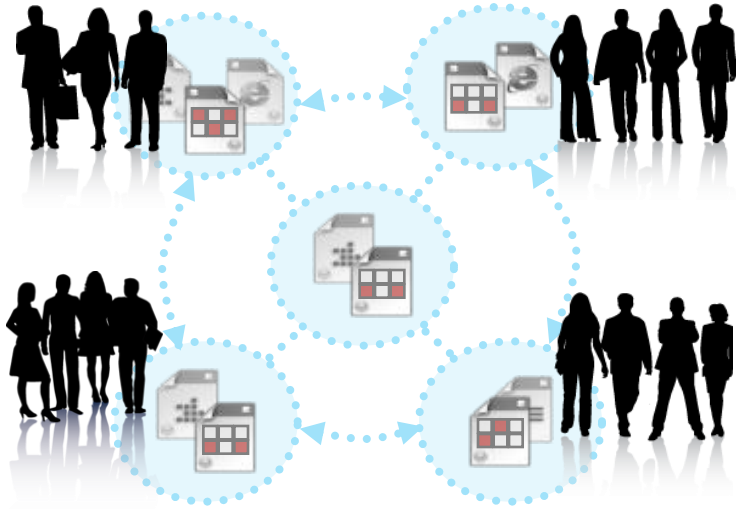
What has changed that I need to test?

What defects have been addressed since the last build?

要素3：什么是基于上下文的协作?

基于上下文的协作提高生产率:

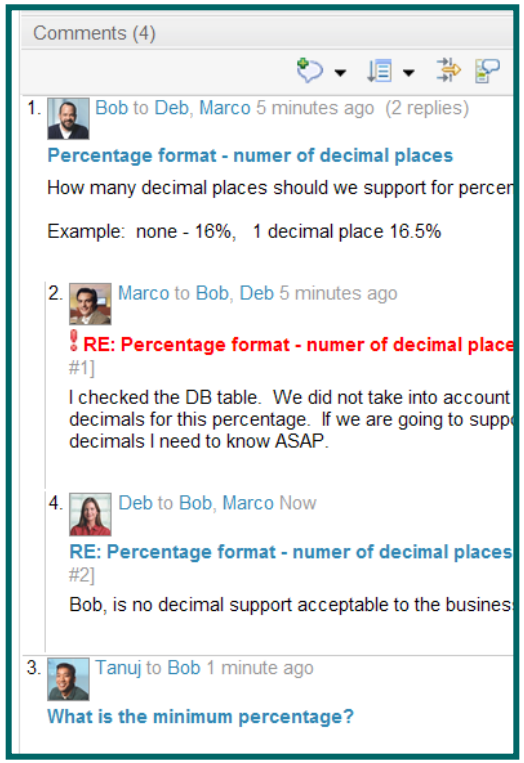
- 在整个团队中，基于工作的上下文，随时访问信息
- 团队成员能够审核软件开发工件，进行更好的合作，更早更频繁的提供反馈意见
- 提供统一的数据源，实现全球化高协作的开发模式



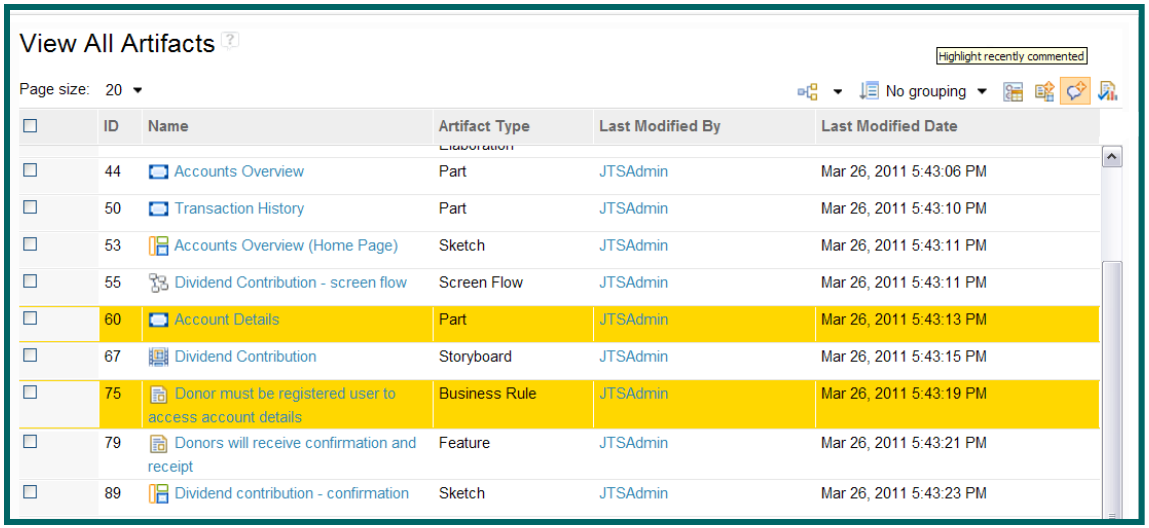
无需鼠标点击，实现自动化信息读取

- ✓ Rich hovers技术提供了快速读取详细信息能力

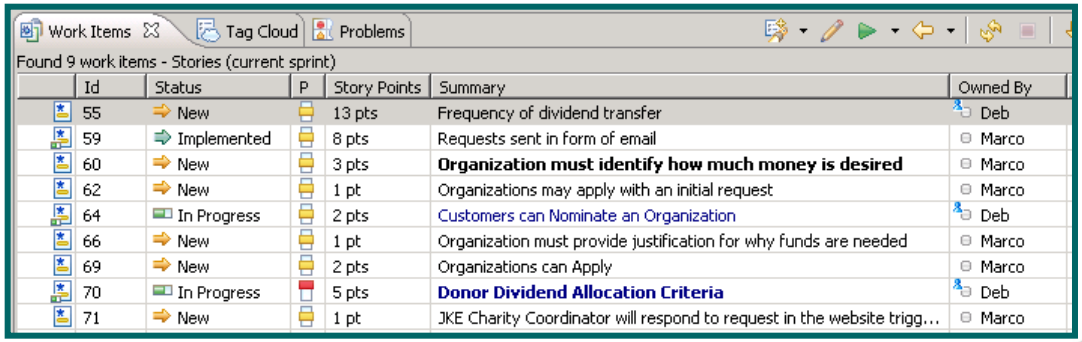
基于上下文的协作，展示最新信息



Threaded discussions on requirements

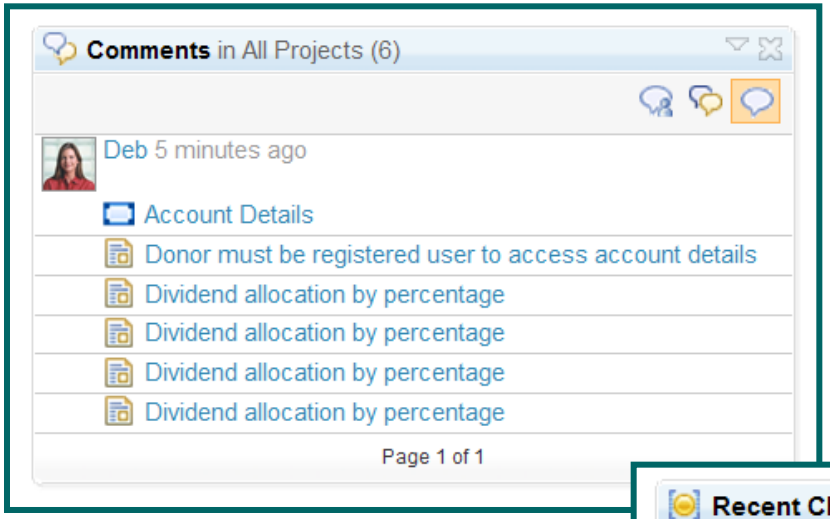


Recent Threaded discussions highlighted on requirements



Unread work Items bolded for developers

仪表盘帮助快速获取最新信息

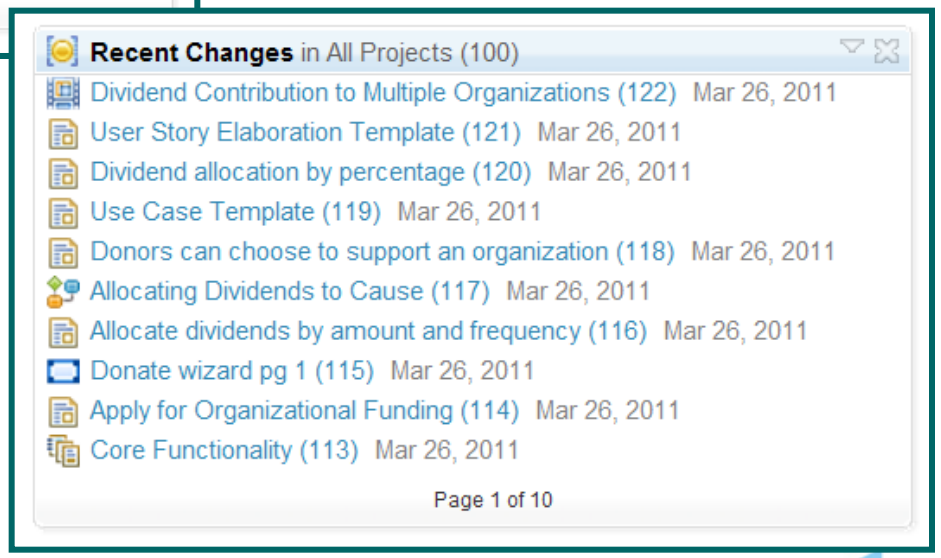


Requirements comment updates

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.



术语表提供团队通用词汇

ID	Name	Artifact Type
17	Enterprise Glossary	Glossary Collection
18	Bank Regulation	Term
22	Account Activity	Term

JKE Banking (Requirements) > ... > Features >

79: Donors will receive confirmation and receipt

s issued at regular
the period in

Key Scenarios

1. Donor will receive confirmation notice that donation has been processed.
2. Once the confirmation is received, the Back Office System will initiate an email to the donor based on the primary contact information in the donor's profile.
3. If the profile indicates no email address available and or the given email address is not valid, then a hard copy of the donation will be sent to the donor's mailing address specified in the donor's profile.
4. The Donor will receive an email - mail notice affirming the donation % ar
    1. If in email, the donor will be provided an option to print the confirm for tax purposes.
5. The printed confirmation notice must be in a format that is acceptable by state, and province agencies and will be mail in their Bank Statement

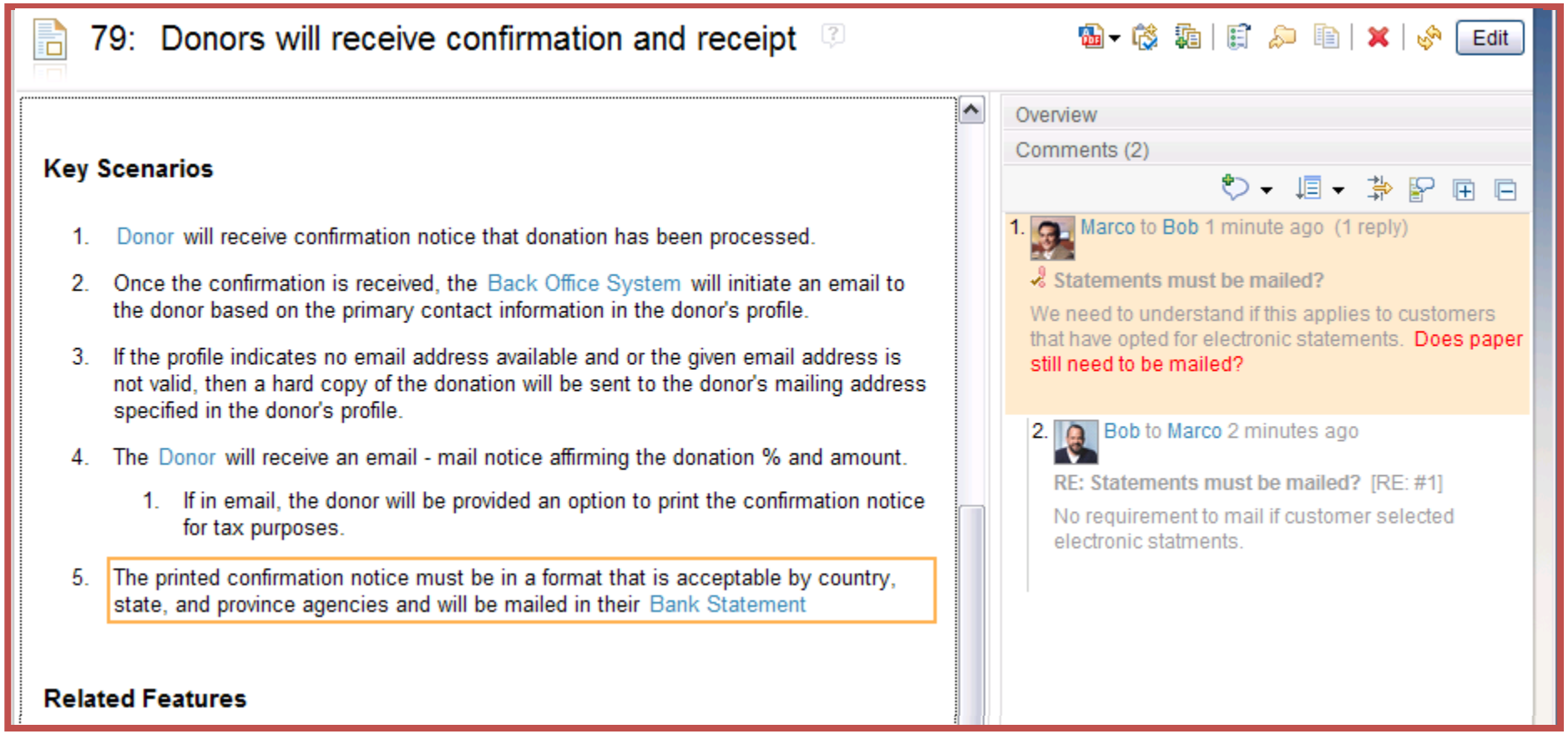
Related Features

24: Bank Statement

A periodic record of a customer's Account that is issued at regular intervals, showing all transactions recorded for the period in question,

Show More

需求注释是基于上下文的



A click on the comment highlights the text under discussion.

测试基于上下文协作的能力

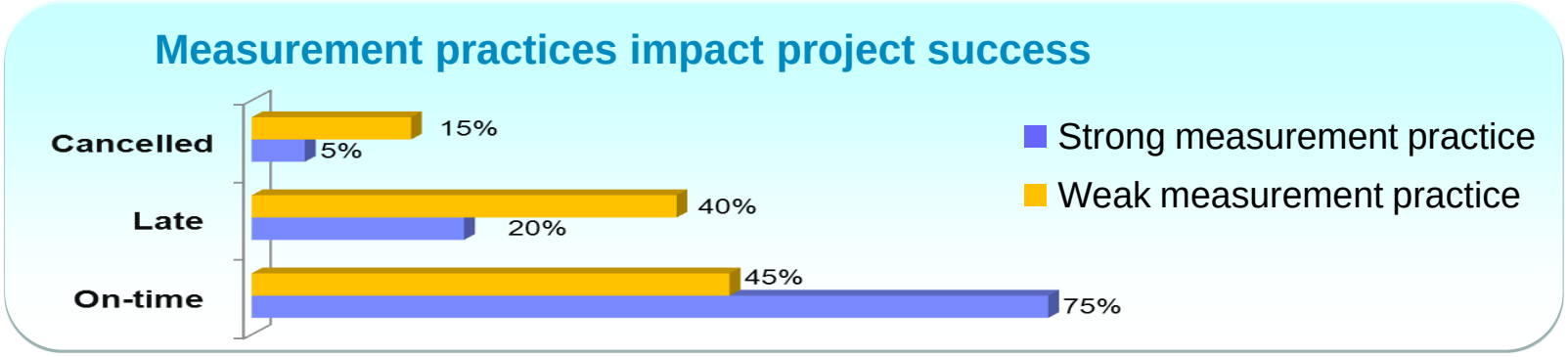
你的团队是否...

- 通过连接工件信息，能否对同一的数据源进行快速的访问？
- 能否针对工作，快速的抓取“谁，做了什么，什么时间，为什么做”等信息？
- 让新团队成员快速融入工作?
- 在外包或者分布式开发团队中，克服不同时区而导致的工作瓶颈和障碍？

要素4：什么是智能开发？

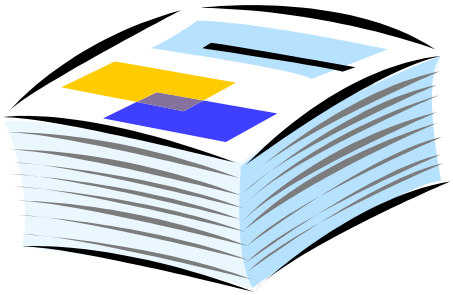
通过以下，智能开发提高了可预测性:

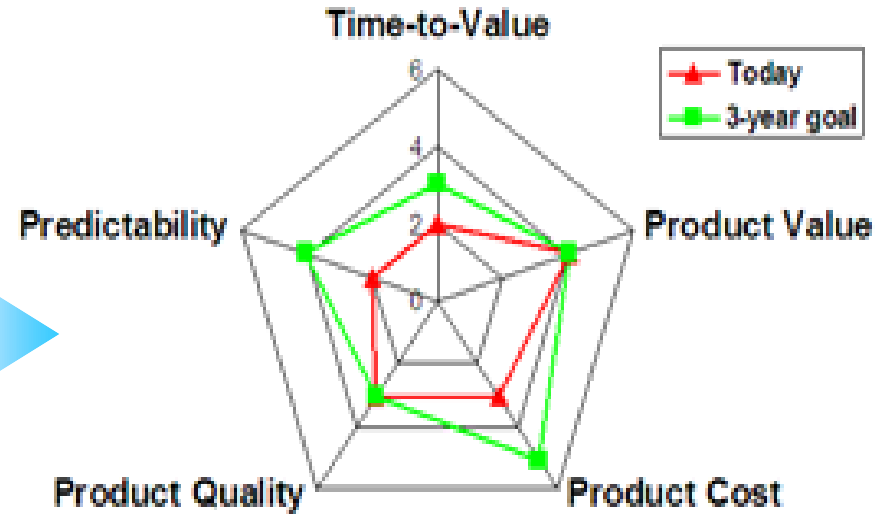
- 在软件以及系统开发中，应用了**商业智能**分析技术
- 实现了**基于事实模式**的决策分析 (从而实现进度监控、状态沟通、问题诊断、识别纠错行为，等等。)
- 为了达到按时交付，**调整项目和项目群组**



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

要素4: 智能开发





Don't

手工手机数据.

“大而全”的开始度量

期望第一次就可以完成

Do

使用仪表板取得真实的信息，使用基于团队活动数据生成的报告

识别当前需要改进的重点

开发改进度量体系

从团队关注的进度到执行官关注的业务价值

从每个不同的管理视角，确定准确的度量尺度

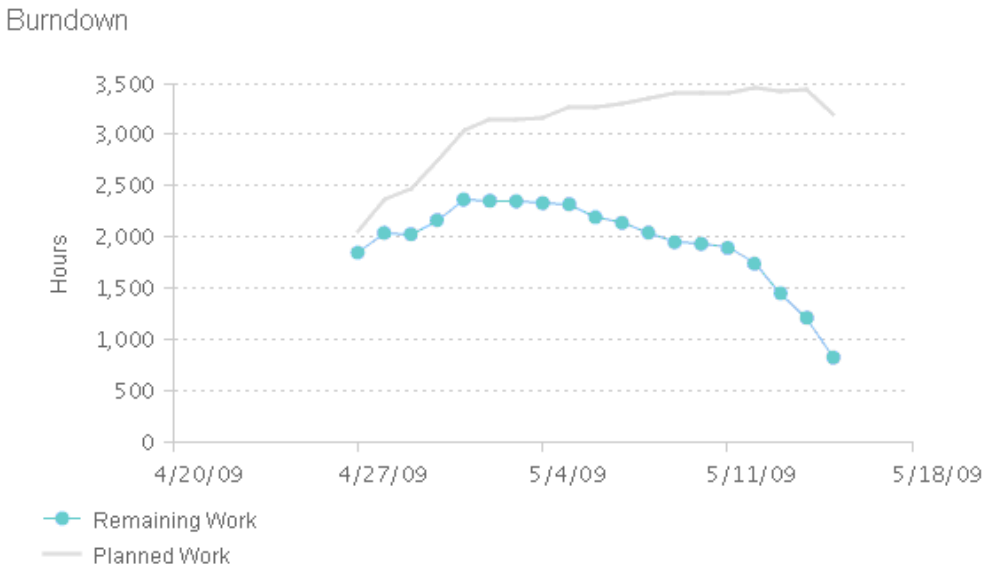
维度	团队 (In Process)	中层管理 (Development Mgmt.)	开发执行官(VP Development)
Time-to-Value (Schedule)	**User Story Points / Use Case Points**		
	Iteration Burndown, Blocking Work Item		
		Release Burndown	
Product Value	**Iteration Velocity**		
	Stakeholder Feedback, # **of Enhancement Request**, **Age of Enhancement Request**		
		Tested and Delivered Requirements, Business Value Velocity, Customer Satisfaction	
Product Cost	**Effort (Man-hours)**		
		Cost / Unit of work	
			Development / Maintenance Costs
Product Quality	**Technical Debt (Defect trend, defect density)**		
	Test Status, Test Coverage of Requirement, Test Execution Status		
		Quality at Ship	
Predictability	**User Story Points / Use Case Points**		
		Planned/Actual Cost and Velocity	
		Trend Variance. Likelihood of on-time delivery	

Note: **Bold** indicates that there is Out-Of-The-Box report supported by Rational tools

衡量Time-to-Value (进度)

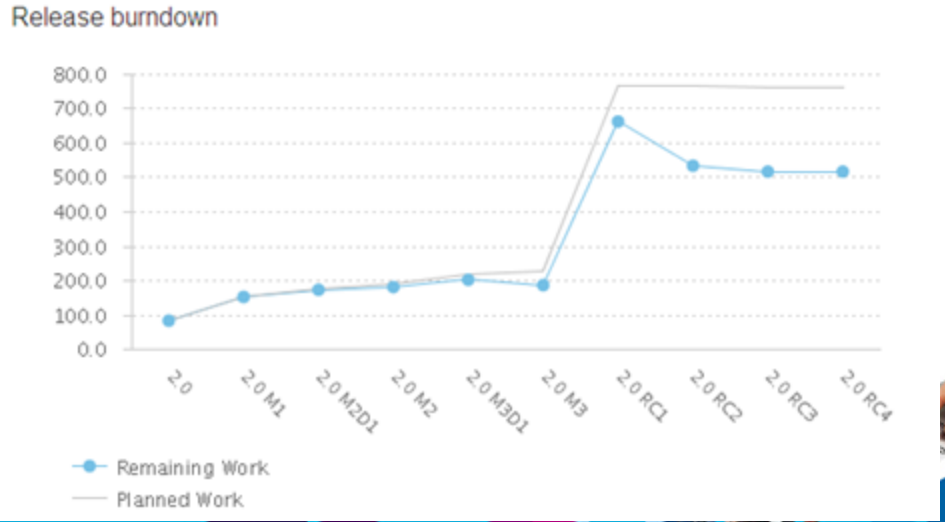
Iteration Burndown

展现在迭代中多少工作量还需要完成. 帮助团队及时的调整资源和范围，从而保障迭代的成功。



Release Burndown

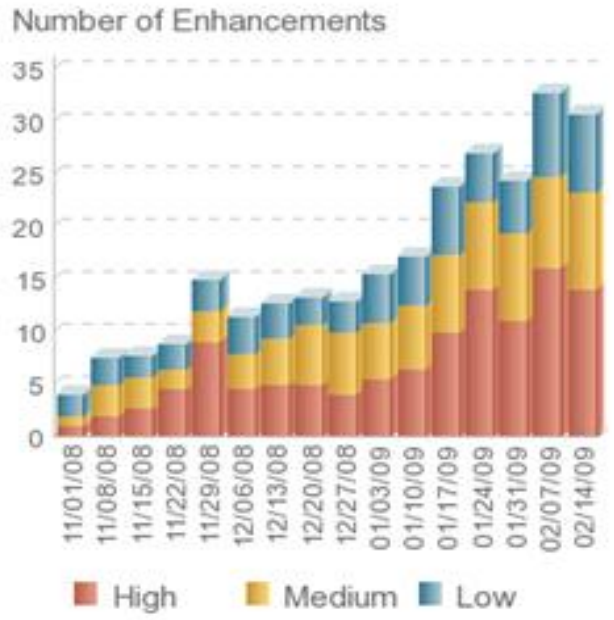
当前发布中，展现预计尚未完成的功能点



衡量Product Value

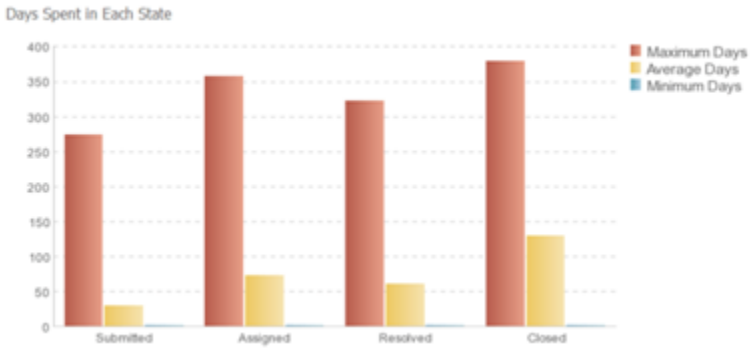
改进请求趋势

在整个项目期间，已收到、已审批、已关闭功能改进请求的要素分析. 过多的请求说明系统功能没有满足干系人的期望.



改进请求龄期

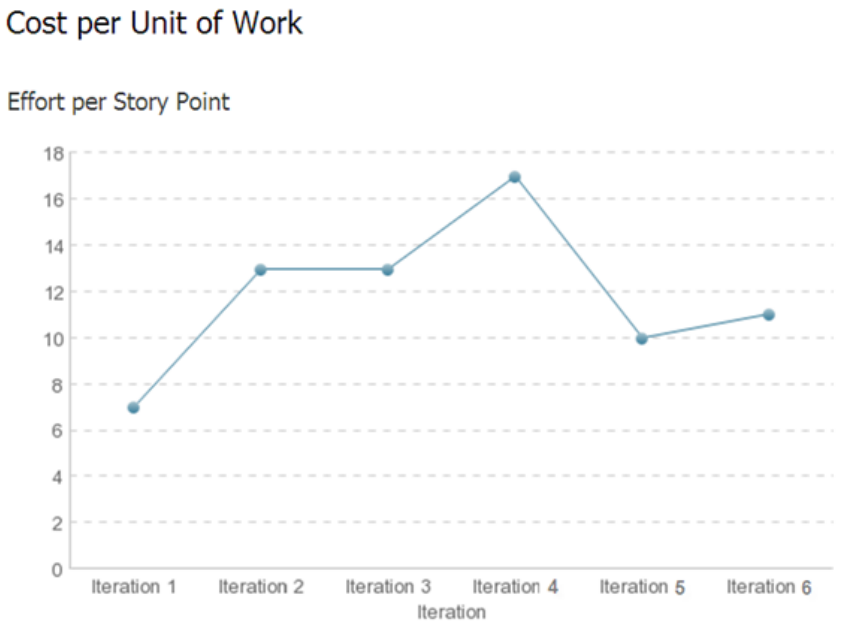
跟踪干系人改进请求保持打开状态的时间长度。仍未解决的请求会影响干系人的价值观念。



衡量Product Cost

工作单元成本

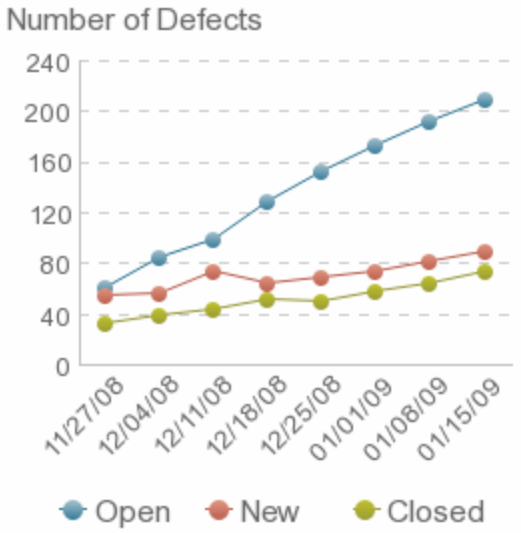
在迭代中，跟踪单一工作单元的成本（例如用户故事分）。在每次迭代中，按照这个度量标准监控，从而保证团队了解预算是否合理的被花费。



衡量Product Quality

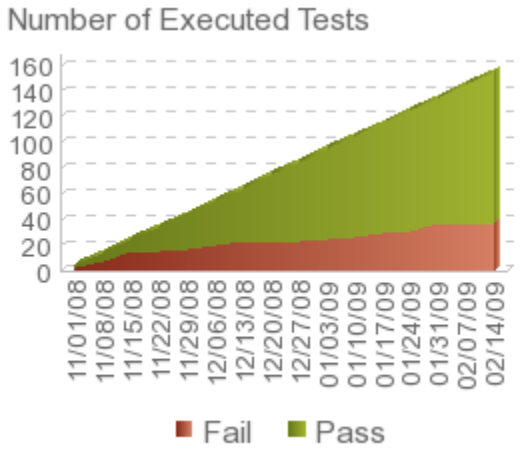
缺陷要素

展示缺陷抵达率和关闭率。
决定剩余缺陷贮备，项目未来缺陷抵达/关闭速率



测试执行状态

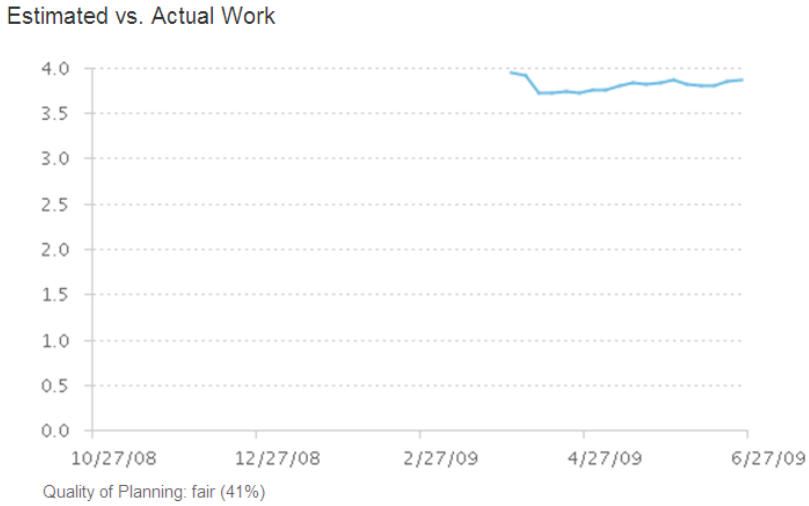
监控测试完整度和成功率



衡量可预测性

Velocity Variance

预测团队处理意外事件的能力. 帮助团队识别什么样类型的变化可能会影响项目的成本以及进度



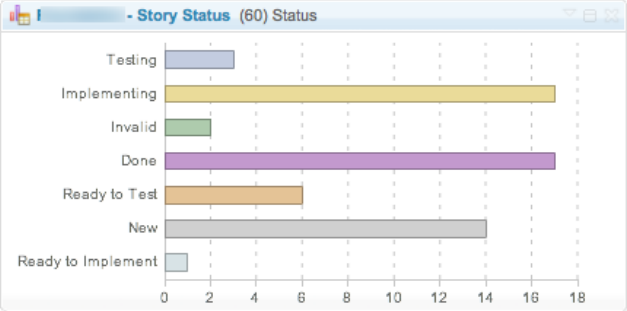
利用仪表盘提供统一项目健康视图

JKE Banking (Change Management)*

Overview | Time to Value (Schedule) | Product Value | Product Cost | Product Quality | Reports | Stabilization

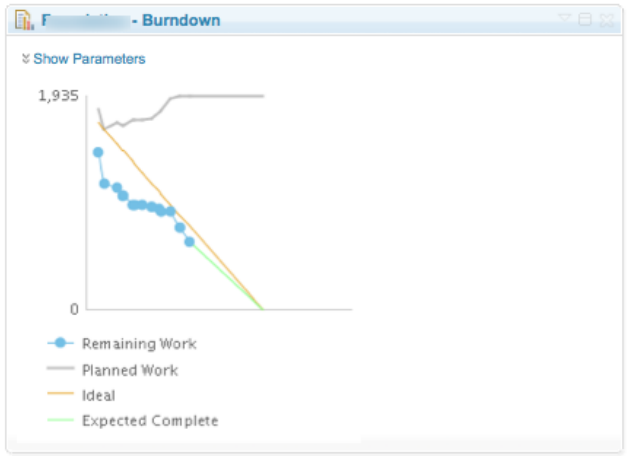
Story Status Current Iteration

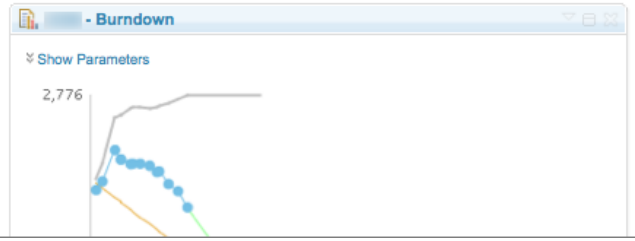
Shows the status of all stories planned for the current iteration



Burndown Current Iteration

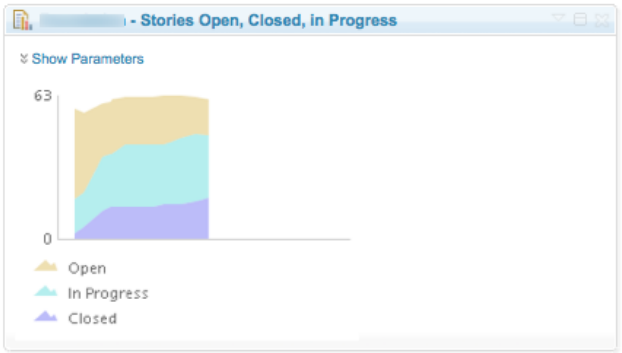
Shows the remaining amount of estimated work in hours of work items planned for the current iteration.

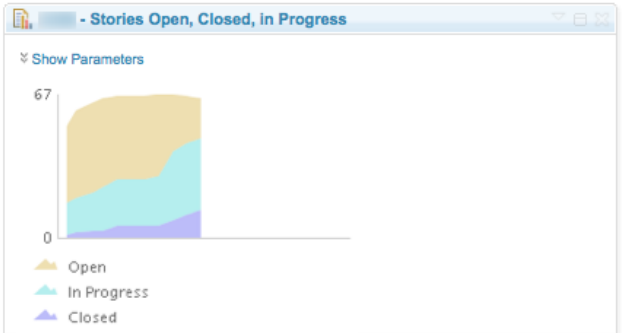




Stories Open/Closed/In Progress

Shows the number of stories which are open, in progress, done during the iteration.





测试你的而团队智能开发化

你的团队能否...

- **Time-to-Value**
  - 根据承诺的进度，产生准确的能力预测？
- **Product Value**
  - 角度有价值的产品?
- **Product Cost**
  - 衡量为了交付系统我们所花费的东西?
- **Product Quality**
  - 构建高质量的系统?
- **Predictability**
  - 管理风险和不确定性?

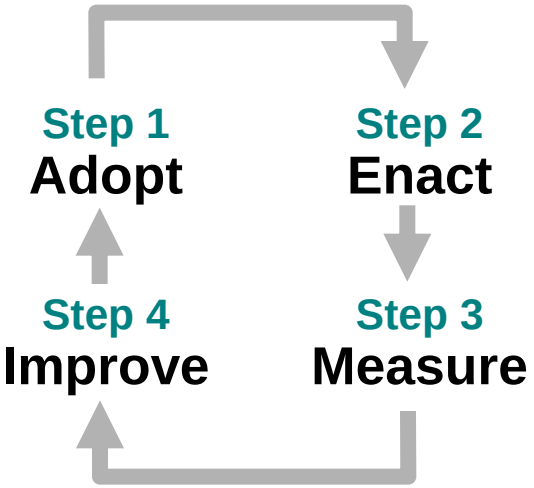
要素5：什么是持续改进?

持续改进降低了项目成本:

- 通过持续的应用**最佳实践和自动化**，减少由手工、非创造性以及容易出错的任务，从而改进软件交付
- 按照需要，以**增量**方式不断改进项目
- 跨团队的**获取最佳实践和重用**，达到改进的突破点
- 允许**每个参与者**方便的学习、采用最佳实践

> *"Successful analytics requires taking it beyond software and reporting, and into the realm of management practices and operations improvement"*
> Information Management Online, February 23, 2011

要素5: 持续改进



Don't

定义好一个流程然后放之不用

忽略过程，或者认为过程是一个不必要的负担

设定过程警察

Do

使用工具贯彻既定流程，并指导团队达到预期值.

从其他团队中学习，将其他团队的成果共享

使用工具监控，通过peer reviews 鼓励知识共享与协作

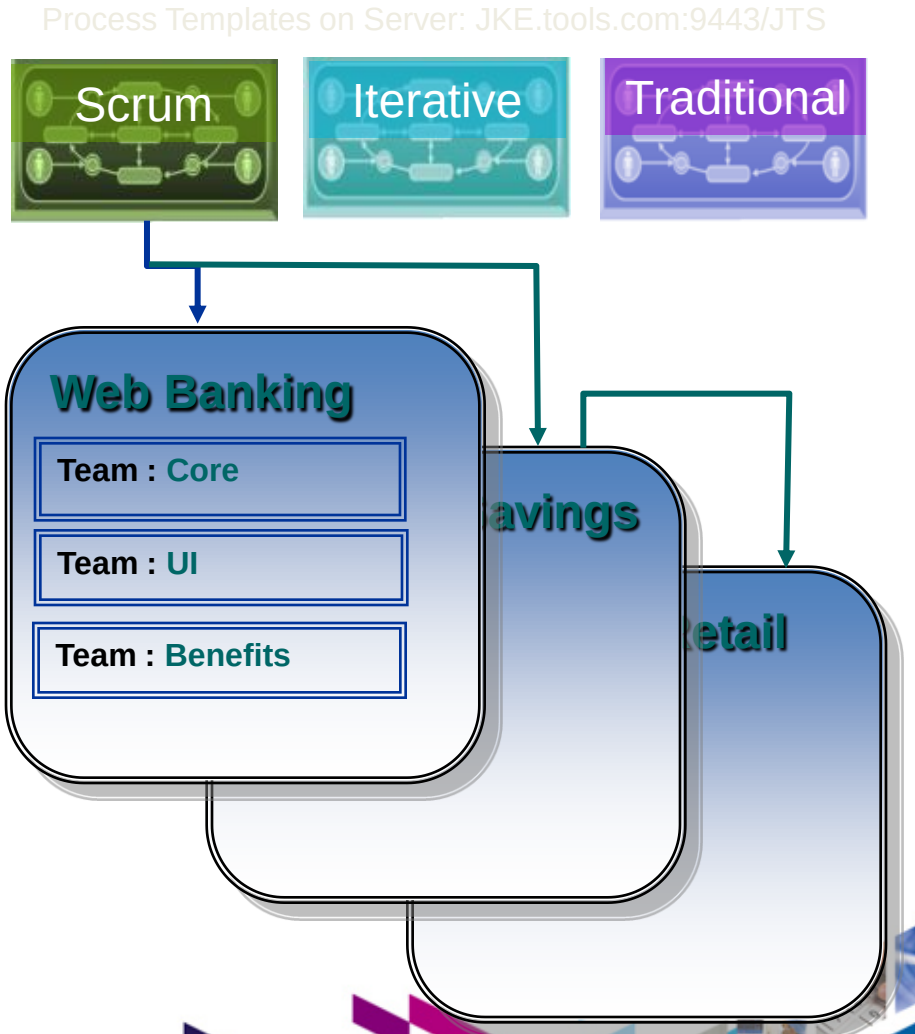
采用—共享流程

从Rational和其他团队吸取最佳实践

1. **导入导出模板**
   提供从Rational和其他团队吸取最佳实践的能力

2. **服务器支持多模板**
   允许管理员支持不同的流程。团队可以独立的改善自己的流程

3. **流程更新能够被共享**
   允许团队控制他们所需要的改进

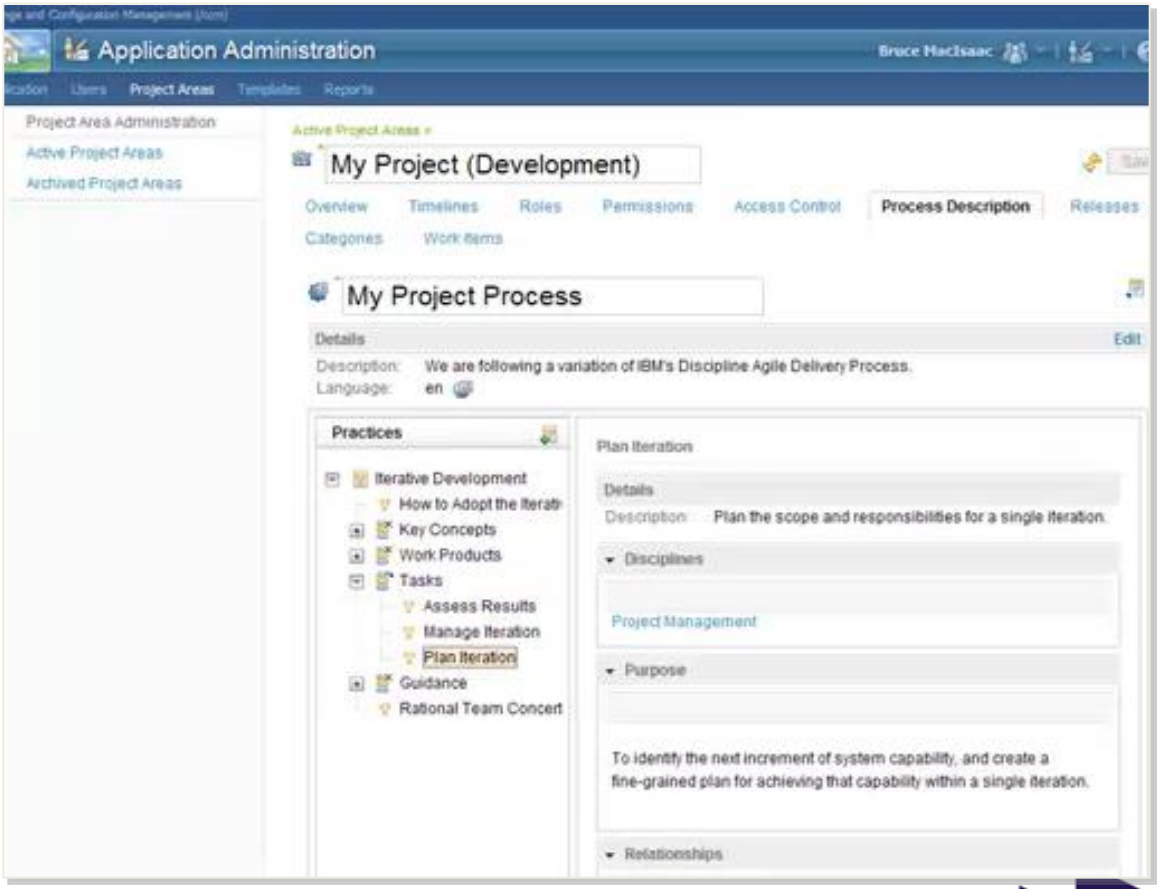


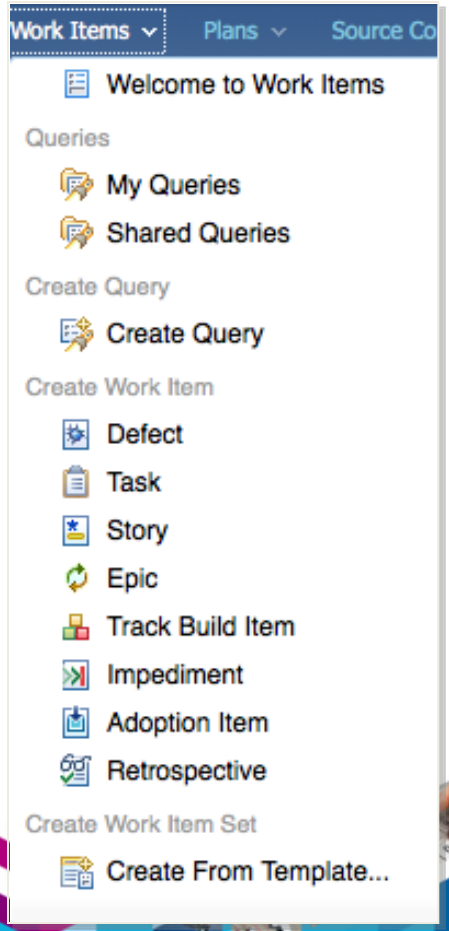
RTC 流程模板

Artifact Type (WI Type)	**SCRUM process template**	**OpenUP process template**	**Formal Project Management process template**	**Simple Team process Template**	**Money that Matters Sample process template**
Adoption Item	Y				Y
Business Need			Y		
Defect	Y	Y	Y	Y	Y
Enhancement		Y		Y	
Epic	Y				Y
Impediment	Y				Y
Issue			Y		
Milestone			Y		
Project Change request			Y		
Retrospective	Y				Y
Risk		Y	Y		
Risk Action			Y		
Story	Y				Y
Task	Y	Y	Y	Y	Y
Track Build Item	Y				Y
Use Case		Y			
Total Types:	**8**	**5**	**8**	**3**	**8**

流程规格定义和工作项模板将加速团队的适应过程

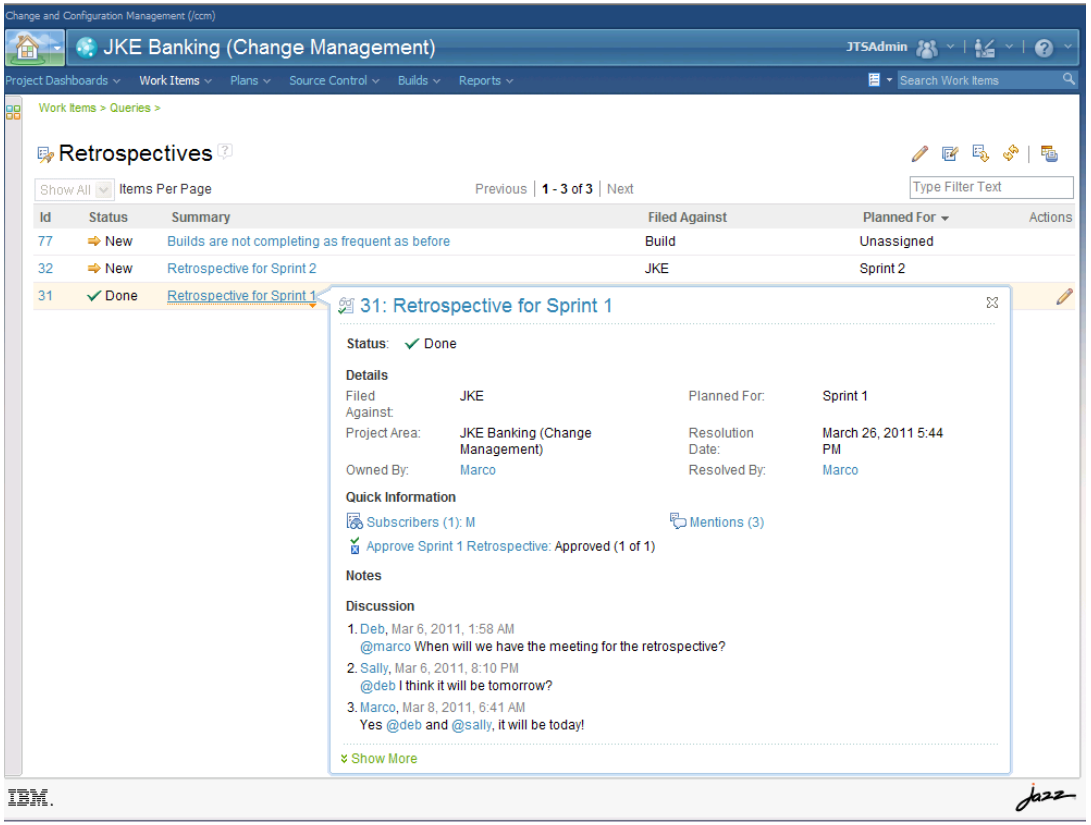
- 基于最佳实践的内容，修改过程
- 团队使用在自身流程中定义的不同工作项类型





团队回顾帮助识别改进区域

- 团队回顾帮助团队成员在互相协作实现改进
  - 根据团队在最大痛点上的感激，对流程改进进行打分.
  - 度量能力帮助流程改进，并展示改进结果.



需求稳定性

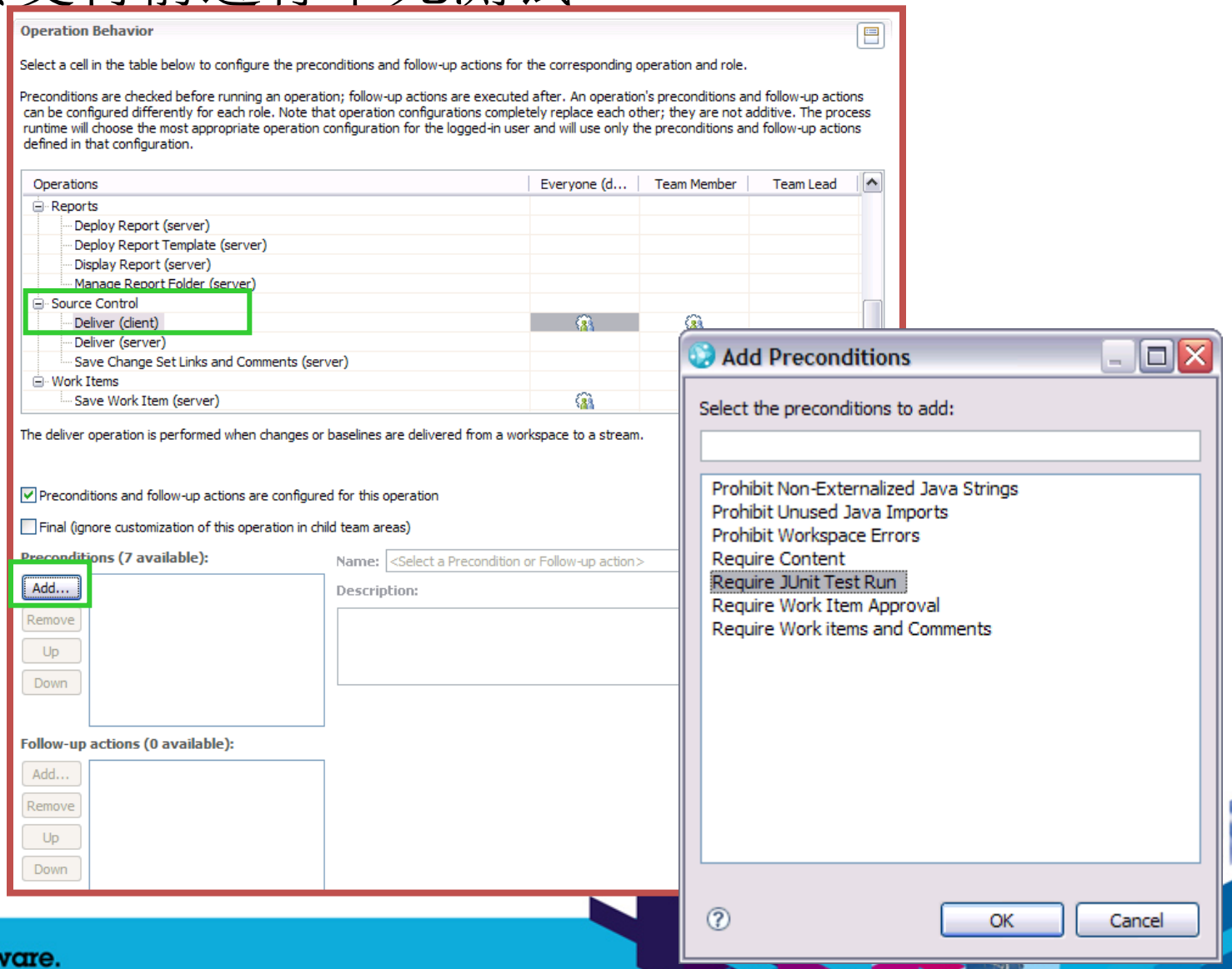
- **需求变更很频繁?**

  改进: 实现需求变更管理流程

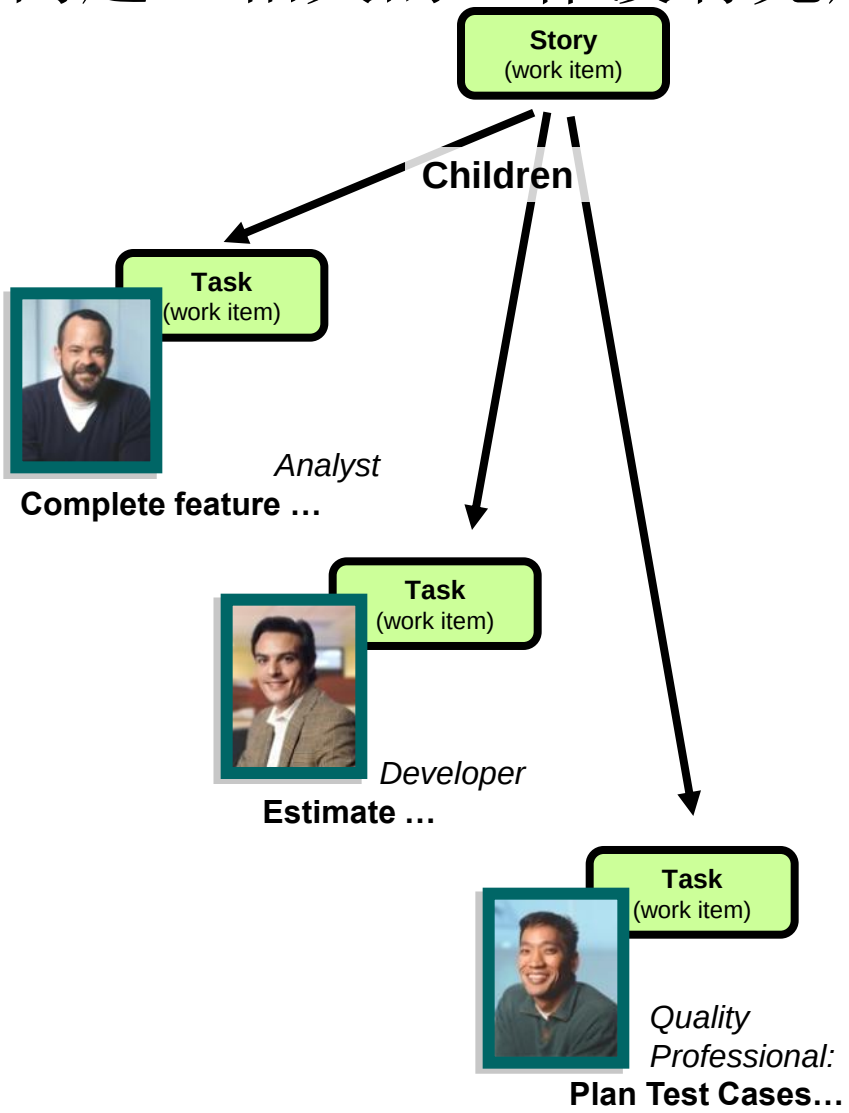
- **需求变更花费了太长时间，从而推迟了项目进度，增加了返工而造成的成本?**

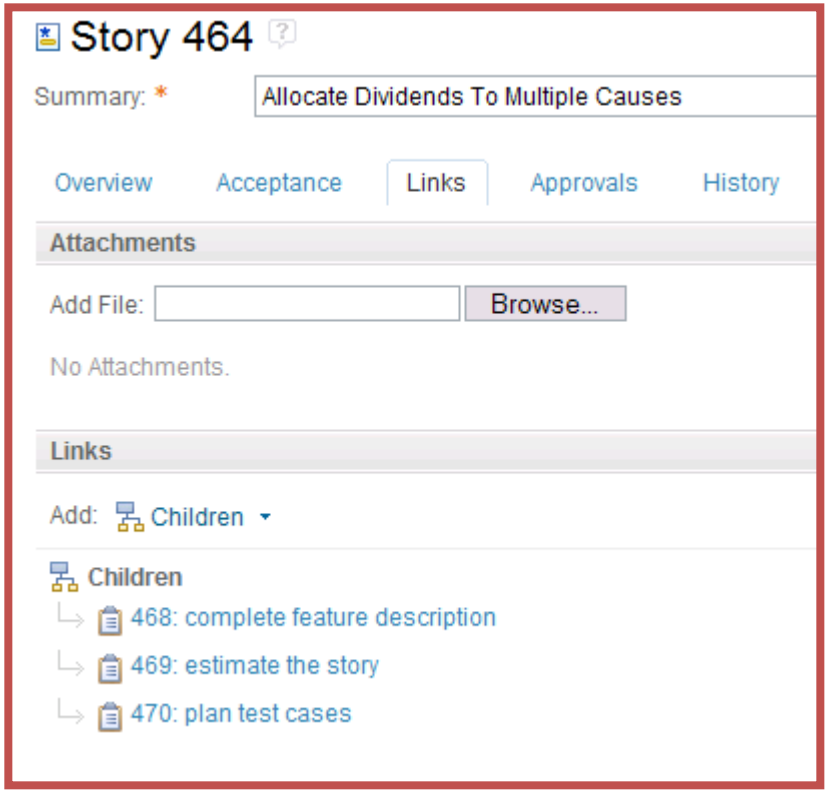
  改进：: 建立筹划指导委员会!

实现: 需要交付前进行单元测试

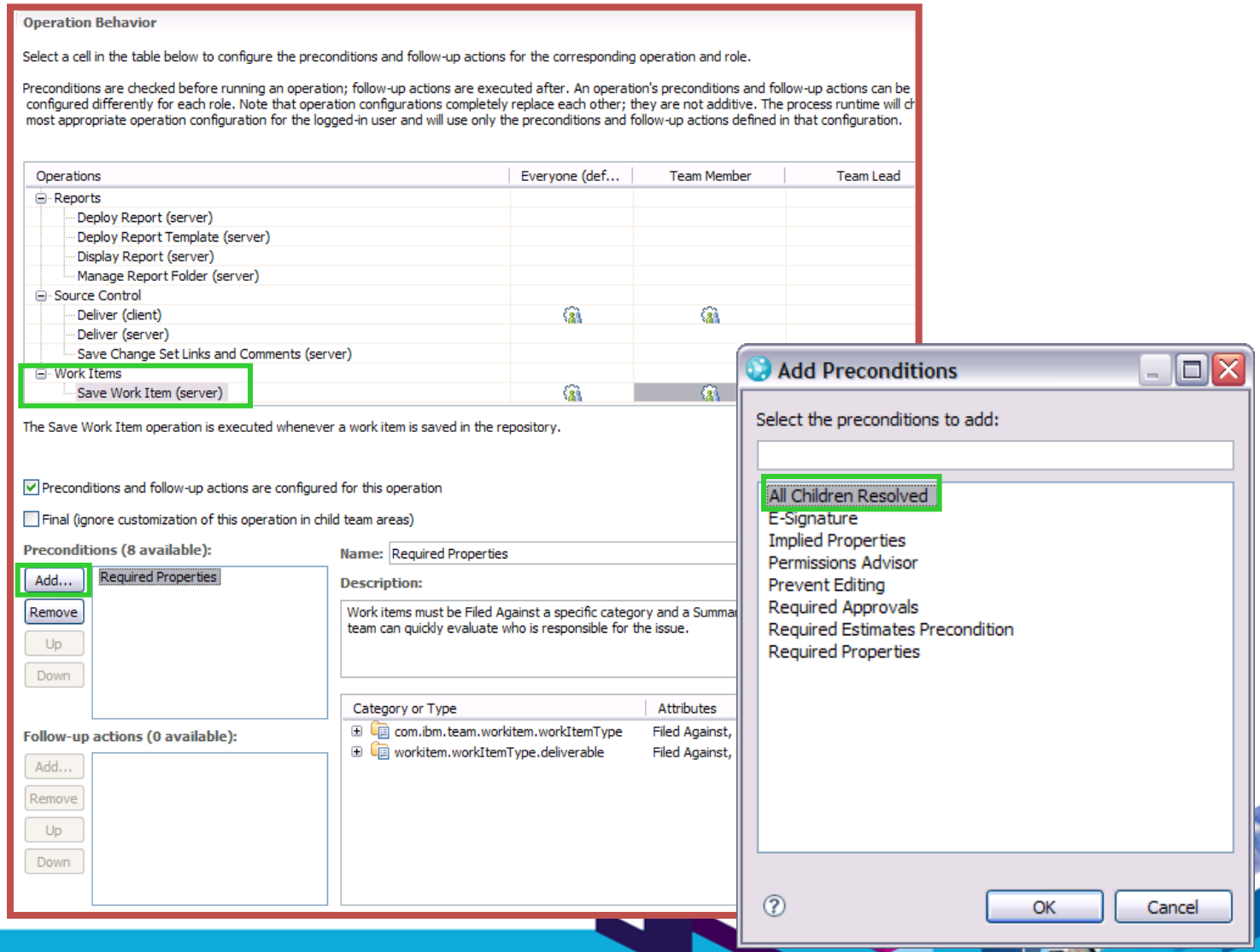


问题：相关的工作没有完成的情况下，需求完成？

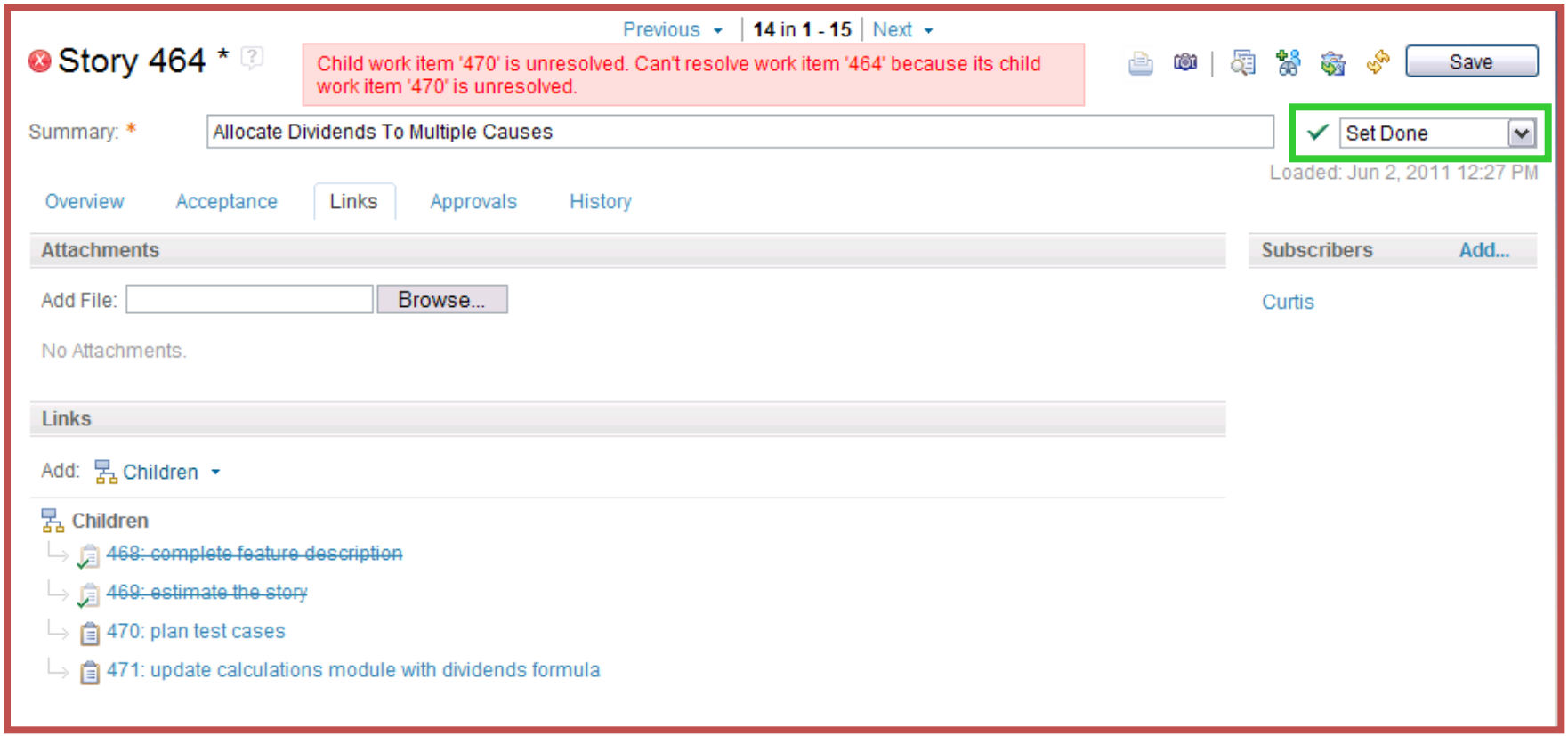




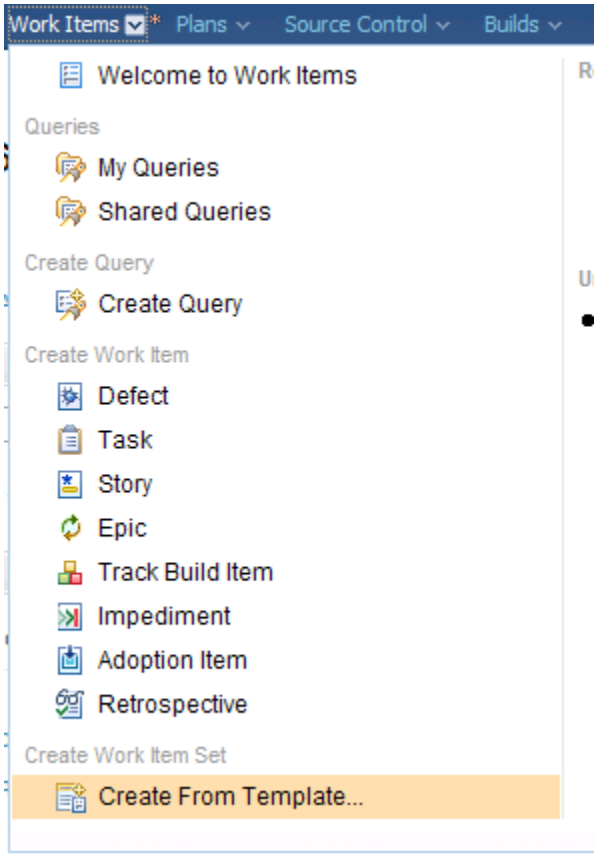
实现：需要所有相关工作完成，需求才能完成

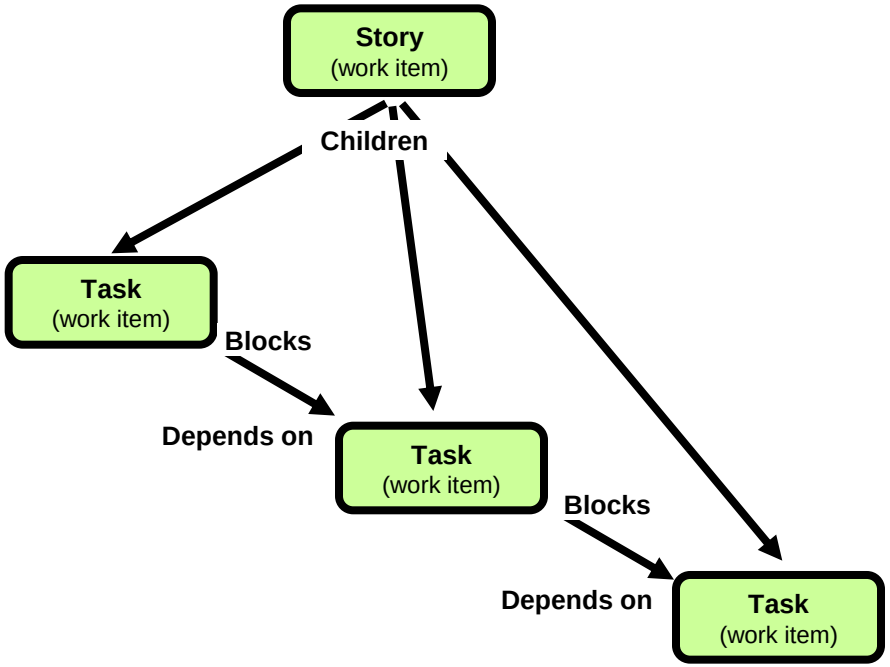


任务不应该在需求完成之前完成



实现：重复性任务的工作项模板





测试你的团队持续改进能力

你的团队能...

- 使用内置的传统与敏捷的工作流模板?
- 变更流程作为 持续反馈的一部分?
- 允许团队确定严格或者松散规范?
- 能够改进贯穿整个项目生命周期的开发过程，从而帮助项目初始阶段的创新以及项目收尾阶段的稳定性?

Agenda

1. Application Lifecycle Managmenet (ALM)
2. IBM Rational Collaboration Lifecycle Management (CLM)
3. Delivering the 5 ALM imperatives
4. Summary

有效的生命周期管理的标准: ALM 要素

1. 实时规划
2. 全生命周期的追踪
3. 基于上下文的协作
4. 智能化开发
5. 持续改进

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