



An IBM Proof of Technology

Collaborative Requirements Definition and Management Solutions from IBM Rational

Presentations



Created for **TechWorks**

PoT.Rational.08.2.050.00

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Collaborative Requirements Definition and Management Solutions from IBM Rational

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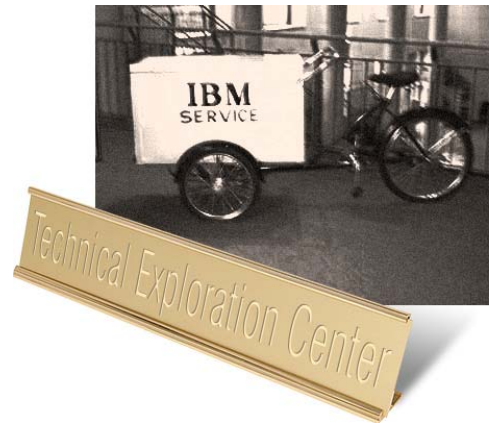
Welcome to the Technical Exploration Center

- Introductions
- Access Restrictions
- Restrooms
- Emergency Exits
- Smoking Policy
- Breakfast/Lunch/Snacks – Location and times
- Special Meal Requirements?



Introductions

- Please introduce yourself
- Name and organization
- Current integration technologies/tools in use



What do you want out of this Exploration session?

Agenda

- Overview of IBM® Rational® Requirements Solution
- Documenting Requirements with an Integrated Editor
- Diagramming and User Stories
- Drawing the New Process
- Showing the Requirement From the User's View
- Reviewing and Approving the Requirements
- Managing your Requirements
- Requirements Across the Lifecycle – Requirements Driven Test
- Requirements Across the Lifecycle – Leverage Requirements for Solution Analysis and Design
- Overview of IBM Requirement Practices (optional)

Overview of IBM Rational Requirements Solution

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Objectives

- Understand the difference between requirements definition and requirements management as well as how they work together in the software delivery lifecycle.
- Identify the different elicitation techniques that are supported by Requirements composer and how they would fit into your organization
- Determine the importance of downstream management and other lifecycle integrations and see how this can be implemented with Rational tools today.

Agenda

- Requirements Definition & Management
- Elicitation Techniques & Requirements Composer
- Management & Lifecycle Activities



*Many CEOs are increasingly looking to their CIO's to improve business value
The CIO must drive down costs while increasing project success at the same time*

“Only 41% of projects are considered successful.”

– IBM CIO Study

CIO Magazine recently reported, “as many as 71% of software projects that fail, do so because of poor requirements management, making it the single biggest reason for project failure.”

30% of all project costs are associated with rework. Requirements mistakes account for up to 70% of this cost, at an average of \$1,300 in labor to fix each requirement

***Reduce rework
in all stages
of development***

Requirements activities impact up to 35% of a project effort, and can cause waiting time, and redundant activities that eat up to 10% of your budget

***Improve requirements
definition productivity
with current resources***

A six-month delay can cost companies up to 33% of ROI on a five year business case

***Faster results – minimize
delays that impact time to value***

There are Often Costly Trade-offs due to “Dis-integrated” Requirements Definition And Management Capabilities

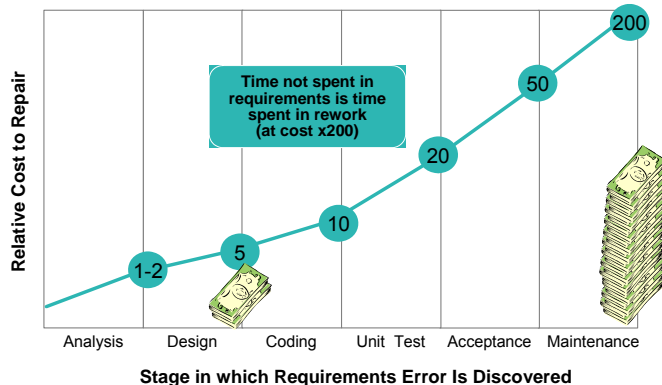
Requirements Impact Time and Effort

- Errors cost **1-200 times** the budgeted cost₁
- More than 40% of IT development budget will be consumed by poor requirements₂
- Typically 20-40% lines of unused code₃

Requirements Impact Project Success

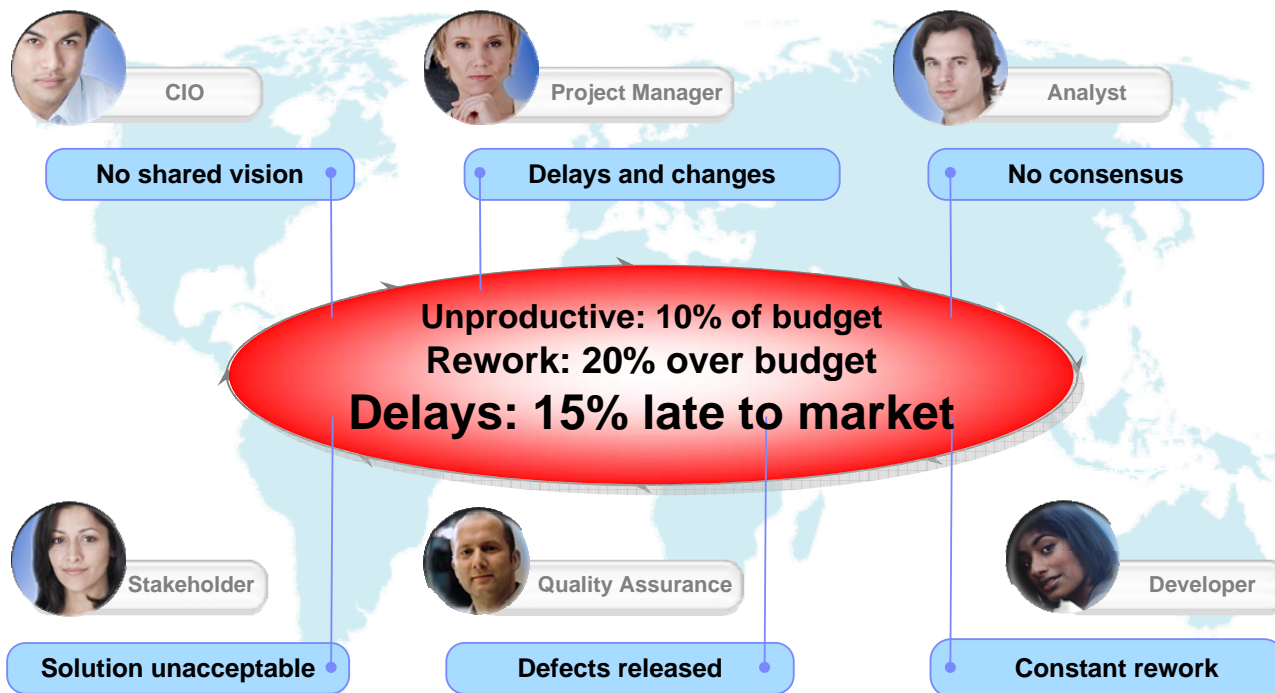
- **28%** of projects on time and on budget₄
- **49%** of projects overrun original estimates₄
 - ▶ Time overrun averaged **63%**.
 - ▶ Cost overrun averaged **45%**.
- **23%** of projects canceled before completion₄
- **Driving Forces:** Low executive support, low user involvement, unclear business objectives, no scope control, inability to capture firm basic requirements₄

Requirements Issues drive excessive rework, delays, poor quality, and project failures.

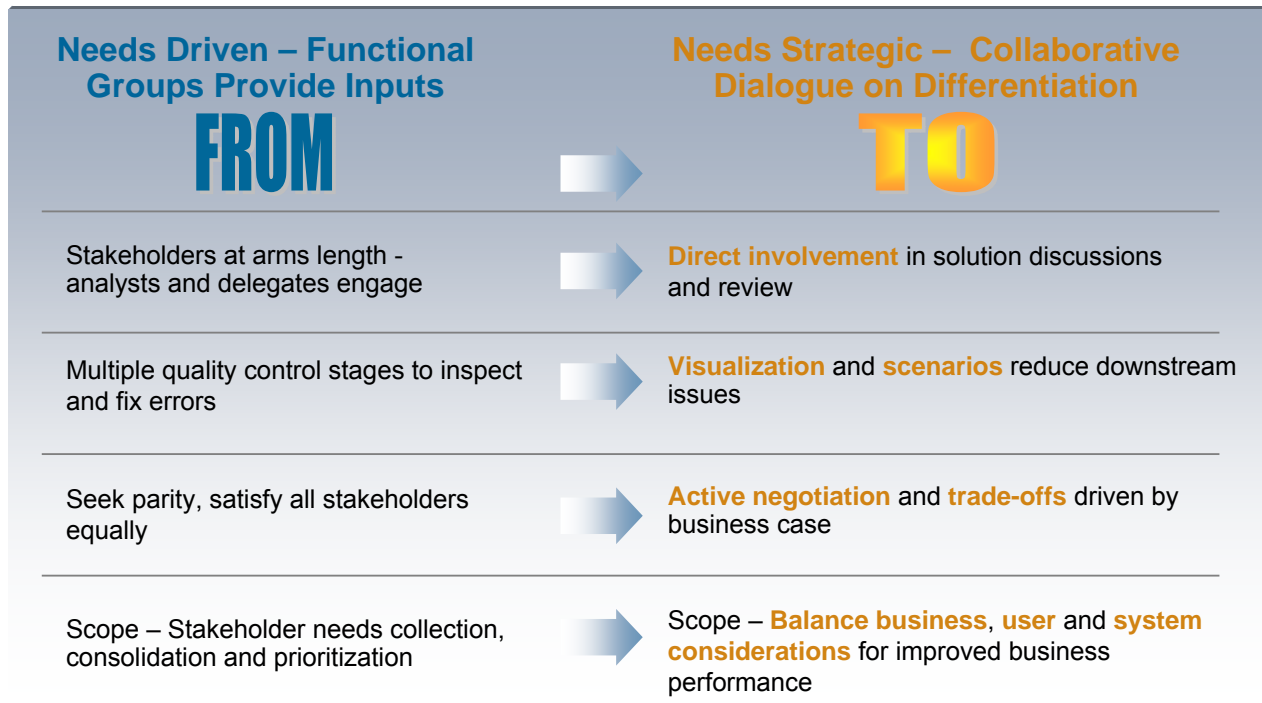


1. IBM Research
2. IAG Consulting
3. Standish Group
4. Standish Group

Impact: Issues ripple across teams, creating shared pain, not vision
 Need more collaborative, organized, and iterative business process



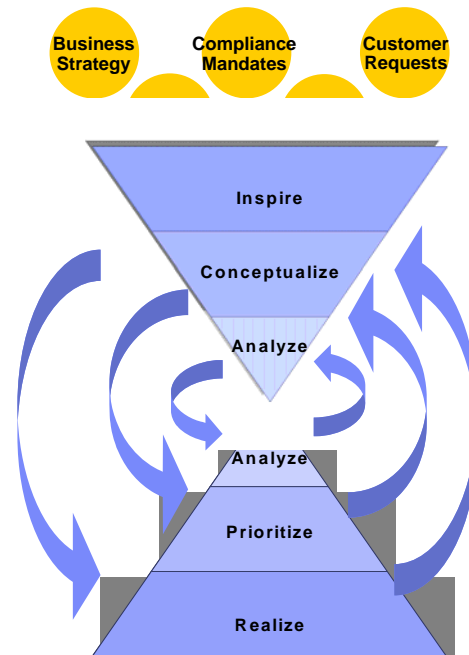
Requirements Paradigm is Changing



Requirements Definition and Management is More Important than Ever

- **Requirements Definition**
 - ▶ Get requirements right
 - ▶ Define the problem and conceptualize solutions
 - ▶ Maintain the context of business needs

- **Requirements Management**
 - ▶ Trace requirements to objectives, tests and designs
 - ▶ Understand the impact of change
 - ▶ Know what requirements have been delivered



Introducing a technology... That can transform software delivery

An open technology initiative to *transform how people work together* to deliver greater value and performance from their software investments



- Robust, extensible and scaleable
- Globally distributed, fluid and dynamic
- Community-based and open at Jazz.net

Collaborate in Context

- Enable team transparency of "who, what, when, why"
- Build cross-organizational team cohesion and presence
- Ensure consistency and clarity and a focus on business needs

Right-size Governance

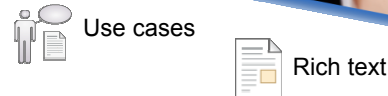
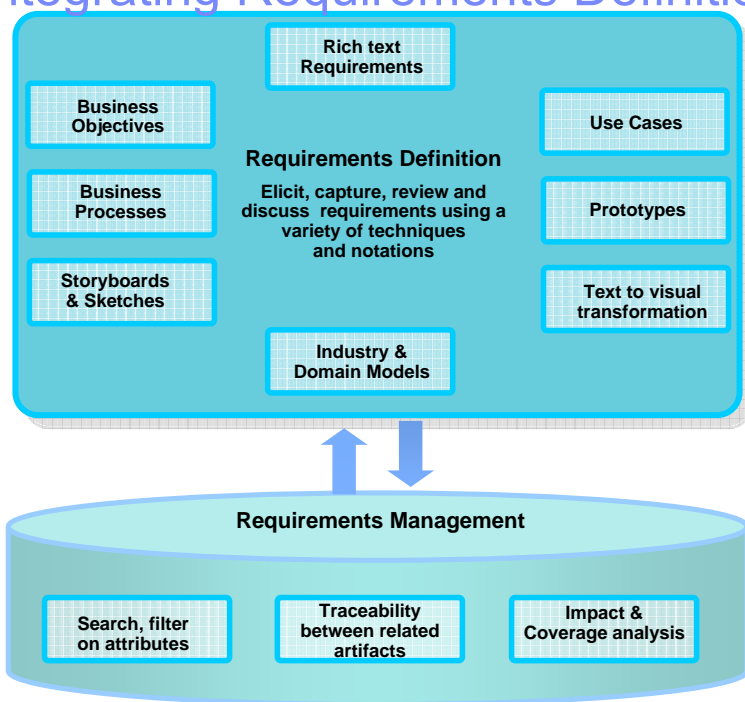
- Add process to team workflow improving productivity
- Automate and consolidate artifact updates eliminating overhead
- Real time reporting and communications reduces project risk

Day One Productivity

- Rich contextual information empowers decisions
- Real-time iterations and discussions
- Unify teams across functions, organizations, geographies

Real-time alignment of people and process to business objectives

Integrating Requirements Definition and Management



Open and extensible on



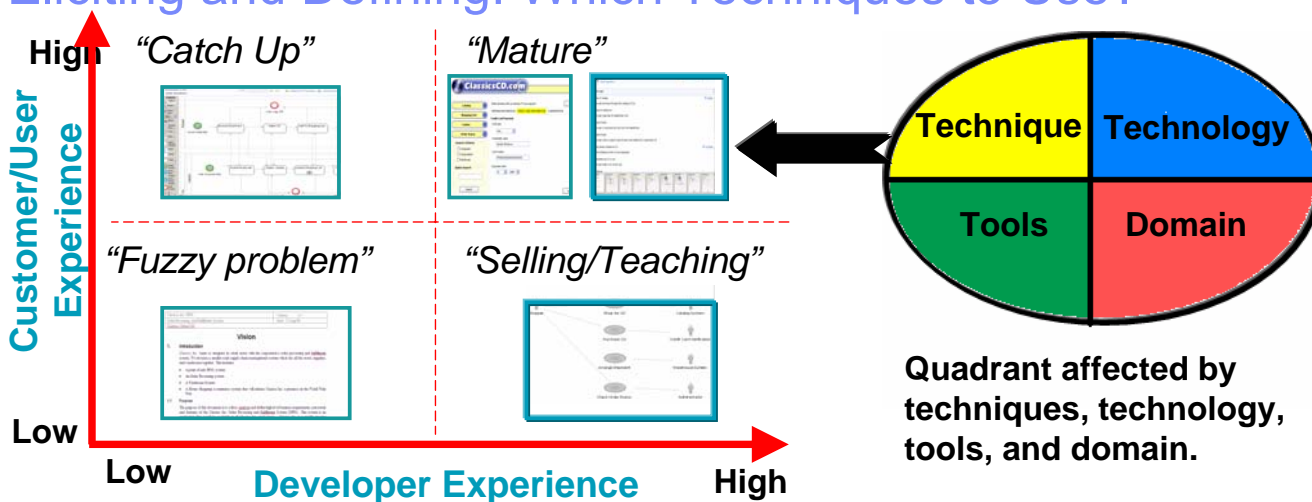
- ✓ Collaborate in context
- ✓ Right-size governance
- ✓ Day one productivity

Agenda

- Requirements Definition & Management
- Elicitation Techniques & Requirements Composer
- Management & Lifecycle Activities



Eliciting and Defining: Which Techniques to Use?



- | | | |
|----------------------|---------------------|------------------|
| 1. Process Sketching | 5. Questionnaires | 9. Documentation |
| 2. Brainstorming | 6. Role Playing | |
| 3. Use Cases | 7. Storyboarding | |
| 4. Interviews | 8. Interface Sketch | |

Which of these techniques might you use for your projects?

Rational Requirements Composer: Capture And Connect The Web Of Information

Use **Rich-text Documents** to capture structured and unstructured information (links, images, emails)

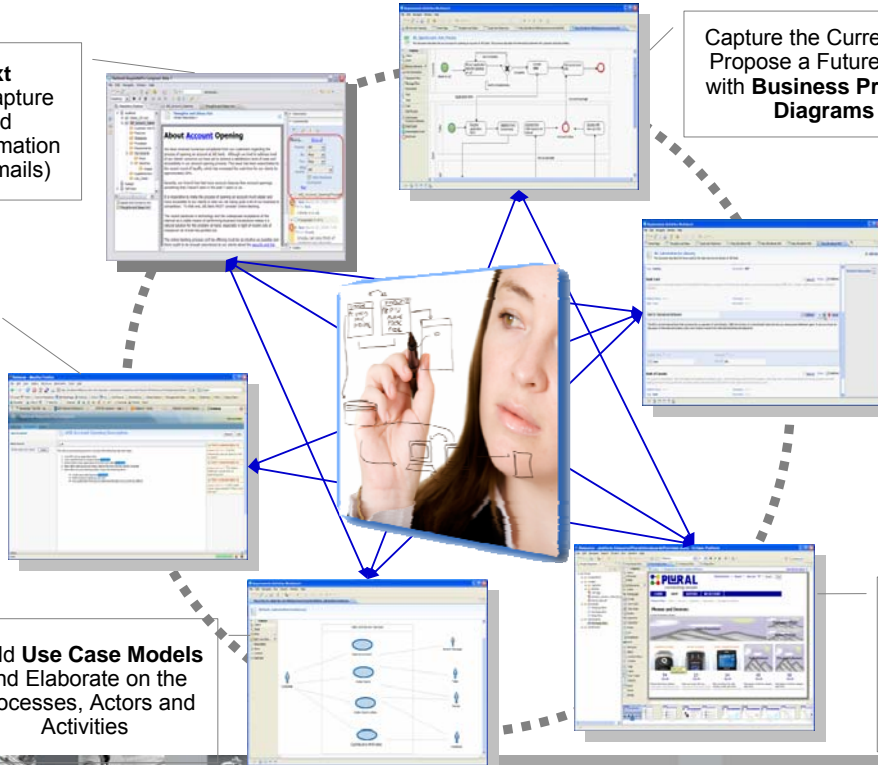
Capture the Current and Propose a Future State with **Business Process Diagrams**

Collaborate in real-time using **Wiki-like discussions**, to quickly achieve sign-off.

Remove Ambiguity on Business and Technology Terminology with **Shared Glossaries**

Build **Use Case Models** and Elaborate on the Processes, Actors and Activities

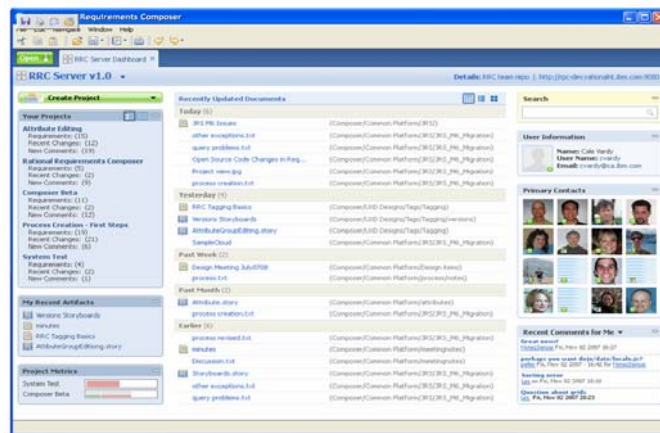
Visualize the User Experience with **User Interface Sketches and Storyboards**



Enable Collaboration through Transparency

Keep teams focused with **dashboards, messaging, and a centralized repository**

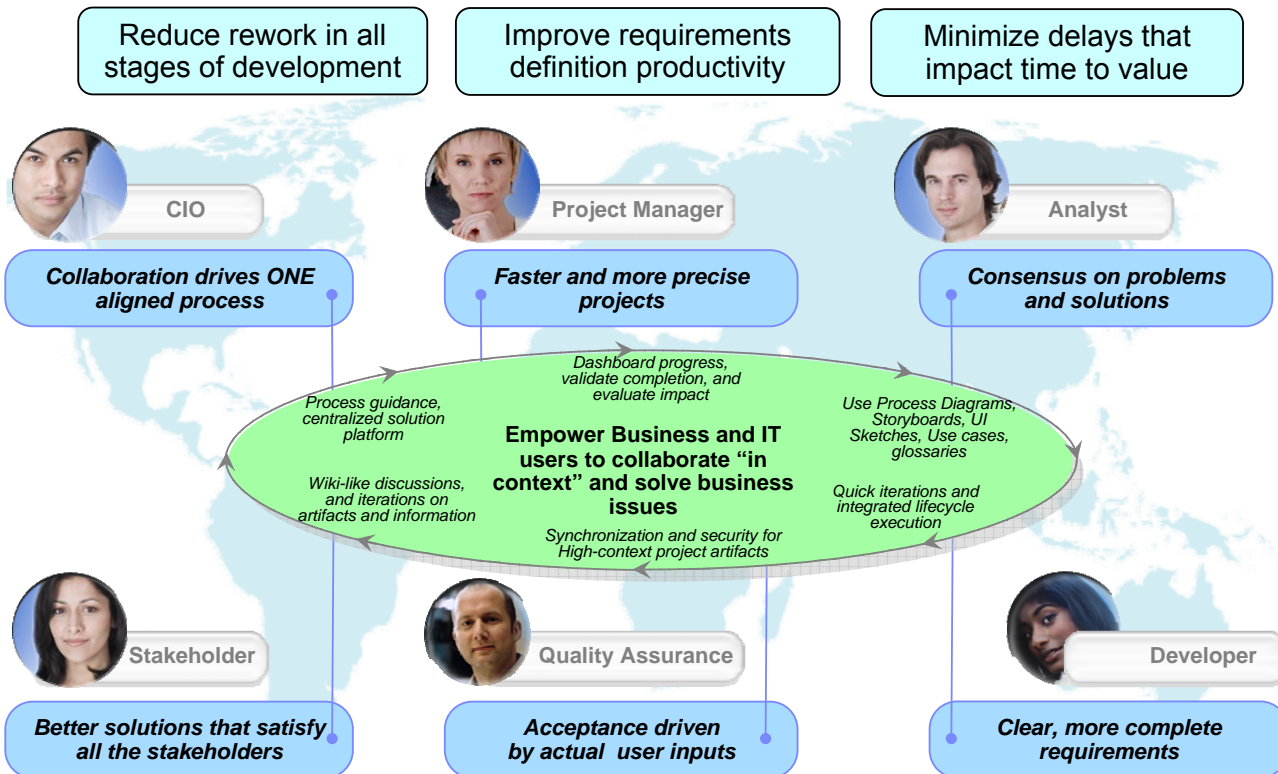
- Collaborative architecture
- Role based dashboards
- Centralized repository
- Security package



Enable Collaboration through Transparency Via the Following Activities:

- Comments
- Tags
- Linking or Marking Requirements

Result: Empower teams to make the right cost, time and scope decisions



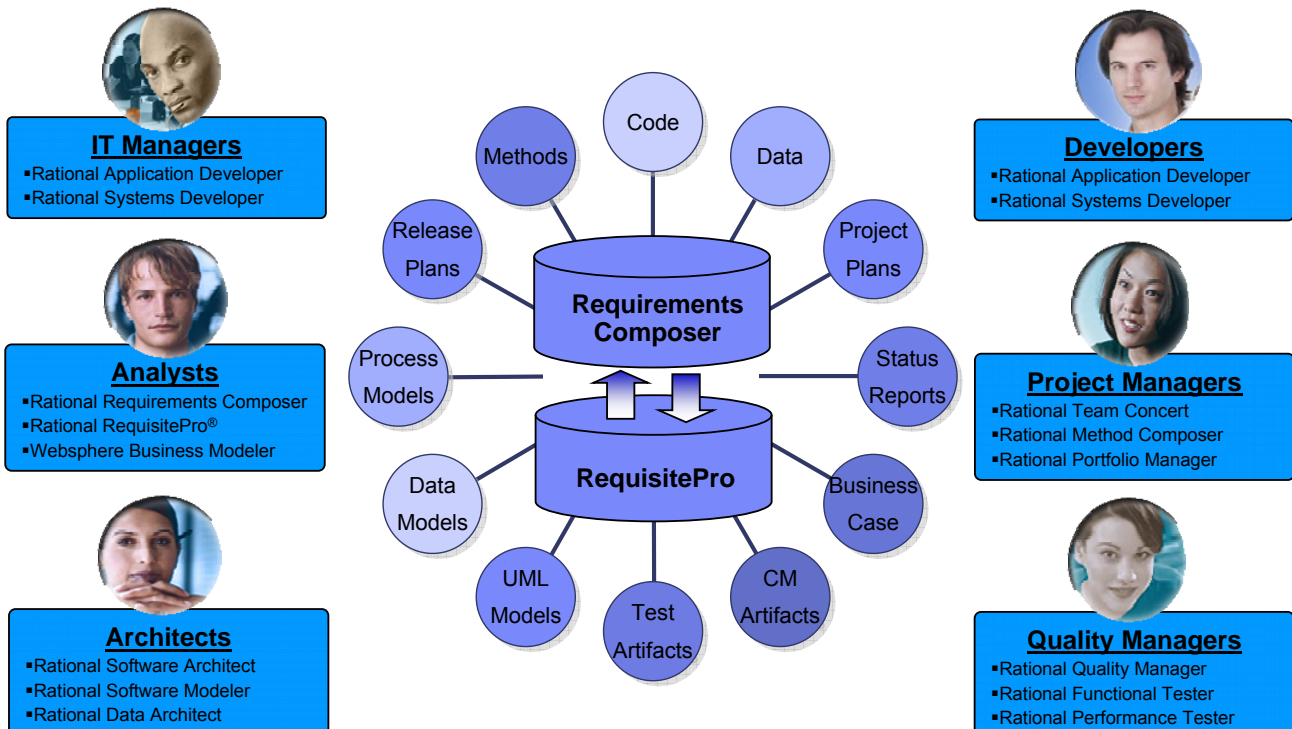
Agenda

- Requirements Definition & Management
- Elicitation Techniques & Requirements Composer
- Management & Lifecycle Activities

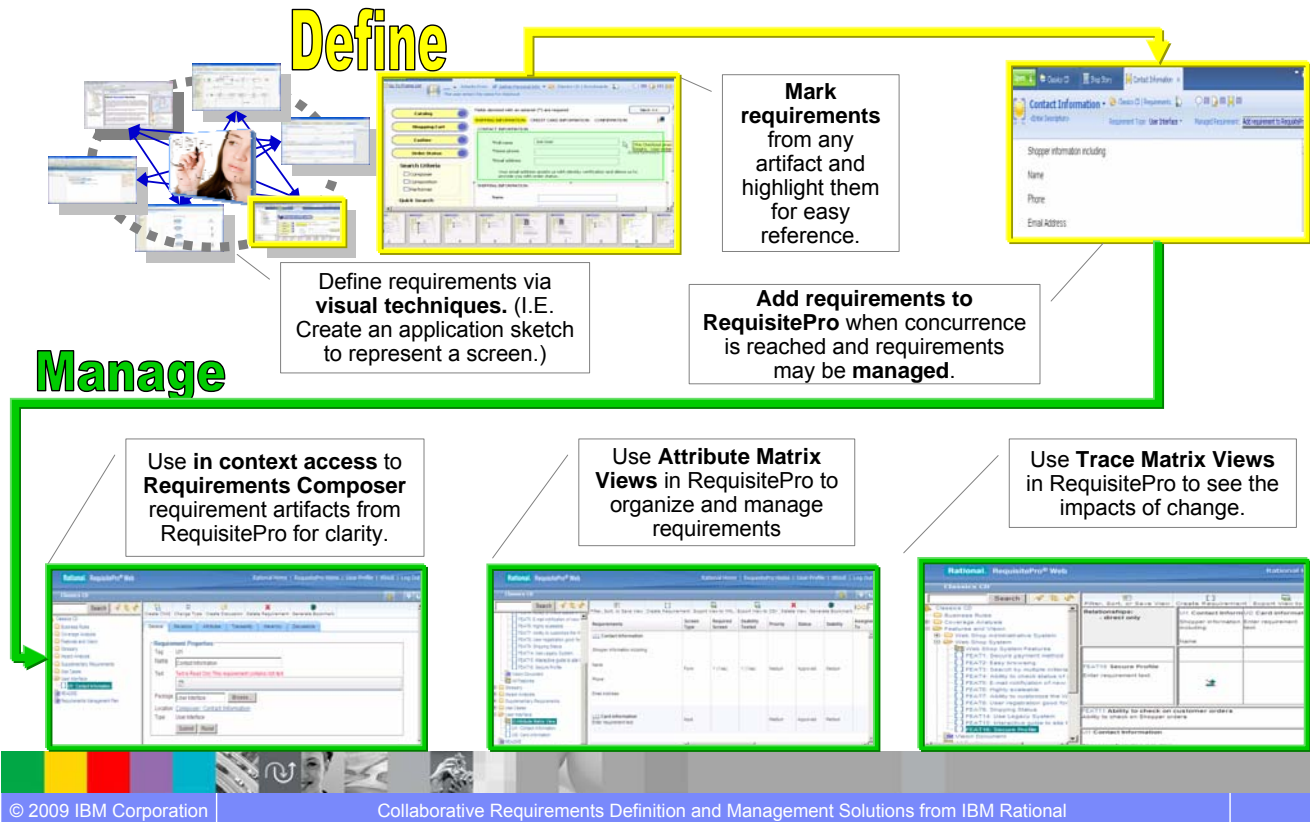


Traceability is Integral to an Integrated IT Lifecycle

Keep everyone on the same page with traceability and alignment

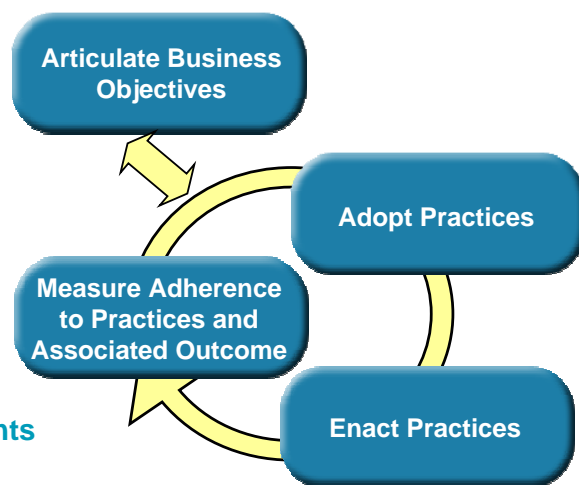


Rational Requirements Definition & Management Tools: Capture And Connect The Web Of Information Across the IT Lifecycle



Practices Enable Teams to Incrementally Adopt Approaches to Solve Requirements Definition & Management Problems

- **What** are practices?
 - ▶ **Packaged** solution which include **techniques** and **guidelines** where **impact** of **business objectives** may be **measured**
- **Why** practices?
 - ▶ Easier adoption, **componentized** content
 - ▶ **Flexible** – use individually or collectively
- **Which** practices?
 - ▶ **Shared Vision:**
 - Guidelines to understand **business problem**
 - ▶ **Use Case Driven Development:**
 - Guidelines to drive **user focused requirements**
 - ▶ **Business Process Diagram:**
 - Guidelines **how to create** a process sketch in a **simple process** or **business to business sketch**



Questions





IBM
Software
Group

Lab Overview

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About Classics CD



Hi, I'm Bob.

I was recently hired as a lead analyst for Classics CD, an online music company. Our team focus is to analyze business issues and work cross organizationally, with Business and IT to identify improvements that will increase profit.

Classics CD has adopted IBM Rational Requirements Composer and RequisitePro for requirements definition and management. Our team will use these tools to help capture requirement information visually, collaborate and gain concurrence on the requirement information so that it can be later managed and leveraged across the lifecycle.

The company has just received feedback on the last wave of projects and the feedback isn't good. There were complaints in the customer survey, our features were not key differentiators from the competition, and failed an audit. Our main task is to help Business and IT take a fresh approach in capturing problems, and identify how the next wave of solutions will address those problems.

We will participate in sessions where we will elicit requirement information from stakeholders. These sessions will allow you to help stakeholders create new goals, processes, and requirements.



Rebecca – Classics CD CIO



Deidre – Business Analyst who focuses on the business



Marco – System Analyst who works with the customer and development to ensure requirements are captured appropriately



Patricia – Customer



AI – Software Architect

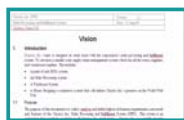


Tanuj – Test Lead

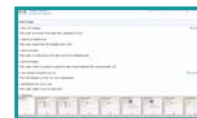
Activities for the PoT Labs

As a member of the project, you will define business requirements through various activities including:

- Developing a Vision



- Create a storyboard



- Detail Use Cases



- Draft a business process



- Sketch a User Interface



- Manage requirements



You will play several roles throughout the labs providing a glimpse of the different types of activities that can be performed in Requirement Composer and later RequisitePro



Rebecca
CIO



Bob
Lead Analyst



Deidre
Business Analyst



Marco
Systems Analyst



Patricia
Customer



AI
Software Architect



Tanuj
Test Lead

PoT Scenario Flow

Documenting Requirements with an Integrated Editor

- Discover & Capture Requirements

1



Diagramming and User Stories

- Discover User Stories & Business Rules

2



Drawing the New Process

- Discover Needed Changes in the Business Process

3



Showing the Requirement from User's View

- Sketch New Screen and Position it in the Screen Flow.

4

Bob & Patricia

Bob

Deidre

Deidre



Reviewing & Approving Requirements

- Gather all the New Information for review and Send Them Out

5



Reviewing & Approving Requirements

- Manage Approved Requirements to RequisitePro

6



Requirements Across the Lifecycle

- Tie Requirements to the Testing Effort

7

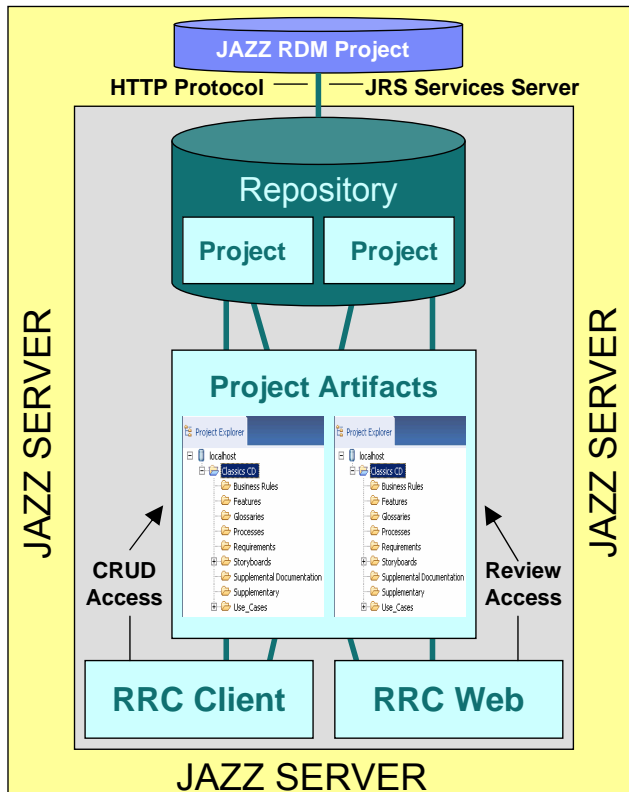


Taking the Next Steps

- Design/ Construction

8

Requirements Composer Architecture



- Requirements Composer projects are associated with a **repository**.
- The repository contains **projects** which contain artifacts.
- Each project has folders which contain **requirements, documents, business process diagrams, story boards, application sketches, use cases, glossary with terms, and other files.**
- Projects are accessed via the **rich client** or the **web client**.
- Access to the **JRS (Java™ REST Services) Server** is performed using HTTP protocols.
- Access control is at the **RDM project** level.

Requirements Composer Home Page

The screenshot shows the Requirements Composer Home Page for a user named Bob. The page includes a **Menu Bar** (File, Edit, Navigate, Search, Window, Help) and a **Toolbar** with an **Open** button and a browser tab for **localhost**. The **Project Explorer** on the left shows a **Listing of Repositories** (Classics CD) and a **Listing of Projects** (Features, Glossaries, Processes, Requirements, Storyboards, Supplemental Documentation, Supplementary, Use_Cases). The main content area displays **My Projects** (Classics CD) and **My Recent Artifacts** (National Web Based Au..., Vision, Secure Profile, Customer Complaints a..., Need Secure Profile). A **Recently Updated Artifacts** section shows a **Listing of Updated Artifacts** with a **By Today:** filter and a **By Yesterday:** filter. The **Recent Artifact Types by User** section is also visible. The **User Home Page** details are shown as **localhost (https://localhost:9443/jazz)**. The **User Information** section shows **Name: Bob** and **User Name: bob**. The **Recent Comments** section shows a comment: **RE: Secure Profile Concern** by Patricia on November 08, 2008. The **Welcome** section includes a **Recent Comments** link.

Requirements Composer Overview

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Lab Overview

7

Requirements Composer Artifact Overview

5th.jpg	JPEG Image (JPG)			Image File (jpg, gif, etc...)
Administrator	Term			Term
Administrator	Actor			Actor
Arrange Shipment	Use Case			Use Case
Browser Compliance	Requirement			Requirement
Cart List Item	User Interface Part			User Interface Part
Catalog	User Interface Sketch			User Interface Sketch
Checkout Flow	Screen Flow			Screen Flow
Classic CD Supplementary Requirements	Document			Document
Classics_Vision.doc	Microsoft Word Document			Microsoft Word Document
Purchase a CD	Business Process Diagram			Business Process Diagram
Shop Online	Use-Case Diagram			Use Case Diagram
CD_Classics_Corporate_Glossary	Glossary			Glossary

Navigational Aids for Requirements Composer

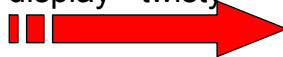
- If the **Project Page** isn't displayed use the green "Open" option on the toolbar and select "Classics CD" to open the project tab.




- If the **Sidebar** isn't displayed click or mouse over the display arrow on the far right vertical toolbar on the right side of the page.

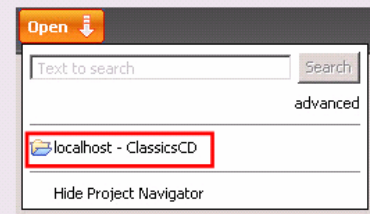


- If the **Comments** aren't displayed select the Recent Comments display "twisty" in the right Sidebar.



What if the Project Page isn't showing?

Click the green **Open** button  in the toolbar and select **ClassicsCD** from the drop down menu.



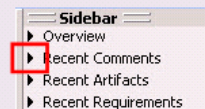
What if the Sidebar isn't showing?

Click the **Expand** icon at the top of the **Sidebar** on the right of the Page.



What if the comments aren't showing?

Click the **Recent Comments** twisty in the Sidebar.



Questions

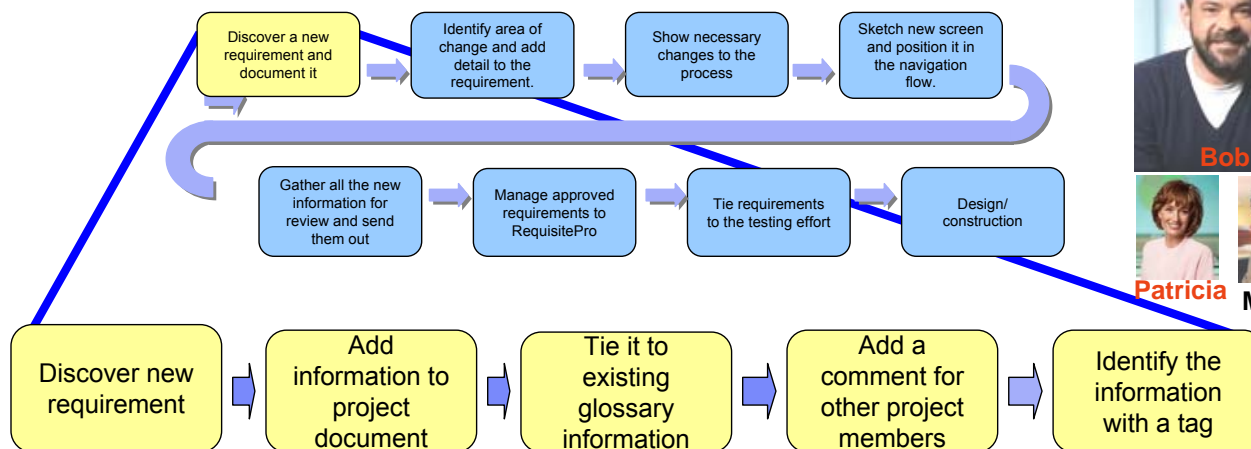
Backup



**These Slides Provide
More Details
About the
Modules to Come**



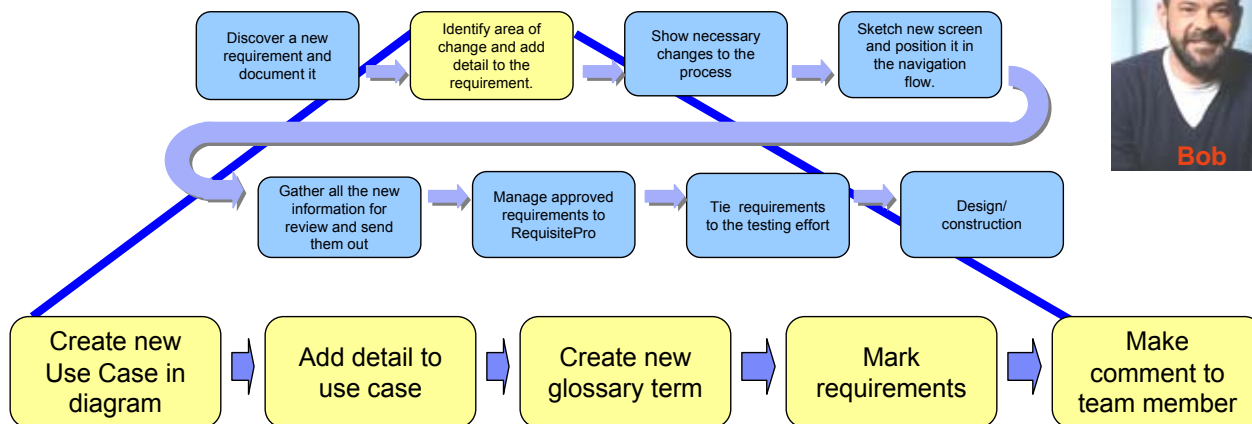
Module - 1



As Bob, you will add the new privacy requirement to the current overall Vision document for the Classics CD website application. While doing you will need to determine the high-level definition of this requirement and check to see if there have already been implementations/definitions done elsewhere in the corporation. Make sure to re-use anything that already exists!!

The activities in this lab apply to the "Shared Vision Practice."

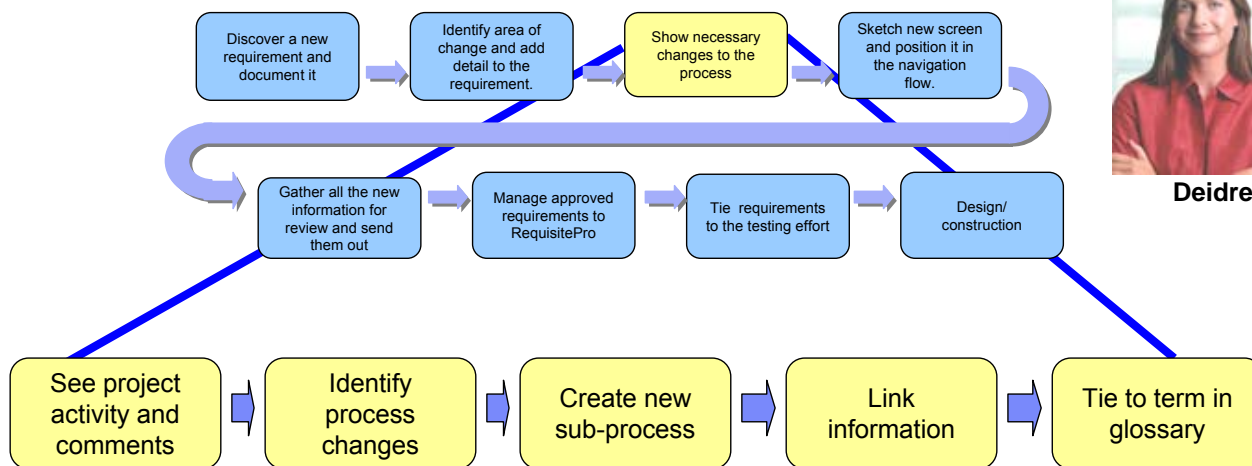
Module - 2



Now that Bob has identified the requirement he will use the Use Case diagramming capabilities to indicate where it fits with the rest of the system. He will write a user story with the bulleted steps of the new requirement.

The activities in this lab apply to the "Use Case Driven Development Practice."

Module - 3



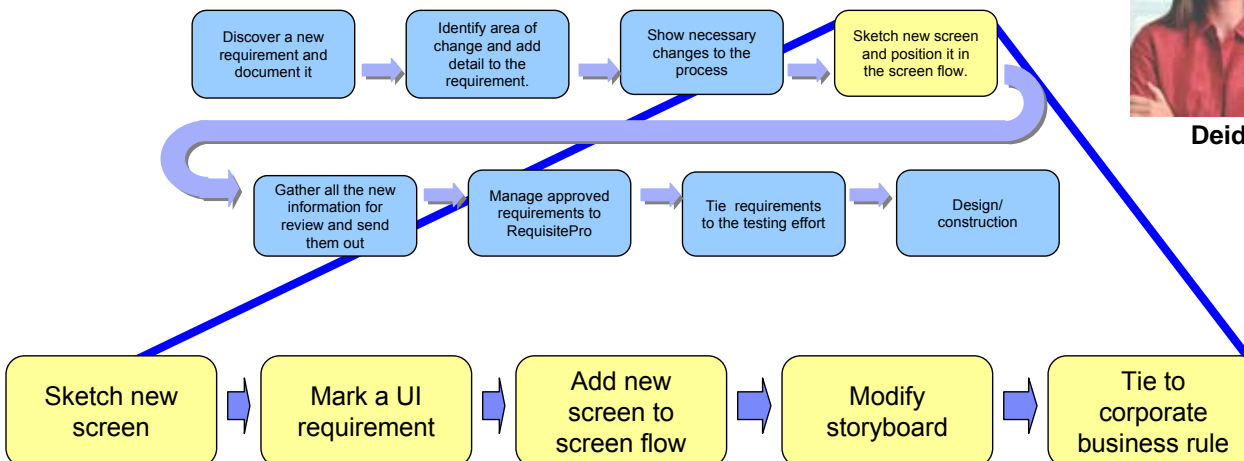
Deidre will see the new requirement and will perform some business process diagram activities to add more detail and assess where it will affect the existing application.

The activities in this lab apply to the "Business Process Diagramming Practice."

Module - 4



Deidre

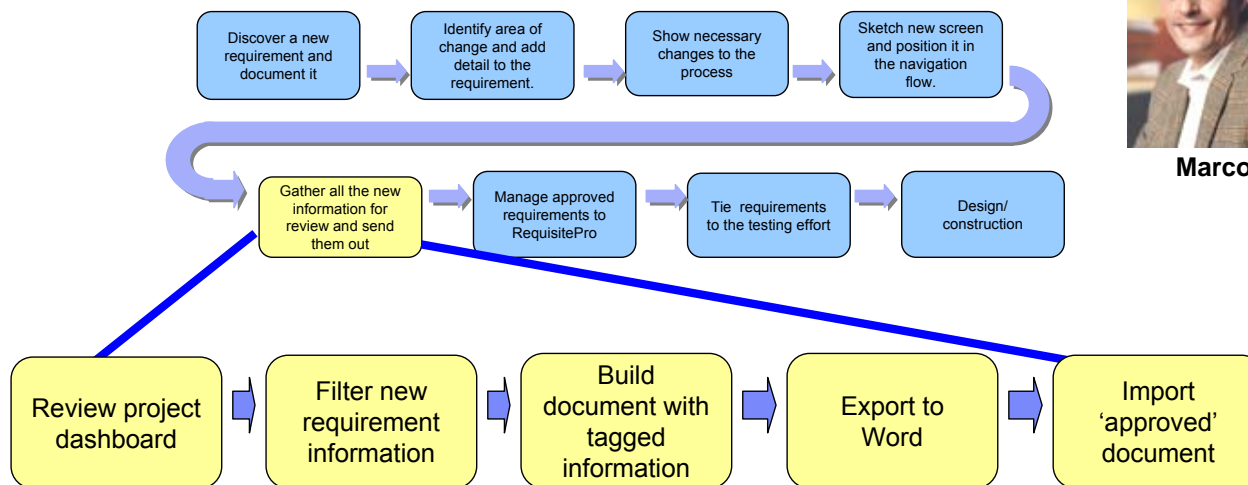


Before saying that this requirement has been completely defined Deidre will identify how it will change the existing screens in the application. She will also give the developers an idea what the screen should look like.

Module - 5



Marco

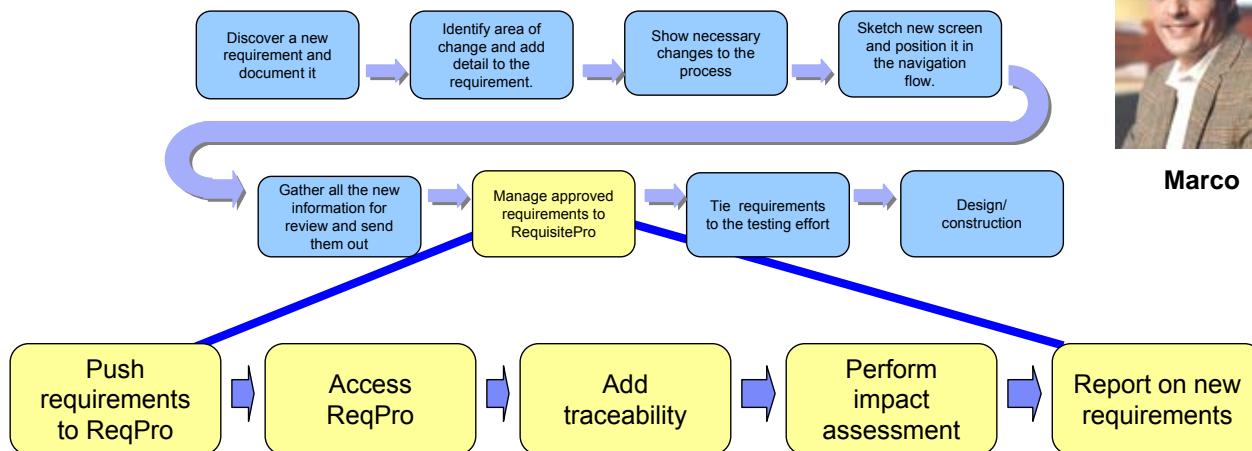


Marco will use the dashboard to review the status of the requirements and comments and ensure comments are closed out before generating a composite document with the privacy requirement artifacts.

Module - 6



Marco



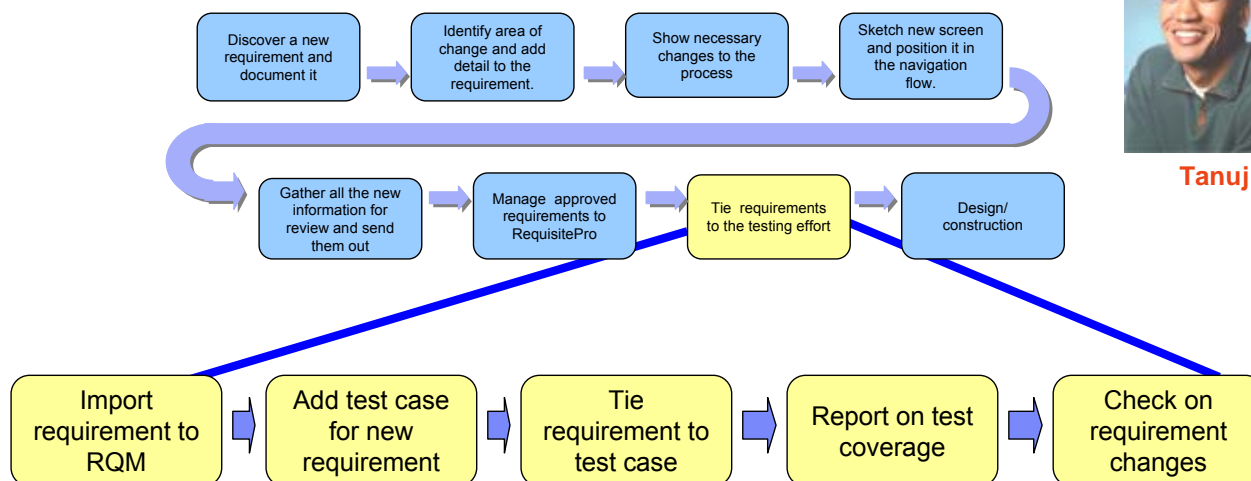
Marco receives the approved Composite Doc that he distributed. He is now ready to manage the approved requirements in Requirements Composer. All of the requirements that are tagged with Privacy will be sent to RequisitePro where they can be reported an managed.

The activities in this lab apply to the "Requirements Management Practice."

Module - 7

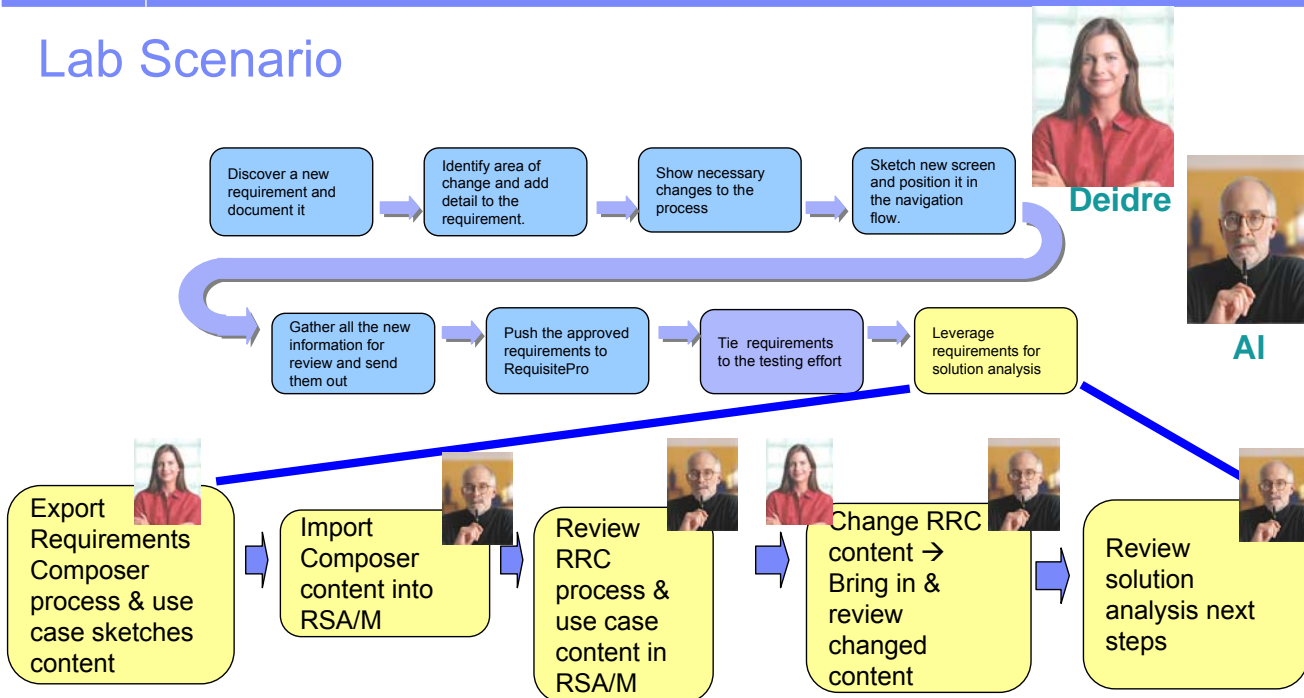


Tanuj



Tanuj imports the privacy requirements into RQM and leverages the information to create a new privacy test case and tie it back to the privacy requirement. View the test case coverage and impacts of requirement changes.

Lab Scenario



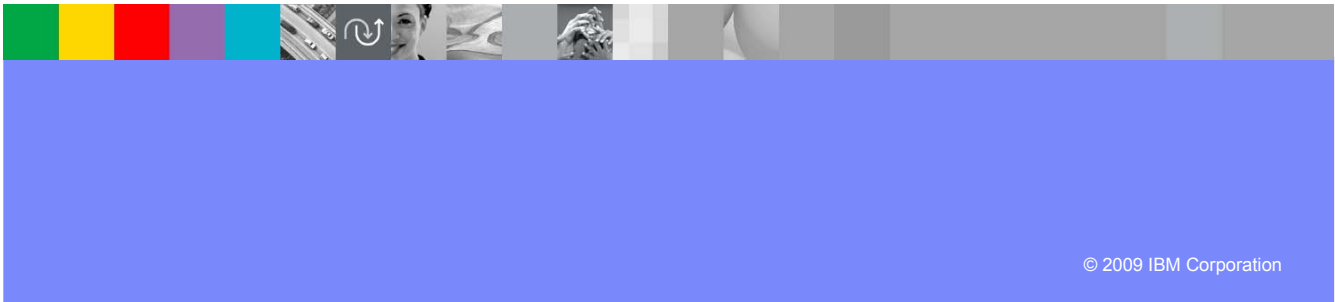
Diedre knows AI needs to start doing solution analysis – using content from Requirements Composer as a seed to his work in Rational Software Architect/Modeler. AI transforms the RRC project content Diedre makes available into a RSA/M model, reviews the content, brings in changed content, and plans his next steps on how to use this content.



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Documenting Requirements with an Integrated Editor

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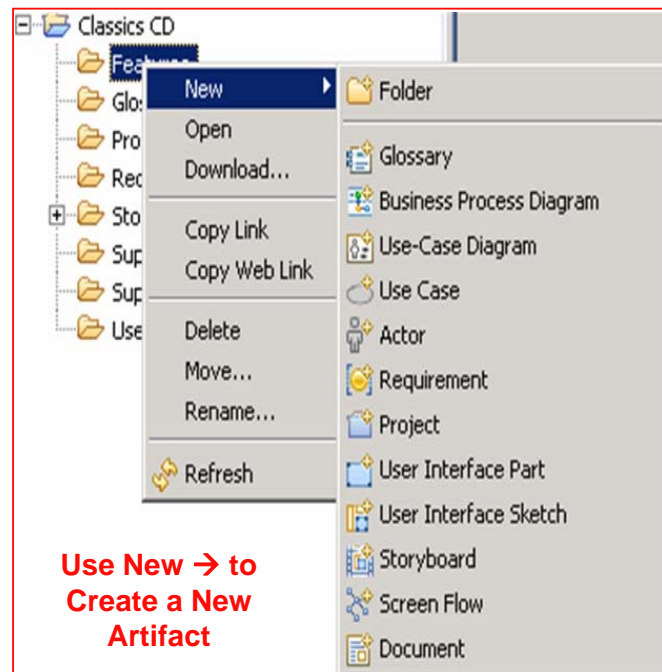
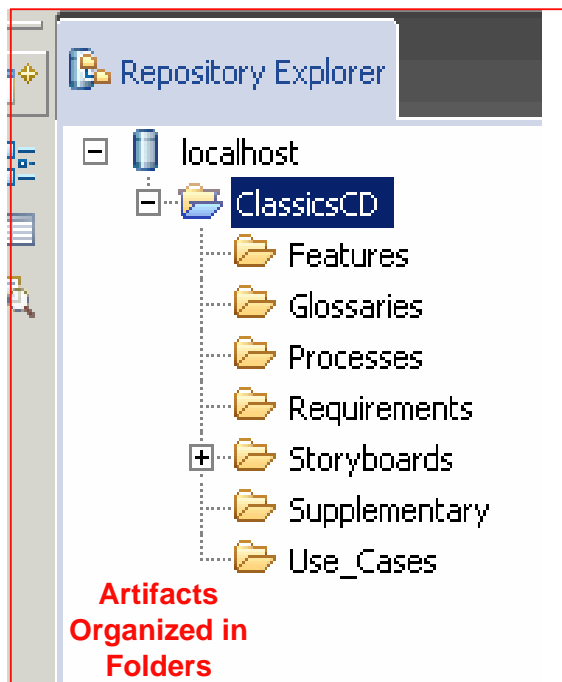
Objectives

- Discover the value of the integrated editor
- Experience the formatting/editing capabilities for text in Rational Requirements Composer
- Start to familiarize yourself with the collaboration techniques



Storing your documents (and other assets)

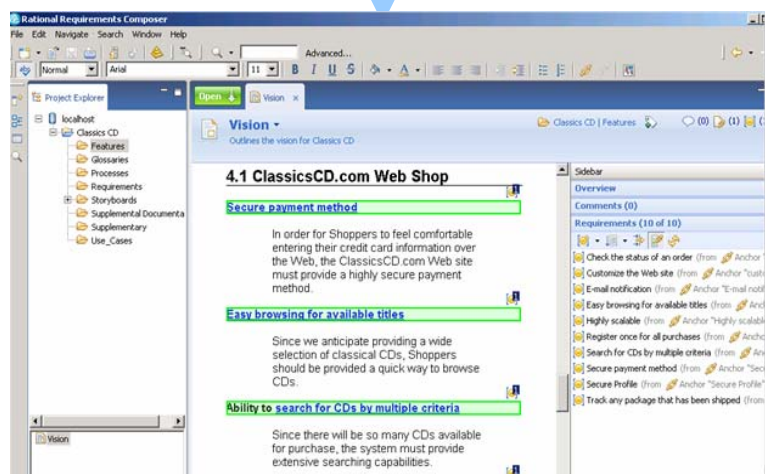
- Windows-standard folder structure to organize and create requirement artifacts



Capture Visual and Textual Information

Use **Rich-text Documents** to consolidate structured and unstructured information

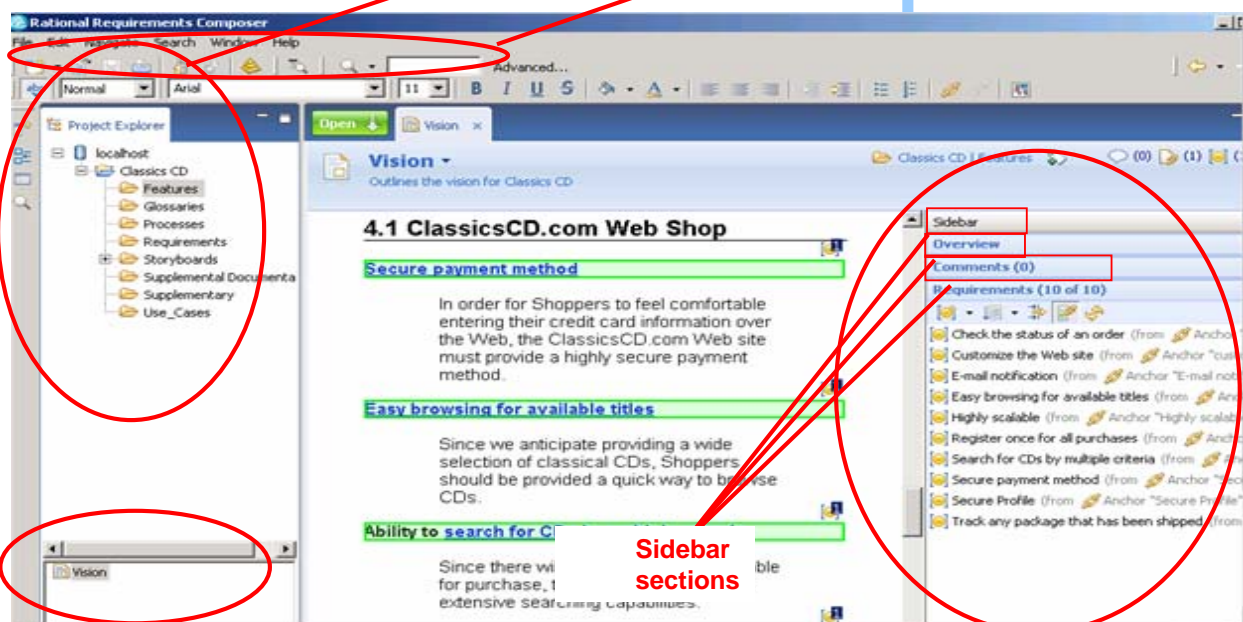
- Use **Rich-text editing** to capture text, images, hyperlinks and begin to organize structured and unstructured data into cohesive vision and specification documents.
- Link **Rich-text document contents** to use case specification flows and models, business process sketches, User-interface sketches and storyboards to show relationships between the different sets of information.



User friendly rich text editor

Editor formatting bar

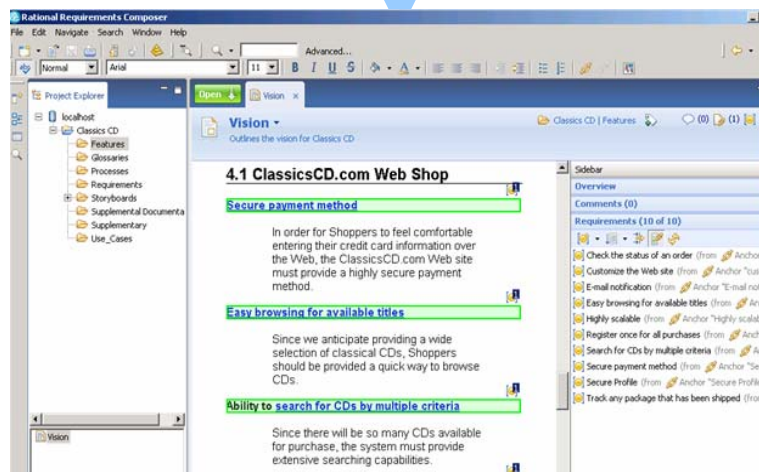
Standard folder structure



Contents of current folder

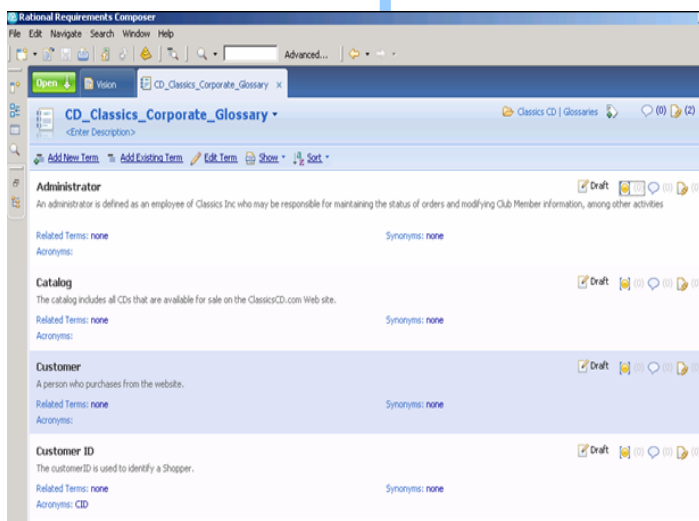
Embedding and Linking

- **Drag and drop** other requirements assets or images to consolidate information and better illustrate requirements.
- **Link text** to glossaries, terms, requirements, or any other asset to show the relationships between information.

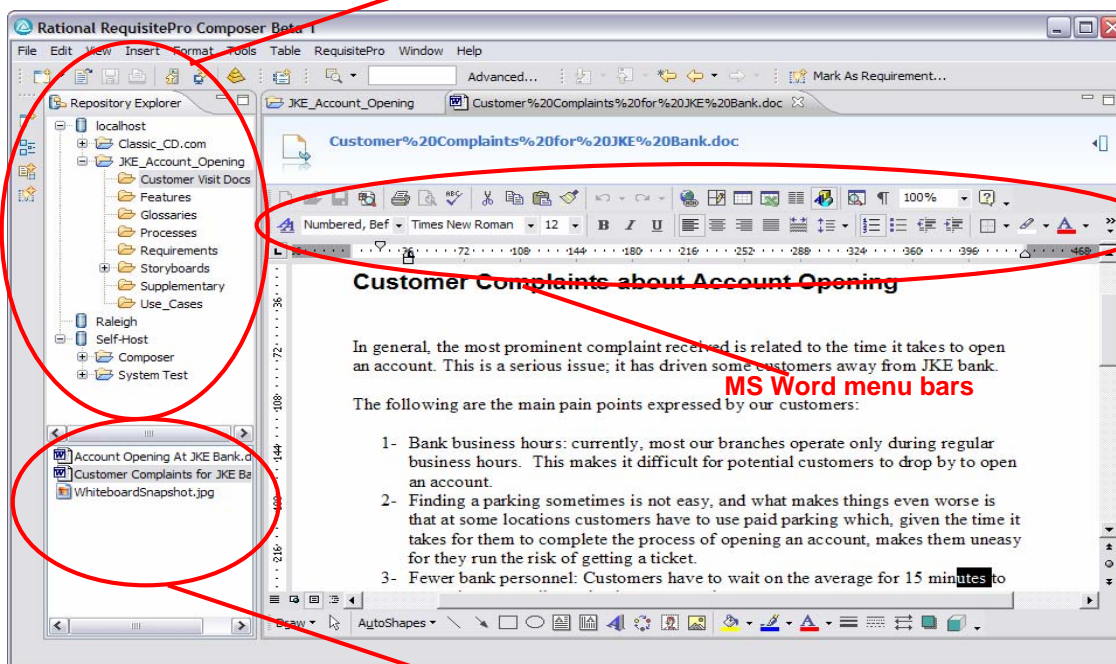


Collaborate on Terminology with Shared Glossaries

- **Maintain multiple glossaries** to reduce organizational confusion
 - ▶ Enterprise, project, client
 - ▶ Business
 - ▶ Technical
 - ▶ Industry-specific
- **Check and link terms within documents** to glossaries to guide terminology usage for clarity and accuracy



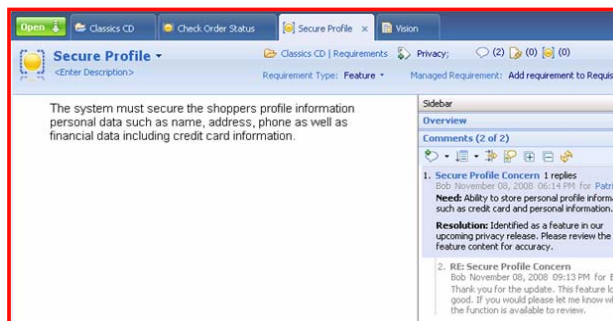
Microsoft® Word support



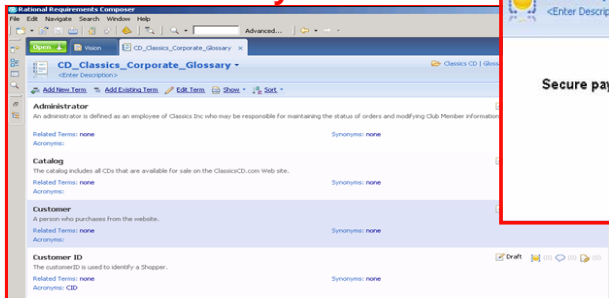
Collaboration

- Attach comments to virtually any element
- Comment threads for conversational context
- Host reviews within the working environment
- Use tags to allow searching and filtering of associated artifacts by keyword
- Use the glossaries to ensure a common definition (and spelling!)
- Link any requirement artifact to another to identify relationships.

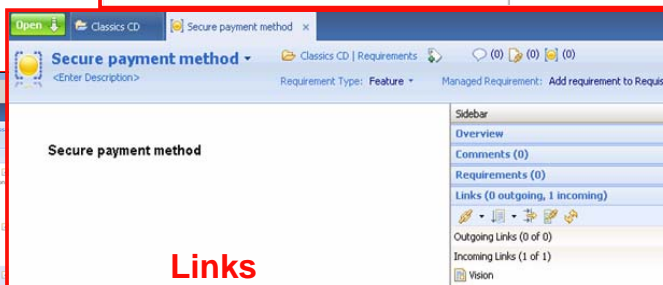
Comments



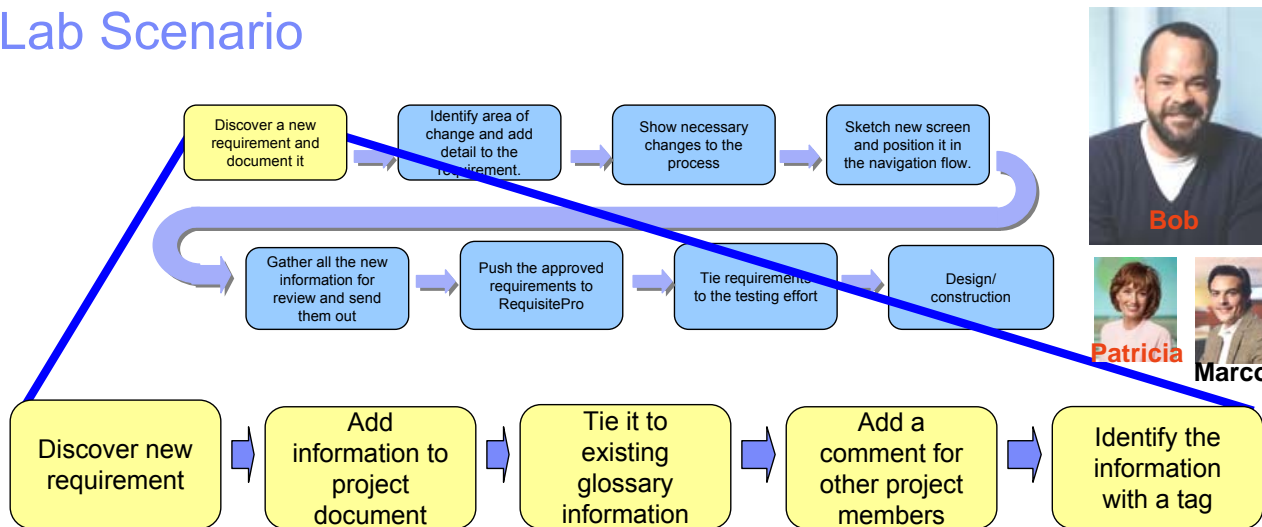
Glossary



Links



Lab Scenario



As Bob, you will add the new privacy requirement to the current overall Vision document for the Classics CD website application. While doing you will need to determine the high-level definition of this requirement and check to see if there have already been implementations/definitions done elsewhere in the corporation. Make sure to re-use anything that already exists!!

The activities in this lab apply to the "Shared Vision Practice."

To the Lab

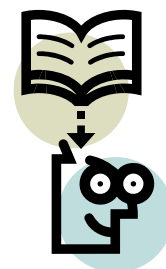


Now That you Have
Learned Some Basics
Let's Get to the
Lab



Concepts Learned

- Requirements Composer *directory structure* allows easy access to artifacts and allows teams to **easily organize information** in a manner that makes sense to them.
- Requirements Composer *editing capabilities* helps teams store rich information in documents. An editor allows analysts to **quickly compose or edit documents** while using formatting options to apply styles, add images and other requirements artifacts via a simple drag and drop gesture.
- *Collaboration techniques* in Requirements Composer provide **in context information** for the analysts at all times: linking, commenting, and tagging.
- *Terms* can be created and **reused** in *glossaries*. Terms can be reused across projects in a repository



Questions

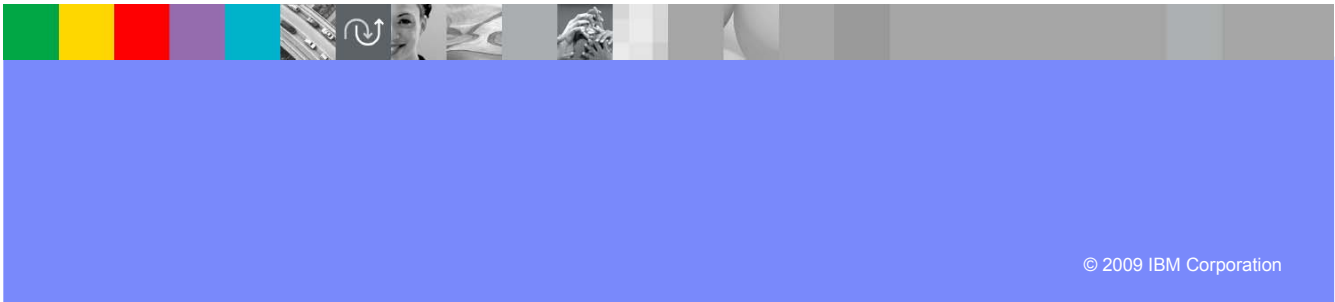




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Diagramming and User Stories

An IBM Proof of Technology



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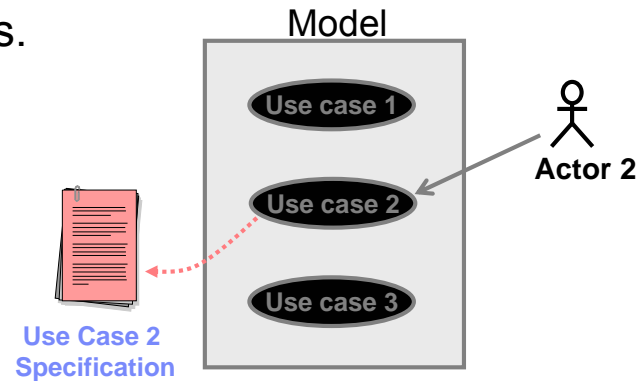
Objectives

- Discover the value of in context use case modeling and user stories
- Experience the use case modeling capabilities in Rational Requirements Composer
- Continue to utilize the collaboration techniques

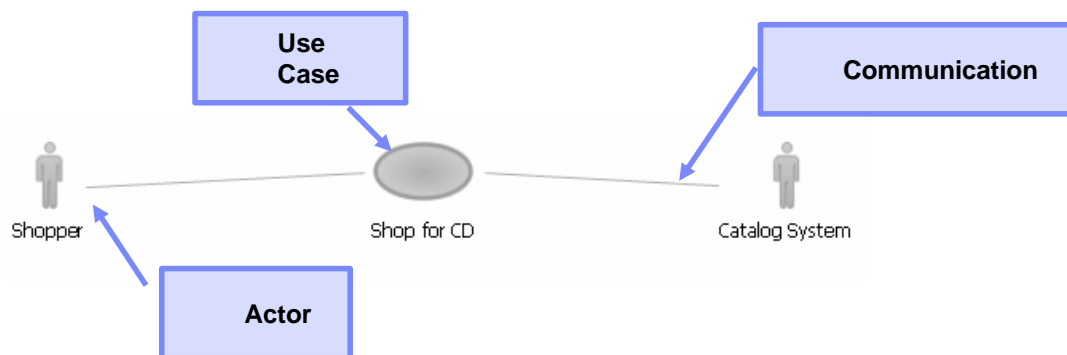


What Is Use-Case Modeling?

- Links stakeholder needs to software requirements.
- Defines clear boundaries of a system.
- Captures and communicates the desired behavior of the system.
- Identifies who or what interacts with the system.
- Validates/verifies requirements.
- Is a planning instrument.



What Is a Use Case?



A use case defines a sequence of actions performed by a system that yields an observable result of value to an actor.

Basic Flow of Events

Shop for CD

1.1 Basic Flow

1.1.1 BEGIN

The use case begins when the Shopper chooses to find CDs.

1.1.2 HELPFUL SUGGESTIONS

The system presents the following:

- A recommended selection of the day
- Newly available albums
- A list of top sellers

1.1.3 OPTIONS

The system presents the following options:

- See a list of all available CDs
- Search for a CD.

The Shopper chooses to see a list.

1.1.4 PRESENT AVAILABLE TITLES

The system presents the available titles in alphabetical order by Composer. Each item contains the title of the album, the date recorded, the performing artist, and the price.

1.1.5 VIEW CD DETAILS

The Shopper chooses a CD to look at its details. The system displays the following information:

- Picture of the cover
- CD title
- Performer and orchestra
- Availability information
- Review of the CD

1.1.6 CHOOSE ITEM

The Shopper chooses one or more items for future purchase. Each time the Shopper chooses an item, the system saves the information.

The use can repeat steps OPTIONS thru CHOOSE ITEM until he is done choosing items.

1.1.7 END

The use case ends when the Shopper stops selecting items for purchase.

Structure the flow into steps

Number and title each step

Make each step a roundtrip of events

Describe steps (completely and concisely)

What is a User Story?

- A software system requirement formulated as **one or two sentences**
- Described in **everyday business language** of user.
- Derived from **XP (Extreme Programming)** but may be used for requirements gathering in any agile development process
- Limited to a **3x5 note card** to foster a shorter user story

Shop for CD

Shoppers can access information on all available CDs and filter the results by composer, composition, and performer. The system helps the Shopper make selections by providing helpful ideas for selection. A shopper may select one or more CDs.

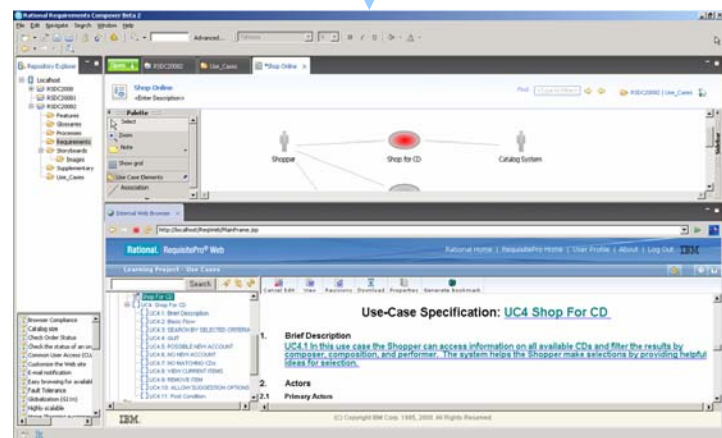
Use Cases vs. User Stories

- User stories serve the same purpose as use cases but are not the same. They are used to help estimate scope and level of effort.
- User Stories are written by the customers as things that the system needs to do for them. They are in the format of about three sentences of text written by the customer in the customers terminology without techno-syntax.
- Use cases may have varying level of detail. Use cases may be:
 - ▶ **Discovered** by listing potential use case names and actors.
 - ▶ **Briefly Described** in a brief description statement.
 - ▶ **Outlined** by listing the sequence of events in the main flow and alternatives flows.
 - ▶ **Fully Described** by detailing the flows of events, structuring the flow of events, and adding further detail, such as Pre- and post- conditions, special requirements, relationships, use-case diagrams, etc.

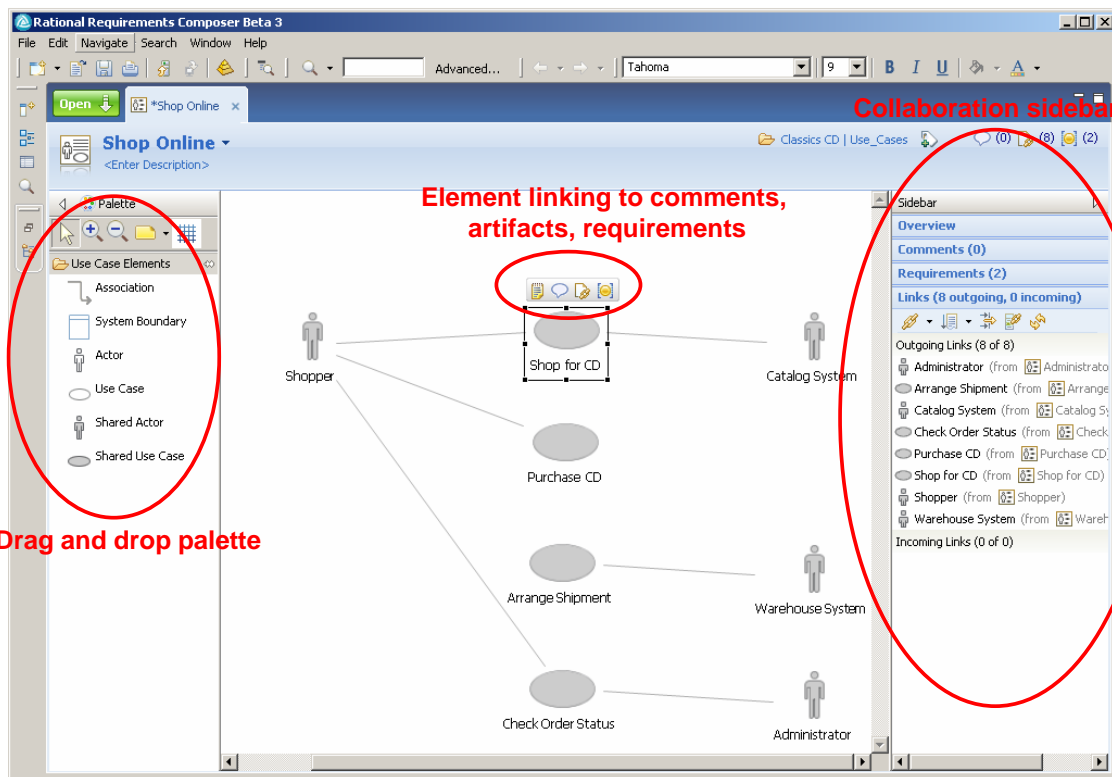
Incorporate Use Case Driven Development

*Build **Use Case Models** and Elaborate on the Processes, Actors and Activities*

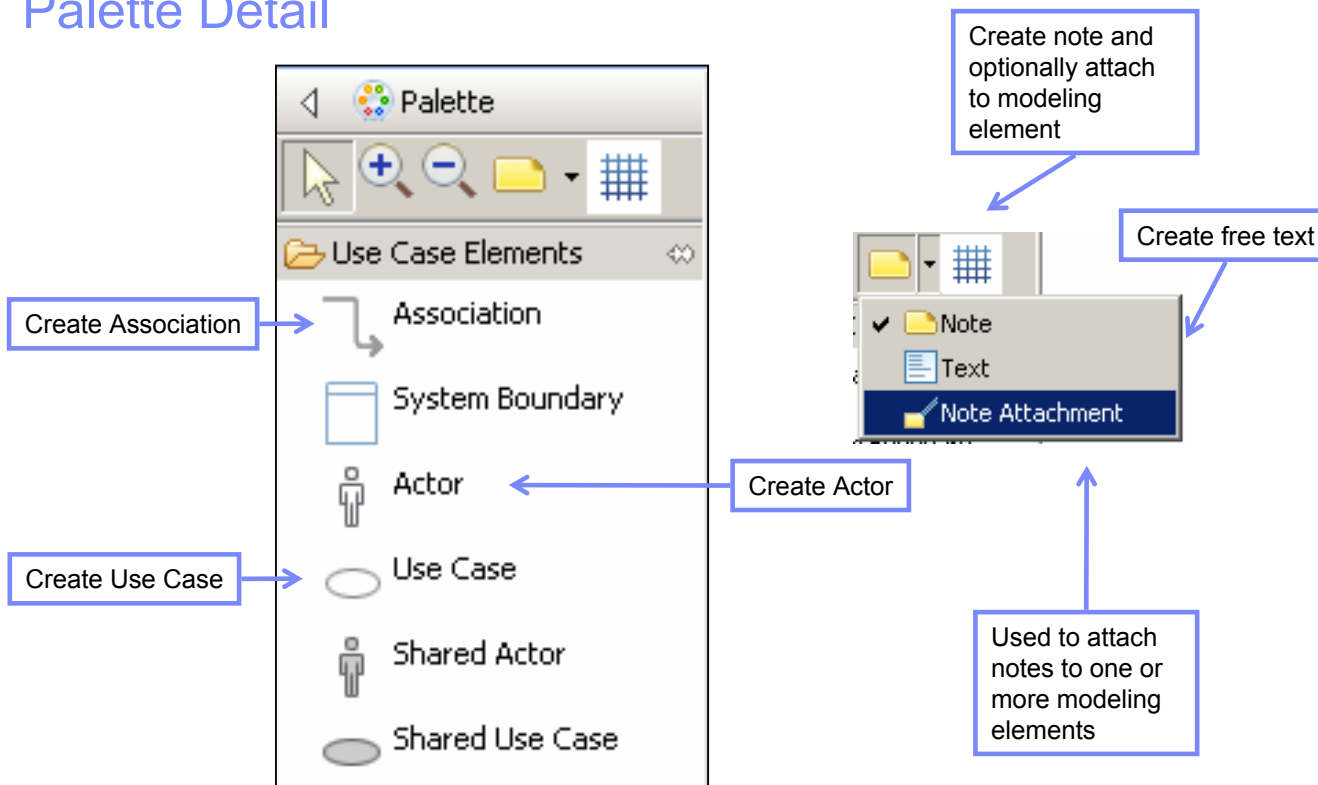
- **Diagram use cases and elaborate** with rich text use-case specifications
- **Visually elaborate** use-case flows with storyboards
- **Link use cases to business tasks** to show how future solutions will support business activities
- **Export use cases to Rational Software Modeler** for reuse in managing architectures (Q4 2008)



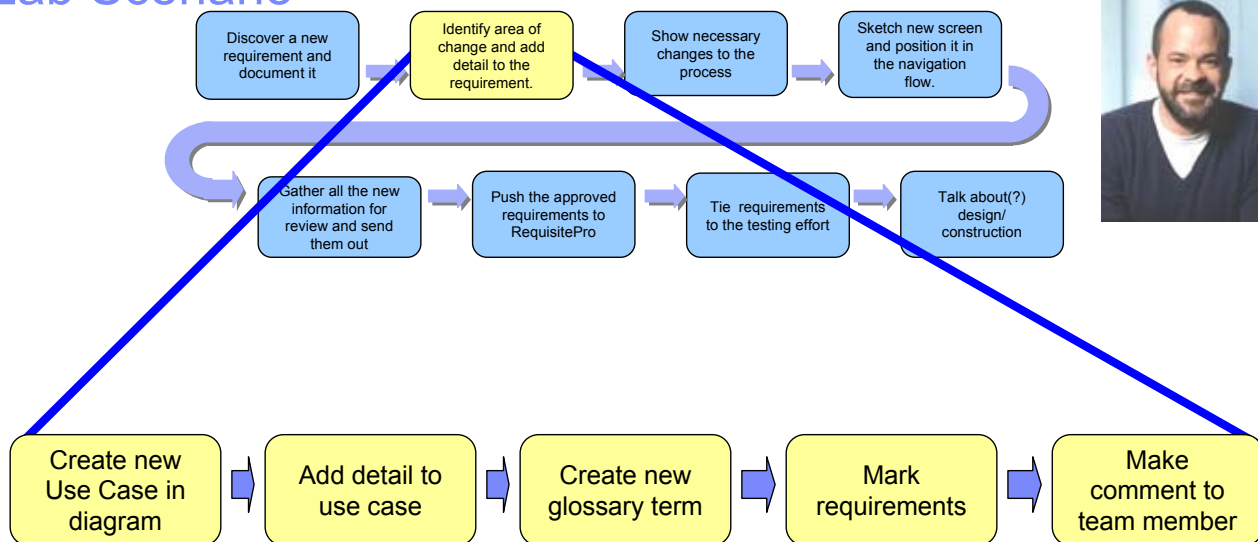
Use Case Diagramming in Rational Requirements Composer



Palette Detail



Lab Scenario

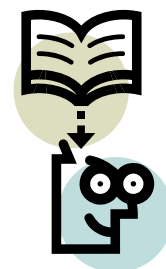


Now that Bob has identified the requirement he will use the Use Case diagramming capabilities to indicate where it fits with the rest of the system. He will write a user story with the bulleted steps of the new requirement.

The activities in this lab apply to the "Use Case Driven Development Practice."

Concepts Learned

- Requirements Composer *visual modeling* techniques include *use case diagramming*.
- Standard terminology can be documented via *Glossaries*.
- Requirements are created *in context*.
- *Collaboration techniques* in Requirements Composer provide *in context information* for the analysts at all times: linking, commenting, and tagging.



To the Lab



**Now That you Have
Learned Some Basics
Let's Get to the
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Questions





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Drawing the New Process

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Objectives

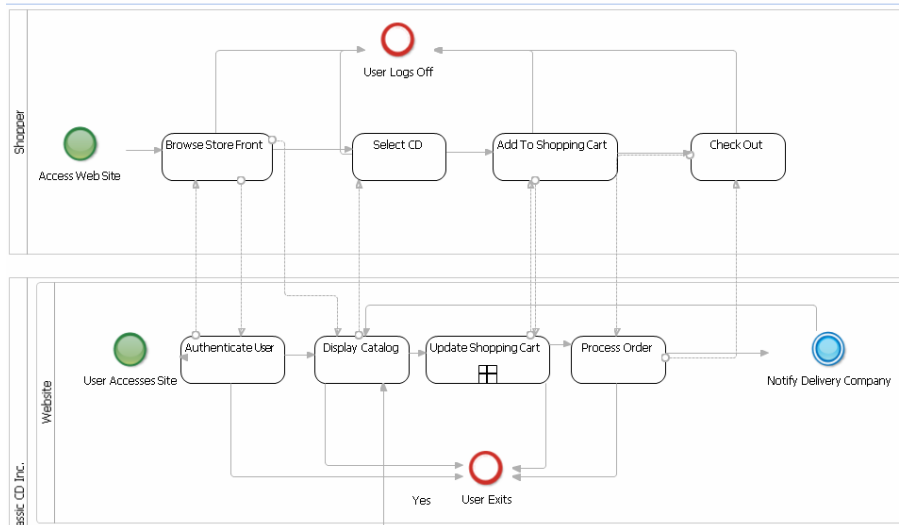
- Discover the value of Business Process Modeling
- Experience the Business Process Modeling capabilities in Rational Requirements Composer
- Continue to utilize the collaboration techniques



What is a Business Process Diagram?

Business Process Models are used to represent processes of an enterprise.

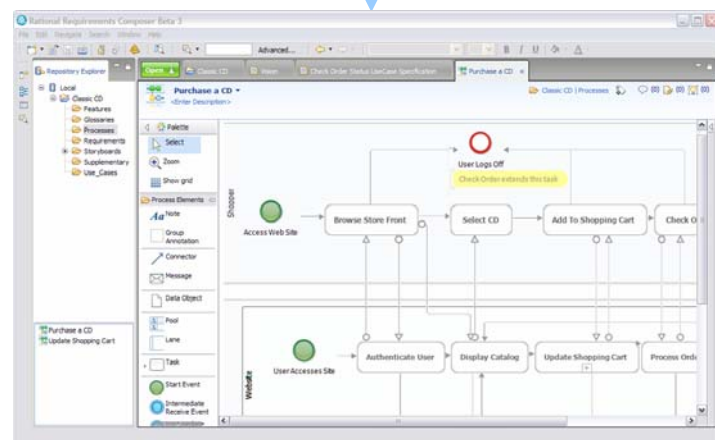
This is done so that the processes may be understood, analyzed, improved or merged with parallel processes. Business Process Modeling (BPM) is typically performed by business analysts and managers who want to improve process efficiency and quality. The process improvements identified by BPM may or may not require IT involvement to implement.



Identify Operational Realities and Possibilities

Define the Current and Future State with **Business Process Diagrams**

- **Sketch current and future business processes** using Industry Standard Business process modeling notation (BPMN)
- **Specify business goals**, actors, inputs, outputs and process flows
- **Identify intersecting, dependant, and impacted processes** to ensure solution coverage, identify stakeholders, and build consensus
- **Link process tasks and decisions to business goals and objectives**, as well as storyboards, sketches and documents



BPM uses the Business Process Modeling Notation (BPMN) as a common language to bridge the communication gap that frequently occurs between business and IT professionals.

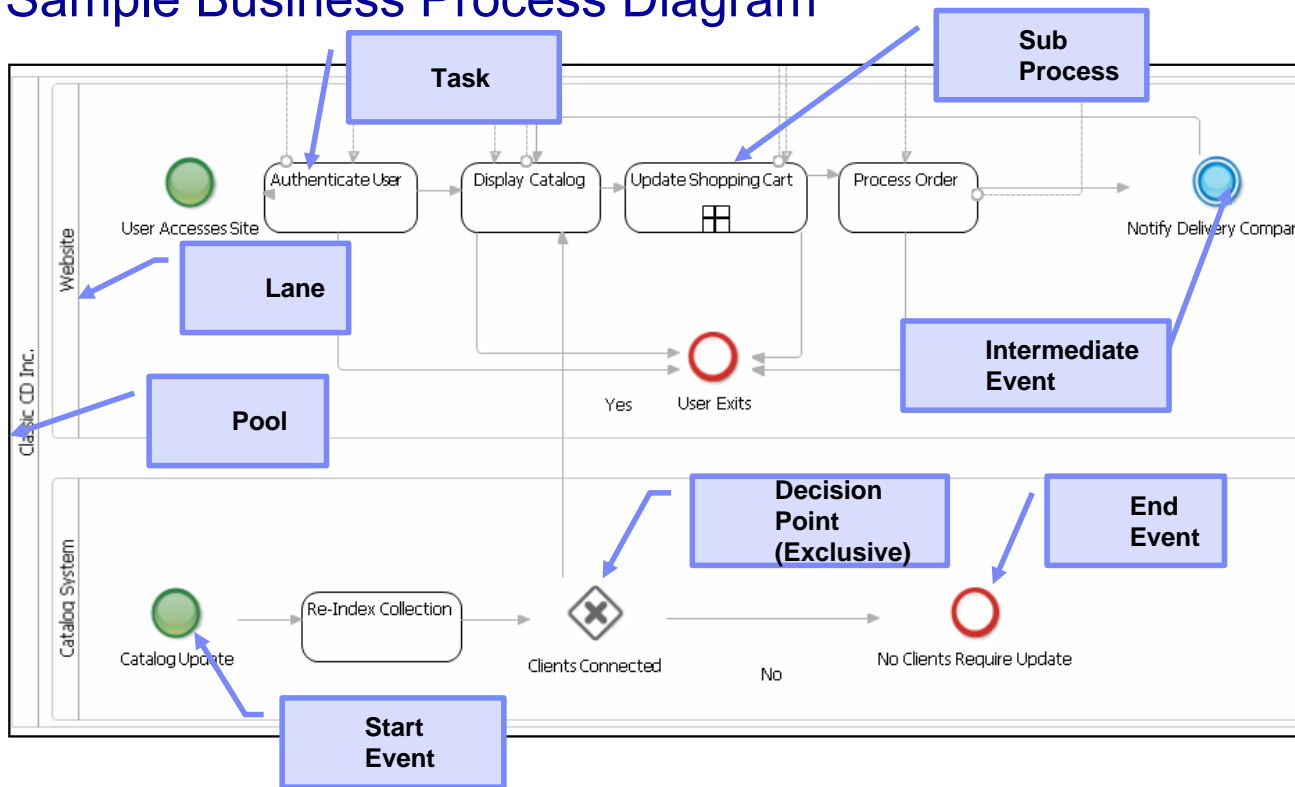
- **BPMN** is a standardized graphical notation for depicting [business processes](#).
- The primary goal of BPMN is to provide a standard notation that is understandable by all business stakeholders. These business stakeholders include the business analysts who create and refine the processes, the technical developers responsible for implementing the processes, and the business managers who monitor and manage the processes.

We will be using a subset of BPMN 1.1 to define business processes within Rational Requirements Composer

For our purposes, we use a subset of business process modeling notation called BPMN 1.1

- We will limit our discussion to:
 - Tasks and sub-processes
 - Connectors and messages
 - Pools and lanes
 - Events (Start event, Intermediate Send/Receive event, End event)
 - Gateway (Decision Points, Join, Fork)

Sample Business Process Diagram



Business Process Diagrams in Rational Requirements Composer

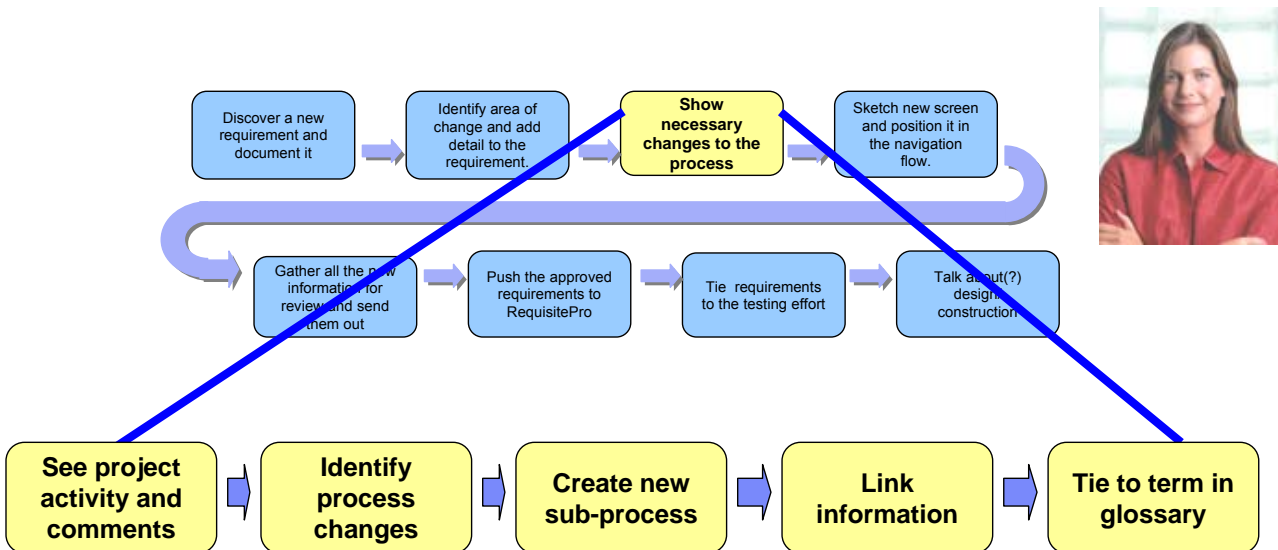
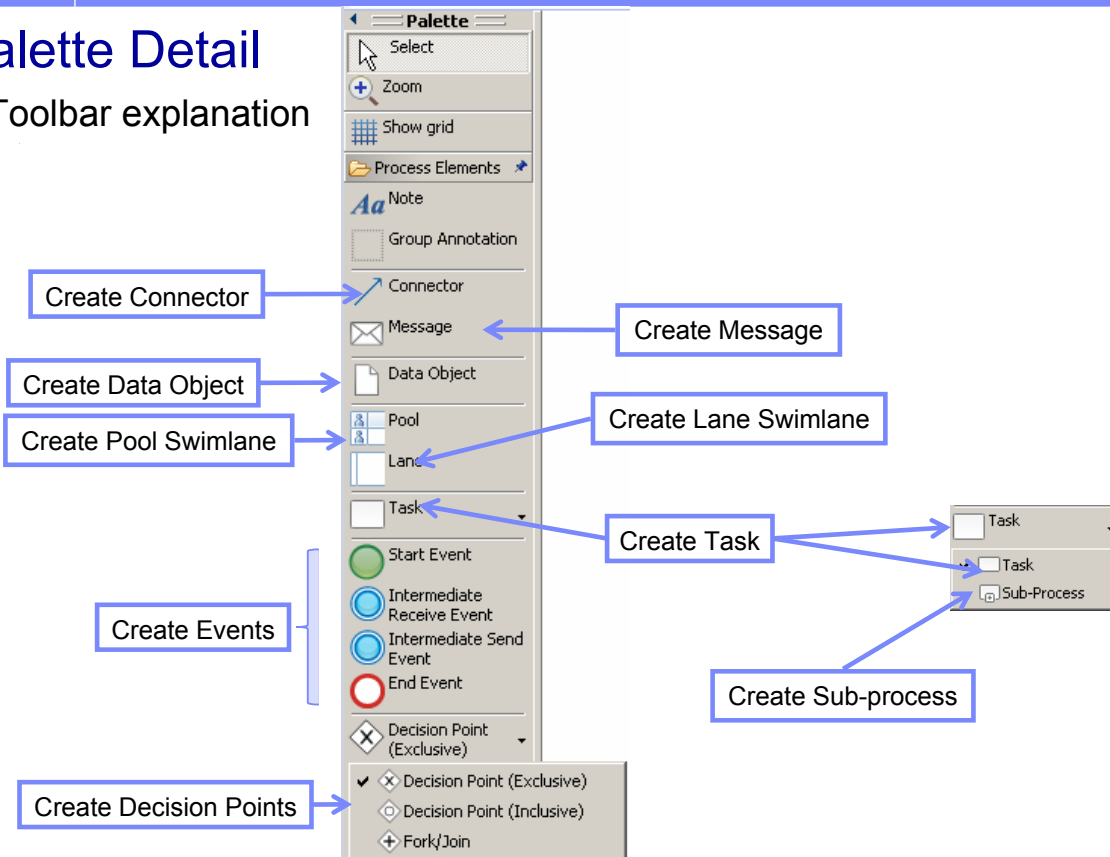
Element linking to comments, artifacts, requirements

Drag and drop palette

Collaboration sidebar

Palette Detail

• Toolbar explanation



Deidre will see the new requirement and will perform some business process diagram activities to add more detail and assess where it will affect the existing application.

The activities in this lab apply to the "Business Process Diagramming Practice."

To the Lab

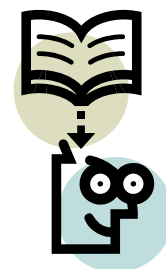


**Now That you Have
Learned Some Basics
Let's Get to the
Lab**



Concepts Learned

- Requirements Composer *visual modeling* techniques include *business process modeling*.
- Business process models can be *linked in context* with use cases, requirement statements, storyboards and UI sketches.
- BPM techniques help improve communication throughout the application development lifecycle, which in turn can reduce costly rework
- In this module we discussed:
 - ▶ How organizations can understand the impact of new business needs using business process model diagrams
 - ▶ How to update or create new modeling elements to reflect the needs of the business



Questions

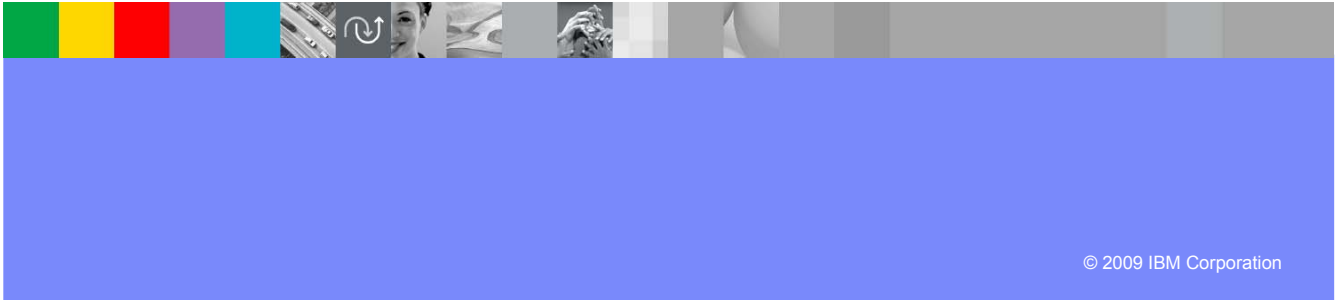




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Showing the Requirement From the User's View

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Objectives

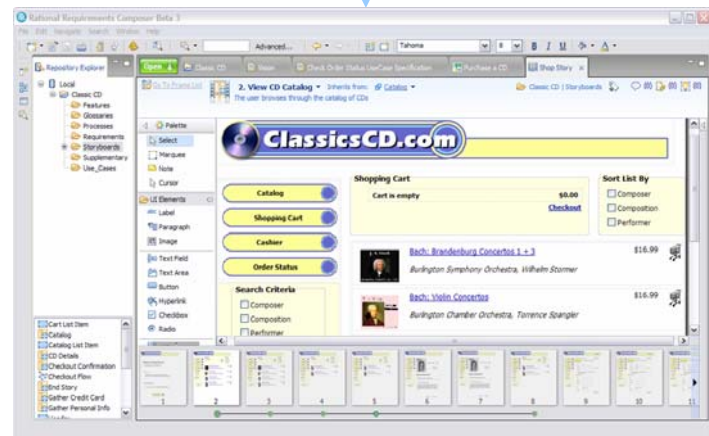
- Start to familiarize yourself with some common terms used in Sketching/Storyboarding
- Understand the difference between storyboarding, and simulating vs. prototyping
- Learn the actions available at individual UI object level
- Experience the Sketching/Storyboarding capabilities in Rational Requirements Composer



Visualize the User Experience

User Interface Sketches and Storyboards

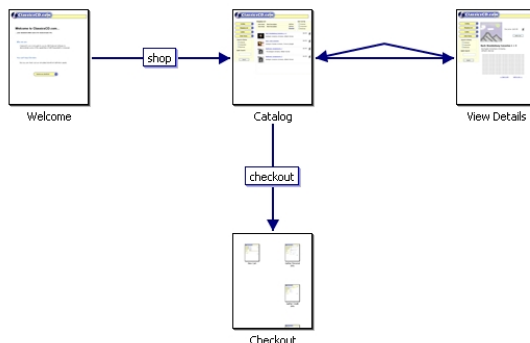
- **Sketch user interfaces and wire frames** to visualize interaction points of user scenarios
- **Compose storyboards quickly** from sketches to understand the user experience, identify gaps and verify requirements
- **Link storyboards** to business processes, use case flows and rich-text content to enhance understanding and gain consensus



Common Terms

Sketch or **Wireframe** an overview of the components and features of a web page, giving a feel for how pages should look and behave

Screen Flow a visual diagram showing the navigation between 'sketches', and indicating primary action by user



Storyboard A list of action steps that tell the story of certain primary uses of the application. Each step in the list can refer to a specific 'sketch'; and all sketches appear on the board, with the appropriate navigation path dynamically highlighted at each sequential step in the story.

Frame List Create your storyboard frame list below. Press 'Enter' to create a new frame. Ctrl+D

1. Enter CDClasses Web Site
Main page
2. View CD Catalog
The user browses through the catalog of CDs
3. Search for Beethoven
The user searches for Beethoven CDs
4. Search Results
The user is returned only the CDs from Beethoven
5. Search Results
The user clicks a search result to get more details for a particular CD
6. View Details of Beethoven CD
The full details of the CD are displayed
7. Add Beethoven CD to cart
The user adds a CD to the cart



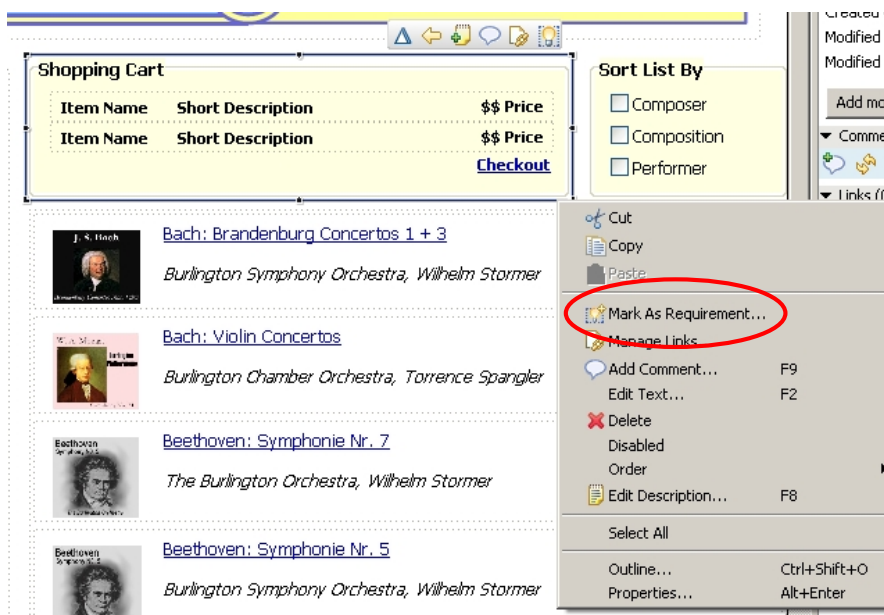
Storyboards, and Simulating vs. prototyping

In Requirements Composer the analyst focuses on visually **designing the user interaction desired** in an application, versus producing a partially “live” version of the application (i.e. a prototype)

Storyboards then can ‘connect’ multiple simulated sketches



Actions at the individual UI object level

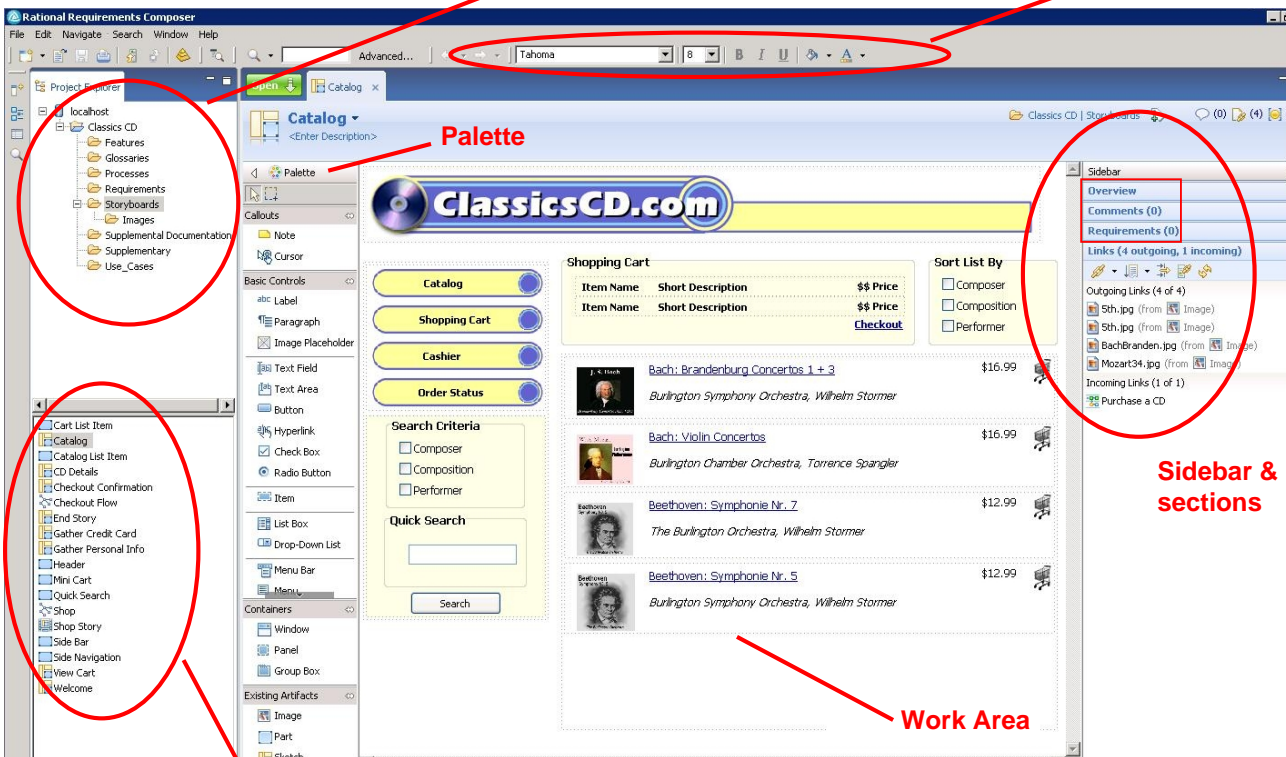


Individual **objects** within the page sketches (like the ‘Shopping Cart’ section, here) can be denoted as Requirements, be linked, have their own collaboration, etc.

Editor features

Standard folder structure

Editor formatting bar



Contents

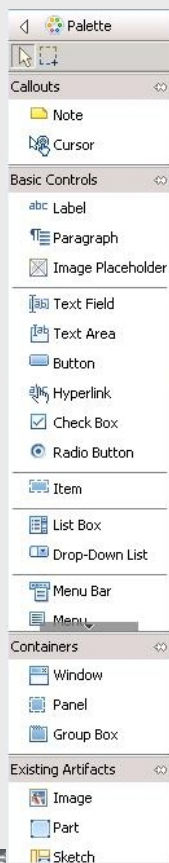
Work Area

Sidebar & sections

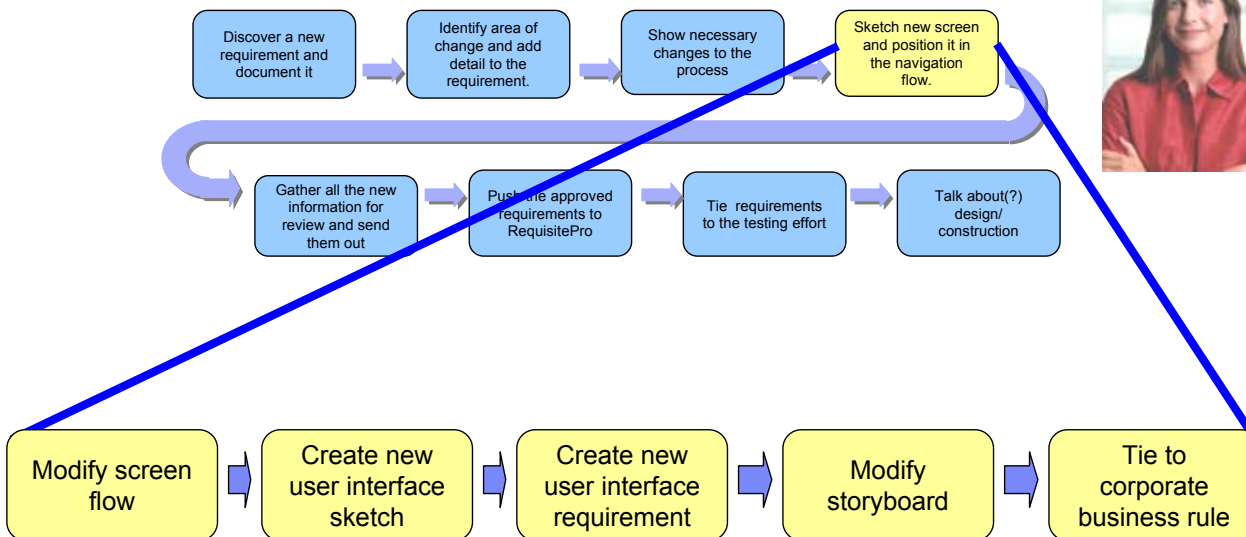
Palette Detail

Pointer options

Varying UI objects available to place on screen mockups



Lab Scenario



Before saying that this requirement has been completely defined Deidre will identify how it will change the existing screens in the application. She will also give the developers an idea what the screen should look like.

To the Lab

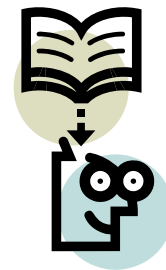


**Now That you Have
Learned Some Basics
Let's Get to the
Lab.**



Concepts Learned

- Requirements Composer uses various forms of *visual design* including Sketches/Wireframes, Screen Flows, and Storyboards to simulate, when being used in requirements *elicitation*.
- Requirements Composer *editing capabilities* help teams design visually. An editor allows analysts to **quickly compose or edit screens** of potential applications. while using formatting options to apply styles, add images, and other objects via a simple drag and drop gesture.
- *Collaboration and Requirement Management techniques* continue to be available in Requirements Composer, all the way down to the **individual object level**.



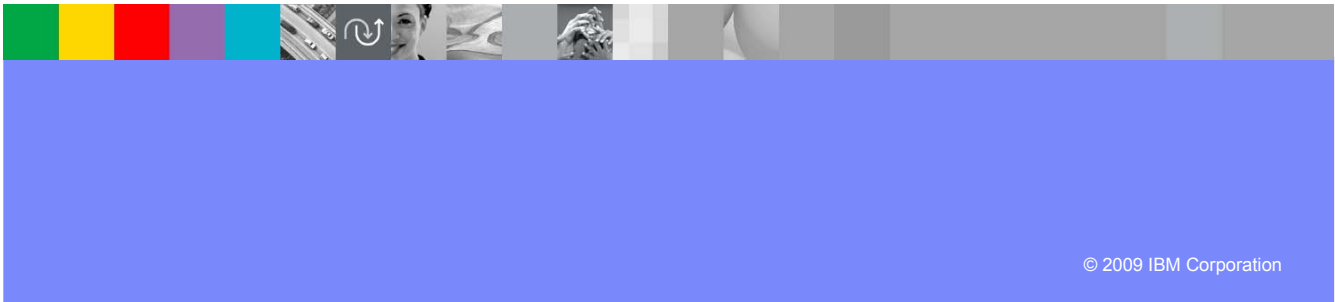
Questions



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Reviewing and Approving the Requirements

An IBM Proof of Technology



Objectives

- Understand the challenges of the Requirements Review and Approval process and how Rational Requirements Composer can help
- See how to build a document with a composite view of relevant requirement artifacts
- Use this composite requirements document to simplify the requirements review and approval process
- Export document to Microsoft Word for review and approval outside of Rational Requirements Composer



Requirements Review & Approval Challenges

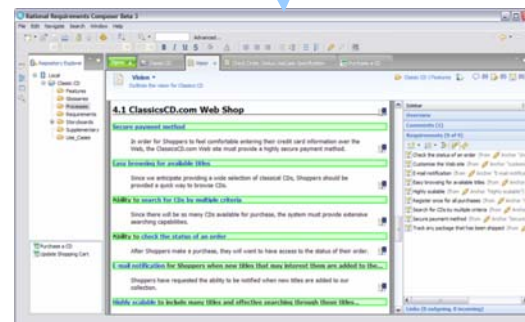
- Review and approval often requires insight into many different kinds of artifacts to see the complete requirements definition
- Different stakeholders have different requirement review and approval needs
- Regulatory and governance audits may require the compilation, review and approval of many diverse requirement artifacts



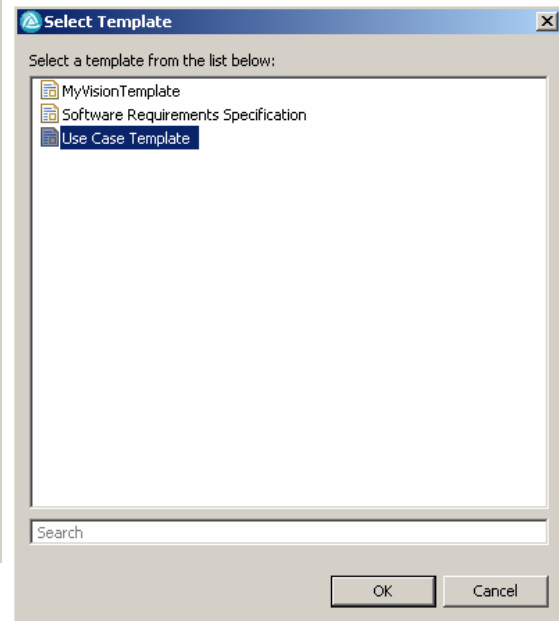
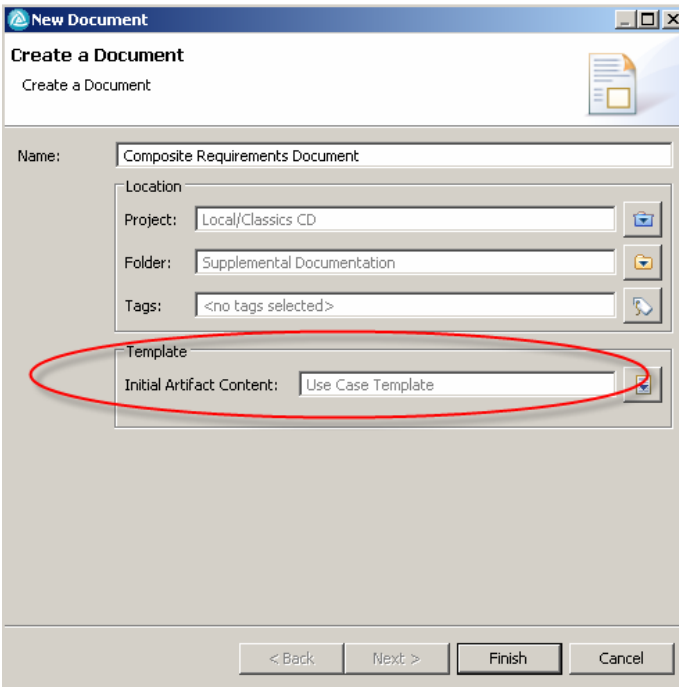
Capture, connect & organize the web of requirements information *Rich-text Documents to structure unstructured information*



- **Capture and format text, images, hyperlinks** into documents that begin to organize unstructured data into cohesive vision and specification documents that link to corporate strategy documents and blueprints
- **Link Rich-text document contents** to use case specification flows and models, business process sketches, User-interface sketches and storyboards.
- **Create composite review documents** with embedded artifacts, for real-time validation and collaboration within a hosted environment.

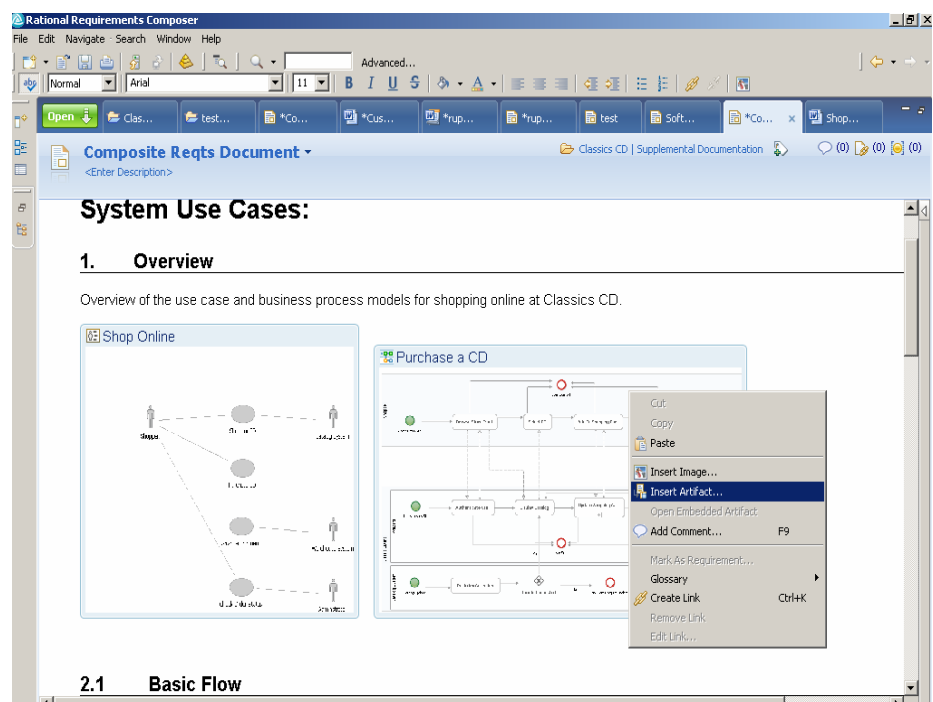


Artifact “templates” can be created in Rational Requirements Composer

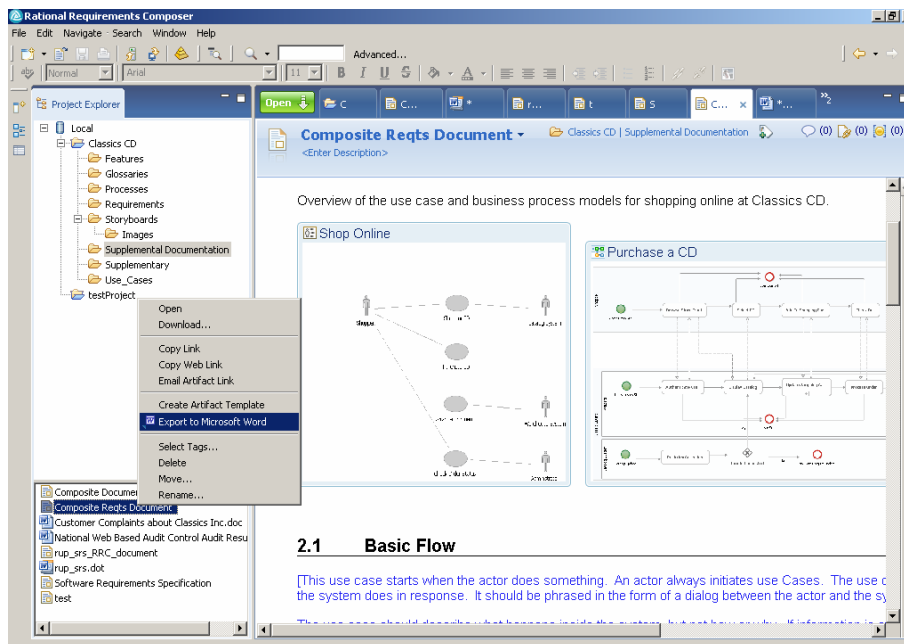


Create Composite Documents in Rational Requirements Composer

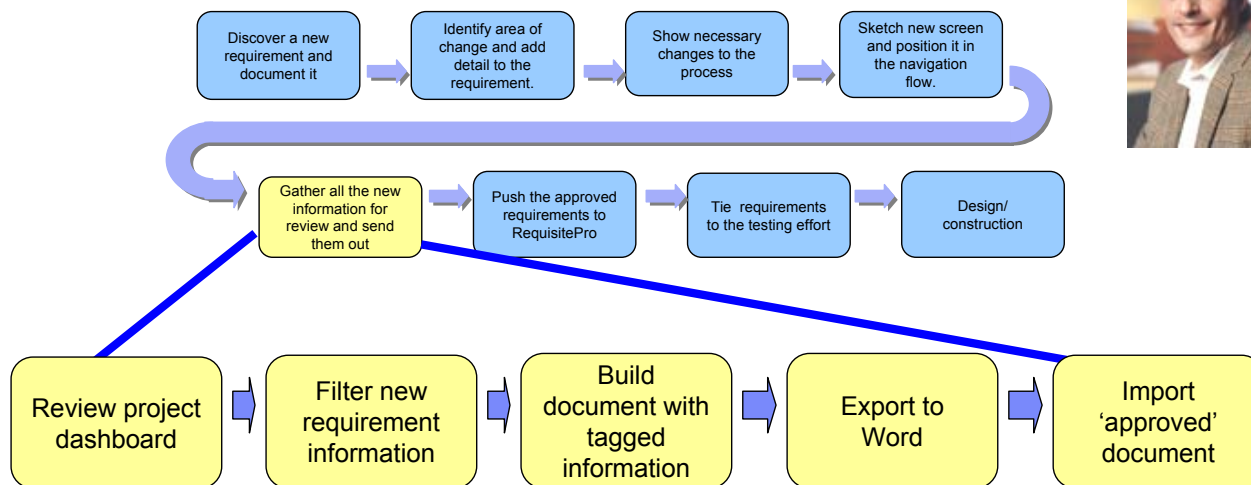
- Rich Text Information
- Capture Requirements Composer Artifacts
 - Links
 - Images
 - Diagrams
 - Sketches
 - Storyboards



Export Composite Documents to MS Word



Lab Scenario



Marco will use the dashboard to review the status of the requirements and comments and ensure comments are closed out before generating a composite document with the privacy requirement artifacts.

The activities in this lab apply to the "Shared Vision Practice."

To the Lab

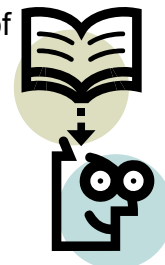


**Now That you Have
Learned Some Basics
Let's Get to the
Lab.**



Concepts Learned

- Requirements Composer can be used to *meet the challenges of the requirements review & approval* process
 - ▶ Assemble *composite requirements documents* that bring together text and visual requirements perspectives
 - ▶ Create documents with *valuable collections of requirements* of different types, levels of abstraction and content
 - ▶ *Export documents to MS Word* to facilitate review and approval outside of the Requirements Composer collaborative environment
 - Satisfy regulatory audits & governance requirements
 - ▶ Create unique requirements documents that meet the needs of each stakeholder responsible for *requirements review and approval*



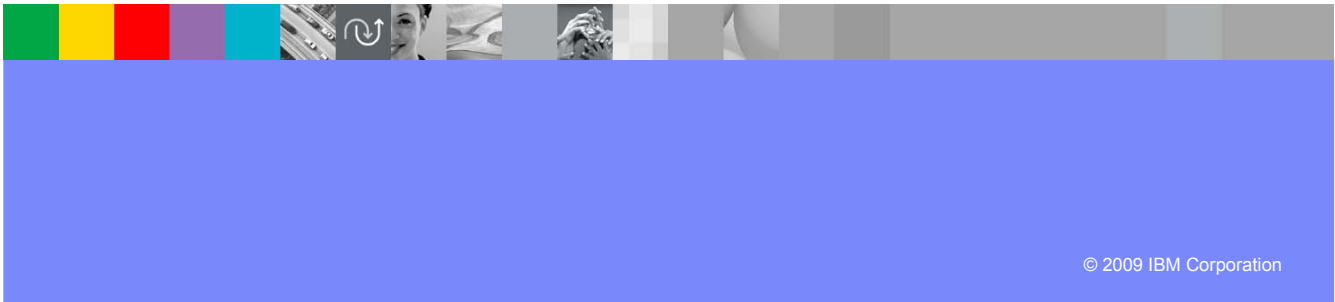
Questions



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Managing Your Requirements

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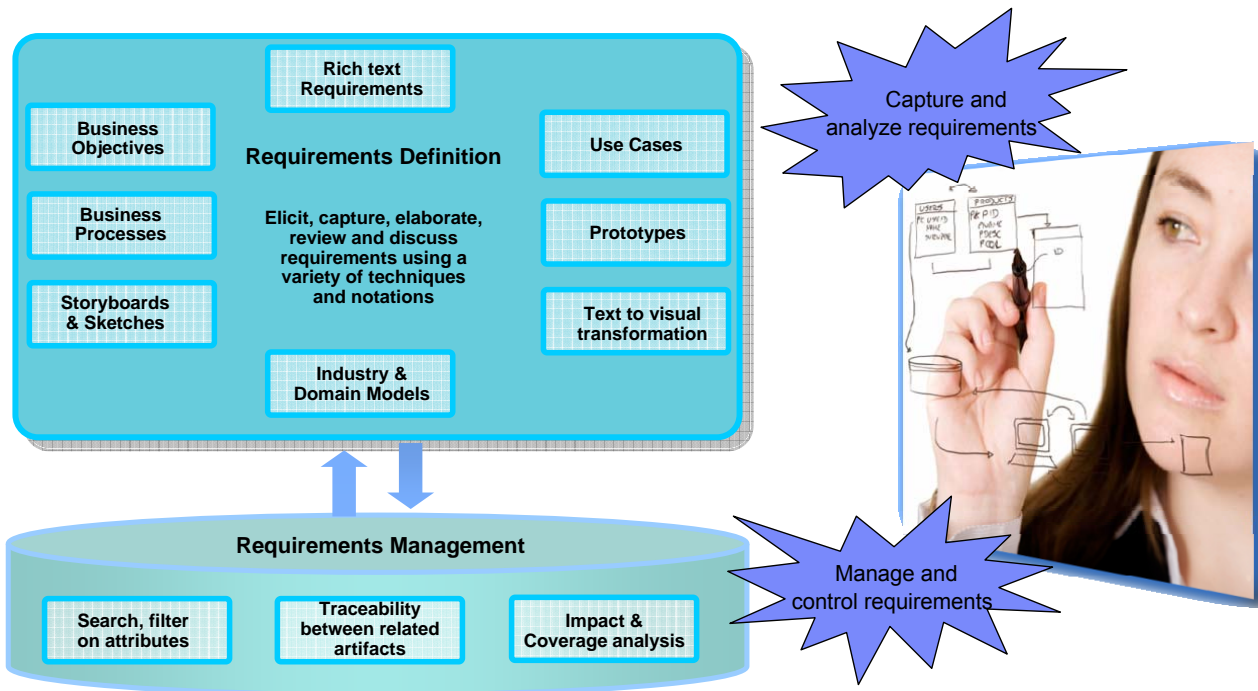
Objectives

- Review requirements definition and requirements management
- See the benefits offered by formal tracing of requirements
- View available reporting to aid in the management of requirements
- Understand available options for managing the newly defined requirements



Enabling Business and Technology Experts to Collaborate

Rational Solutions For Requirements Definition and Management

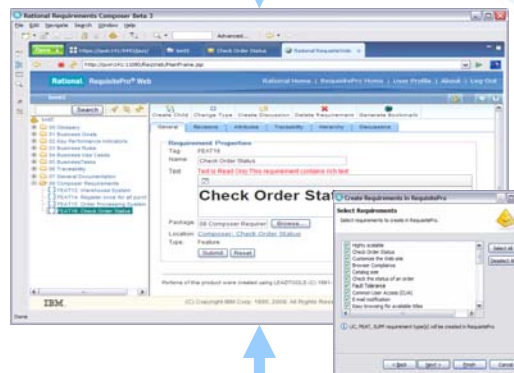


Provide controllable, measurable and repeatable process

Integrated execution with Rational RequisitePro to manage requirements



- **Manage validated requirements** from Composer in RequisitePro with one click transfer for lifecycle management and traceability
- **Maintain relationships** in the face of change between requirements in RequisitePro and Requirements Composer
 - ▶ Easily reference supporting artifact and element for context

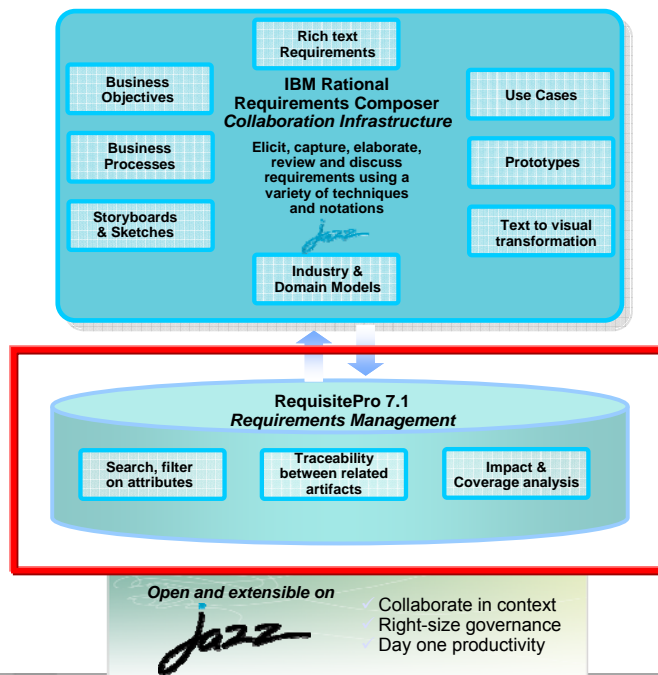


Integrated Requirements Management

Rational Solutions For Requirements Definition and Management

• **IBM Rational RequisitePro**

- ▶ Flexible, integrated requirements and use case management
- ▶ Secure requirement repository for easy access and control
- ▶ Robust web interface for remote access
- ▶ Live Word requirements documents for ease of use and lowered learning curve
- ▶ Powerful database infrastructure for filtering and reporting
- ▶ Traceability provides coverage and impact analysis
- ▶ Application Lifecycle Management integrations
 - Business Process Management (BPM) – WBM, WID
 - Architecture Management – RSA, RSM, RAD, RSD

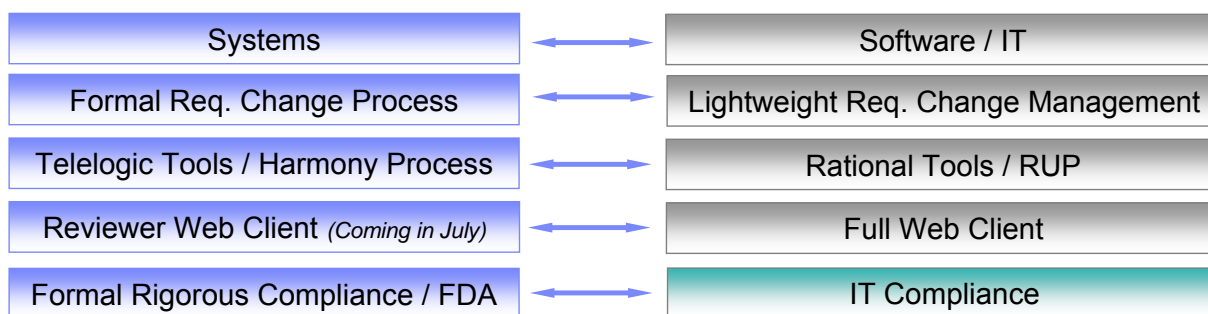


IBM Rational Requirements Management Solutions

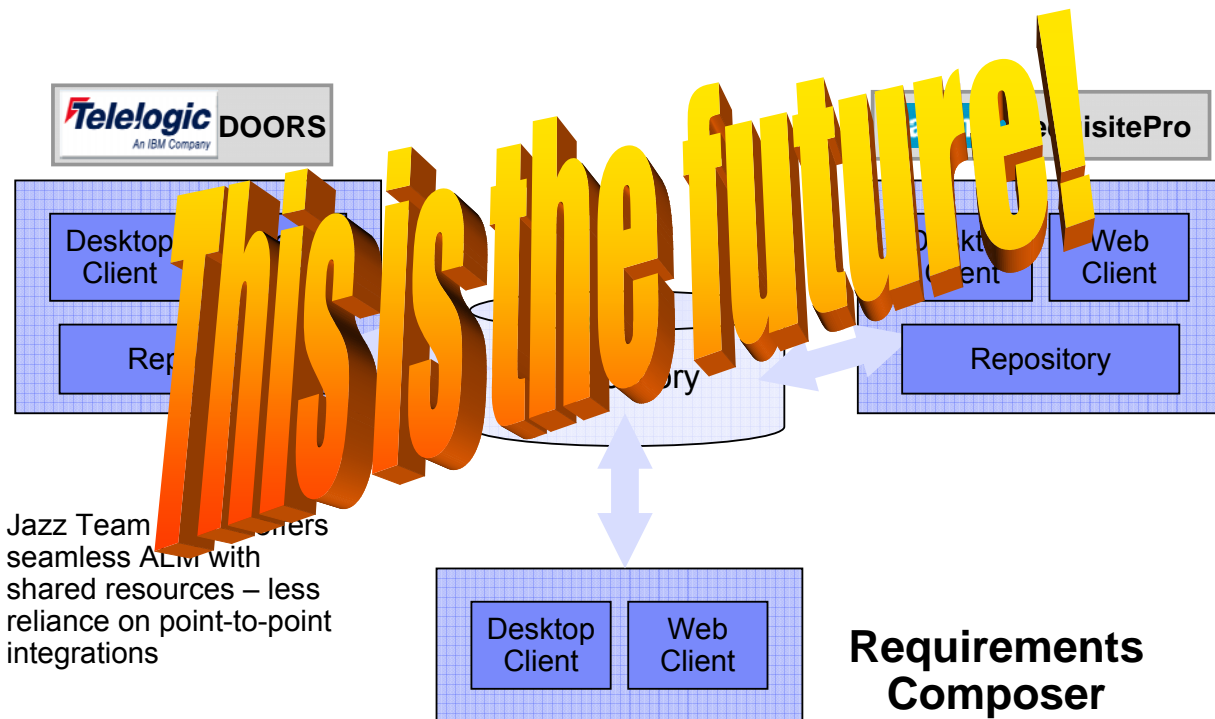
One Size Does NOT Fit All

DOORS

RequisitePro

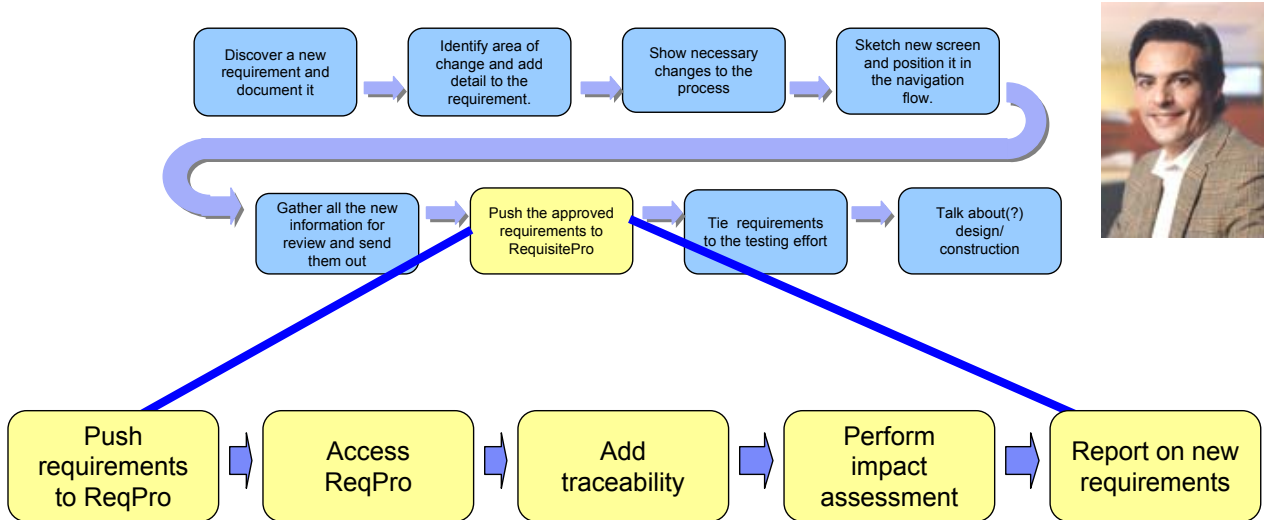


RequisitePro and DOORS evolution



Management Options available today

- If you want to use DOORS you can use the exported Word document in the same way you would use DOORS now.
- If you want to use RequisitePro you can push the *approved* requirements to RequisitePro and continue to work with them in either one (or both) Rational Requirements Composer and RequisitePro.



Marco receives the approved Composite Doc that he distributed. He is now ready to manage the approved requirements in Requirements Composer. All of the requirements that are tagged with Privacy will be sent to RequisitePro where they can be reported and managed.

The activities in this lab apply to the "Requirements Management Practice."

To the Lab

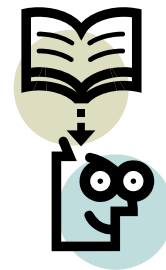


**Now That you Have
Learned Some Basics
Let's Get to the
Lab.**



Concepts Learned

- **Requirements management** is a systematic approach to finding, documenting, organizing, and tracking the requirements of a system.
- **Traceability relationships** make it easy to track changes to a requirement throughout the development cycle and assess the impact of that change.
- **Requirements reporting** allows you to track the progress and prioritize your work.



Questions

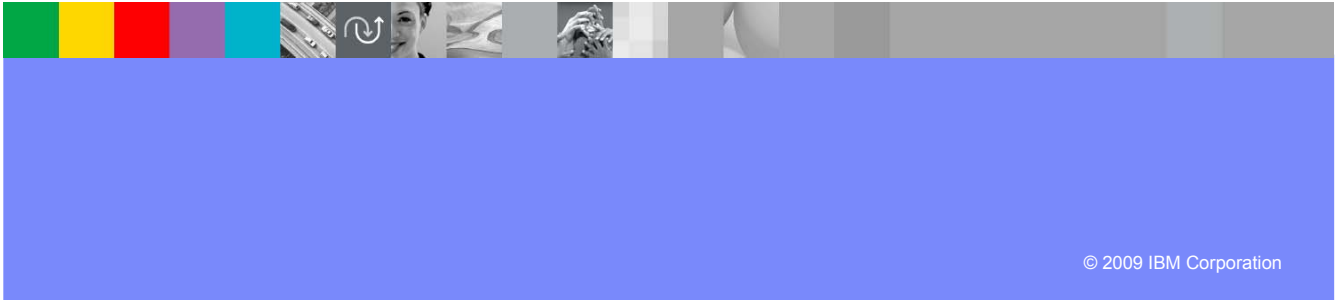


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Requirements Across the Lifecycle

Requirements Driven Test

An IBM Proof of Technology



Objectives

- Discover the value of managing requirements across the lifecycle
- Experience collaborative requirements-driven quality management
- Start to familiarize yourself with the reporting capabilities in Rational Quality Manager



Requirements Driven Quality Management



- Requirements management is an essential aspect of a successful software
- The ability to manage requirements is made easier by the team collaborations features in Jazz platform

Managing requirements in your test plan

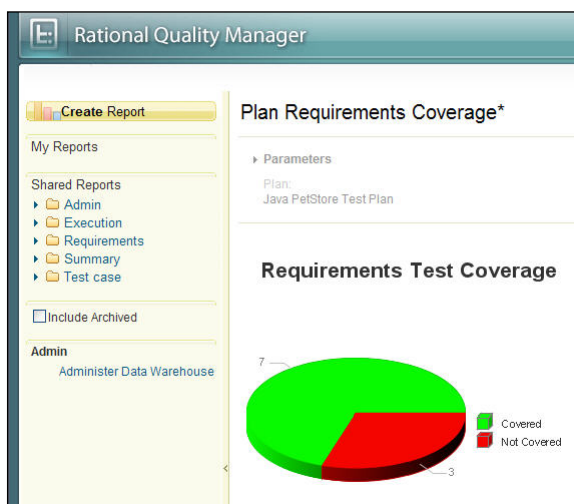
- Import requirements from external tools including IBM Rational RequisitePro directly into,
 - ▶ IBM Rational Quality Manager - requirements are visible in the Requirements view
 - ▶ An existing test plan in Rational Quality Manager
- You can also create new requirements right in the test plan
- Associate requirements with test cases and test plans to ensure thorough testing coverage of product requirements

Responding to changes in requirements

- Requirement changes in IBM Rational RequisitePro are reflected in IBM Rational Quality Manager
 - Requirement in Rational Quality Manager is updated to show the latest requirement status
 - Test cases that contain requirements that change or are deleted are identified as “suspect”
- Modify test plans and test cases based on requirement changes
 - Adjust quickly and accurately to respond to requirement changes

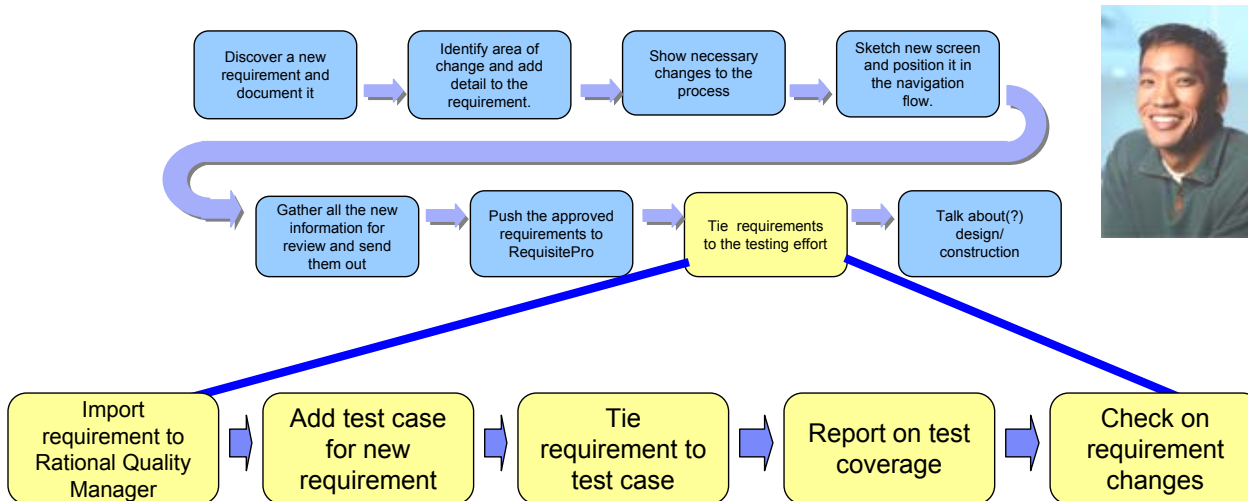
On Demand Reporting

Snapshot views of project status from multiple perspectives



- Customizable reporting enables sharing and communication of vital project information
- Team members can run reports to track the requirements and generate metrics that measure the health of the project

Lab Scenario



Tanuj imports the privacy requirements into Rational Quality Manager and leverages the information to create a new privacy test case and tie it back to the privacy requirement. View the test case coverage and impacts of requirement changes.

To the Lab

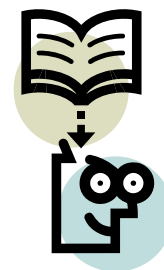


**Now That you Have
Learned Some Basics
Let's Get to the
Lab.**



Concepts Learned

- Requirements management helps to ensure **lifecycle traceability** by allowing you to link the test cases in your test plan with requirements.
- Maintaining **linkages between requirements and test plans**, enables analysis of key metrics using IBM Rational Quality Manager's on demand **reporting capabilities**.
- Seamless integration between IBM Rational RequisitePro and IBM Rational Quality Manager improves **team productivity** and **quality through collaboration**.



Questions



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Requirements Across the Lifecycle

Leverage Requirements for Solution Analysis and Design

An IBM Proof of Technology



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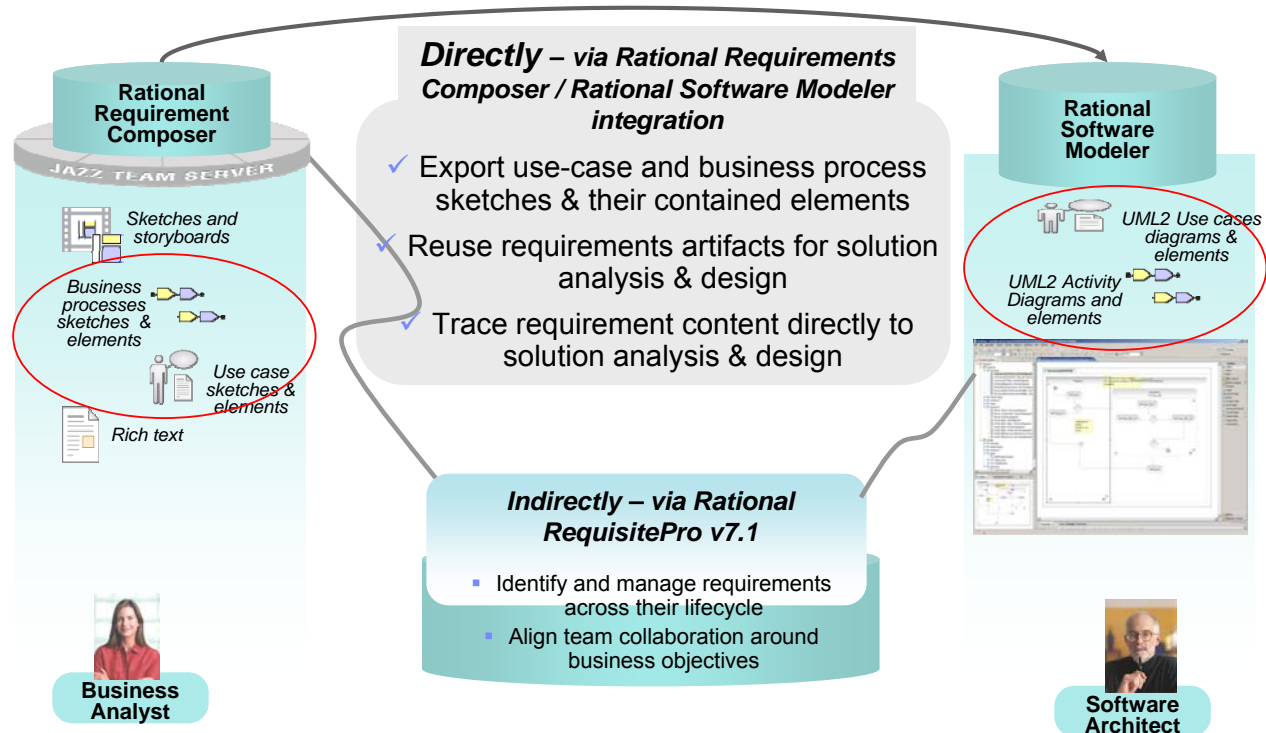
Objectives

- Discover the value of leveraging Rational Requirements Composer content for solution analysis in Rational Software Architect/Modeler (RSx)
- The “What” and “How” of directly leveraging Composer content in RSx:
 - ▶ Composer content can be brought into RSx
 - ▶ Managing change made to Composer content already brought into RSx
 - ▶ Navigating from Composer content in RSx back to Composer
 - ▶ Ways that Composer content can seed solution analysis



Composer Integration with Rational Software Modeler & Architect

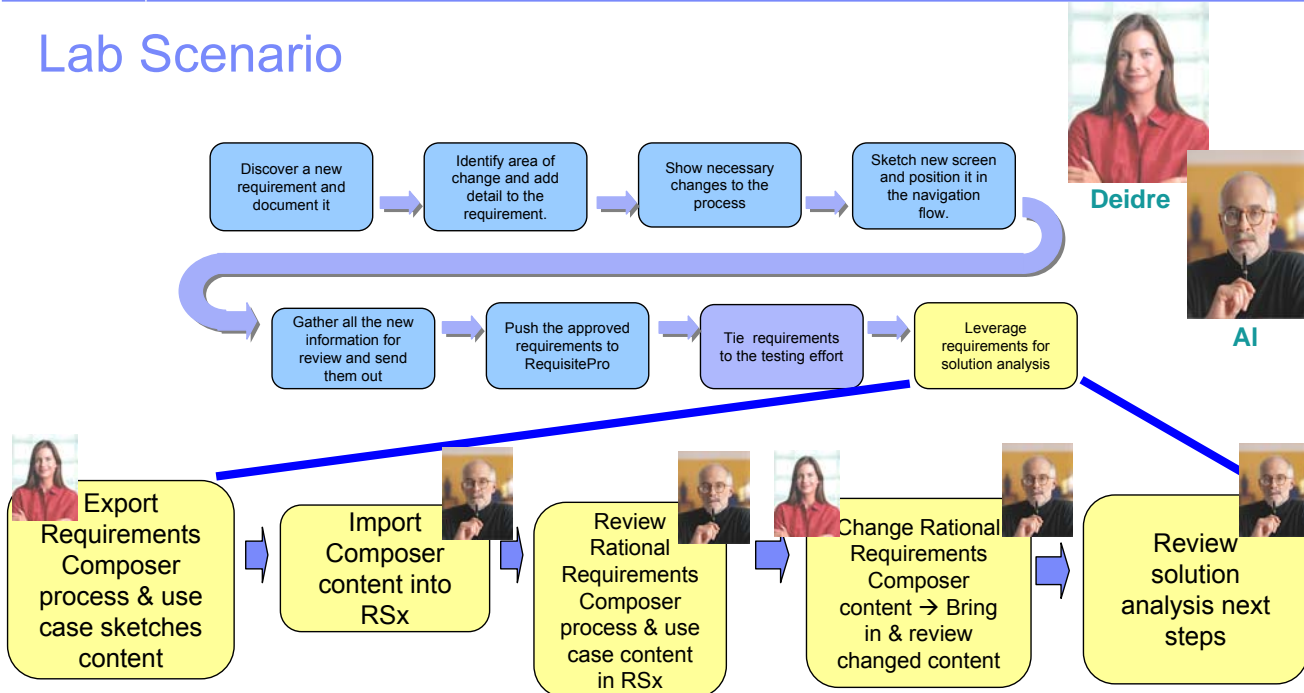
Flexible integrated requirements-driven development



Directly leverage Composer content for solution analysis activities in Rational Software Architect or Modeler

- Locate and export Rational Requirements Composer content for use in Rational Software Modeler or Architect (RSx)
 - Specify subset of overall Composer Process & Use Case content
- Import, Transform, and Review Rational Requirements Composer content in RSx
 - Composer Process Sketches (& elements) as RSx UML 2.x Activity Diagrams (& elements)
 - Composer UseCase sketches (& elements) as RSx UML2.x Use Case (& elements)
- Manage Change to Rational Requirements Composer content already brought into RSx
 - Navigate from RSx elements back to Rational Requirements Composer elements
- Use Rational Requirements Composer content in RSx
 - ▶ Create cross-model relationships to create related and/or derivative model artifacts/element
 - ▶ Composer content is seed for more rigorous Data, Use Case, & Service analysis

Lab Scenario



Deidre knows AI needs to start doing solution analysis – using content from Requirements Composer as a seed to his work in Rational Software Architect/Modeler. AI transforms the Rational Requirements Composer project content Deidre makes available into a RSx model, reviews the content, brings in changed content, and plans his next steps on how to use this content.

To the Lab

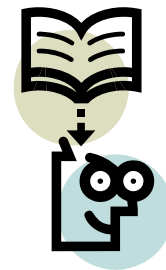


**Now That you Have
Learned Some Basics
Let's Get to the
Lab**



Concepts Learned

- Value of directly leveraging Composer content brought into RSx for more rigorous solution analysis including:
 - ▶ Improved Productivity because of lack of rework and associated errors in re-keying business needs in solution delivery tooling
 - ▶ Improved Understanding of business needs because of business needs expressed in language of solution delivery and available in solution delivery tooling
 - ▶ Improved “what if” impact and coverage analysis because of direct traceability from business needs to their solution delivery fulfillment
- The “What” and “How” of directly leveraging Composer content in RSx:
 - ▶ Composer content can be brought into RSx
 - ▶ Managing change made to Composer content already brought into RSx
 - ▶ Navigating from Composer content in RSx back to Composer
 - ▶ Ways that Composer content can seed solution analysis



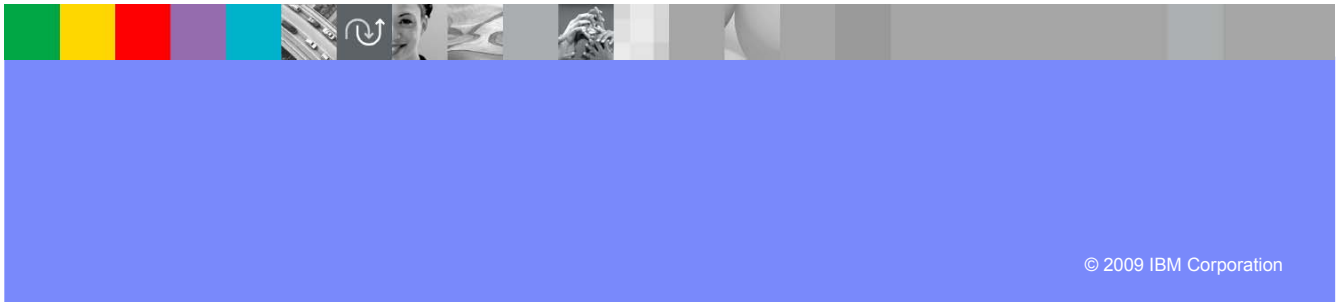
Questions



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Overview of IBM Requirement Practices

An IBM Proof of Technology



Objectives

- Discover the value of Practices for Requirements Definition and Management
- Start to familiarize yourself with the requirement practices
- Measure the results of practices and understand the impact on business objectives



What are Practices?

Practices are not prescriptive process; they instead provide guidance in the art of eliciting, defining, and managing requirements.



Practices Provide a Jumpstart in Requirement Lifecycle

"Packaged" solution



Provide a framework and approach for proven patterns of success

Provide a Recipe



Are a recipe or a starting point for tailoring planning activities.



Why Leverage Practices?

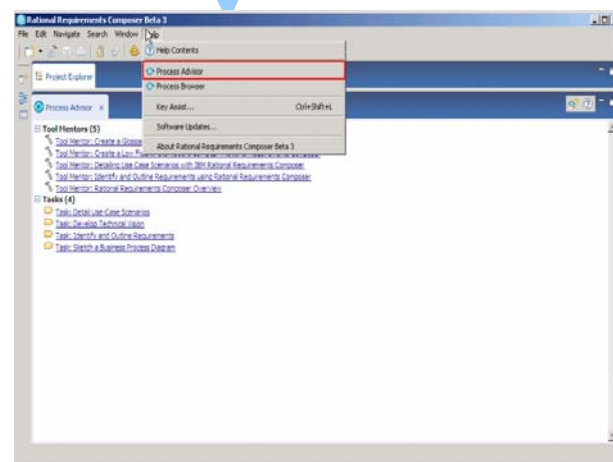
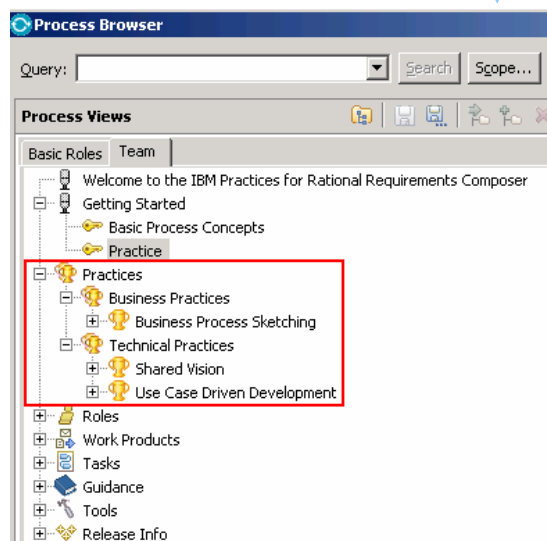
- Easier to adopt
- Adaptable and scalable
- May be used individually or collectively
- Easy to configure and use
- Requirements Composer provides in context access to Practices to use as a guide
- Sizeable chunks of information



Process Advisor in Requirements Composer

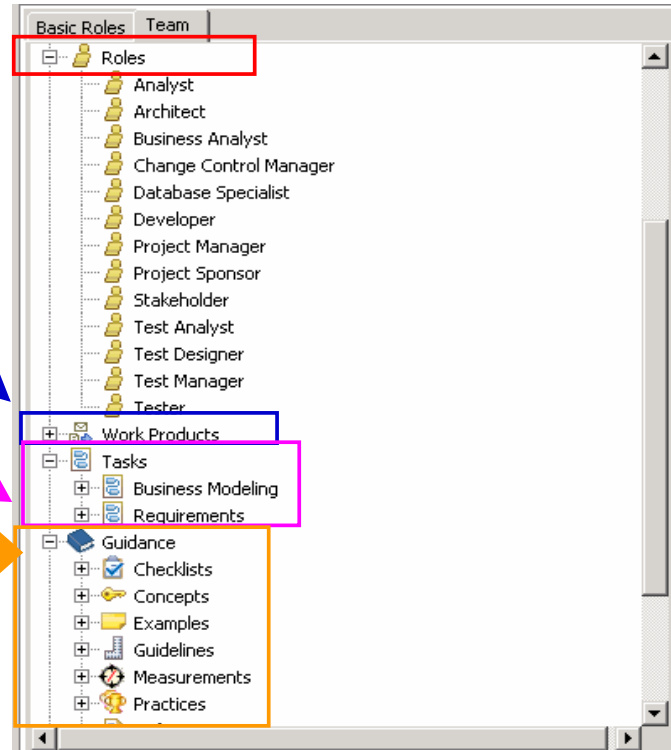
Use the **Process Advisor** to Access Guidance for Requirement Practices

- Suggestive and provide guidance, techniques, and measures from successful patterns of success.



What do Practices Include?

- **Roles** person whom performs tasks, and what artifacts they are responsible.
- **Work Products** represent deliverable artifacts in the requirement process.
- **Tasks** are activities performed by roles within the requirements process.
- **Guidance** generalizes forms of content including: Checklists, Concepts, Examples, Guidelines, Measurements, Practices, etc....



Practice: Business Process Sketching

- **Business Problem**
 - ▶ Business context is unknown
 - ▶ Process maps do not exist
- **Solution to Problem**
 - ▶ New guidelines - Business Process Diagram, Scope of Business Process sketching
 - ▶ Many tasks supported by Requirements Composer
- **Benefits**
 - ▶ Guideline to create in context Simple and business2Business sketches
 - ▶ Simplify manner to graphically represent business activities within an organization

Practice: Business Process Sketching



A Business Process Diagram is a sketch that uses graphical elements and semantics that support these elements as defined in the Object Management Group Business Process Modeling Notation specification.

[Expand All Sections](#) [Collapse All Sections](#)

Relationships

- Relationships
 - How To Adopt Business Process Sketching
 - Business Process Diagram
 - Business Process Diagram
 - Tasks
 - Sketch a Business Process Diagram
 - Capture a Common Business Glossary
 - Determine the scope of the sketch
 - Guidance
 - Rational Requirements Composer Overview
 - Business Process Diagram Guideline
 - Scope of Business Process Sketching

Inputs

- [Business Architecture]
- [Business Requirements]

[Back to top](#)

Description

Practice: Shared Vision

● Business Problem

- ▶ Teams may **rush** into a solution before business problem understood and solution **doesn't meet stakeholder needs**
- ▶ **Failure to gain concurrence** on problem to be solved

● Solution to Problem

- ▶ **Guideline** to identify stakeholders
- ▶ **New technique** for requirement gathering
- ▶ **New tool mentor** to capture glossary
- ▶ **Objective metrics**

● Benefits

- ▶ Ensure **business problem** is **understood** and agreed upon by everyone on the team
- ▶ Provide **foundation** for software development activities

Practice: Shared Vision



Define and communicate an overall vision for the project.

[Expand All Sections](#) [Collapse All Sections](#)

Relationships

Relationships

- [How to Adopt the Shared Vision Practice](#)
- [Stakeholder Collaboration](#)
- [Stakeholder Concurrence](#)
- [Vision](#)
- [Glossary](#)
- [Develop Technical Vision](#)
- [Guidance](#)
 - [Create a Low Fidelity Storyboard Using IBM Rational Requirements Composer](#)
 - [Create a Glossary using Rational Requirements Composer](#)
 - [Guidelines](#)
 - [Requirements Gathering Techniques](#)
 - [Effective Requirement Reviews](#)
 - [Identify Stakeholders](#)
- [Measurements](#)

[Back to top](#)

Description

Practice: Use Case Driven Development

● Business Problem

- ▶ Effectively define requirements in a **declarative statement**
- ▶ **Functional decomposition**

● Solution to Problem

- ▶ **New guidelines and concepts**
- ▶ **Tasks** supported by Requirements Composer
- ▶ **Tool Mentors**
- ▶ **Objective metrics**

● Benefits

- ▶ **User focused** requirements
- ▶ **Scenarios** categorize behavior for test
- ▶ **Use Cases drive development** activities
- ▶ Provide **support to story boards** and other requirement techniques

Practice: Use Case Driven Development



This practice describes how to capture requirements with a combination of use cases and system-wide requirements, and then drive development and testing from those use cases.

[Expand All Sections](#) [Collapse All Sections](#)

Relationships

Relationships

- [How to Adopt the Use-Case Driven Development Practice](#)
- [Key Concepts](#)
 - [Requirements](#)
 - [Use Case](#)
 - [Actor](#)
 - [Use-Case Model](#)
 - [Functional Decomposition](#)
 - [Use Case Granularity](#)
 - [Storyboarding](#)
- [Work Products](#)
 - [Use Case](#)
 - [Use-Case Model](#)
 - [System-Wide Requirements](#)
 - [Actor](#)
 - [Storyboard](#)
- [Tasks](#)
 - [Identify and Outline Requirements](#)
 - [Detail Use-Case Scenarios](#)
 - [Detail System-Wide Requirements](#)

Questions

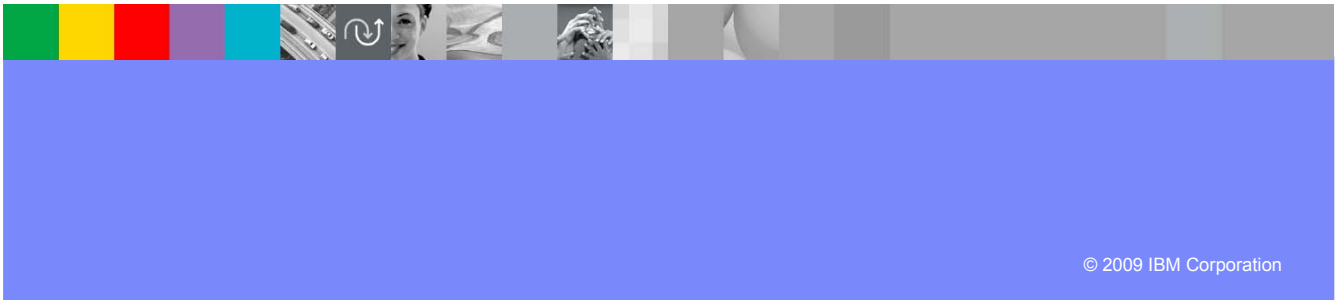




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Session summary

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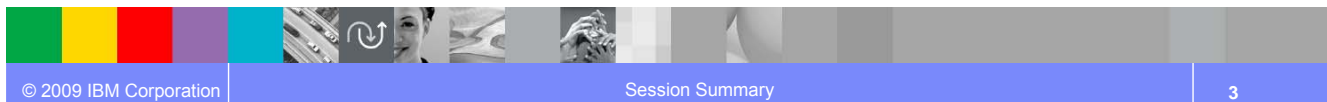
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Session summary

- We have described the design and delivery challenges driven by failure to align and unify Business and IT perspectives around problems and solutions through effective requirements definition and management
- We have explored how Requirements Composer can
 - ▶ Enable business stakeholders, analysts, and delivery teams to **collaborate in context** by eliciting, elaborating and validating requirements that align with business objectives
 - ▶ Enable analysts to capture stakeholders needs using multiple **visual and textual requirements documentation techniques**
 - ▶ Unify the web of information by **creating artifacts and capturing their inter-relationships** to align stakeholders and empower lifecycle teams with context needed to deliver more value
 - ▶ Guide execution across the lifecycle through **integrations with other Rational Tools**
- We have provided a hands on experience using Requirements Composer to enhance the software delivery process

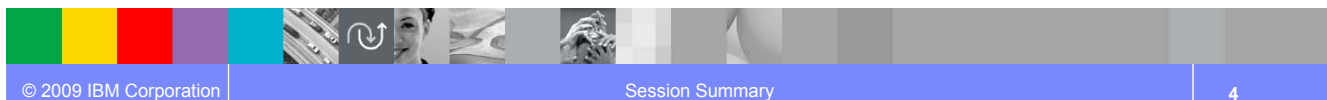
Next steps

- Engage your local Rational team
 - ▶ Provide a customized demo for your team
 - ▶ Conduct a targeted proof of concept
- Download a free trial of Rational Requirements Composer at <https://www14.software.ibm.com/iwm/web/cc/earlyprograms/rational/RDMOpenBeta/index.shtml>
- Download a free trial of Rational RequisitePro at <http://www-128.ibm.com/developerworks/downloads/r/rrp/>
- Register on jazz.net and explore learning tutorials and videos
 - ▶ <http://www.ibm.com/developerworks/spaces/jazz>



Additional resources

- Learn more about Rational Requirements Composer (demos, articles) at <http://www.ibm.com/software/rational/announce/rrc>
- Download free trials of Rational Requirements Composer at <https://www14.software.ibm.com/iwm/web/cc/earlyprograms/rational/RDMOpenBeta/index.shtml>
- Explore Jazz Product tutorials, demos and other developer learning resources <http://ibm.com/developerworks/spaces/jazz>
- Participate in the open commercial development of Jazz by joining the community <http://jazz.net>
- Learn more about the Jazz technology and the future IBM Rational product roadmap <http://ibm.com/rational/jazz/roadmap>



Questions



Thank You

We appreciate your feedback in order to improve this educational event. Please fill out the survey form.





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