



爱开发 重创新 更智慧

Innovate2011

IBM Rational 软件创新论坛



Software. Everywhere.



IBM敏捷质量管理战略

Brian Bryson

Technology Evangelist, IBM Canada



个人简介...

- Brian Bryson
 - Various roles within IBM
 - Consultant
 - Technical Representative
 - Product Management Group



- Prior to IBM Rational
 - University Instructor
 - QA Manager
 - Tester
 - Accountant



–bbryson@ca.ibm.com



内容



- 敏捷质量
- IBM敏捷质量战略
- 小结



内容

- 敏捷质量
 - 什么是敏捷?
 - 敏捷质量最佳实践
- IBM敏捷质量战略
- 小结



“敏捷开发的方法和相关技术正被
全球9,000,000+（64%）开发人员所使用。”



什么是敏捷?

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.



什么是敏捷?

iterative

collaborative

high quality

changing needs

.



敏捷宣言

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	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	



The Jazz Impact – Rational自身的 改进效果

度量指标	目标	2006 评估结果	2009 评估结果
按时交付率	65%	47%	98%
缺陷修复时间	3 Months	9+ Months	3.5 months
增强需求发布率	15%	1%	21%
客户满意指数	91%	88%	96%
交付时间	12 Months	18+ Months	12.5 Months

Note: Goals are either internal IBM statistics or industry benchmarks.



Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.
Through this work we have come to value:

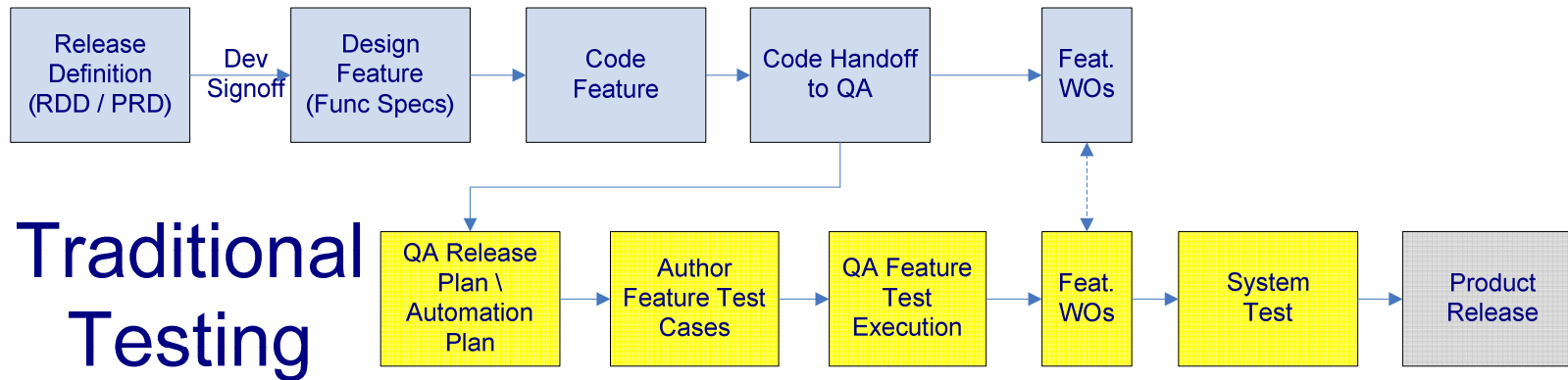
Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

Individuals and interactions over processes and tools

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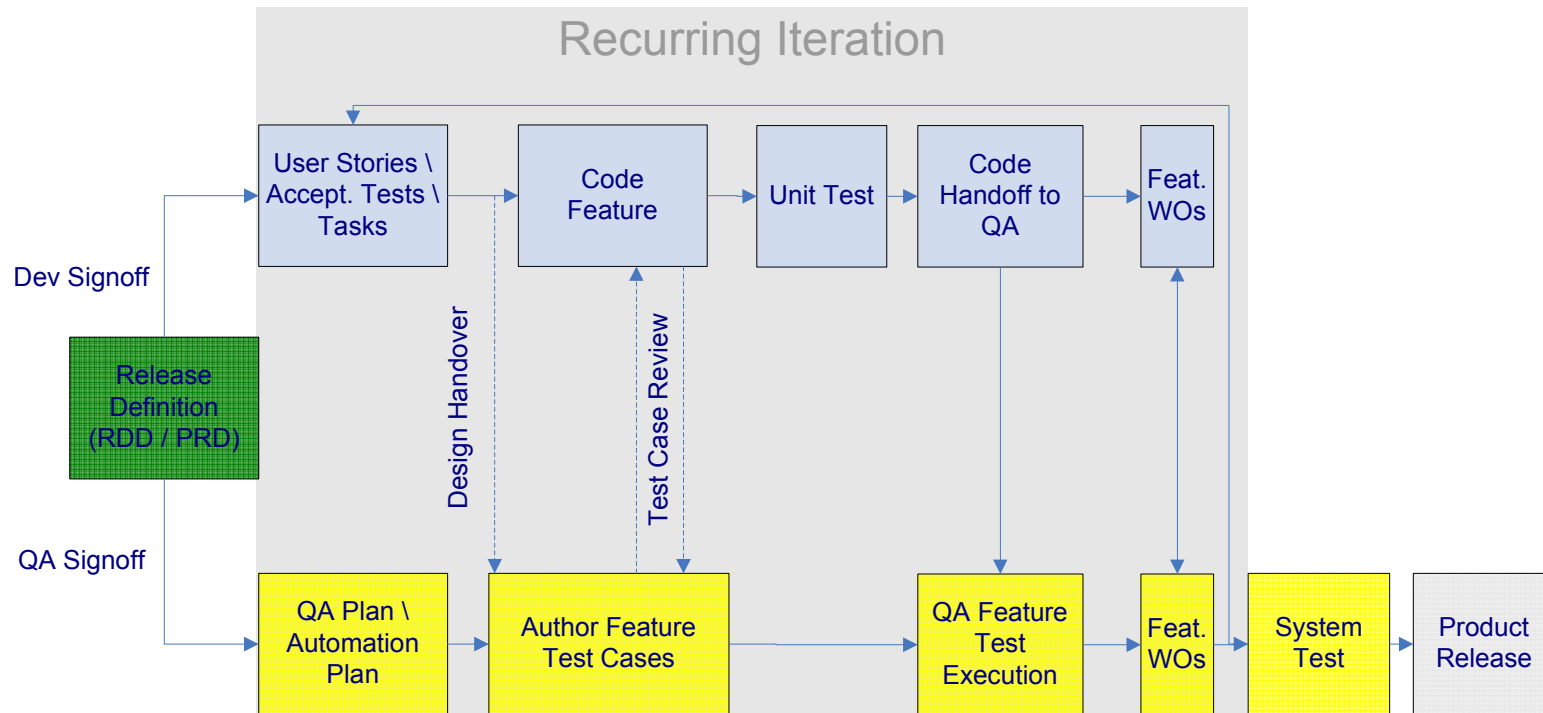
传统质量的解决之道



- 线性的, 顺序的
- QA 计划发生较晚
- 测试计划没有协作



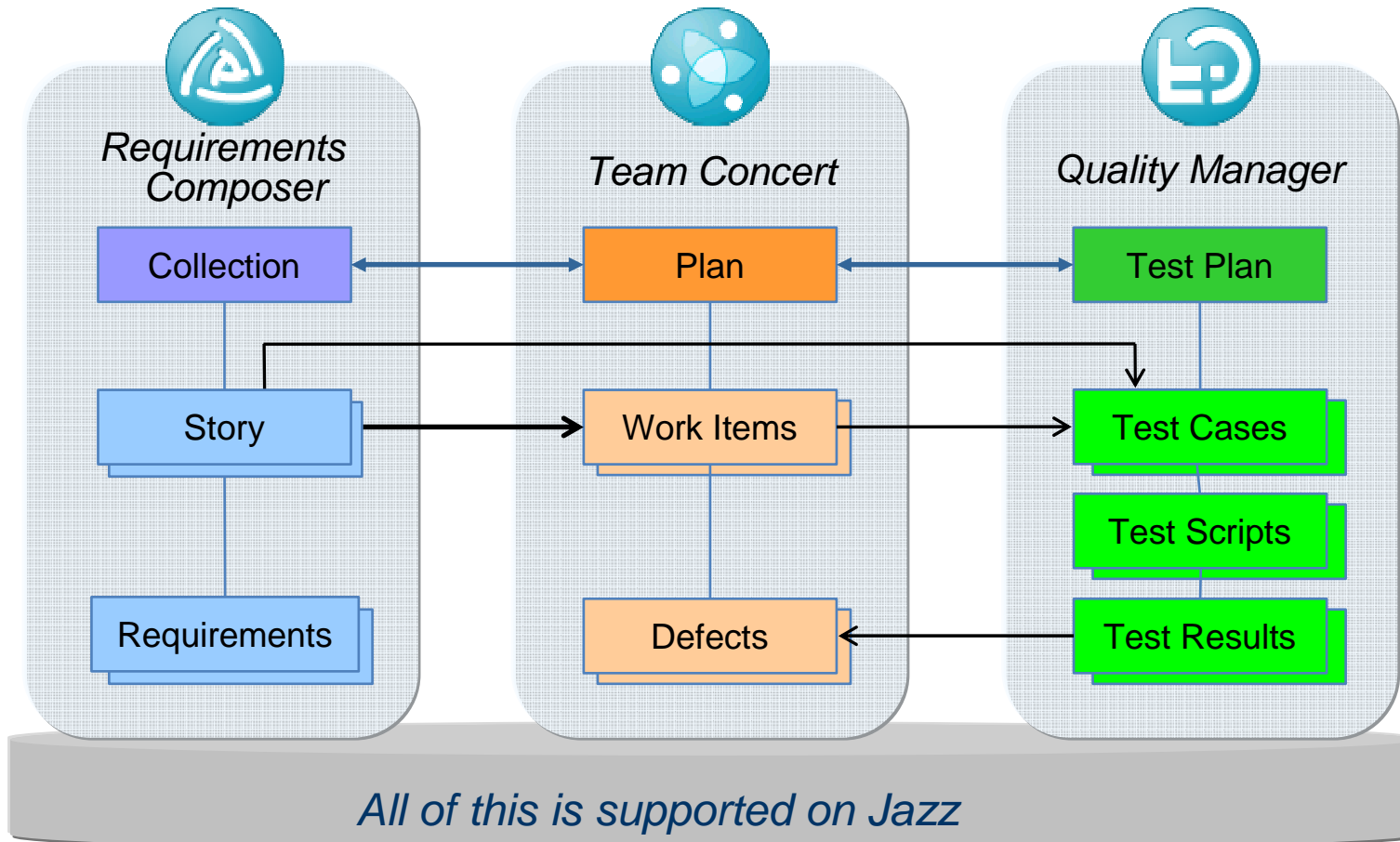
敏捷质量的解决之道



- 持续的测试
- 持续的反馈
- 持续的进展



个人、工件和交互



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Working software over comprehensive documentation

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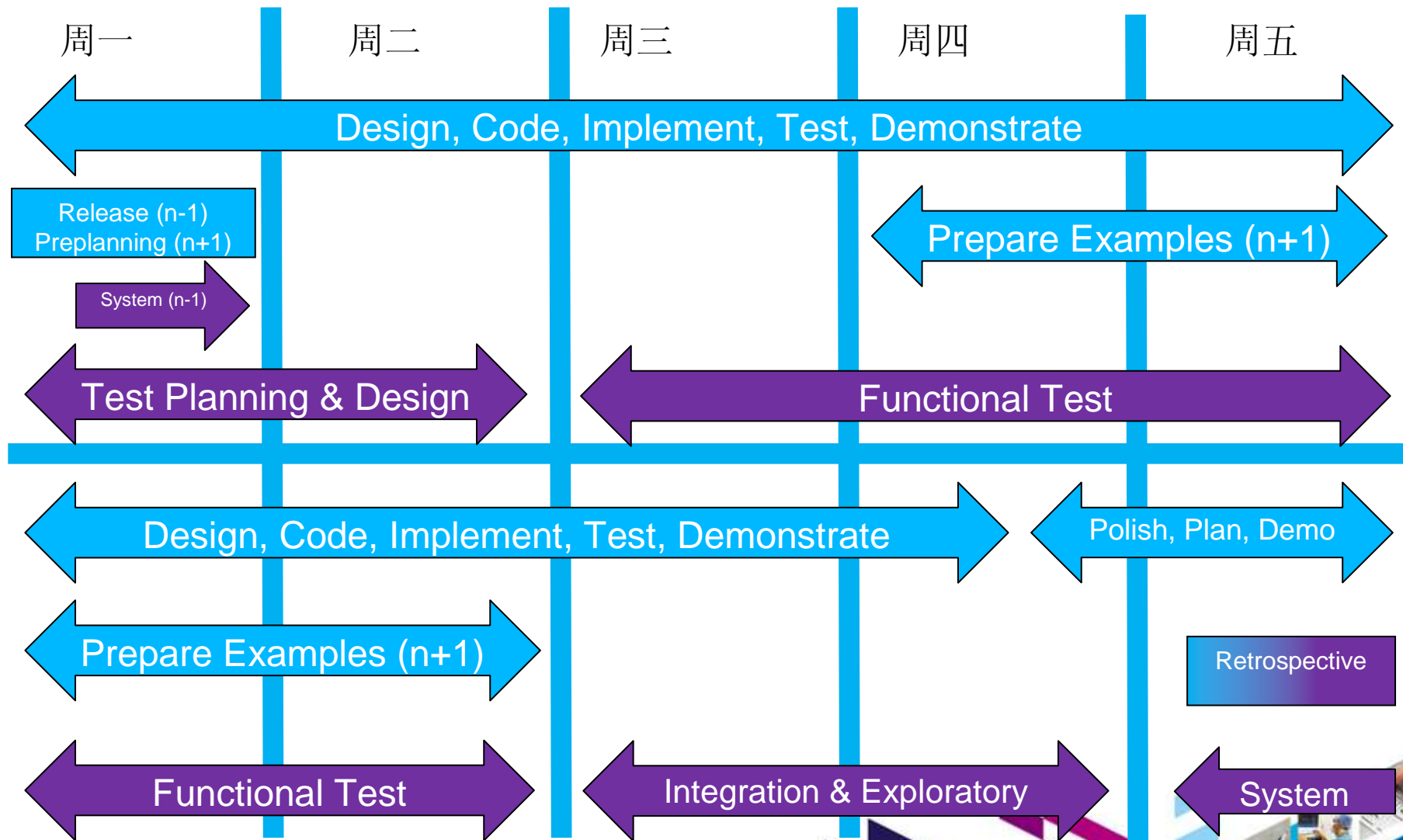
敏捷测试计划

- 发布测试计划 (主测试计划)
 - 沟通测试策略
 - 质量目标
 - 资源估算
- 迭代/Sprint测试计划
 - ▶ 每个Sprint需要验证的需求
 - ▶ 测试进度
 - ▶ 测试环境和测试用例
 - ▶ 整体状态报告
 - ▶ 缺陷、问题和任务管理

The screenshot displays two views of the IBM Rational Test Plan tool. The top view is for a 'Master Test Plan - Watson Project' with a state of 'Under Review'. It includes a 'Table Of Contents' on the left with sections like Summary, Test Objectives, Requirement, Collection Links, Risk Assessment, Test Schedules, Test Environments, Test Team, Quality Objectives, Test Cases, Attachments, and Child Test Plans. The main area shows a 'Summary' section with an overview and 'Categories' dropdowns for Product (Discussion Forums), Release (3.1), and Test Phase (User Acceptance Test). The bottom view is for a 'Sprint Test Plan' with a state of 'Draft'. It has a similar 'Table Of Contents' and 'Summary' section, but the Test Phase is 'Integration Test'. A 'Master Test Plan' section at the bottom lists the 'Child Test Plan'.

Keep it light!

以一个2周的迭代为例



Agenda

Manifesto for Agile Software Development

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Customer collaboration over contract negotiation

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自动化验收测试过程

- 手工测试时产生验收测试, 利用关键字和执行变量加速自动化

Manual Steps ?

Step	Description	Expected Results
1	JKE Login Log into JKE Banking with username and 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. Record account number. Set account .	Validate account created successfully.
4	View account details page.	validate new account with id account is listed.
5	JKE Logout	

Keyword View ?

Clipboard ?

Type Filter Text

Steps

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

Execution Variables ?

Type Filter Text

Name	Value
username	jbrown
account	
password	password123

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

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Responding to change over following a plan

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保持进度的更新

基于个人和团队的任务管理

挑战: 在跨团队的情况下分配和协调测试计划的责任和事件

解决方案: 可视化承诺，减少返工，跟踪任务和监控和事件



团队事件日志

个人工作列表

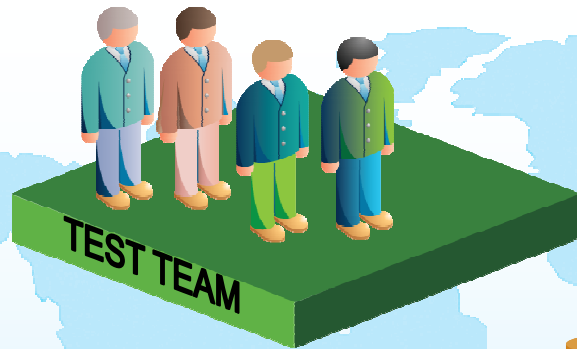
知道对他人的预期, 知道他人对你的预期

内容

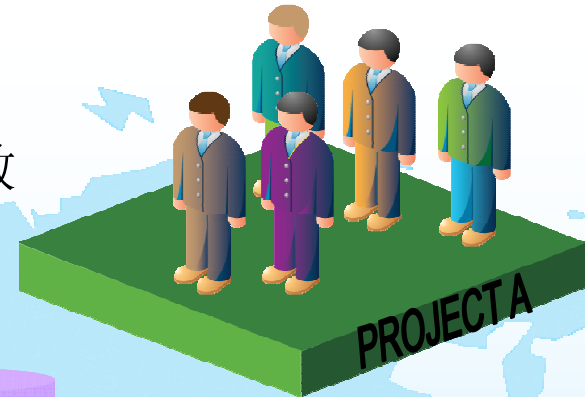
- 敏捷质量
- IBM敏捷战略
 - 已实现的
 - 计划实现的
- 小结



可扩展的协作生命周期管理



实时、透明地访问项目数据、风险和进度



IBM Partner Solutions

Open Source Solutions

Rational Workbench for Collaborative Lifecycle Management

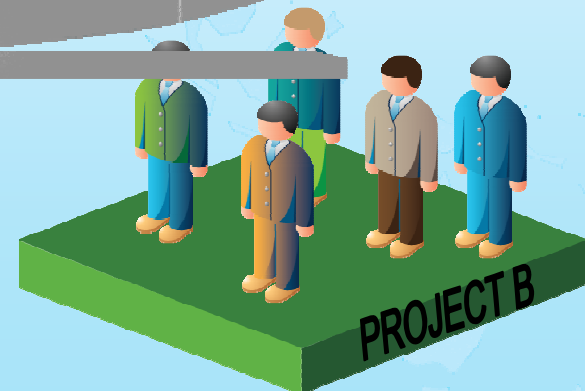
Your Existing Capabilities

Additional IBM Jazz Capabilities

HTTP/REST

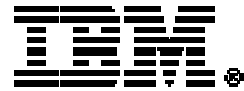


集中的系统管理和安全控制，灵活的部署方式





开放的Rational Quality Manager生态圈



Rational. software

Tivoli. software

Automated Testing

- Rational Functional Tester
- Rational Performance Tester
- Rational Service Tester for SOA Quality
- Rational AppScan Tester Edition
- Rational Test RealTime
- Rational Rhapsody

Builds, WorkItems and Defects

- Rational ClearQuest
- Rational Team Concert
- Rational BuildForge

Reporting

- Rational Insight

Provisioning

- Tivoli Provisioning Manager (TPM)
- Tivoli Service Request Manager
- TADDM

Requirements

- Rational Requirements Composer
- Rational DOORS



Supporting bidirectional integration with the Jira change management system



Accelerating test sandbox creation through service virtualization



Managing mobile applications testing across a global handset test environment



Model-based test generation



Certify



Quick Test Professional LoadRunner



TMAP Process

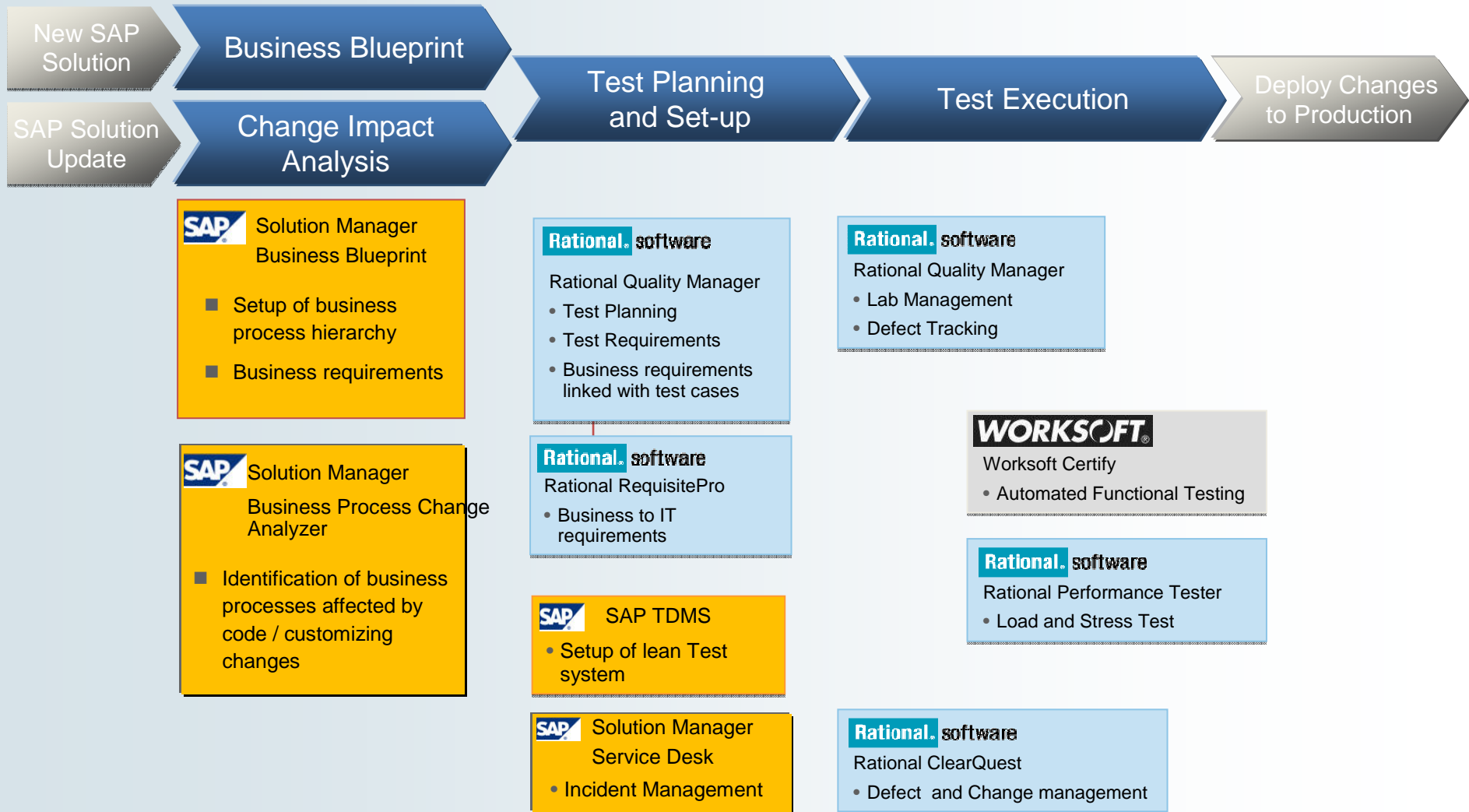


Application Performance Analysis



Telecom Test Automation

端到端的SAP质量管理解决方案



内容

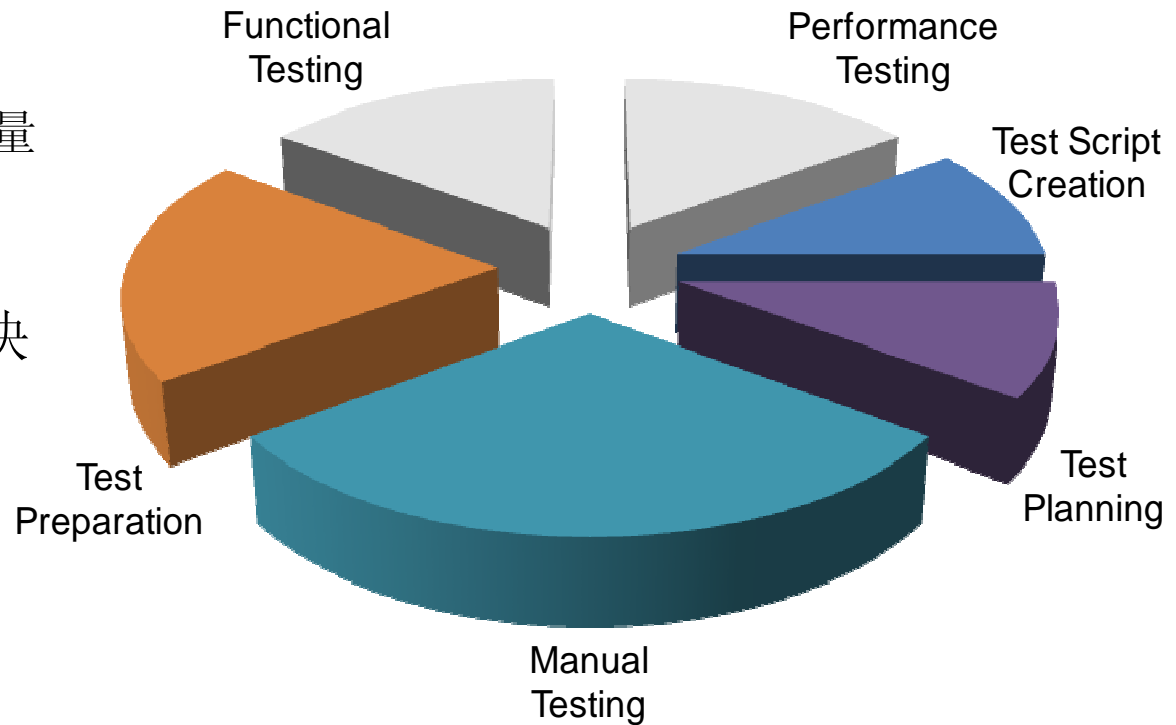


- 敏捷质量
- IBM敏捷战略
 - 已实现的
 - 计划实现的
- 小结



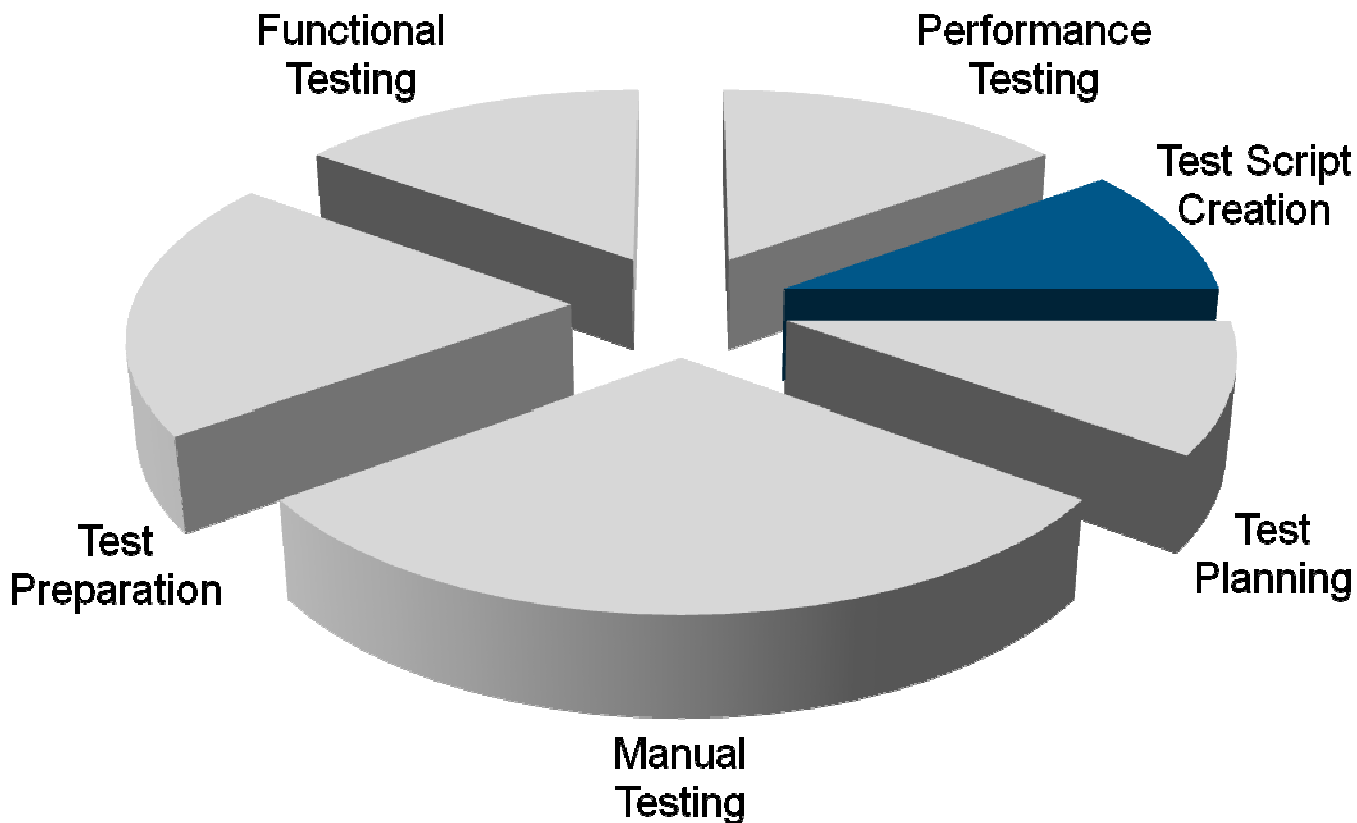
质量保证的未公开的秘密

- 以往关注在测试自动化
 - 功能、性能、服务测试
 - 测试工作量 < 30% QA工作量
- 没有或很少工具能够解决 50%+QA的工作



Estimated QA labor cost breakdown by activity – IBM Feb. 2011

测试脚本生成



更加智慧的测试 vs. 更多的测试

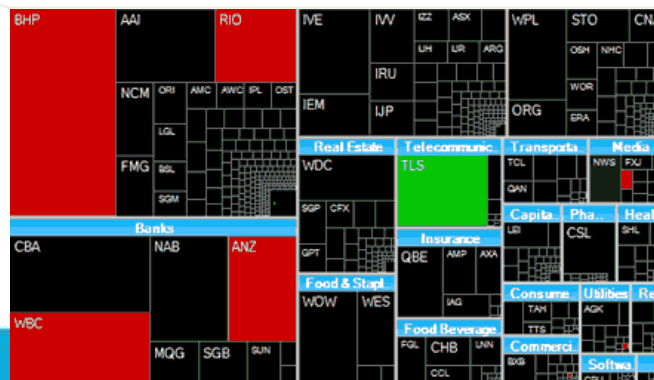
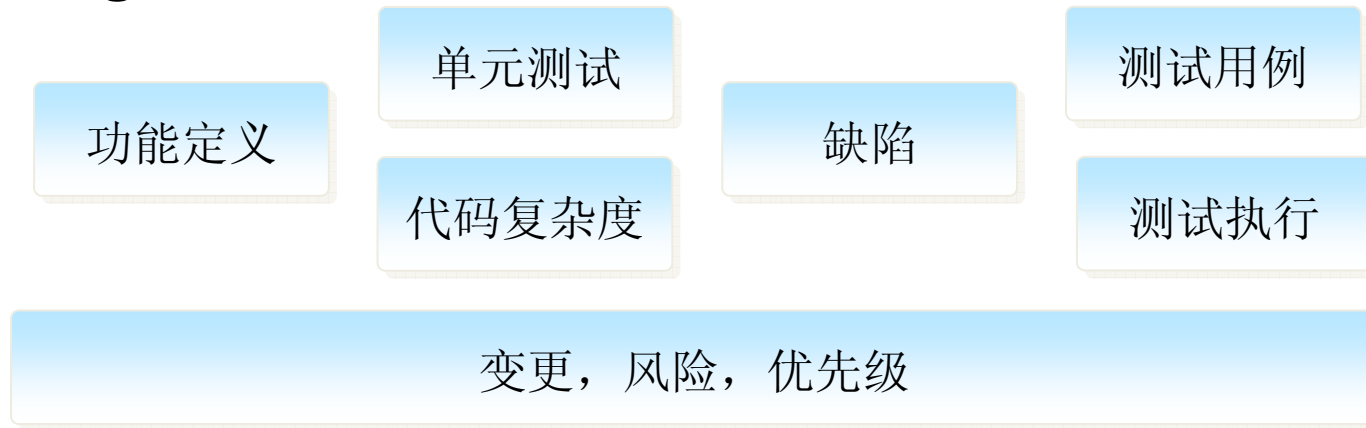
- 事实: 测试不可能面面俱到!
 - 合理的方法是: 关注正确的测试
- 研究不表明:
 - ▶ 80%的缺陷来源于20%的模块 -- *Barry Boehm*
 - ▶ 20% 的测试用例覆盖80%的业务价值 – *Barry Boehm*

如何选择正确的20%?



即时的测试生成指引

- 利用智能分析，从而进行更有针对性的测试
 - e.g. 针对有风险的功能区域进行测试



基于历史数据调整更好的质量流程

基于过往经验的流程改进

■ 持续的数据收集



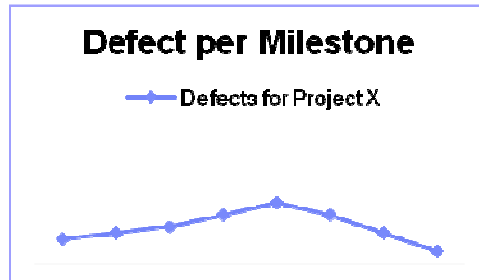
趋势显示最新的里程碑出现缺陷失效

- 对Release的影响
 - 增加时间或更多的里程碑
 - 减少内容以维持进度

■ 基于数据的智能分析



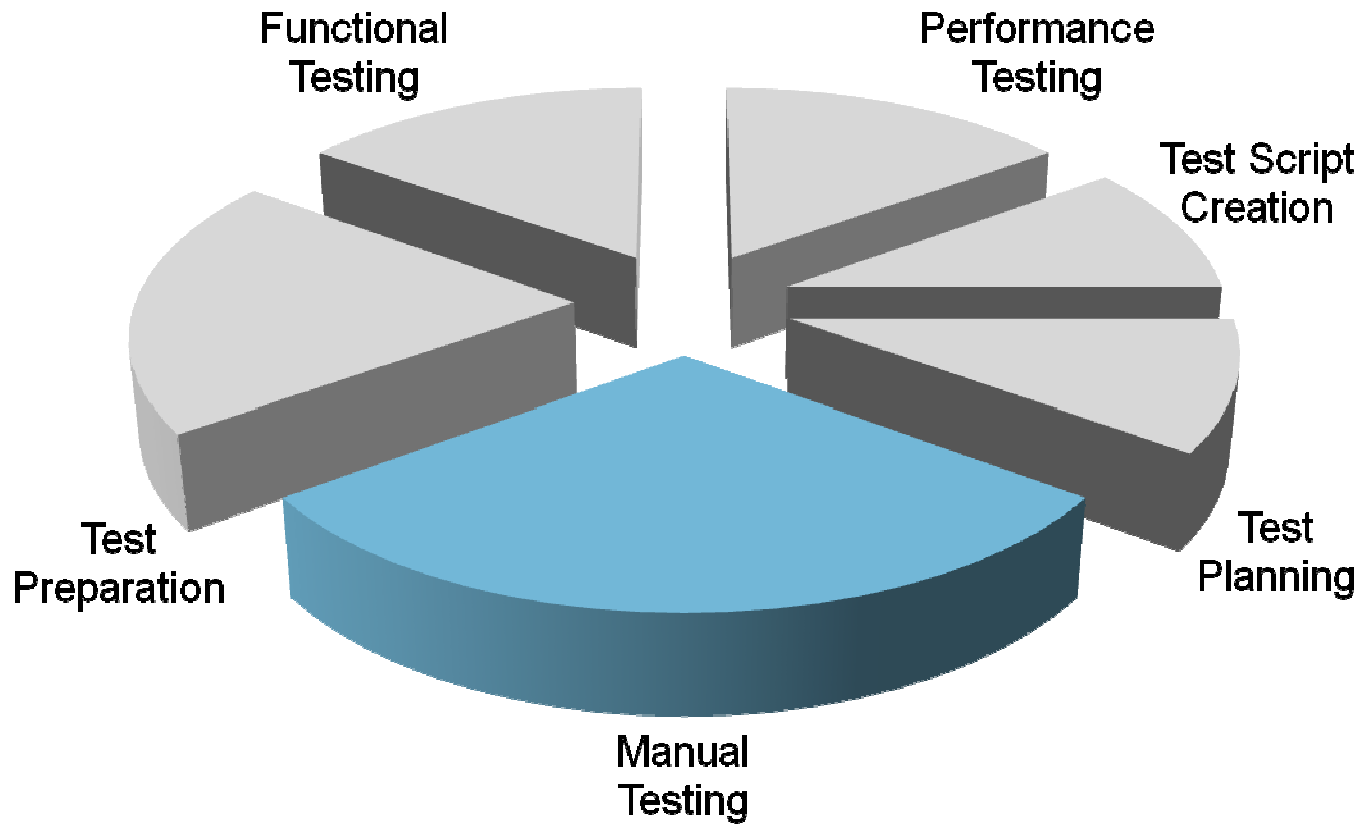
■ 实时的流程调整



目标- 降低流程失效、维持进度

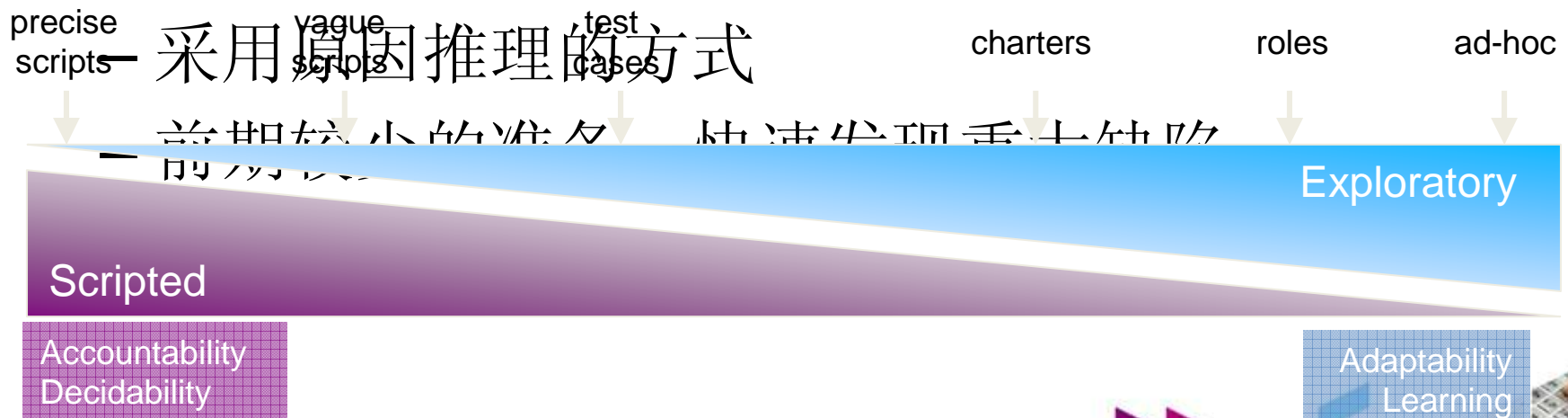
- 对Release的影响
 - 任何里程碑没有重大缺陷
 - 按时交付
 - 按计划内容交付

手工测试



手工测试的方式

- 脚本化的测试
 - 测试用例先被设计，并被记录下来
 - 测试用例可能被其他人在后期执行
- 探索性测试
 - 业务学习、测试设计和执行同时进行



适用于所有人员的测试描述语言

- 类自然语言的脚本描述
- 使得业务分析人员，UI设计人员，开发人员以及其他相关人员能够共享统一的脚本语言



捕获业务流程



定义功能需求

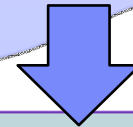


描述工作场景



评估易用性

1. Go to <http://demo.testfire.net/>
2. Verify there is a "Sign In" link
3. Click "Sign In" link
4. Enter "jsmith" into the "Username:" textbox
5. Enter "demo1234" into the "Password:" textbox
6. Click "Login" button



PERSONAL

Online Banking Login

Username:

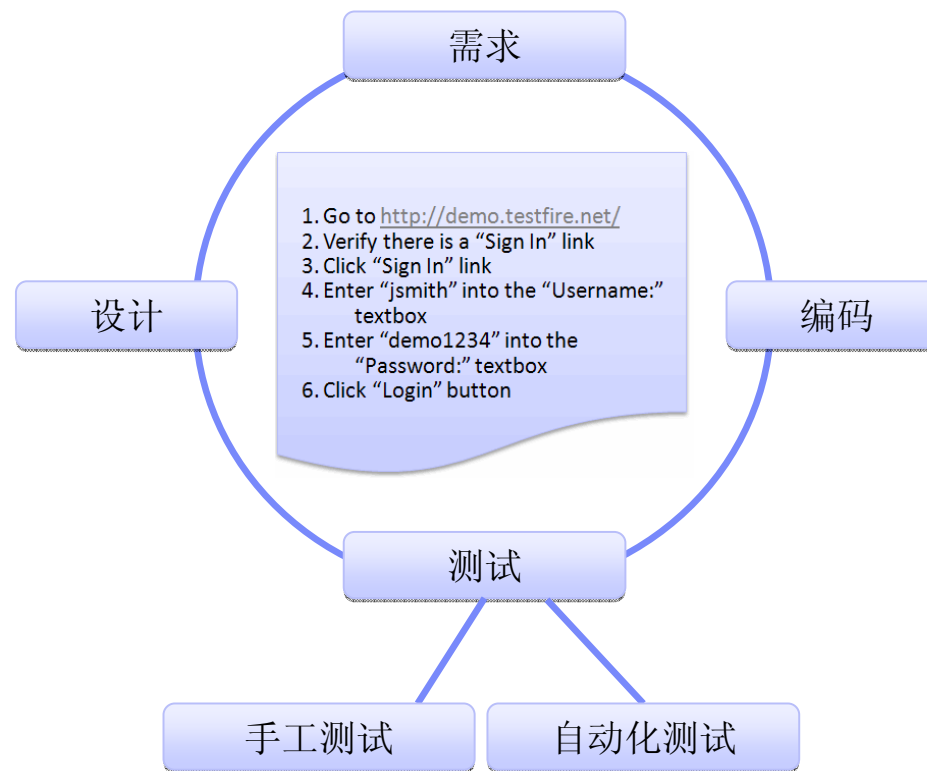
Password:

Login

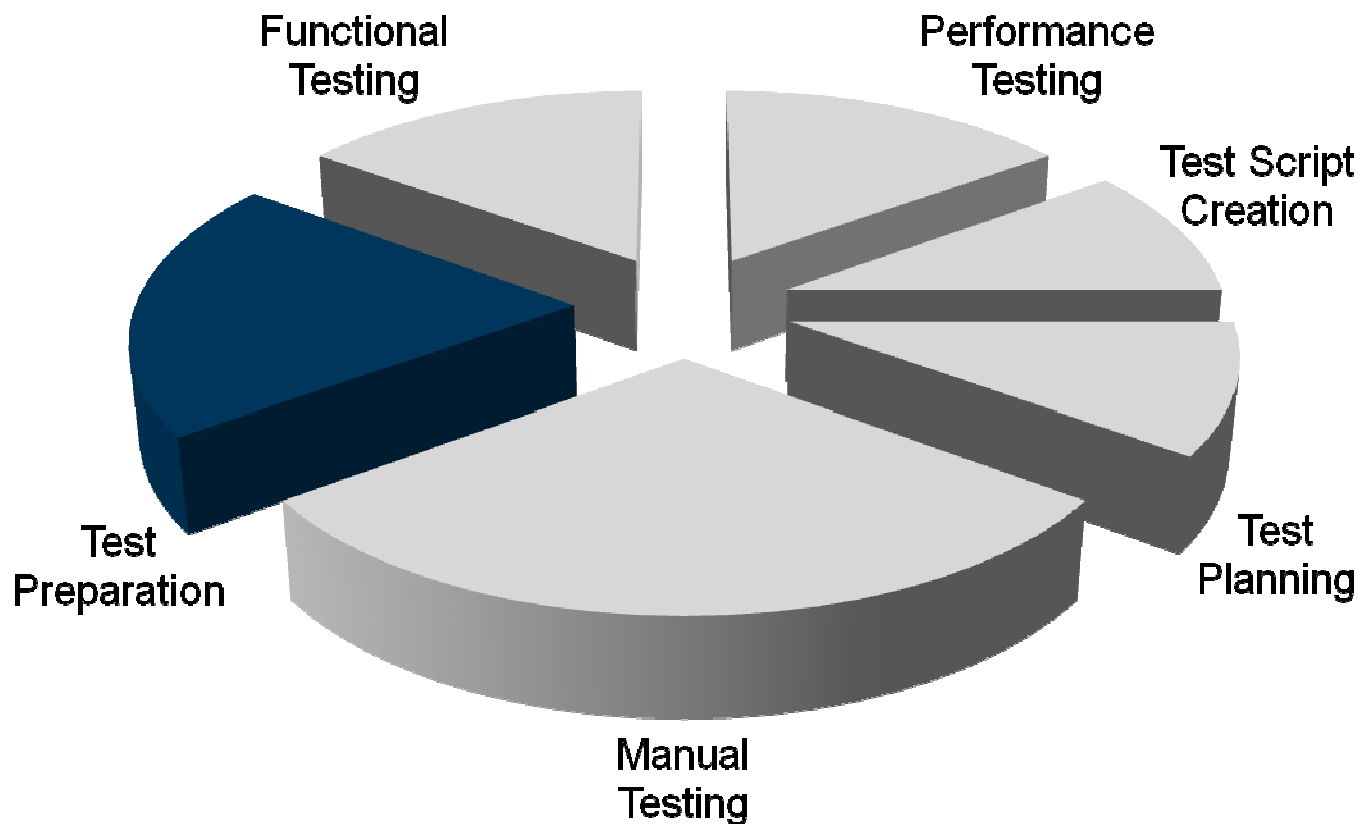


一次描述，广泛应用于质量生命周期

- 在开发的早期捕获测试用例
- 在系统细化过程中，作为手工测试脚本
- 当代码稳定后，转换为自动化回归测试脚本

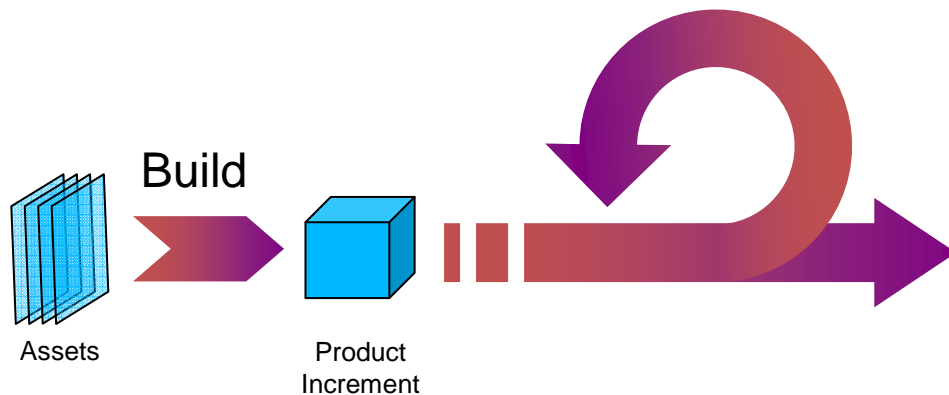
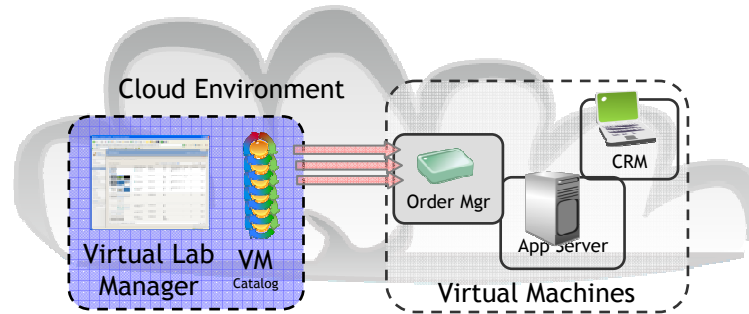


测试准备



测试环境自动化

实现编译，部署，发布，冒烟测试和自服务的
sandboxes的自动化



- 冒烟测试
- Sandboxes
- 自动安装



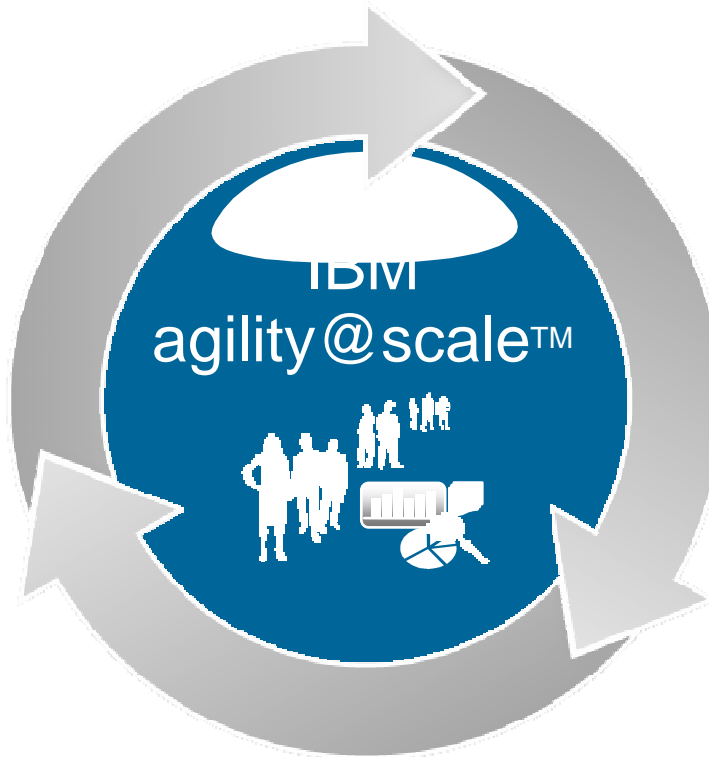
灵活的、成本可控的部署模式



Cloud Provisioning



Integrated Infrastructure "Stacks"



Rational Tools virtual images



内容

- 敏捷质量
- IBM敏捷质量战略
- 小结



小结

- IBM 敏捷质量战略
 - ▶ 关注团队以及RQM和Jazz产品的协作
 - ▶ 借助合作伙伴扩大测试范围
 - ▶ 基于过程数据的收集和分析, 提升测试和质量的ROI
 - ▶ 引入探索性测试, 并提供探索性测试的自动化之路
 - ▶ 将质量延伸到部署自动化



小结

- 敏捷质量管理的最佳实践
 - ▶ 期待并接受变化
 - ▶ 通过快速响应和轻量的文档降低变更的成本
 - ▶ 提供在线实时的状态和进度报告，以便与变更的通知
 - ▶ 在会议过程中收集确认测试用例，提升会议质量
 - ▶ 测试作为完成的标志





