[2012 IBM 開發者大會]

Rational 全面進化全新功能全速實現 CLM 4.0

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Rational 資深技術顧問
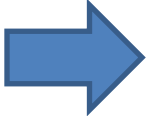
Agenda

- 軟體無所不在
- Rational CLM 4.0 for ALM
- Rational CLM 5個極重要的優點
- 結論

Agenda

- **軟體無所不在**
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無法想像的軟體應用方式

創新是在推動軟體的發展的關鍵

到2020年前，可能更早，手機銀行(Mobile Banking)將成為使用最廣泛的銀行管道

在2010年，汽車所使用的軟體程式碼平均比一架戰鬥機還多

它會實現嗎？

它安全嗎？

可以符合遵規標準嗎**?**

Source: *Mobile banking: A catalyst for improving bank performance*, Deloitte, 2010; and *This Car Runs on Code, Robert Charette,* IEEE Spectrum, 2009.

軟體驅動創新中的現實情況

市場的壓力加劇了軟體交付的複雜性

Complex, Multi-platform Systems and Applications

62% of companies have agile projects requiring integration with legacy systems

Increasing Mandates

2010 Spending in U.S. on governance, risk and compliance was **$29.8 billion**

Globally Distributed Software and Product Supply Chains

50% of outsourced projects are expected to under perform

Cost Reduction

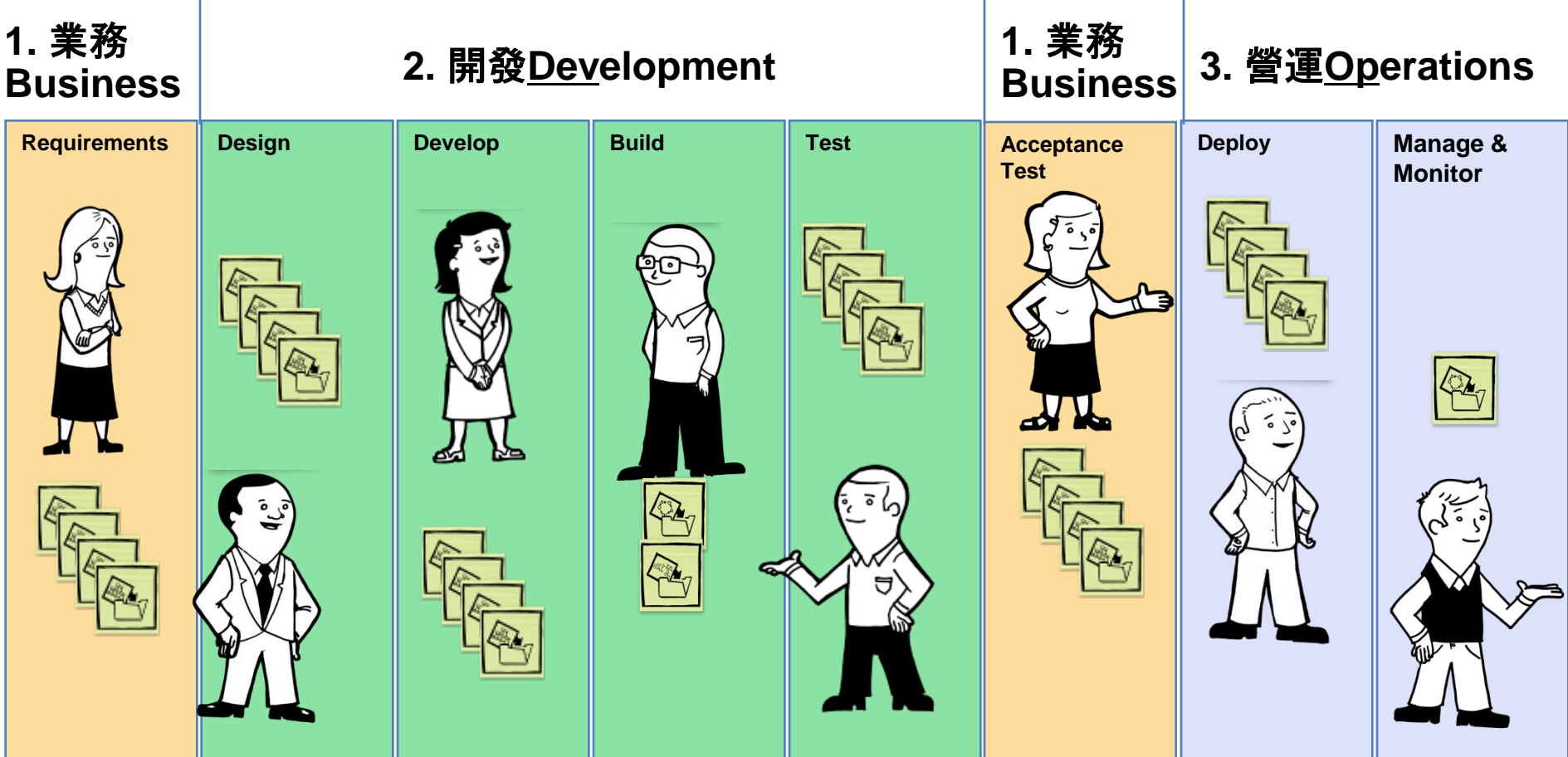**70%** budget locked in maintenance and **37%** of projects go over budget

Unpredictability in Software Delivery
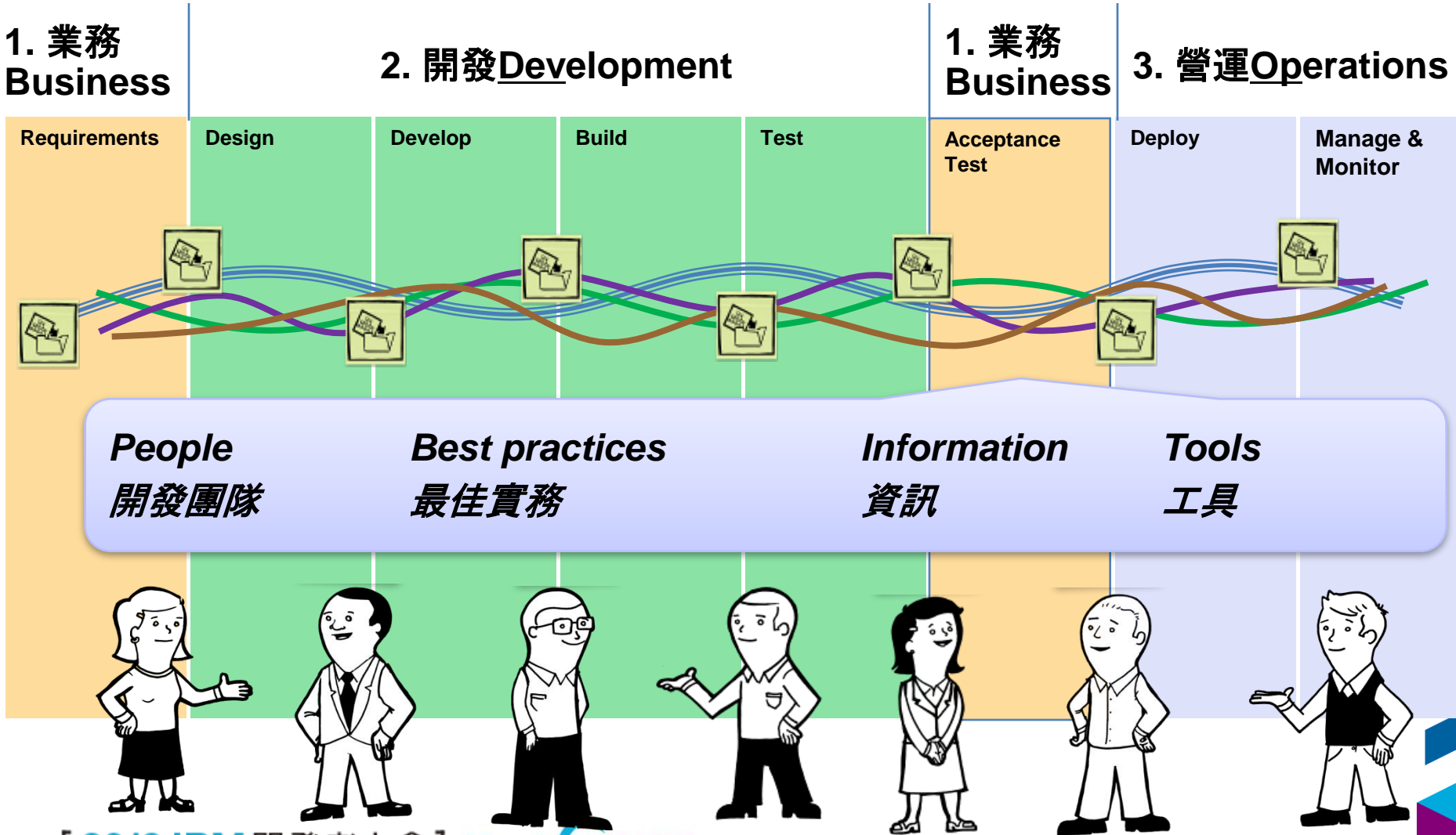
62% of projects fail to meet intended schedule

Changing Requirements and Time to Market

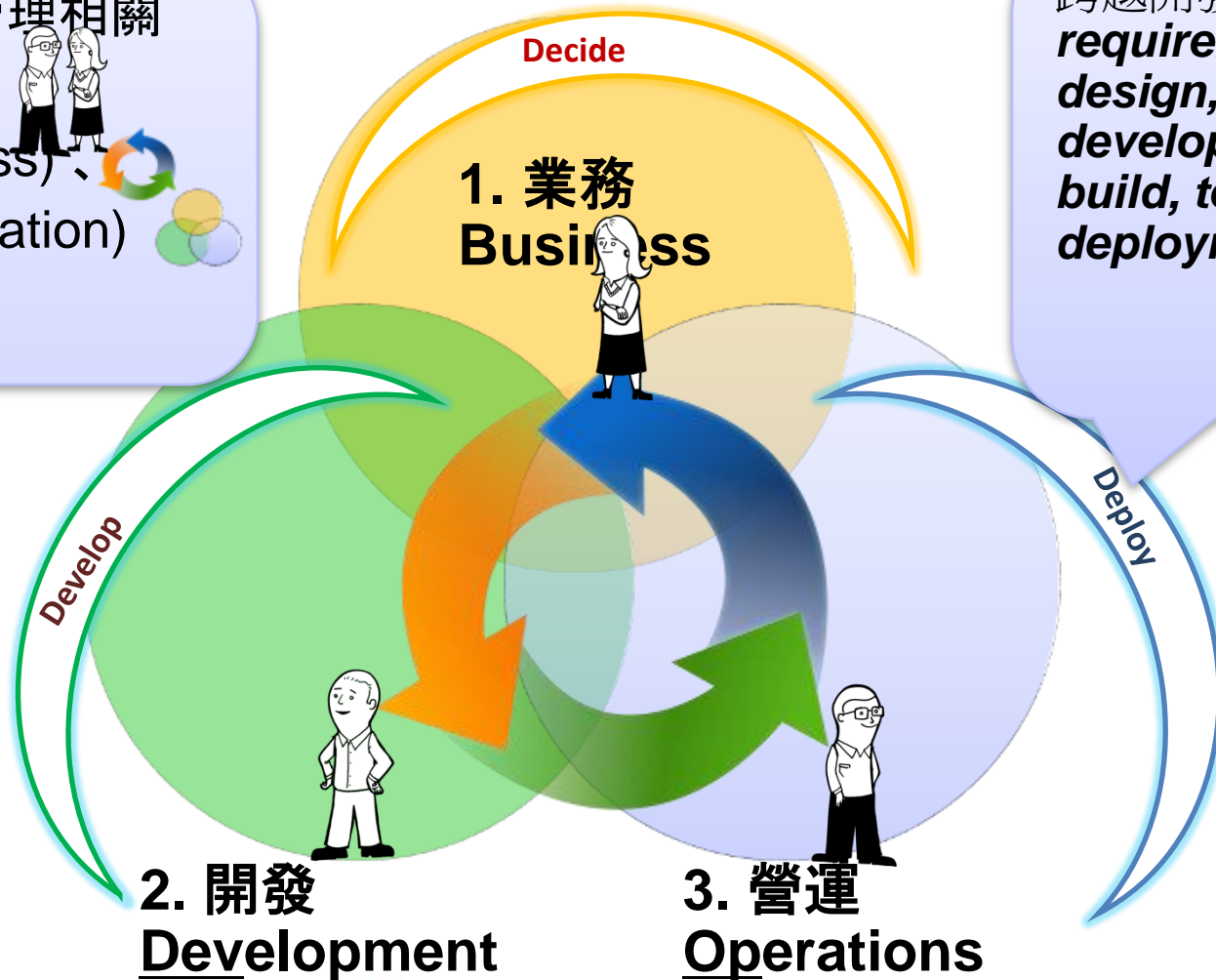**30%** of project costs are due to rework and poor execution of requirements

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Source: Numerous sources, see speaker notes for details

從軟體開發生命週期全景圖來看

1. 業務 Business	2. 開發Development				1. 業務 Business	3. 營運Operations	
Requirements	Design	Develop	Build	Test	Acceptance Test	Deploy	Manage & Monitor

所面臨的挑戰是如何協調跨開發階段....

1. 業務 Business | **2. 開發Development** | **1. 業務 Business** | **3. 營運Operations**

| Requirements | Design | Develop | Build | Test | Acceptance Test | Deploy | Manage & Monitor |

People
開發團隊

Best practices
最佳實務

Information
資訊

Tools
工具

好的應用生命週期管理(ALM)可以提高生產力

ALM 如何管理相關人(People)、流程(Process)、資訊(Information)的互動

跨越開發各階段:
requirements,
design,
development,
build, test,
deployment

Decide

1. 業務 Business

Develop

Deploy

2. 開發 Development

3. 營運 Operations

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Rational CLM4.0 for ALM

提昇**效率**降低成本，**支援多平台**軟體開發與整合的ALM解決方案！

- 跨團隊**協同合作**，並在整個生命週期中建立的深層的整合

- 可**統一的基礎設施**和透過一個單一的、開放的、可擴展的平台來保護您當前的投資

- 擴大您的需求的不斷發展，基於不同**角色**的授權

- 具有5個極重要的，**優點**能使應用生命週期管理(ALM)有效率地並能提高組織的生產力

IBM Rational ALM Solutions
Get Up and Running Quickly

Collaborative Lifecycle Management

Rational Requirements Composer
RRC

Rational Team Concert
RTC

Rational Quality Manager
RQM

Collaborative Design Management

Rational Rhapsody Design Manager
RDM

Rational Software Architect Design Manager

NEW!

Analyst

Engineer

Developer

Architect

Quality Professional

Deployment Engineer

jazz

z/OS · for Business · AIX · Linux

JAZZ 智慧的軟體交付平臺

- **統一的儲存庫 ：吸取行業的前車之鑒**
  - 所有整合圍繞一個**統一的儲存庫**
  - 針對該存儲庫，設計了一個**涵蓋整個軟體工程領域**的資料模型（OSLC)
- **基於Web2.0技術 ：基於Web的開放架構**
  - 工具通過HTTP/REST訪問資料
  - 可整合大規模的資訊
  - 規模空前的協作
- **開放，可擴展 -基於組件的架構（OSGi）**
  - 實現生命週期管理服務的元件化
  - 定義的資料是獨立於工具的
- **完整的應用生命週期管理能力**
  - 流程的感知能力
  - 專案計畫、工作項管理、配置構建和發佈管理、報告能力

專案組合

發佈　　　　　需求

INTERNET

品質　　　　　分析設計

開發

JAZZ TECHNOLOGY PLATFORM

基於開放的標準
統一的資料庫
可外掛的組件架構
統一的用戶端
整合的伺服器端

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5個極重要的優點:
能使應用生命週期管理(ALM)有效率地
並能提高組織的生產力

1. 在上下文(In-Context)協同合作以最大化地提高產品價值

2. 提供即時規劃(Real-Time Planning)以加速交付時間

3. 加強生命週期追踪(Lifecycle Traceability)以提高軟體品質

4. 開發智能化(Development Intelligence)以實現可預見性
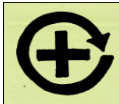
5. 持續改進(Continuous Improvement)以降低成本

Learn more at ALM Everywhere

挑戰#1: 協同合作所面臨的挑戰

你的團隊可以

- ...尋找到一個特定的任務與其相關的所有訊息？
- 迅速掌握 "是誰?，作什麼?，何時作?以及為什麼要作?" 的團隊活動？
- .. 帶給新的團隊成員快速回應？
- ...當有外包人員和分散式團隊成員一起工作時，可否克服多地、多時區的障礙？

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在上下文(In-Context)協同合作以最大化地提高產品價值
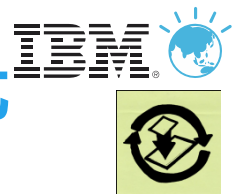
- 建立在一個共享庫以提供一個單一的來源，使團隊成員可以有效地，在全球各地協同合作、貢獻集體智慧
- 賦予團隊協同合作和審查軟體開發構件(artifacts)，使他們能夠及早加入回饋，並經常調整軟體交付以符合利害關係者(stakeholder)的願景
- 能讓所有的團隊成員在其工作範圍立即存取所需之資訊

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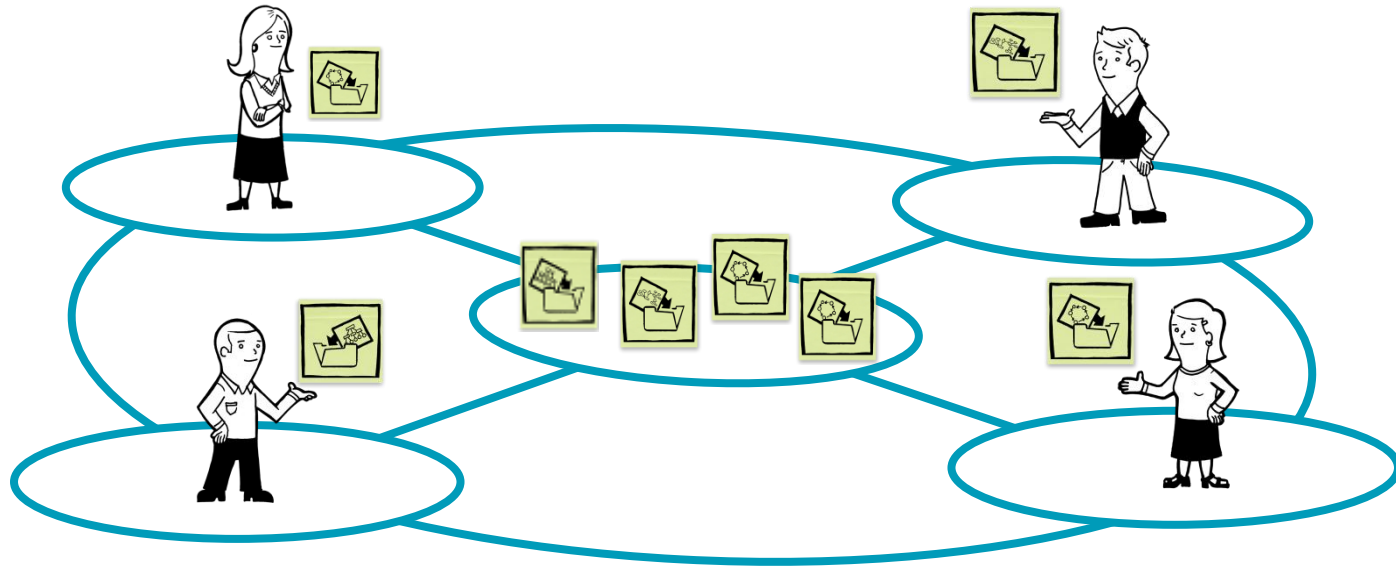
在上下文(In-Context)協同合作始終顯示最新資訊
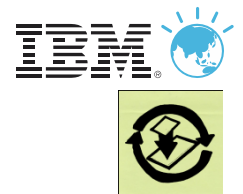
Threaded discussions on requirements

Recent discussions highlighted on requirements

Unread work Items bolded for developers

評論需求的的細節

A click on the comment highlights the text under discussion.

正式的審核可以驅動協議和防止重工(rework)

✓ 檢閱與審查，確保構件 (artifacts)已經由關鍵團隊成員的審查和/或批准，並且符合法規遵從要求。

Requirements

JKE Banking (Requirements) >
Approval ?

⊕ 👤 Participant's Review: 📖 In progress | 0% completed | Your role: Approver

⊖ 📝 Overall Review: ✏ Draft → ▶ In progress | 65% completed | ⏸ Pause Review → ✓ Re

Due: Apr 18, 2011

Instructions to reviewers:

List of requirements for our second sprint. All comments have been resolved. Please review and appr requirements as written.

	Participant	Type of Participant	Review results	
☐	Bob	Approver	▬▬▬▬	Done - 5 Approved
☐	Deb	Approver	▬▬▬▬	Done - 5 Approved
☐	Marco	Approver	▬▬▬▬	60% - 2 Approved, 1 Disapproved
☐	Tanuj	Approver		

Test Artifacts

Work Items

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 yo

View: All ▼

Show All ▼ Items per page   ⏮ Previous 1 - 4 of 4 Ne

☐	Review Type	Name	Status	Comme
☐	Approver ▼	Bob ▼	Pending	
☐	Reviewer ▼	Sally ▼	Pending	

📄 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
	Al	Pending	
	Curtis	Pending	
	Tanuj	Approved ▼	
	Add Approvers...		

[2012 I

19

挑戰#2: 規劃(planning)所面臨的挑戰
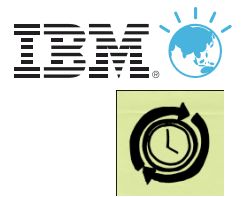
你的團隊可以

- ......規劃整個團隊的計劃嗎？
- .....是手動收集和報告專案狀態嗎？
- .....能立即看到在專案的範圍或資源變化的影響？
- .....與結合規劃(planning)的相關的執行(execution)嗎?
- ....可以規劃反覆式(iterative)和敏捷式(agile)的環境嗎？

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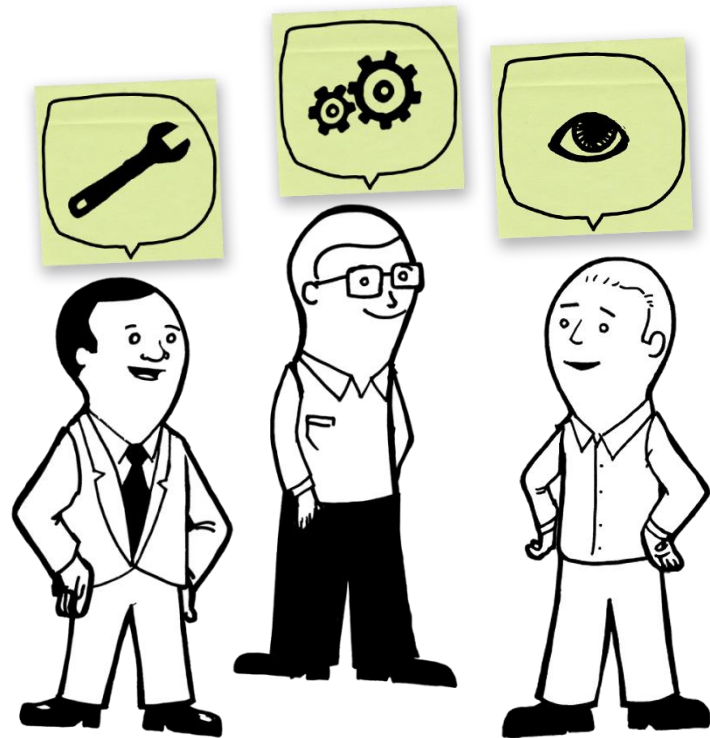
即時規劃(Real-Time Planning)以加速交付時間
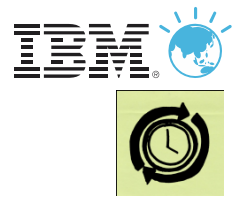
- 提供了一個單一的計劃能跨越需求，開發和測試階段，以確保整個團隊了解一個專案的整體範圍
- 整合規劃(planning)的相關的執行(execution)，確保整個團隊了解真實的專案狀態
- 使得每個人都參與，保持計劃為目前最新與準確
- 幫助團隊及時回應那些在意想不到的事件，確保團隊的時程依然如期完成

一個計劃 – 可提供多個視圖以便於詳細分析

跨專案計畫管理

- **Planning Across Projects**

  - 主計畫(Master Plan)追蹤跨專案工作

  - 看見跨專案所有時程

計劃(planning)與執行(execution)相連結

✓ Change Sets & Attachments are better !

✓ Progress & Status are good indicators of execution.

Requirement Collection為在此次所將發行的需求集合

需求集合
(Requirement Collection)
關注在:
- ✓ Reviews
- ✓ Snapshots
- ✓ Implementation

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調整計劃以跨越業務，開發和測試團隊

✓ Linked to Requirement Collection

✓ Linked to Test Plan

挑戰#3: 生命週期追蹤(Lifecycle Traceability)所面臨的挑戰

- *你的團隊可以回答下列問題嗎?*

Analyst

Which requirements are addressed in this iteration?

Are all of the requirements tested?

What defects are affecting which requirements?

Project Manager

Can we pass an audit?

Are we ready to release?

What defects were resolved in this release?

Are we aligned with the business?

Architect

Can we implement in a way that supports maintainability?

Which requirements impact the design?

Are there reusable components we can leverage?

Developer

What requirements am I implementing?

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

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?
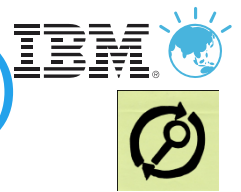
How can I speed up my builds?

Quality Professional

What is the quality of the build?

What is ready for me to test?

What defects have been addressed since the last build?

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加強生命週期追踪(Lifecycle Traceability)以提高軟體品質

- 建立軟體構件(artifact)之間的關係
- 查明和消除構件的差距，確保跨開發生命週期的覆蓋範圍
- 藉由通過檢查所有相關構件，以提供完整性的計劃項目(planned items)的可視性(visibility)
- 提供方便的存取相關構件，以確保每個人能共享相同的視圖(view)
- 提供的透明度，使每個人都能基於業務優先順序，充分了解情狀而作出最好的決定

Instant access to details from any point in development process
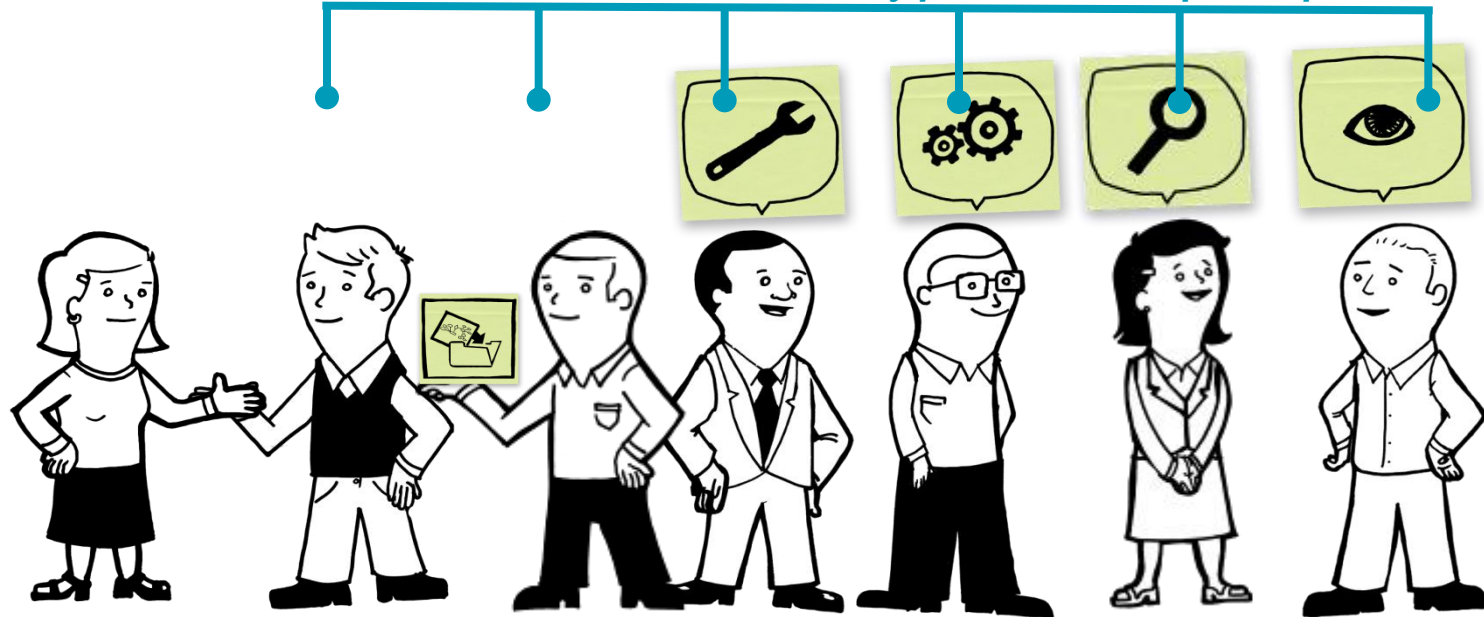
Customer	Final Product	Build Artifacts	Environment	Supporting Systems	Requirements Management	Initial Idea

以開發驅動的整個生命週期的發展
團隊負責人擁有覆蓋率和完整性的能見度

- 可以透過需求(Requirement/Story)、實作(Task) 、測試案例與缺陷(Defect)之間的鏈接關係，積極應對存在的差距，並且快速的解決突出問題

以開發驅動的整個生命週期的發展
團隊負責人擁有覆蓋率和完整性的能見度

量身定做的可追溯性視圖，突出顯示計劃的差距

團隊負責人可以提升品質和可預測性

- ✓ 創建一個共享的願景，提供利益相關者想要什麼
- ✓ 整個團隊相信可以改善團隊的信任、效率和專案的焦點
- ✓ 大家都知道需要什麼樣的工作應該找誰和什麼時候
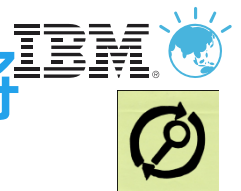- ✓ 可追溯性提供洞察力，知道何時你將完成！

開發人員可以了解業務需求、測試標準和測試結果

團隊小組進行協同合作和釐清的業務需求細節

測試人員基於清楚地了解需求，可以定義和執行測試案例

開發人員擁有可視性的視圖，來看他們將實作的需求

For the Developer

✓ **Rich Hovers** provides insight at your finger tips reducing time to value.

✓ **Clickable links** provides valuable information on requirement

Story 64 *

Summary: *

Overview   Accep

Attachments

Add File:

No Attachments.

Links

Add: Related ▾

Implements Requ
→ 29: Custom

Tested By Test Case
→ 6: Organization must identify how much money is desired
→ 7: Allocate dividends by amount and frequency
→ 10: Customers can Nominate an Organization
→ 9: Donors Can Choose to Support an Organization

29: Customers can nominate an organization for the program

Requirement: Customers can Nominate an Organization Brief Description Customermay nominate an organization for assistance whether a result of a catastrophic event or from some other justification. A

Location

📁 JKE Banking (Requirements) 📂 Features

🏷 Extended Functionality, Release 1

Attributes

Type:	Feature	Format:	📄 Text
Description:		Stability:	Medium
Origin:	Customer	Difficulty:	Medium
Status:	Draft	Business Priority:	Should

Links

Constrained by (3): 27, 72, 84   Link To (1): 81
References Term (3): 13, 31, 102   Embedded In (1): 112
Implemented By (1): ...

缺陷(Defect)自動可追溯性可降低成本和提高質量

- ✓ 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

測試人員執行測試並提交缺陷

開發人員可以看到確切的測試失敗結果，而不必去問測試人員，可以直接進行修復

可疑鏈接 (Suspect Links)追蹤 協助進行影響評估

Overview

349: Increase agility to produce applications and services
Description:
Project: JKE Banking
Team Ownership: JKE Banking
Created On: Feb 27, 2012 9:44:28 AM
Created By: p
Modified On: Feb 27, 2012 9:45:07 AM
Modified By: p

Requirements Management (/rm)

Suspicion Profile Administration

Suspicion Profiles for Your Applications >

Suspicion Profiles for JKE Ban...

Use the Suspicion Profile Application to track...
suspect. Select the link types and any specif...

Suspicion Profiles	
Untitled Profile	

1 linked artifact has changed significantly: Clear all

Product Manager (1)   Clear for profile

   5: Test Increasing Agility   Clear

Developer (1)   Clear for profile

   5: Test Increasing Agility   Clear

ate Suspicion Profile | Save

...ause linked artifacts to be considered

...raft

	Action	All	All
	...on	All	
	...emented By	All	
		All	
	...rences	All	
	...sfaction	All	All
	...ified By		
	...ifies		
	...nym		
	...ked By		

Suspect Links

Capability

- Use suspect profiles to track changes to linked requirements
- Use suspect notifications in many different areas
- Clear suspicion for individual/all

Benefits

- discover changes across trace links among requirements and other lifecycle elements
- Easily recognise impact to your requirements

Links (1)

▼ Validated By (1)

   5: Test Increasing Agility

Artifacts ?

Page size: 20 ▼

	ID	Name	Artifact Type
☐	349	Increase agility to produce applications and services	Business Goals
☐	356	Accelerate economic recovery	Business Goals

NOW!

圖形化可追溯鏈接

All Project Members

JKE Banking (Requirements Management)

Project Dashboard Artifacts ∨ Collections ∨ Reports ∨

Diagram view of related links

70: Div...
percen...

Satisfies

Satisfied By

102: Allocating Dividends to a Cause

134: Allocate divi... by Percentage

Satisfied By   Satisfies   Satisfied By   Satisfies

144: Donor Chooses an Organization   131: Accelerate economic recovery   80: Donor Chooses Multiple Organizations   102: Allocating Dividends to a Cause

Graphical Traceability Explorer

Capability

➤ Visually analyse traceability links for gap and change assessment

➤ Filter on relevant link types

Benefits

➤ Best method to see relationships from requirements to other requirements, test, development, etc.

Apply

40%   100%

Filter by Attribute
Artifact type: is any of Feature
Filter by Folder

79 Requests sent in form   Feature   Approved   Should

Showing 19 of 19 Artifacts

以需求驅動的整個生命週期的發展

Analysts, Testers, Developers

Rational Requirements Composer 4.0
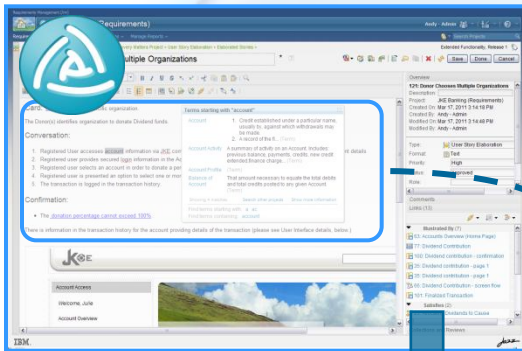
Rational Team Concert 4.0
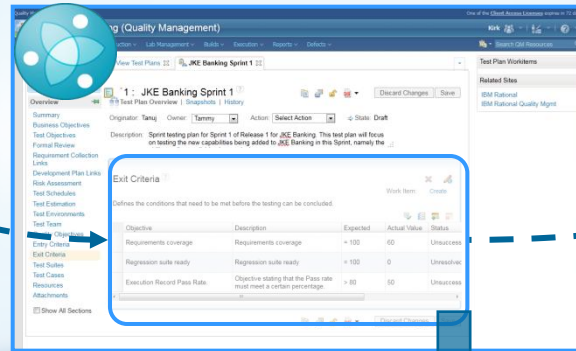
Rational Quality Manager 4.0

Previous | 1 | Next
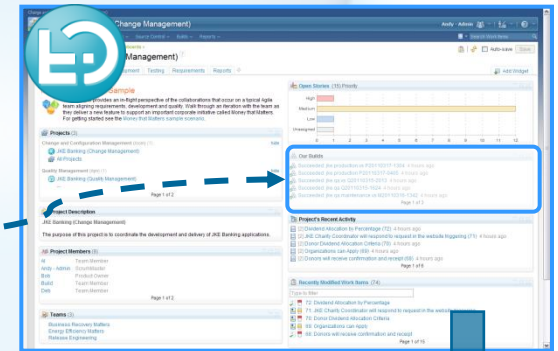
	ID	Name	Artifact Type	Implemented By	Validated By
	8	Dividend allocation by percentage	Feature	75: Dividend Allocation by Percentage	18: Dividend Allocation by Percentage
		Requirements ...s can nominate an organization for the program	Feature	6 ...ustomers can Nominate an ...n	21: Customers can nominate an organization for the program
				Development	10: Customers can Nominate an Organization Quality
	12	Donor Dividend Allocation Criteria	Feature	73: Donor Dividend Allocation Criteria	16: Donor Dividend Allocation Criteria
	Satisfied by				
	23	Frequency of dividend transfer	Feature	58: Frequency of dividend transfer	1: Frequency of dividend transfer

Single View for End to End Development Needs

以測試驅動的整個生命週期的發展

- Traceability views for test plans, test cases/scripts, test suite/case execution records and test suite/case results showing links:
  - From test plans to requirement collections and development plans
  - From test cases to requirements and development work items
  - From test scripts to requirements
  - From test suite/case execution records (TERs) and results views show links to defects

Design and Lifecycle Traceability CLM 2012 and Design Manager 4.0 Beta Lifecycle Integration Scenarios

- **Design and Requirements**
  - Analysis: link designs that provide the next level of details for requirements
  - Coverage: link designs that implement requirements to ensure coverage

- **Design and Change Management (Work Items)**
  - Planning: link design tasks to related designs
  - Design Changes: link design change sets to related work items
  - Implementation: link implementation tasks to related designs making it easier for developers to find design
  - Defects: link design defects back to defective design

- **Designs and Test Artifacts (one-way only)**
  - Test coverage of designs: Link from designs to test artifacts that validate the design to ensure test coverage

RRC   DOORS

Requirement (RRC)   Requirement (DOORS)

Derives From   Refines, Satisfies, or Trace

Design   RDM

Elaborates, Related To   Validated By

Work Item   Test Artifact

RTC   RQM
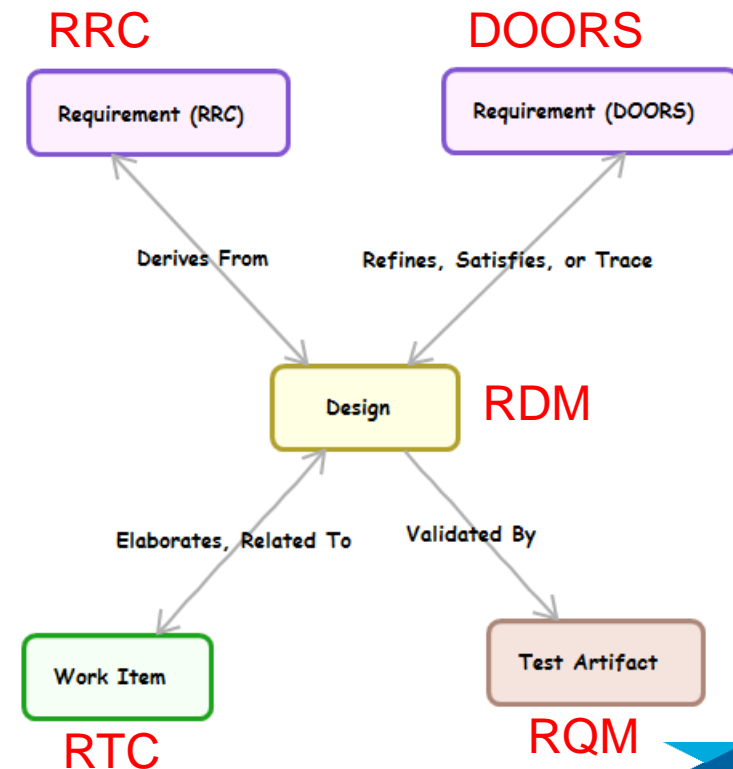
設計(Design)在計劃和需求呈現的視圖

☐	206	JKE Charity Coordinator will respond to request in the website triggering..	Feature
☐	216	Donors can choose to support an organization	Feature
☐	217	Service for Allocating Dividends	Feature

Derives

584: Service Interfaces - Overview

537: Logical Topology

對系統分析者而言

RRC View showing elements linked to requirements

對開發者而言

RTC Plan in Traceability view showing linked design elements

BRM Sprint 2 (1.0) Plan

34 items: 34 open, 0 closed | Ends in: 1 day

▸ Plan Details   Edit

Planned Items ?   Links   Snapshots   Dashboard   Notes

☐ ▾ | View As: Traceability ▾   (23 items filtered)   Add Work Item ▾

Summary	Implements Requirement	Tested By Test Case	Elaborated by Architecture Element
Donor Dividend Allocation Criteria	Donor Dividend Allocation Criteria	Donor dividend allocation conforms to stated criteria	Allocate Dividends to Cause
Validate Loan Term and Amount	Validate Loan term and amount	Test Validate Loan Term and Amount	--
Frequency of dividend transfer	Frequency of dividend transfer	Verify dividend transfer frequency	--
Requests sent in form of email	Requests sent in form of email	Process email requests	--
Organization must identify how much money is...	Organization must identify how much money is desir	Organization must identify how much money is desir	--
Organizations may apply with an initial request	Organizations may apply with an initial request	Organizations may apply with an initial request	--
Customers can Nominate an Organization	Customers can nominate an organization for the pro	Customers can Nominate an Organization	--
Organization must provide justification for why ...	Organization must provide justification for why funds	Organization must provide justification for why funds	--
Organizations can Apply	Organizations can apply	Organizations can Apply	defined organizations
JKE Charity Coordinator will respond to reque...	JKE Charity Coordinator will respond to request in th	JKE Charity Coordinator responds to online request	--
Allocate Dividends with Web Service	217: Service for Allocating Dividends	--	Service Interfaces - Overview

影響分析 – 以設計中心的觀點

- Design Management 4.0 Beta includes a new graphical impact analysis diagram
  - Includes both **design and OSLC linked** artifacts

- An **Analysis Configuration** defines the parameters for the analysis
  - **Upstream** level, **downstream** level, which links types to include
  - Can be used be shared by multiple analysis

- An **Analysis** applies the configuration to a selected element to perform the impact analysis
  - Add and remove elements from impact analysis diagram
  - Save and re-run at a later time
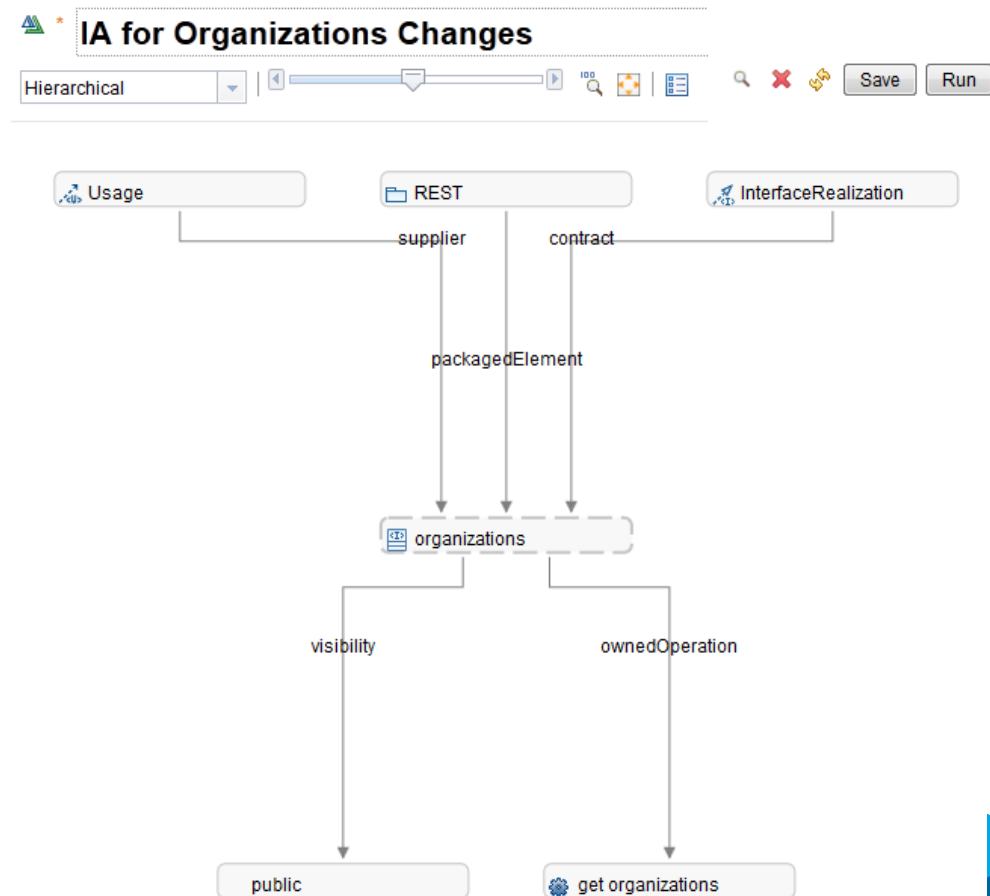
Design Collaboration

- 參與專案的團隊成員，在設計過程中可透過Web client 進行設計
- 通過評論和視覺標記，在上下文設計協同合作中可以改善品質
- 有引導流程的自動化人工和耗時間的設計審查
- 可由Web client和RSA進行張貼評論

生命週期的查詢

✓ 提供跨開發階段之交付問題的能見度

挑戰#4: 衡量指標和引導所面臨的挑戰

你的團隊可以

- …提供一個視圖顯示多層次的專案健康狀態？

- …基於事實，而非 "guesstimates" 來引導決策？

- …追踪度量標準與預期的改善？

- …依賴於的環境來減少管理成本並能獲取度量分析指標？
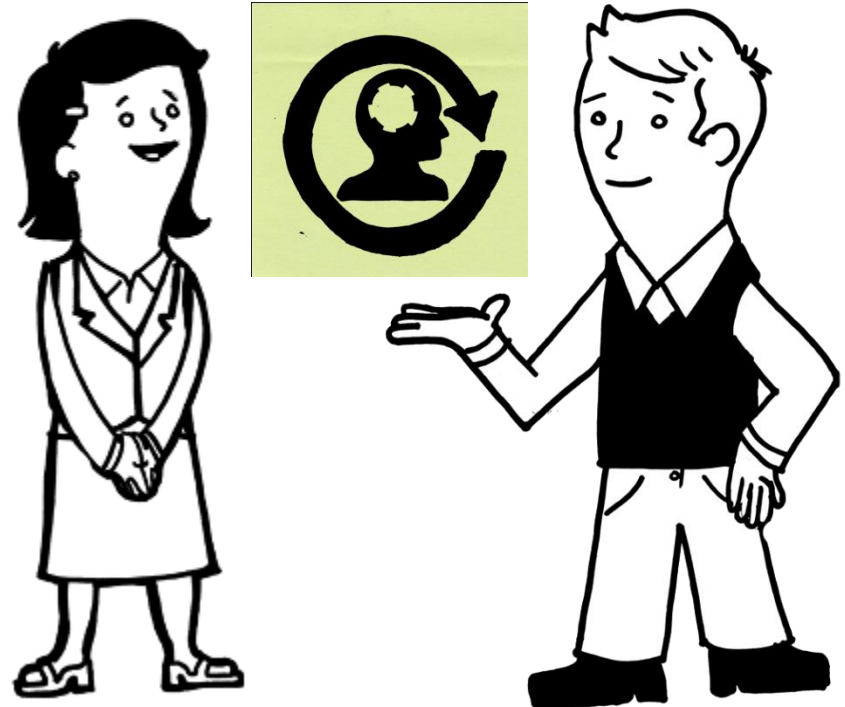
開發智能化(Development Intelligence)以改善可預見性
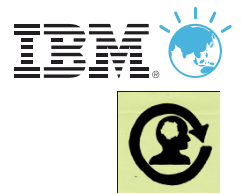
- 啟用基於事實的決策（溝通狀態，監測進展情況，診斷問題，確定的糾正措施）
- 引導專案準時交付
- 應用商業智能技術在軟體開發和系統開發

度量的實踐影響專案的成功

	度量的實踐-弱
	度量的實踐-強

Cancelled
- 15%
- 5%

Late
- 40%
- 20%

On-time
- 45%
- 75%
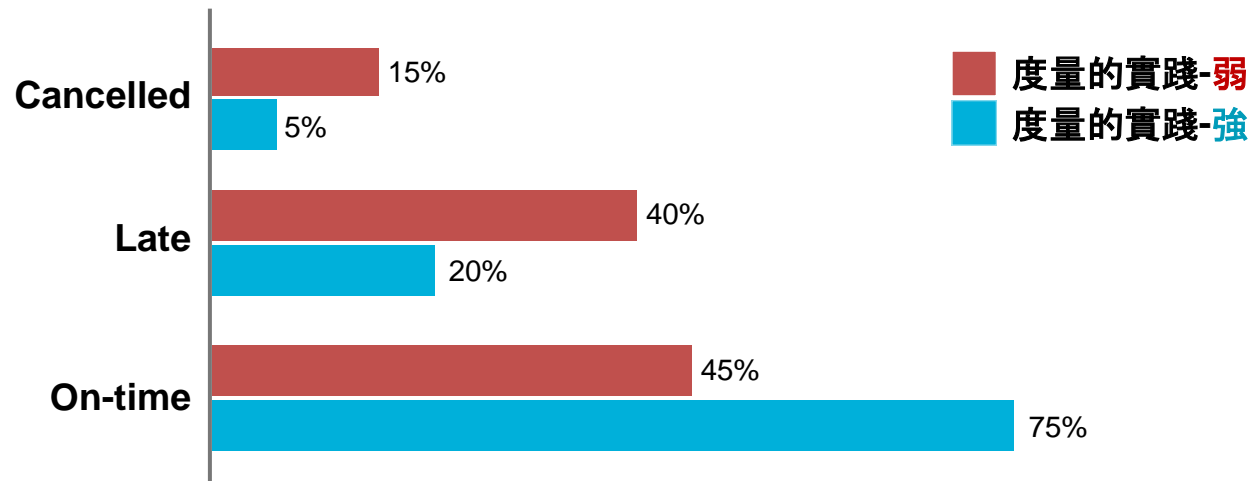
Sources: Capers Jones, Measurement, Metrics and Industry Leadership, Copyright © 2002-2007 by Capers Jones LLC
Capers Jones, Software Engineering Best Practices, Copyright © 2010 McGraw-Hill

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使用儀表板提供統一的View查看專案的健康狀態

儀表板的定制

確保團隊已督導來自各開發階段的資料

✓ 容易地添加Viewlet以協助督導的完成
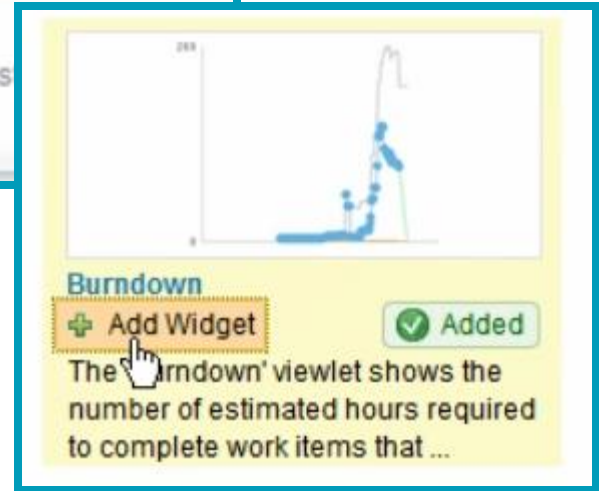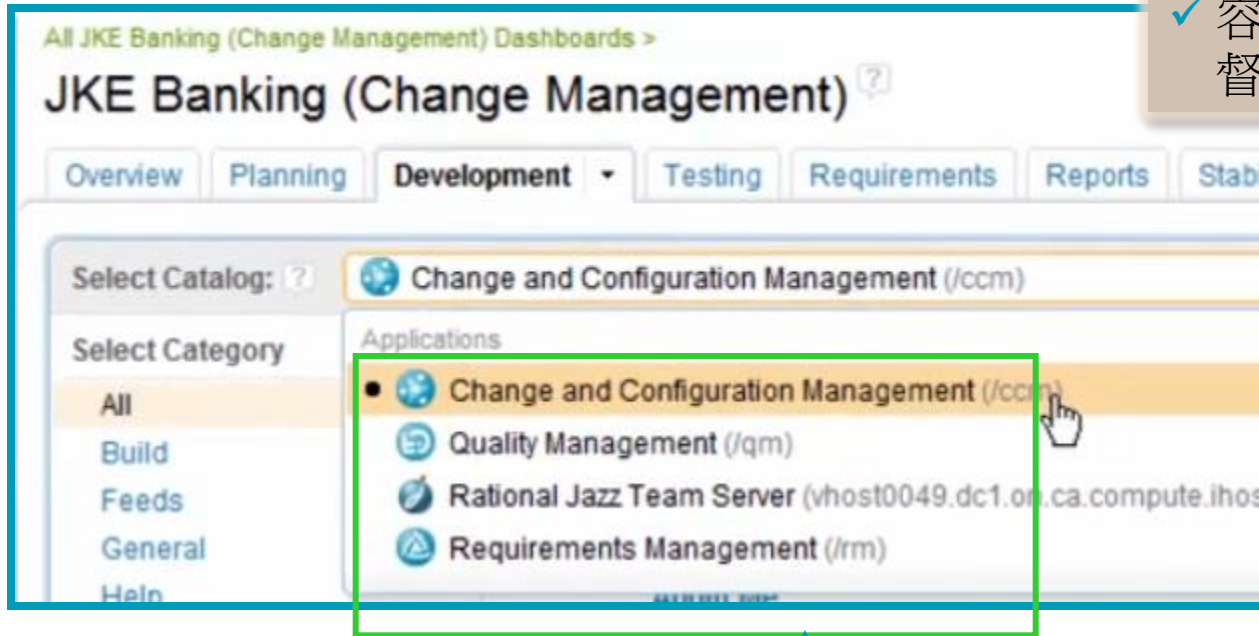
✓ 混搭儀表板與跨開發階的資訊

儀表板的細節

容易回答監督問題

通過點擊Viewlet就可深入
分析資訊的

可以就地採取
糾正措施

個人的儀表板

✓ Mini-dashboards: available on any page

✓ Customized by the practitioner

挑戰#5: 持續改進(Continuous Improvement) 所面臨的挑戰
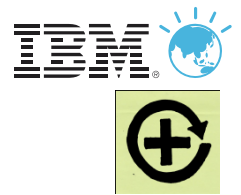
你的團隊可以

- ….**可以**充分利用的現成的模板，支持傳統的專案管理流程和敏捷的工作流程嗎？

- ….改變流程可以"飛快地進行"，並作爲一個持續的反饋循環的一部分嗎？

- …..讓團隊負責人，可以決定如何應該是嚴格的或寬鬆的規則？

- …修改一個專案的生命過程中的執行，鼓勵早期試驗，與最終流程的穩定？
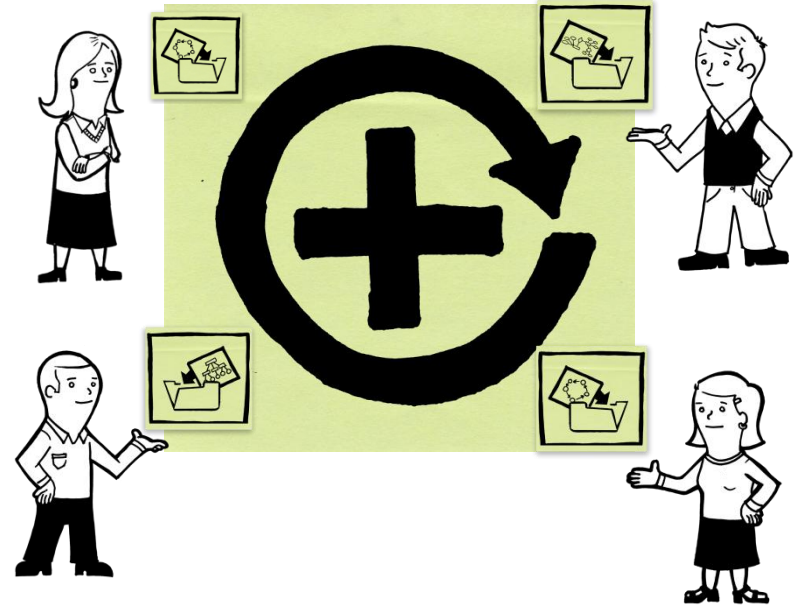
持續改進(Continuous Improvement)可以降低成本
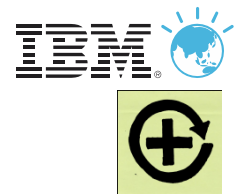
- 通過正在進行所採納的最佳實務做法和自動化,以減少人工、非創造性和容易出錯的任務,來改進軟體交付
- 在需要時,推動專案的增量改進
- 使突破性的改進,藉由獲取最佳實務做法和跨團隊重用(reusing)
- 讓每一個人很容易參與,並採取最佳實務做法

Assess

Act

ROADMAP

Steer

Jazz

團隊的回顧，幫助識別需要改進的地方

- **追踪回顧會議幫助團隊成員協作改善**
  - 流程的改進的排行 (ranking)有助於集中小組所認為在開發生命週期中最大的痛苦

團隊協同合作的行動

✓ 團隊追蹤一個實施改善工作

範本/模板(Templates)
支持突破性的改進

專案範本的使用和重用是一個突破性的改進，例如 ：修改，以符合您的組織的流程

專案透明度協助提高團隊協同合作

✓ 持續地使容易找到正確的事情

5個極重要的優點:
能使應用生命週期管理(ALM)有效率地
並能提高組織的生產力

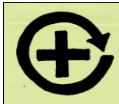1. 在上下文(In-Context)協同合作以最大化地提高產品價值

2. 提供即時規劃(Real-Time Planning)以加速交付時間

3. 加強生命週期追踪(Lifecycle Traceability)以提高軟體品質

4. 開發智能化(Development Intelligence)以實現可預見性

5. 持續改進(Continuous Improvement)以降低成本

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Agenda

- 軟體無所不在
- Rational CLM 4.0 for ALM
- Rational CLM 5個極重要的優點
- 結論

"Efficient coordination and automation of the delivery process requires new, collaborative approaches to the planning, measurement, execution, control and reporting of activities."

"These new approaches are what differentiate current application life cycle management (ALM) tools, and what make ALM processes vital to leading-edge development activities."

"ALM is what enables sustainable agile practices. ALM creates a management framework providing consistent, auditable records of the decisions and activities of agile teams."

Duggan, Jim & Murphy, Thomas E., "MarketScope for Application Lifecycle Management," Gartner, Inc., 11 November 2010 ID Number: G00208572 , pp2,6

IBM earns "Strong Positive" — the highest possible rating

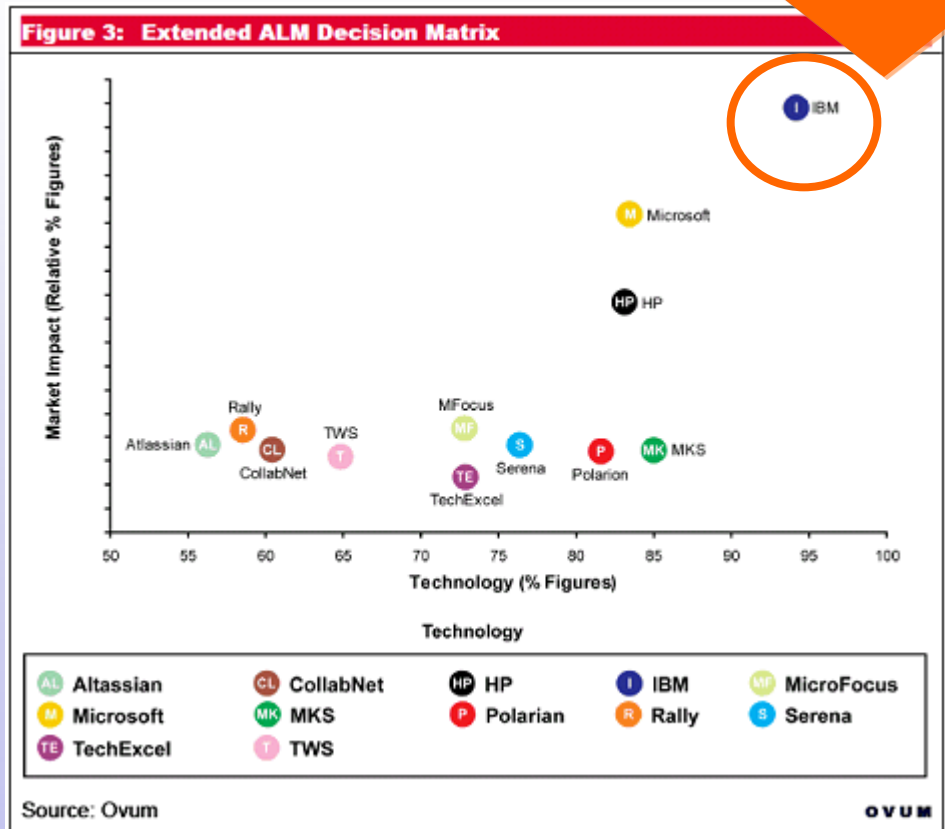|	RATING				
	Strong Negative	Caution	Promising	Positive	Strong Positive
AccuRev			x		
Aldon			x		
Atlassian				x	
CollabNet				x	
Digite			x		
HP				x	
IBM					x
Kovair			x		
Micro Focus			x		
Microsoft				x	
MKS				x	
Parasoft			x		
Polarian Software			x		
Rally Software				x	
Seapine Software			x		
Serena Software				x	
SmartBear Software			x		
TechExcel			x		
ThoughtWorks			x		
VersionOne				x	

IBM Rational 在 ALM領域是被認為領導者

Ovum Decision Matrix: Selecting an ALM Vendor

Reference Code: OI00068-002 Publication Date: March 2011
Authors: Chandranshu Singh, Tony Baer, Michael Azoff

Report Highlights

– "IBM has the broadest and arguably the ***deepest portfolio among all vendors profiled in this report***."

– IBM's Technology Score: **94.3%**

– IBM's Market Impact score: **10/10**

  • The highest score!
  • All other vendors were ranked relative to IBM

– "Furthermore, the vendor has ensured that it stays ahead of the pack by having a ***good grasp of market demand and meeting it through tool support***."

Figure 3: Extended ALM Decision Matrix

Source: Ovum

www.ibm.com/software/rational