



爱开发 重创新 更智慧

Innovate2011

IBM Rational 软件创新论坛

 Software. Everywhere.



协同的软件架构与建模

分析设计的新愿景

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议程

2011年建模回顾

软件建模的挑战及趋势

协同的设计管理

未来展望

- *RSA 8.0.3 发布*
- *新产品CDM发布*
- *新特性面市*

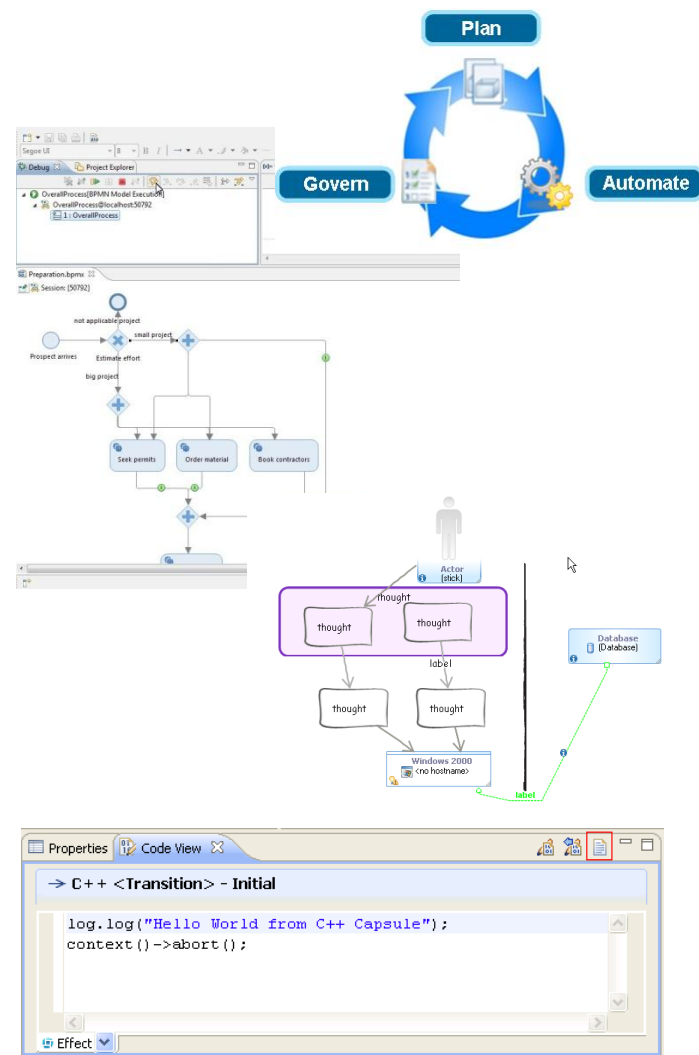
Rational2010/2011 重点

■ Rational Software Architect

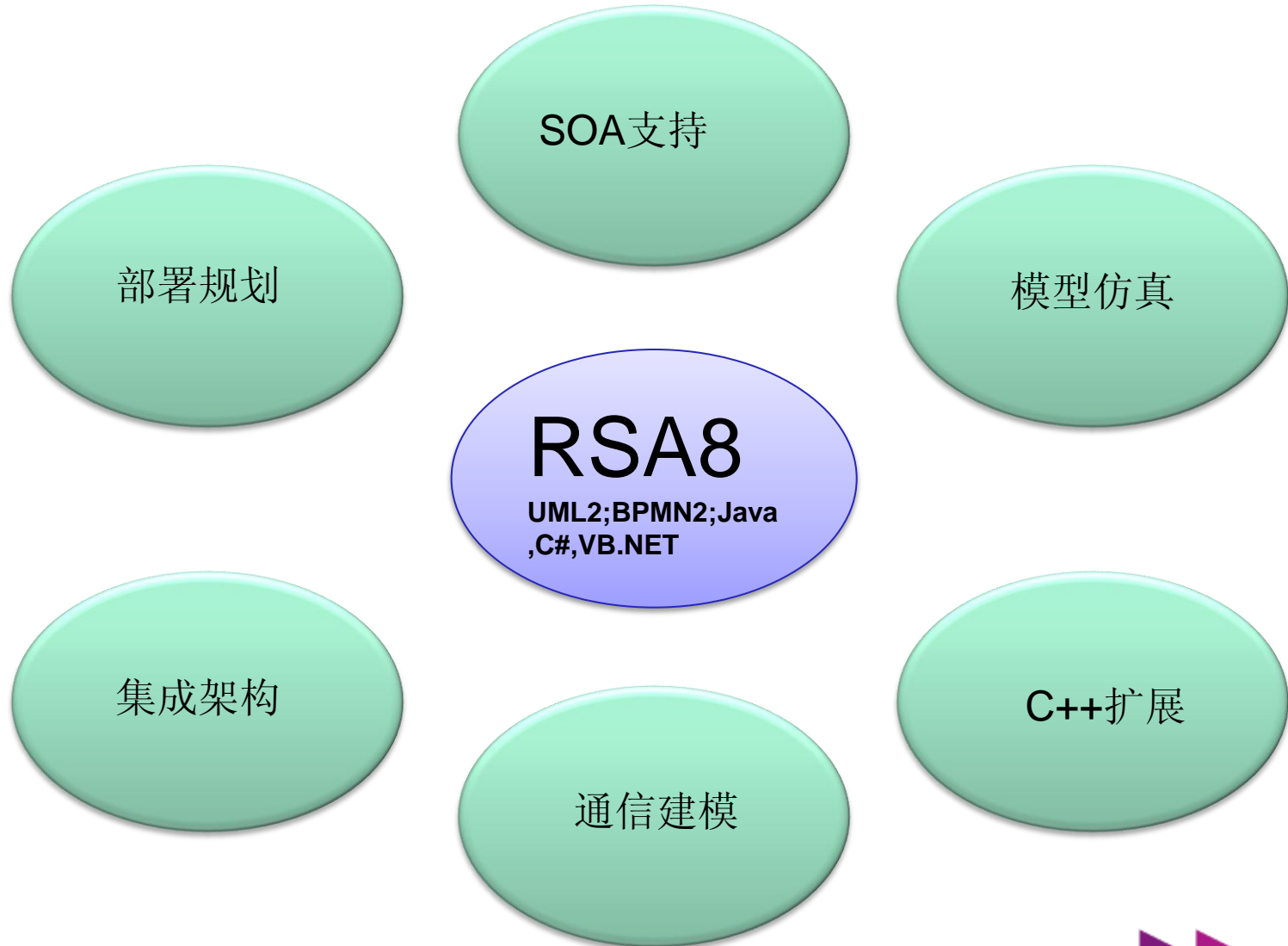
- ▶ 敏捷草图
- ▶ 模型仿真和执行
- ▶ 依据 **Rational SOMA 2.9** 理论指导，实现了相关的服务规约和开发的工具
- ▶ 创建和设计出了**基于REST的服务** 架构风格
- ▶ 用Apache **Struts Framework**为Java EE建模
- ▶ **部署规划及自动化** 和为WAS定制的自动化内容包
- ▶ 通过**RSA 设计管理**与**Jazz** 对接

■ Rational Software Architect Real-Time Edition

- ▶ 针对超大型的实时模型，进行了**性能提升**
- ▶ 模型仿真，对**UAL (UML Action Language)**执行的支持
- ▶ **提升了代码查看器能力**并能更好的支持长代码片段
- ▶ 改进了从**Rose RT** 导入时的图层展示
- ▶ 通过**RSA Design Manager**使RSA/RTE实现了**Jazz**平台化

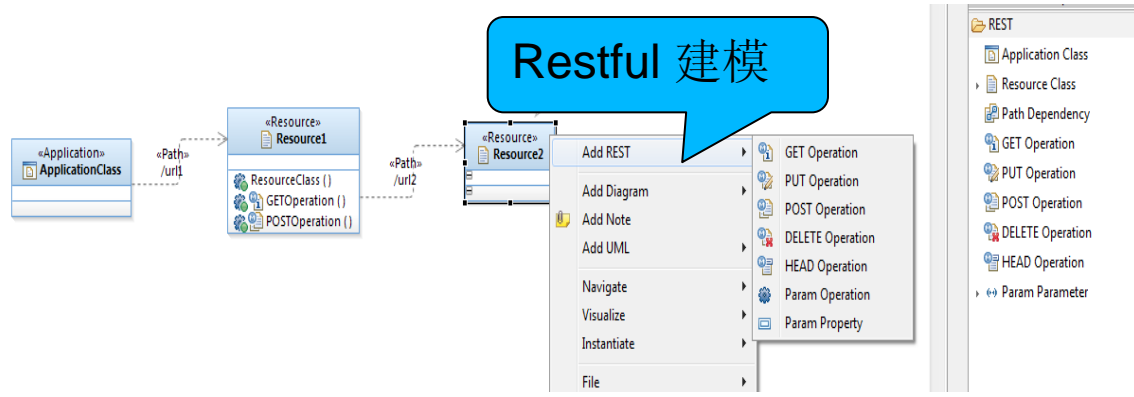


一个全新的RSA

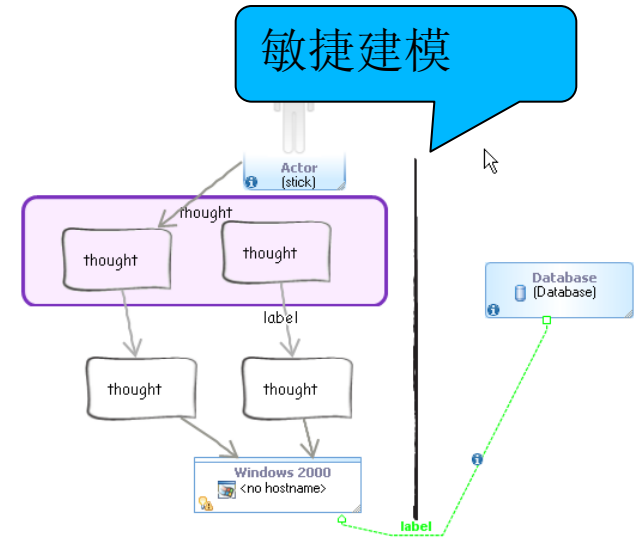


基础的建模能力

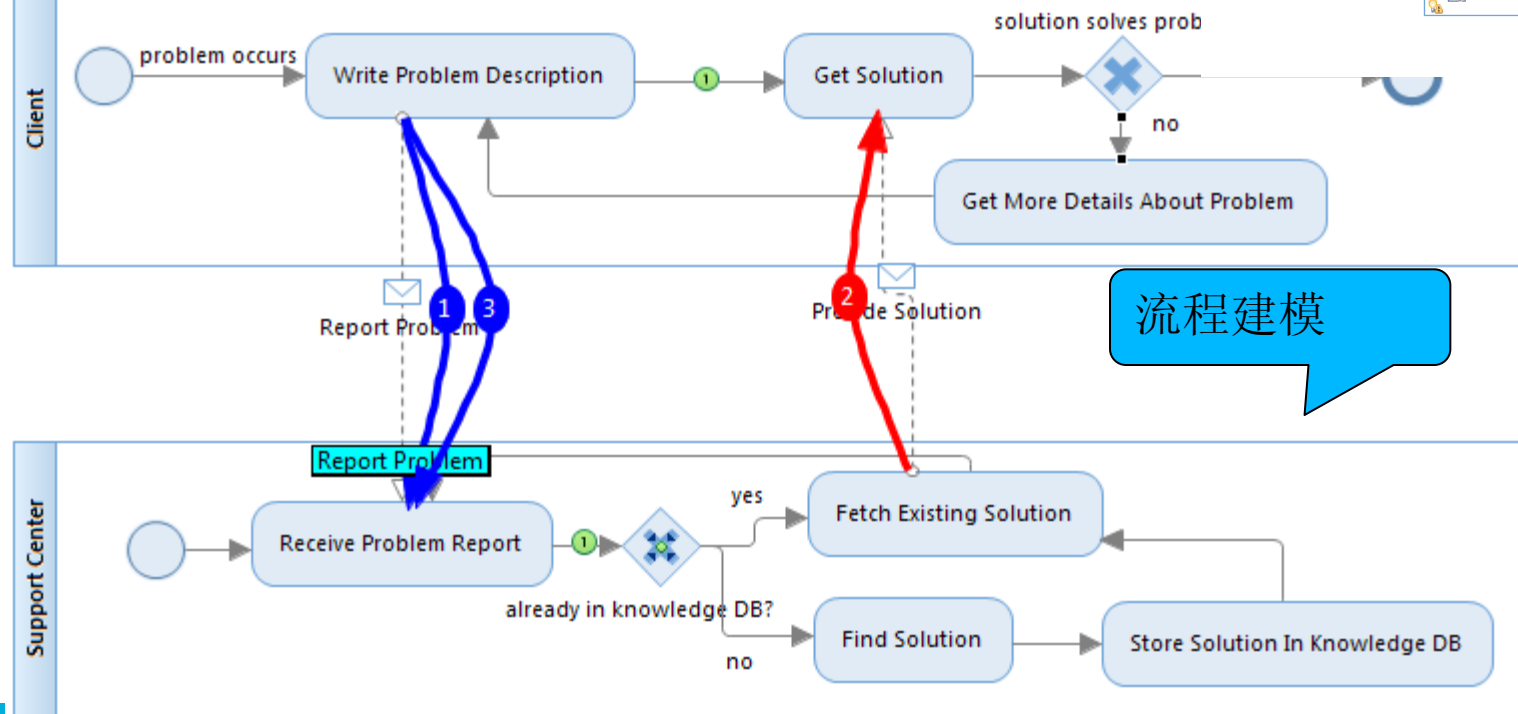
Restful 建模



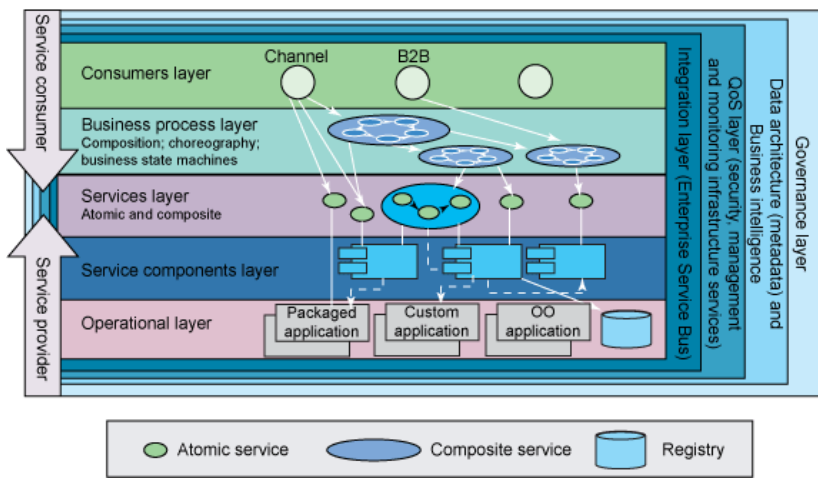
敏捷建模



流程建模



SOA 支持



一个参考架构

一套SOMA理论

一个全面支持的工具

SOMA2.9

The screenshot shows the SOMA2.9 software interface for 'Service Model Outline'. It features a navigation tree on the left, a central workspace with a flow diagram, and a table at the bottom. Three callout boxes highlight key features:

- Service Identification:** Points to the 'Service Model Outline' in the tree.
- Service Specification:** Points to the 'Refactor Capabilities Portfolio' task in the table.
- Service Realization:** Points to the 'Perform Technical Feasibility Exploration' task in the table.

 The flow diagram shows 'Capability Identification from Business Use Cases', 'Business Processes', 'Functional Areas', 'Information Model', and 'Existing Assets' all leading to 'Capability Portfolio Refactoring and Rationalization'.

Steps	Index	Predecessors	Model Info	Type	Planned	Repeatable	Multiple Occurrences	Ongoing
	20			Activity	✓			
	21			Task	✓			
	22	21		Task	✓			
	23	20		Activity	✓			
	26	20		Activity	✓			
	29	20		Activity	✓			
	32	20		Activity	✓			
	36	20		Activity	✓			
	39	23,32,26,29,36		Activity	✓			
	40			Task	✓			
	41	40		Task	✓			

部署规划及自动化



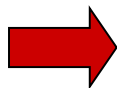
Solution Architect

Describe the topology that captures the deployment requirements for a composite application.

- Would love to
- Reuse known good plans and assets
 - Discover existing resources vs guess

部署规划

应用工件和模板



规划和创建流程



提供的平台和安装/配置的应用

Deployment Engineer



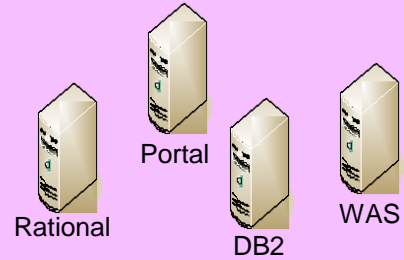
Defines environment media, creates building block workflows, creates service definition and associated management plans

部署环境



物理机器

Or



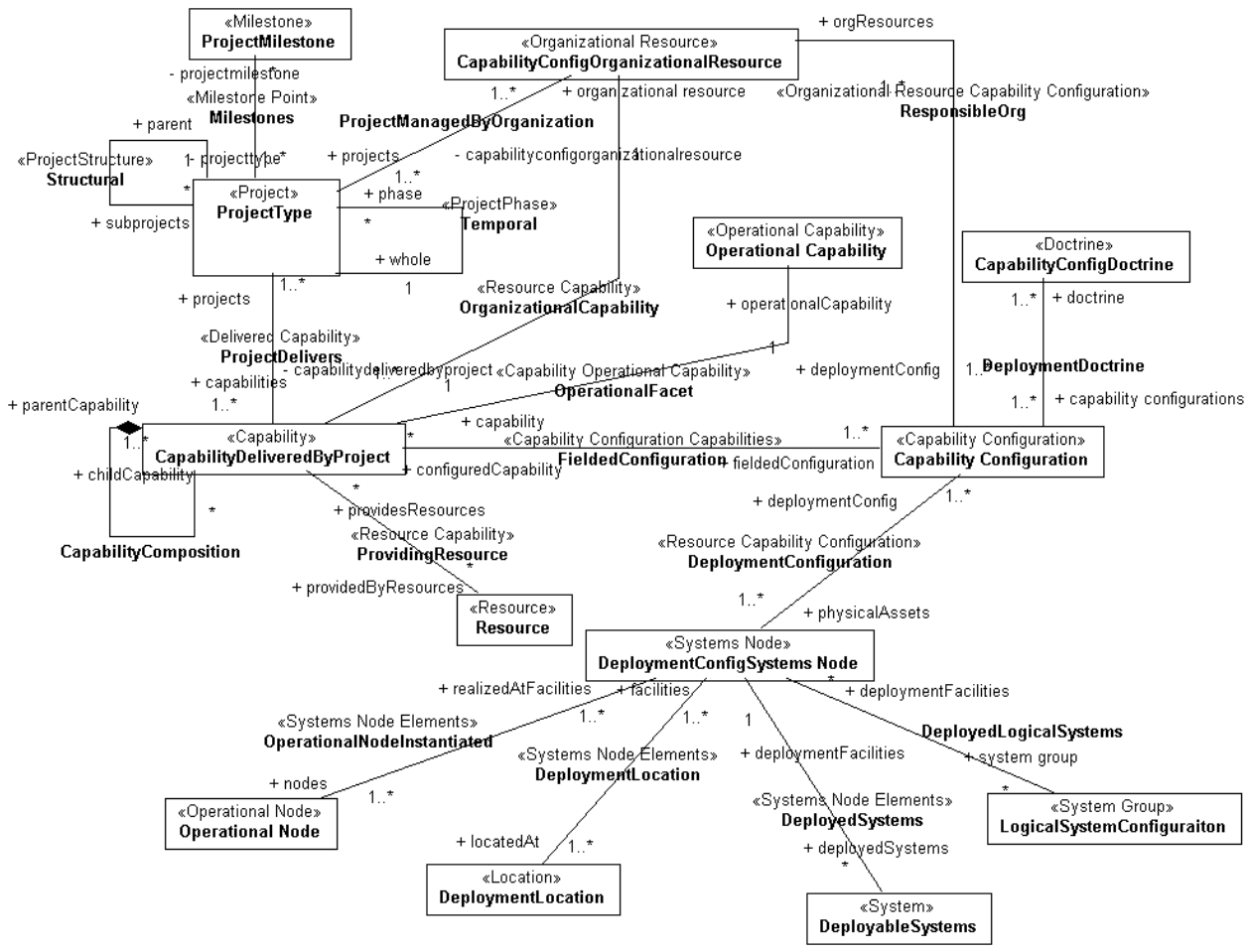
虚拟机器

Or



云

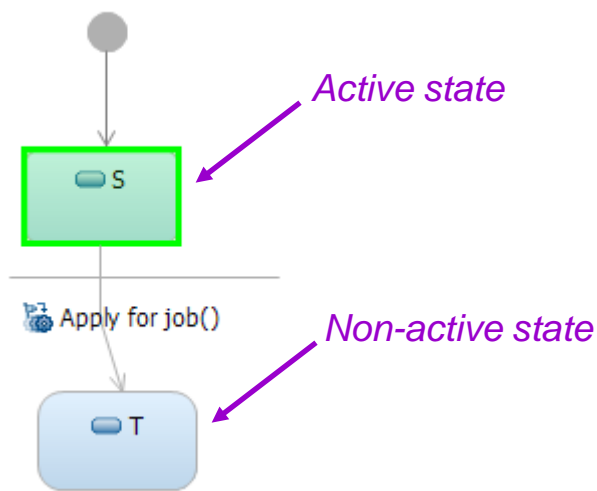
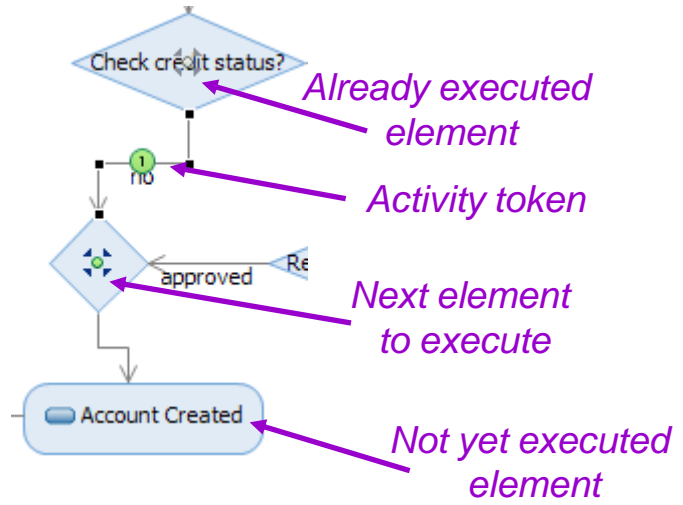
集成架构



支持EA领域的建模如DODAF\MODAF\TOGAF等框架

模型仿真

- UML 行为模型能被执行来模仿它的行为
 - 活动图
 - 交互图
 - 状态机图
- 执行可以控制、调试
 - 停止
 - 中断点
 - 运行到这儿 Run To Here
 - 挂起, 重新开始, 断点, 重启等
 - 执行过程中的事件注入 Restart
 - 运行时提示



议程

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协同的设计管理

未来展望

- 软件开发新趋势：集成、协作、优化
- 复杂性成最大挑战
- 分析设计从个人走向团队



软件开发管理三大趋势

集成
(Integration)

协同
(Collabration)

优化
(Optimation)

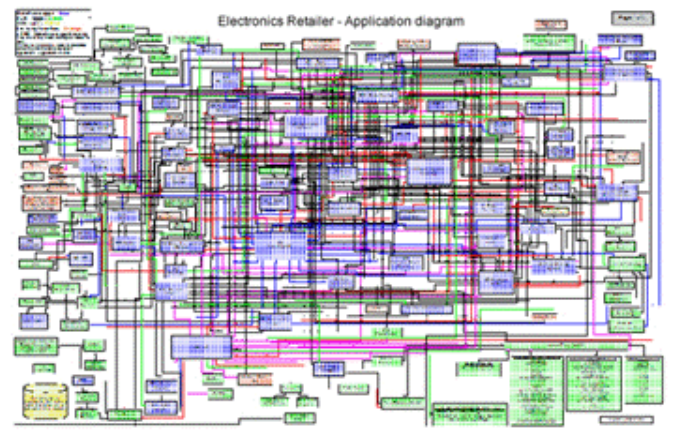


复杂性已经成为当今组织面临的最大的挑战

“今天的复杂性，就是明天的风险，过半数的CEO们怀疑自己管理如此复杂性事务的能力。”

IBM 2010 Global CEO Study: 跨60个国家，33个行业，超过1500个面对面的访谈。(IBM CEO study)

1. 无论IT还是基于设备，基于软件的应用，都在大小和复杂度上持续增长。
2. 全球化的分布式团队，外包和供应链的依赖导致给有竞争力的产品和服务的发布带来挑战



- 组织都纠结于平衡敏捷和复杂性
- 现有的开发设计流程是不够的，必须要更加平滑和高效

设计是控制复杂度的关键

客户在今天通过设计工具去:

- ▶ 简化应用和系统的复杂度
- ▶ 在早期修改成本小的时候, 帮助识别问题和缺陷
- ▶ 缺陷分析, 影响性分析
- ▶ 潜在的重用性分析
- ▶ 自动产出文档并和项目干系人沟通

Estimates Of Relative Costs For Repair Of Generic Defects

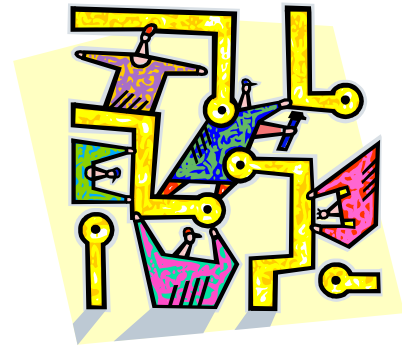
Design and architecture	Implementation	Integration test	Customer beta test	Post product release
1X	5X	10X	15X	30X

X is a normalized unit of cost and can be expressed in terms of person-hours, dollars, etc.



分析设计面临的挑战

- 但是，设计工具通常只关注个体，缺乏团队的集成性
 - ▶ 团队很难获得项目干系人对设计的快速**反馈**，也很难**分享设计成果**。
 - ▶ 很难建立从需求到设计到代码的**追踪关联**，导致变更影响分析的**跟踪性**在设计环节缺失，从而影响对变更的**理解**。
 - ▶ **跨**工具的设计结果的关联难
 - ▶ **跨多个设计成果**和**应用生命周期元素**的报告费时费力，难于获得。
 - ▶ 大量开发团队还在**竖井**下工作，这极大限制了将他们的设计提供给其他团队和组织的机会



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2011年建模回顾

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协同的设计管理

未来展望

- *Jazz上的设计管理项目*
- *RSA Design Manager; RSA Design Reviewer*
- *RSA CDM 逻辑结构*

IBM 推出了协同的设计管理产品 - CDM

让所有的项目干系人参与到设计流程中

- 在整个设计过程中，项目干系人更能理解他们的精力应该放在哪里
- 通过自动化评审和团队范围的跟踪分析，能更好提升质量

跨领域和供应商来统一设计

- 通过一个系统范围的设计存储库，加强了知识的传递
- 显性和隐性的设计变更的影响能很容易的分析和理解

加速 项目交付

- 通过访问真实的信息，决策速度提高了
- 通过干系人直接参与设计，减少了迭代的时间
- 通过设计流程跟踪及多阶段报告，改进了需求方的满意度

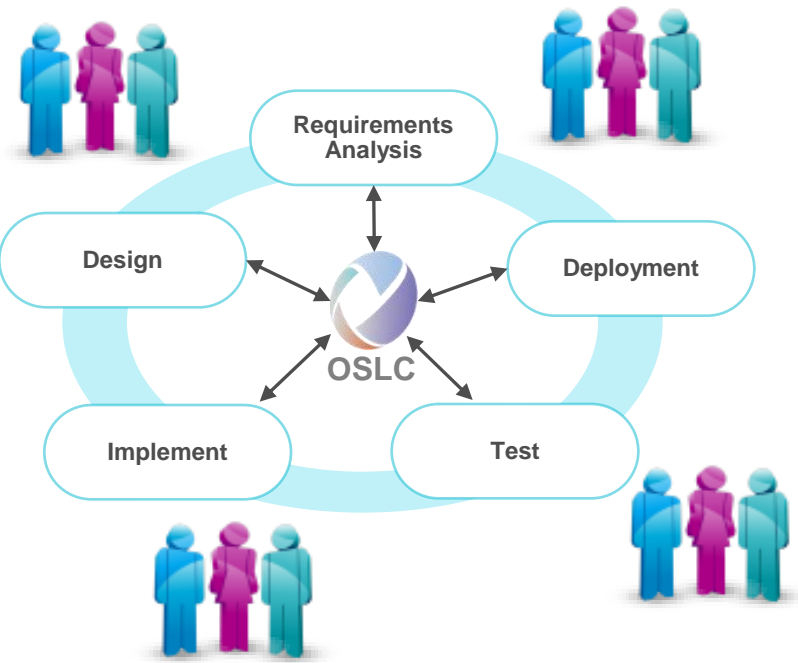


让整个团队都参与其中

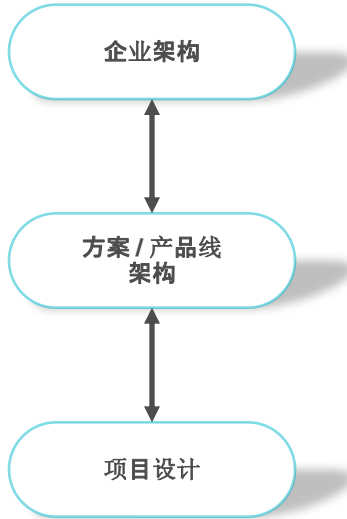
协同设计管理的愿景

跨.....的协作

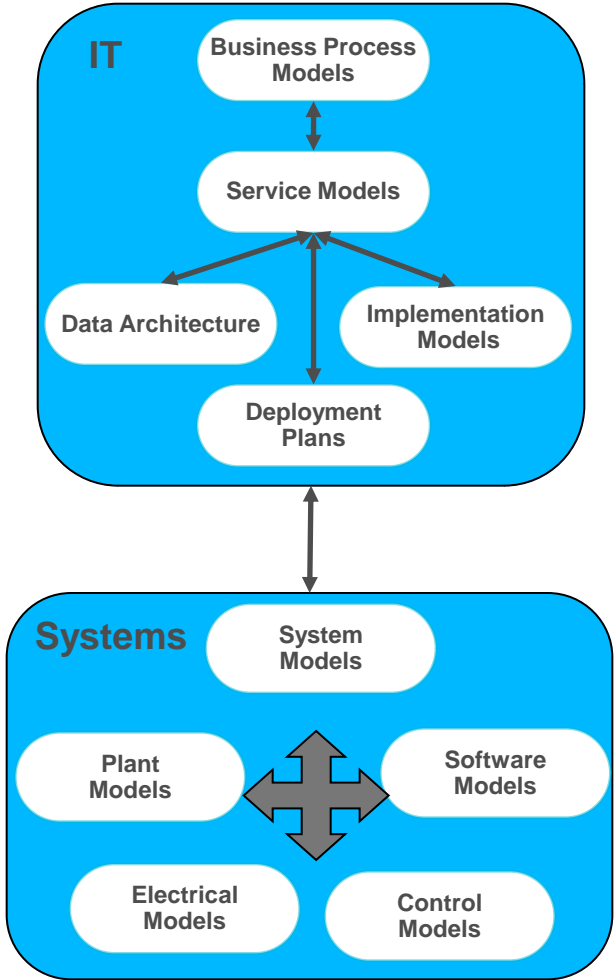
...应用与
工程生命周期...



...抽象层次...



...领域



jazz.net上的设计管理(CDM)项目

- Jazz Design Management 项目是一个将设计团队集成到Jazz的项目...
 - ✓ 用Jazz技术来打破组织竖井
 - ✓ 允许团队在一个公共的设计方法下协作
 - ✓ 提升项目干系人通过web方式来搜索和浏览设计数据能力
 - ✓ 连接设计到其他生命周期资源来提升质量和重用

jazz.net/projects/design-management

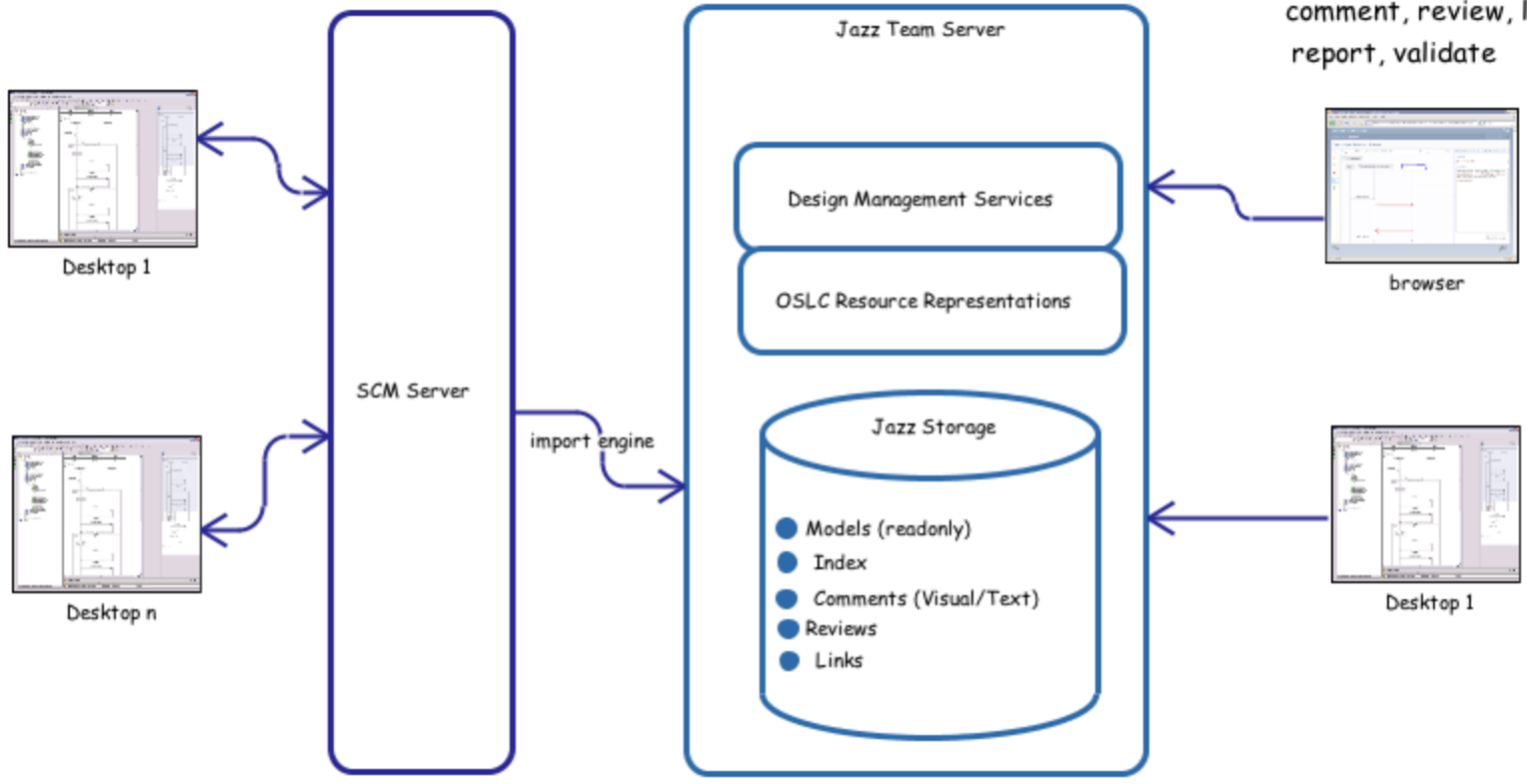
- 你可以访问和参与该项目...
 - ✓ 了解更多内容
 - ✓ 下载里程碑，并使用软件
 - ✓ 参与论坛讨论
 - ✓ 浏览发布计划和状况
 - ✓ 通过提交增强的需求来帮助改进产品

The screenshot shows the Jazz.net community site. At the top, there's a navigation bar with links like Home, About Jazz, Roles, Projects, Downloads, Forums, Library, Development, and Community. A user login section is on the right. The main content area features a large banner for 'Collaborative software and systems design' with a background image of stylized human figures. Below the banner, there are several key messages: 'Agile planning and tracking', 'Scoring with scorecards', 'Design Management' (highlighted), and 'Asset management'. The 'Design Management' section includes a call to action: 'Read our announcement blog >', 'Learn more about the project >', and 'Download it today! >'. Below this is the 'Jazz Team Blog' section with three entries: 'New project at Jazz.net: Design Management!' by Dan Leroux, 'CLM Beta 3 now available' by Erich Gamma, and 'Rational Asset Manager 7.5.0.2 now available' by Derek Baron. On the right side, there are buttons for 'Learn about Jazz', 'Take a tour of Jazz.net', 'Explore development projects', and 'Download products'. At the bottom, there are sections for 'New from Our Library', 'In the News', and 'Testimonials'.

RSA Design Manager 逻辑结构图

Model creation, editing, ...

Model search, browse, comment, review, link, report, validate



搜索和浏览

- 浏览树能管理非常大的树
- 文本搜索能全文检索(名称, 描述, 类型)
- 当一个元素有上下文, 预定义的搜索将找到它相关联的元素
 - ▶ 被依赖的元素
 - ▶ 被依赖的图
 - ▶ 依赖的图

Long Name	Type
[Address Book] Design::addressbook::<Association>	UML2 Modeler - Association
[Address Book] Design::addressbook::AddressBook::contacts	UML2 Modeler - Property
[Address Book] Design::addressbook::Contact	UML2 Modeler - Class
[Address Book] Design::addressbook::AddressBook	UML2 Modeler - Class

Items Per Page Previous | 1 - 4 of 4 | Next

Long Name	Type
[Address Book] Design::addressbook::<Association>	UML2 Modeler - Association
[Address Book] Design::addressbook::AddressBook::contacts	UML2 Modeler - Property
[Address Book] Design::addressbook::Contact	UML2 Modeler - Class
[Address Book] Design::addressbook::AddressBook	UML2 Modeler - Class

Previous | 1 - 4 of 4 | Next

浏览图的渲染

- 所有DM 资源能通过web方式来浏览
- 图能被渲染并在发布后缓存
- 整个图能被导航到
- 图中元素能被选择并能通过弹出式菜单看元素属性

AddressBook modified Feb 16, 2010 2:40:12 PM

Properties Related Elements Other Links

General

Name:

Visibility: Public Private Protected Package

Abstract:

Leaf:

Stereotypes

Keywords:

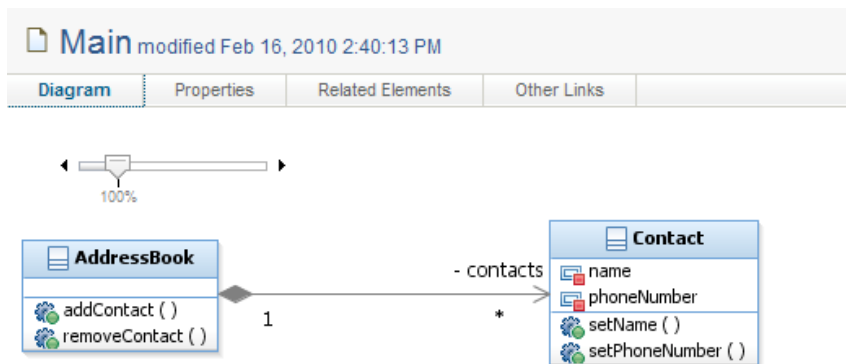
Applied Stereotypes:

Stereotype	Profile	Required
------------	---------	----------

Stereotype Properties:

Property	Value
----------	-------

Documentation



注释

- 能在任何DM 资源上创建注释
 - ▶ 文本性的(纯文本)
 - ▶ 图形化的
- 组织的讨论 (嵌套的回复)

The screenshot displays a software development environment with a class diagram. The diagram shows two classes: **AddressBook** and **Contact**. **AddressBook** has methods `addContact()` and `removeContact()`. **Contact** has attributes `name` and `phoneNumber`, and methods `setName()` and `setPhoneNumber()`. A relationship named `contacts` is shown between **AddressBook** (multiplicity 1) and **Contact** (multiplicity *). A red scribble is drawn over the diagram. On the right, a 'Comments' panel shows a discussion:

- Needs more detail (3)** Now
- admin1** 5 minutes ago: this diagram needs more detailed information in it to qualify as an example diagram.
- Add some more content, and then we'll use it in the demo.
- test** 1 minute ago: Ok, but where should I place the content?
- admin1** Now: Use this area down here. You can even add a sequence diagram if it will fit. [Edit Reply](#)

评审

- DM 允许用户去快速创建审核并收集审核的意见

Reviews >

*MyReview ?

Save

Overview | Participants | Resources | Links

Draft Start Review → In progress → Reviewed → Finalized

Name: Snapshot:

Due:

Instructions:

Participants Add...

Name	Role	Review results	Completed	Actions
Julian Jones	Reviewer	0 0 2	0%	
jim conallen	Reviewer	0 0 2	0%	

Resources Add...

Name	Description	Actions
Main	<input type="text" value="Main Diagram"/>	
JKEClientApp	<input type="text" value="Application Interface"/>	

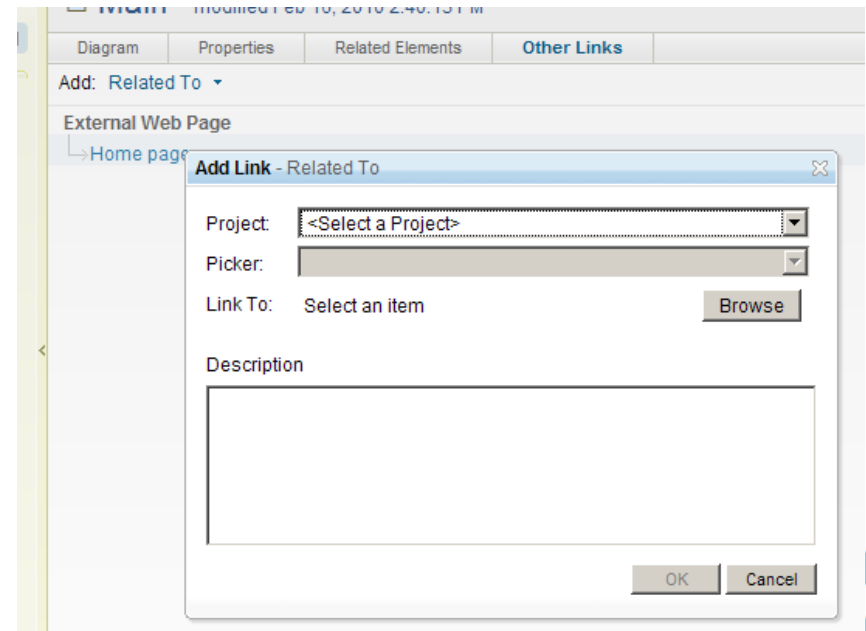
Review Comments [-]

Resource Comments [-]

Comments (0 of 0)

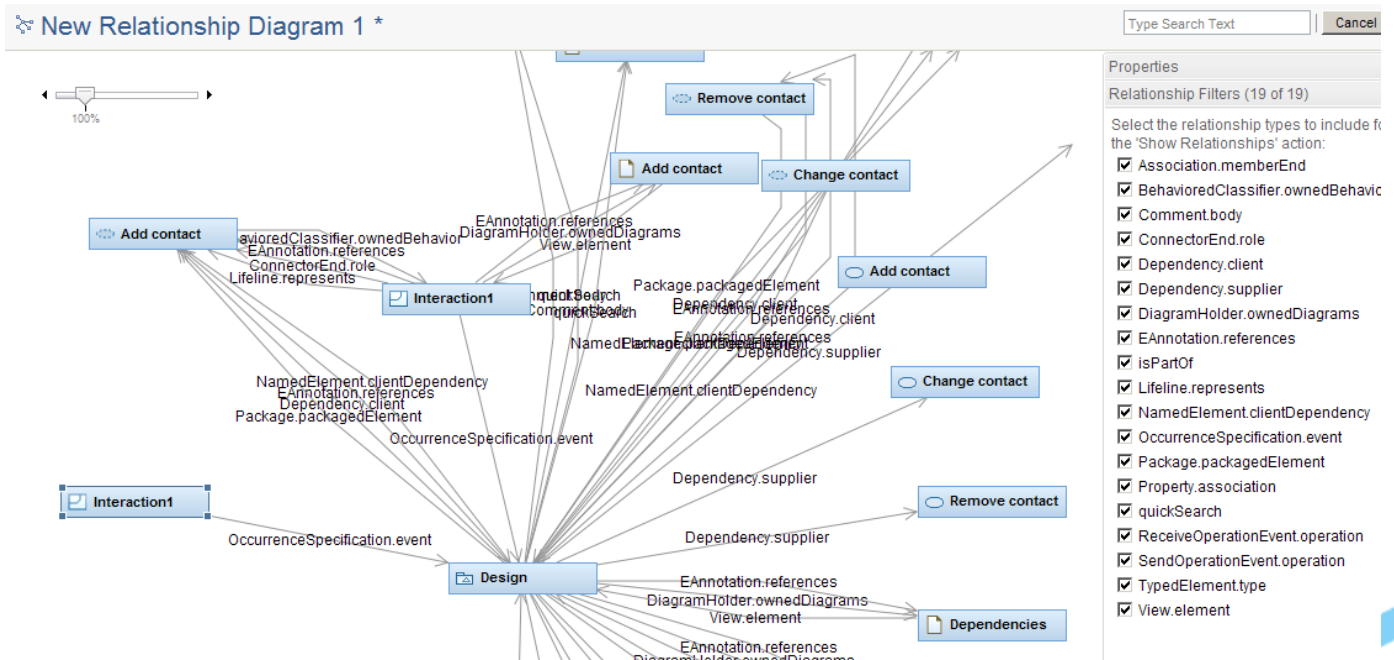
ALM 和OSLC 链接

- DM 允许用户创建资源连接，包括被其他Jazz 和OSLC服务器管理的
- DM 允许捕获和管理连接的简单描述
- DM 能通过资源选择器选择资源，他也提供资源选择器给需要的其他用户
- 链接能显示在用户界面中。
- 项目可以控制什么类型的链接是允许被创建的（包括客户定制的类型）



关系图

- 交互式的“长”出关系图
- 每一个被管理的关系可以被浏览，包括链接到外部资源的关系
- 通过过滤器来管理自己感兴趣的关系



协同设计管理

集中的设计Hub

- ✓ 企业级设计存储库，供检索、评审、分析和重用
- ✓ 关联设计元素到生命周期工件
- ✓ 导航和可视化关系

干系人协作

- ✓ 在所有开发阶段的自动设计评审
- ✓ 为外部团队设计的WEB客户端使设计能被更广泛的访问

文档生成和报告

- ✓ 直接从设计生命周期中创建文档
- ✓ 通过OSLC直接从信息资产库拖过来



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未来展望

- 阶段1
- 阶段2
- 阶段3



协同设计管理 Roadmap



总结

- 复杂性在增加
- **RSA** 桌面解决方案为解决这个问题走了很长的路
- 协同设计管理通过**Jazz**和**OSLC**允许团队基于**RSA / Rhapsody**，集成设计和生命周期各工件，将取得更进一步成绩
- 提升敏捷和创新，减少风险



QUESTIONS

www.ibm.com/software/rational





www.ibm.com/software/rational

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