

IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**



Managing Requirements throughout the Software Development Lifecycle

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IBM Rational Technology Events*

Agenda:

- Requirements Management and IBM Rational RequisitePro
- Requirements Management and Use Cases
- Rational Unified Process (RUP), RequisitePro, and Rational Software Modeler (RSM) Demo
- Business Modeling
- WebSphere Business Modeler and RSM demo



Focus of the Presentation: Process and Tools

- The software development process
 - ▶ The Rational Unified Process

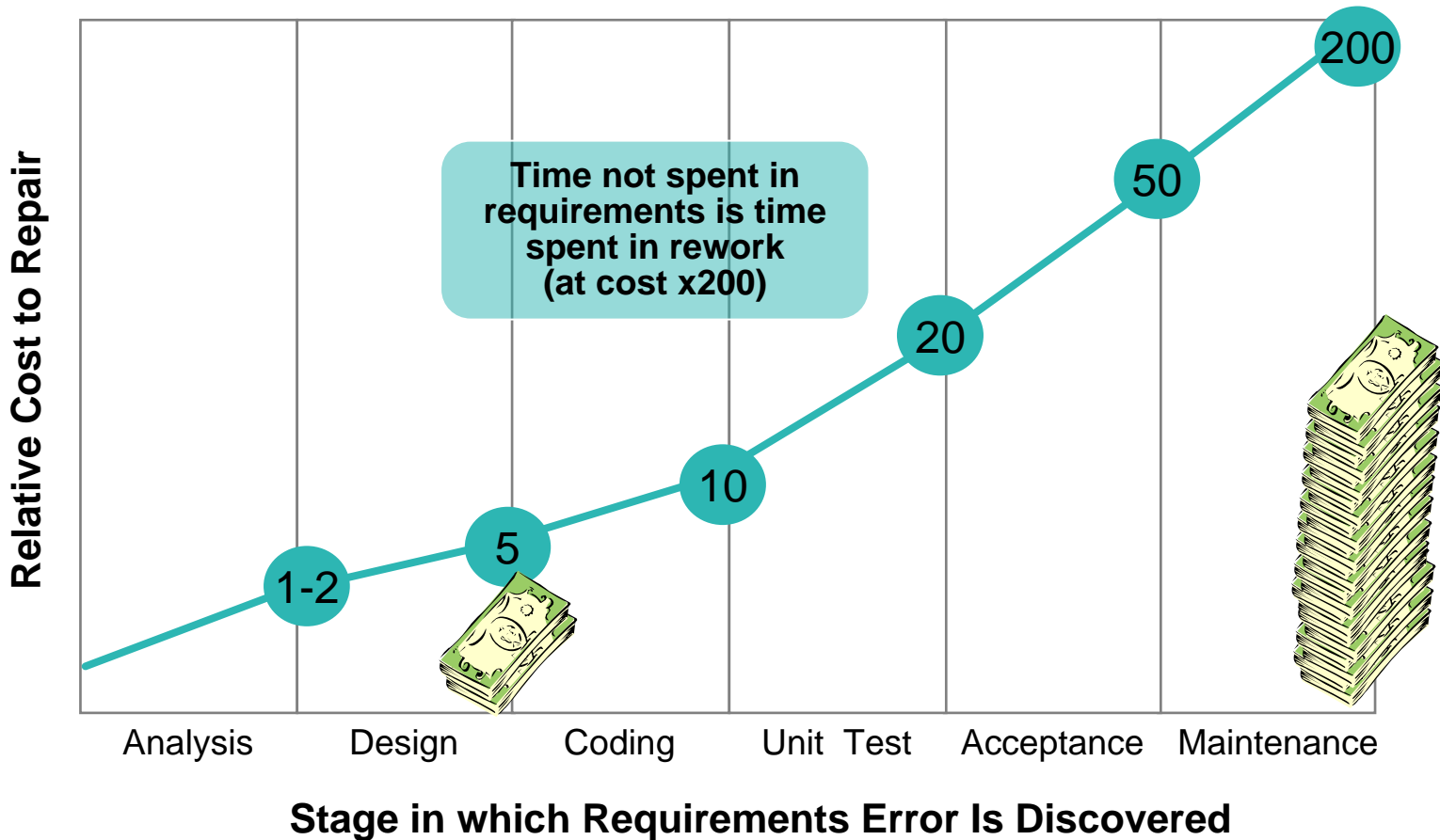
- Tools
 - ▶ IBM Rational RequisitePro
 - ▶ WebSphere Business Modeler
 - ▶ IBM Rational Software Modeler/Architect
 - ▶ IBM Rational ClearQuest Test Management



The Challenge: Managing Your Requirements

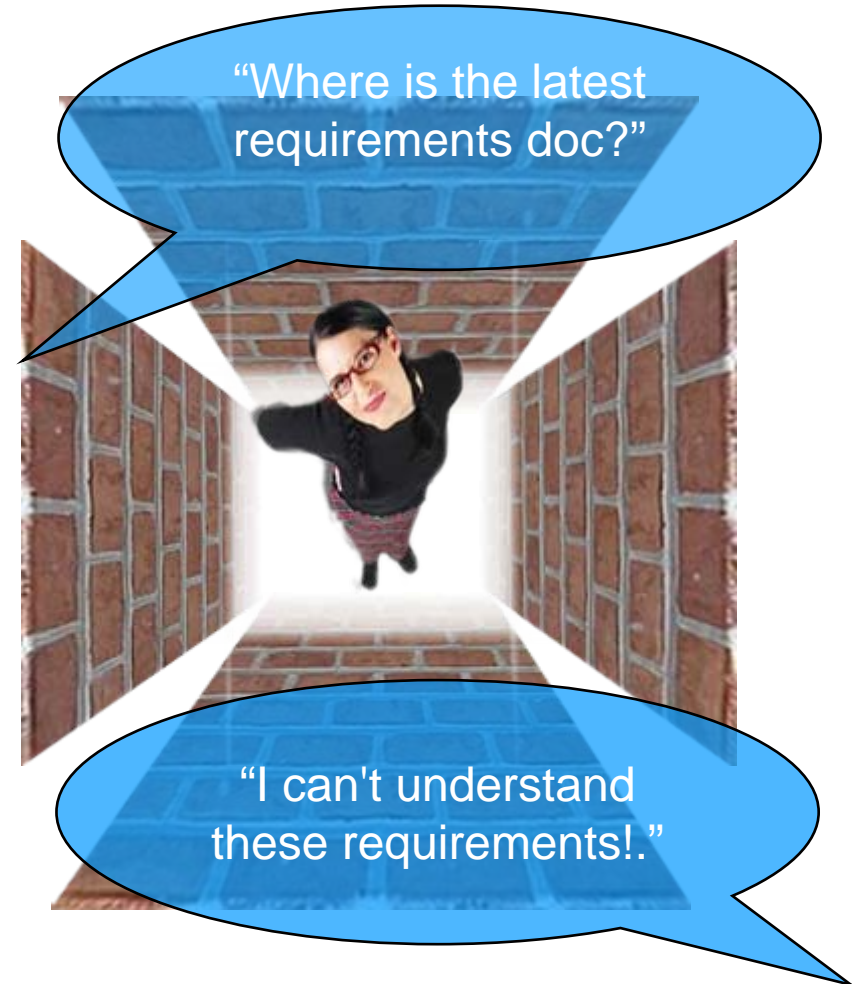
Unmanaged requirements cause unmanageable budgets

- A primary reason for excessive rework, delays, and poor quality



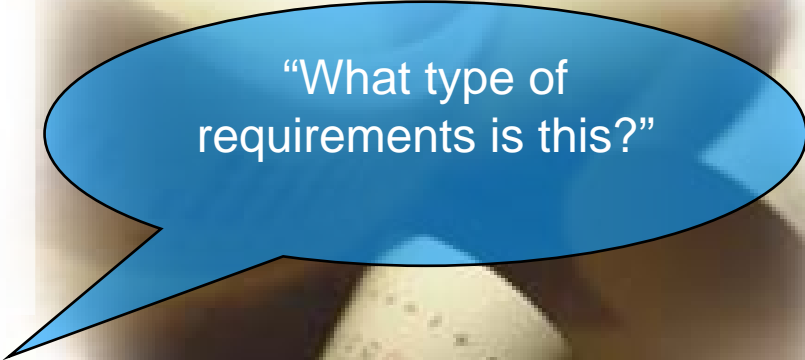
Challenges of Managing Requirements

- Too many requirements errors
 - ▶ Team members don't know where the latest requirements are
 - ▶ Difficult to understand a big list of shall statements
 - ▶ No repeatable process

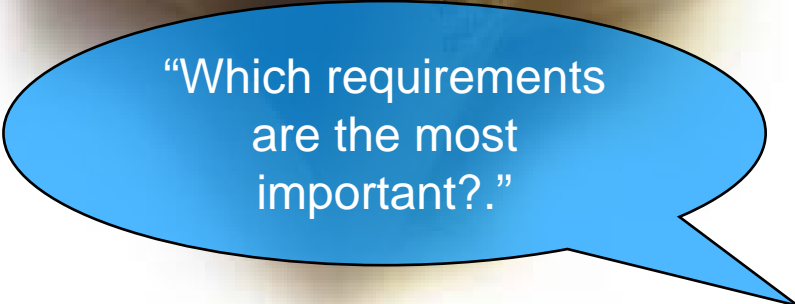


Challenges of Managing Requirements

- Too many requirements errors
 - ▶ Team members don't know where the latest requirements are
 - ▶ Difficult to understand a big list of shall statements
- Hard to organize and report on requirements
 - ▶ No organizing paradigm
 - ▶ No way to search, sort, and filter



“What type of requirements is this?”




“Which requirements are the most important?.”



Challenges of Managing Requirements

- Too many requirements errors
 - ▶ Team members don't know where the latest requirements are
 - ▶ Difficult to understand status and priority
- Hard to organize and report on requirements
 - ▶ No organizing paradigm
 - ▶ No way to search, sort, and filter
- Can't manage changes to requirements
 - ▶ Don't know what has changed
 - ▶ No understanding of impact



“What requirements have changed since the last release?”

“If I change this requirement what else will have to change?”



Managing Requirements with IBM Rational RequisitePro

Requirements management for the whole team



- **IBM Rational RequisitePro**
 - ▶ Flexible, integrated requirements and use case management
- **Key Benefits**
 - ▶ 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

Challenge #1 - Too Many Requirements Errors

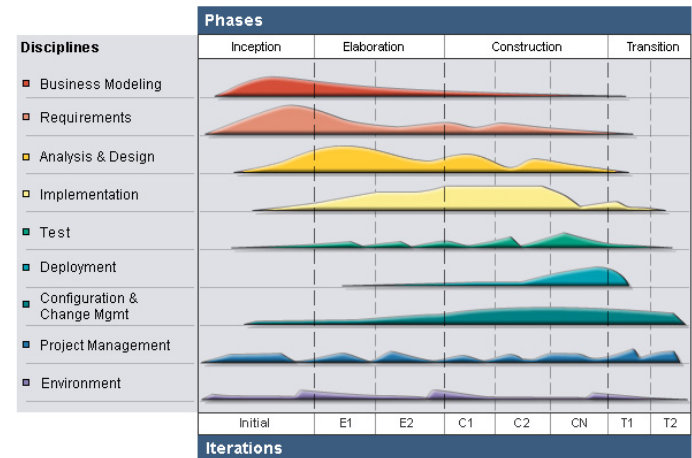
- Challenge

- ▶ Team members don't have a requirements process, they don't know where the latest requirements are, and they find it difficult to understand a big list of shall statements.



- Resolution

- ▶ Have secure central requirements repository accessible on a local network or over the internet
- ▶ Support alternate types of requirements like use cases, features, and user stories
- ▶ Provide best practices and process guidance



Challenge #2 - Hard to Organize and Report on Requirements



- Challenge
 - ▶ There is no consistent organizing principle and it is very difficult to sort or filter requirement based on information like priority and release.
- Resolution
 - ▶ Document types (and associated templates) and requirement types provide structure and guidance.
 - ▶ Requirements attributes provide necessary information to sort, search, and filter

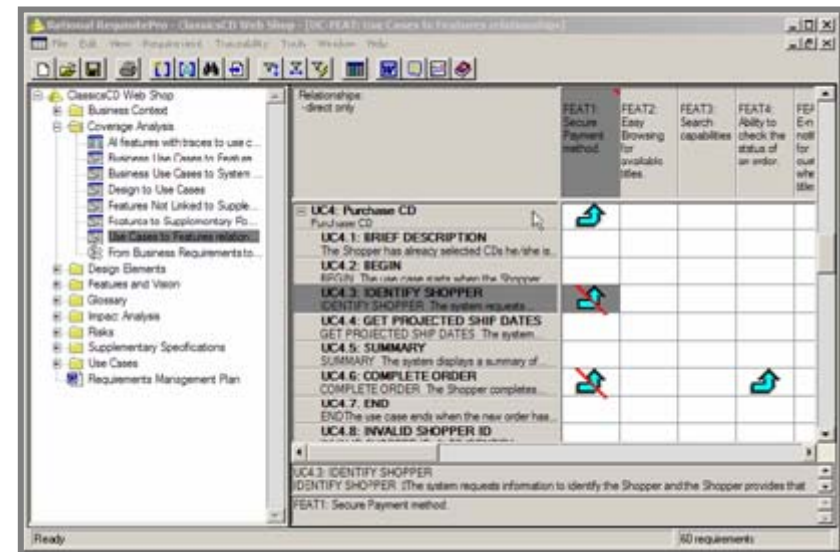
Requirements	Priority	Status
FEAT11 Secure payment method Secure payment method	Should	Approved
FEAT12 Easy browsing Easy browsing for available titles	Should	Approved
FEAT13 Search by multiple criteria Ability to search for CDs by multiple criteria	Must	Approved
FEAT14 Ability to check status of an order Ability to check the status of an order	Should	Approved
FEAT15 E-mail notification of new titles of interest E-mail notification for Shoppers when new titles that may interest them are added to the collection.	Could	Approved
FEAT16 Highly scalable Highly scalable to include many titles and effective searching through those titles	Must	Approved
FEAT17 Ability to customize the Web site Shoppers should be able to customize the Web site.	Should	Approved
FEAT18 User registration good for future purchases Shoppers should be able to register once for all purchases; they should not be asked to re-enter personal information.	Should	Approved
FEAT19 Shipping Status Shoppers should be able track any package that has been shipped to them.	Should	Approved
FEAT110 Ability to add/remove offerings Ability to add/remove CDs available for sale	Should	Proposed
FEAT111 Ability to check on customer orders Ability to check on Shopper orders	Must	Incorporate



Challenge # 3 - Change Not Managed

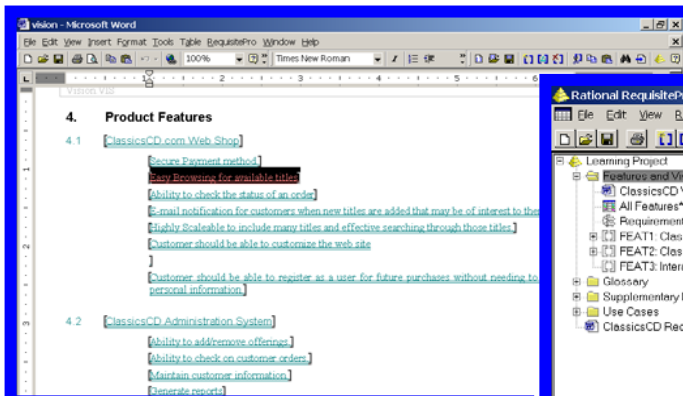


- Challenge
 - ▶ Team member don't know what has changed over time. They have no way to understand what the impact of a change will be.
- Resolution
 - A requirements audit trail (history) provides a record of all changes.
 - Traceability and suspect links provides visibility into change impact
 - Automatic notification of revisions to requirements

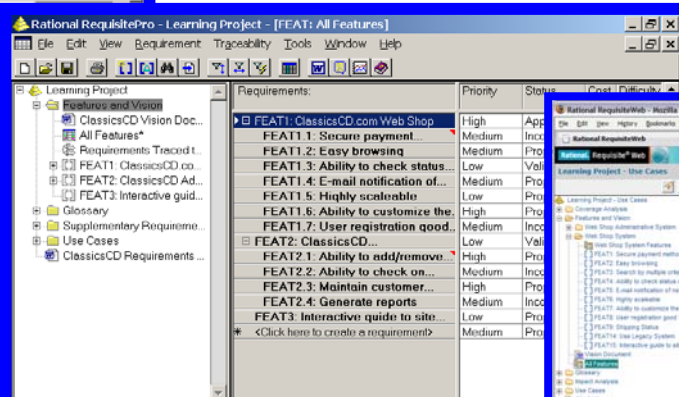


Managing Requirements with IBM Rational RequisitePro

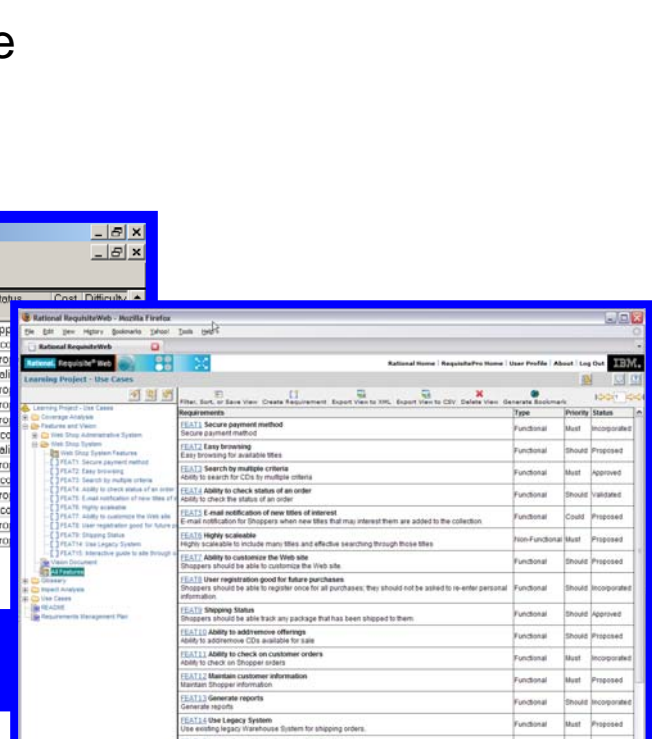
- ✓ Keep your team on track
- ✓ 3 interfaces - work the way you want
- ✓ Document-centric or database-centric - your choice



Microsoft Word



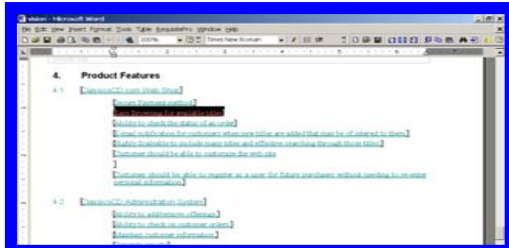
Windows



Web

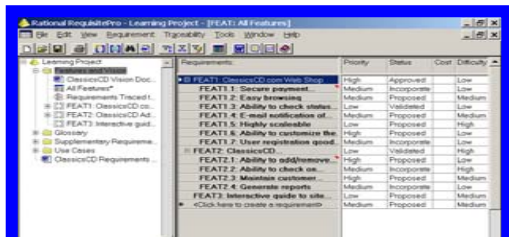


Understanding and Using Requirements



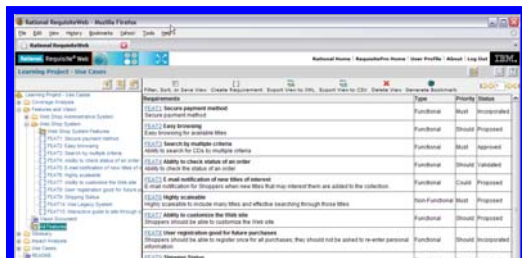
Microsoft Word

- ✓ Familiar interface
- ✓ Provides requirements context
- ✓ Highly effective for reviews
- ✓ Optional



Windows

- ✓ Central repository, easy secure access
- ✓ Project and document templates
- ✓ Filtering and sorting



Web

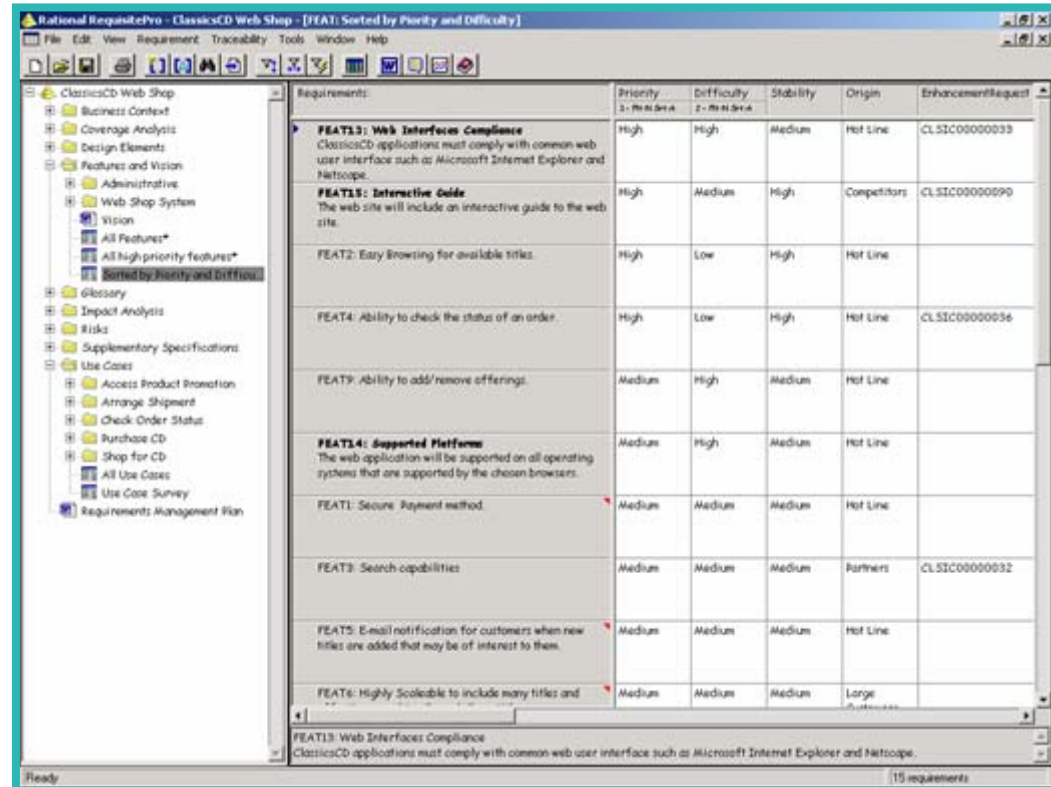
- ✓ Remote/distributed access
- ✓ No desktop installation
- ✓ Easy to use and performs well in a geographically distributed environment



Organizing Requirements

Types, Attributes, Views, Packages

- ✓ User-defined requirement types
- ✓ User-defined attributes
- ✓ User-defined filters (views)
- ✓ Saved views
- ✓ User defined packages



Rational RequisitePro - ClassicsCD Web Shop - [FEAT: Sorted by Priority and Difficulty]

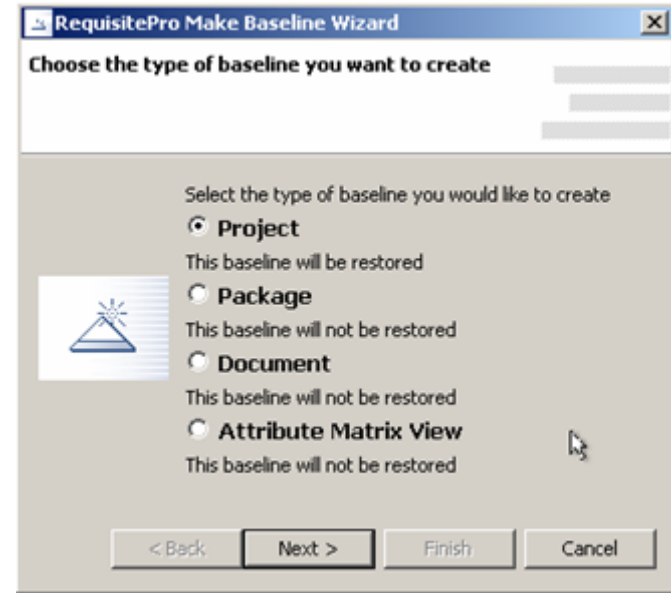
Requirements:	Priority 1 - High to 4 - Low	Difficulty 1 - High to 4 - Low	Stability	Origin	EnhancementRequest
FEAT13: Web Interfaces Compliance ClassicsCD applications must comply with common web user interface such as Microsoft Internet Explorer and Netscape.	High	High	Medium	Hot Line	CL51C0000033
FEAT15: Interactive Guide The web site will include an interactive guide to the web site.	High	Medium	High	Competitors	CL51C0000090
FEAT2: Easy Browsing for available titles.	High	Low	High	Hot Line	
FEAT4: Ability to check the status of an order.	High	Low	High	Hot Line	CL51C0000056
FEAT9: Ability to add/remove offerings.	Medium	High	Medium	Hot Line	
FEAT14: Supported Platform The web application will be supported on all operating systems that are supported by the chosen browsers.	Medium	High	Medium	Hot Line	
FEAT1: Secure Payment method.	Medium	Medium	Medium	Hot Line	
FEAT3: Search capabilities.	Medium	Medium	Medium	Partners	CL51C0000032
FEAT5: E-mail notification for customers when new titles are added that may be of interest to them.	Medium	Medium	Medium	Hot Line	
FEAT6: Highly Scalable to include many titles and	Medium	Medium	Medium	Large Customers	

Ready | 15 requirements

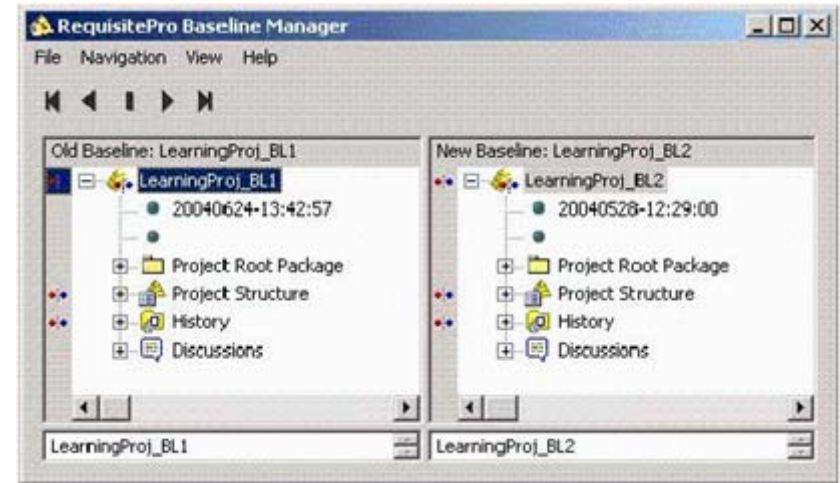


Reporting on Requirements

- ✓ Customizable views
- ✓ Export views to Word or Excel
- ✓ Create and compare partial or complete baselines



Requirements	Priority [1 - FE:N Srt:A]	Difficulty [2 - FE:N Srt:A]	Stability	Origin	Enhancement/Request
FEAT13: Web interfaces Compliance ClassicsCD applications must comply with common web user interface such as Microsoft Internet Explorer and Netscape.	High	High	Medium	Hot Line	CLSC0000033
FEAT15: Interactive Guide The web site will include an interactive guide to the web site.	High	Medium	High	Competitor	CLSC0000090
FEAT12: Easy browsing for available titles.	High	Low	High	Hot Line	
FEAT4: Ability to check the status of an order.	High	Low	High	Hot Line	CLSC0000036
FEAT9: Ability to add/remove offerings.	Medium	High	Medium	Hot Line	
FEAT14: Supported Platforms The web application will be supported on all operating systems that are supported by the chosen browsers.	Medium	High	Medium	Hot Line	
FEAT1: Secure Payment method.	Medium	Medium	Medium	Hot Line	
FEAT3: Search capabilities	Medium	Medium	Medium	Follows	CLSC0000032
FEAT5: E-mail notification for customers when new titles are added that may be of interest to them.	Medium	Medium	Medium	Hot Line	
FEAT6: Highly Scalable to include many titles and effective searching through these titles.	Medium	Medium	Medium	Large Customer	
FEAT8: Customer should be able to register as a user for future purchases without needing to re-enter personal information.	Medium	Medium	Medium	Hot Line	
FEAT10: Ability to check on customer orders.	Medium	Medium	Medium	Hot Line	
FEAT11: Maintain customer information now.	Medium	Medium	Medium	Large Customer	
FEAT7: Customer should be able to customize the web site.	Medium	Low	High	Hot Line	
FEAT12: Generate reports	Low	High	Low	Large Customer	CLSC0000038



Managing Changing Requirements

Traceability

- ✓ Graphical trace matrix
- ✓ Textual trace matrix
- ✓ Graphical trace tree

Rational RequisitePro - ClassicsCD Web Shop - [BUS1: From Business Requirements to Software Requirements]

Requirement: BUS1

- ClassicsCD Web Shop
 - Business Context
 - Coverage Analysis
 - Features with traces to use cases
 - Business Use Cases to Feature...
 - Business Use Cases to System...
 - Design to Use Cases
 - Features Not Linked to Supple...
 - Features to Supplementary Re...
 - Use Cases to Features relation...
 - From Business Requirements to...
 - Design Elements
 - Features and Vision
 - Glossary
 - Impact Analysis
 - Risks
 - Supplementary Specifications
 - Use Cases
 - Requirements Management Plan

50 requirements

Rational RequisitePro - ClassicsCD Web Shop - [UC: FEAT1: Use Cases to Features Relationships]

Relationships: direct only

	FEAT1: Secure Payment method.	FEAT2: Easy Browsing for available titles.	FEAT3: Search capabilities
UC5.7: CHOOSE ITEM CHOOSE ITEM. The Shopper chooses one or			↗
UC5.8: END END. The use case ends when the Shopper...			↗
UC5.9: SEARCH BY SELECTED... SEARCH BY SELECTED CRITERIA. A BF	↘	↗	
UC5.10: QUIT QUIT. The Shopper may choose to quit at any			↗
UC5.11: POSSIBLE NEW ACCOUNT POSSIBLE NEW ACCOUNT. A AF QUIT, the			↗
UC5.12: NO NEW ACCOUNT NO NEW ACCOUNT. A AF POSSIBLE NEW			↗
UC5.13: NO MATCHING CDs NO MATCHING CDs. A AF SEARCH BY...			↗
UC5.14: VIEW CURRENT ITEMS VIEW CURRENT ITEMS. At any time the			↗
UC5.15: REMOVE ITEM			↗
UC5.17: POST-CONDITION			↗

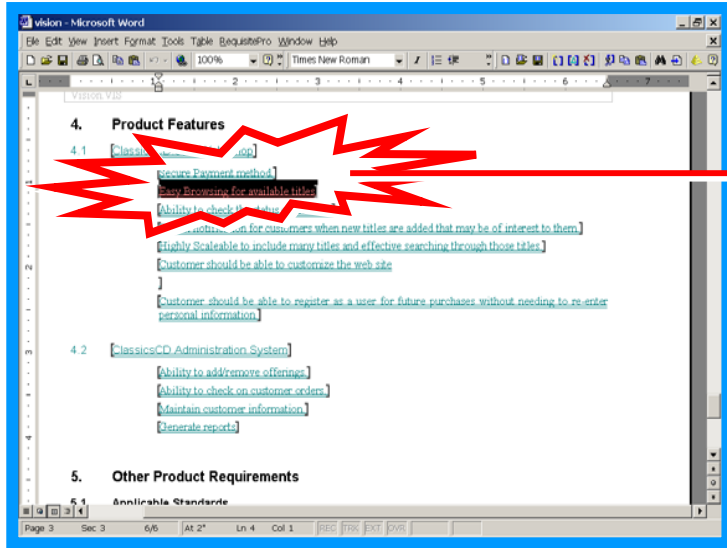
Rational RequisitePro - ClassicsCD Web Shop - [FEAT1: All features with traces to use cases]

Requirements	Traced from
FEAT1: Secure Payment method.	UC2.3, UC4
FEAT2: Easy Browsing for available titles	UC5.9(x), UC5.14(x)
FEAT3: Search capabilities	UC5.7, UC5.9
FEAT4: Ability to check the status of an order.	UC3
FEAT5: Email notification for customers when new titles are added that may be of interest to them.	UC5.16
FEAT8: Customer should be able to register as a user for future purchases without needing to re-enter personal information.	UC4.8, UC4.9(x)
FEAT10: Ability to check on customer orders.	UC3

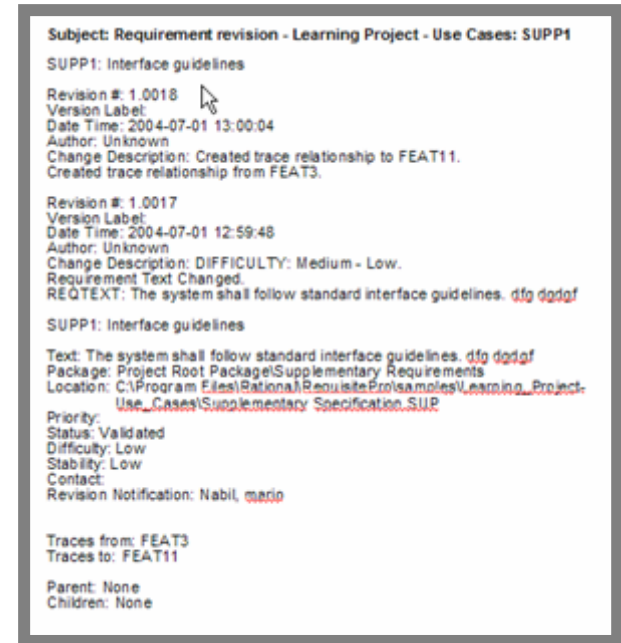
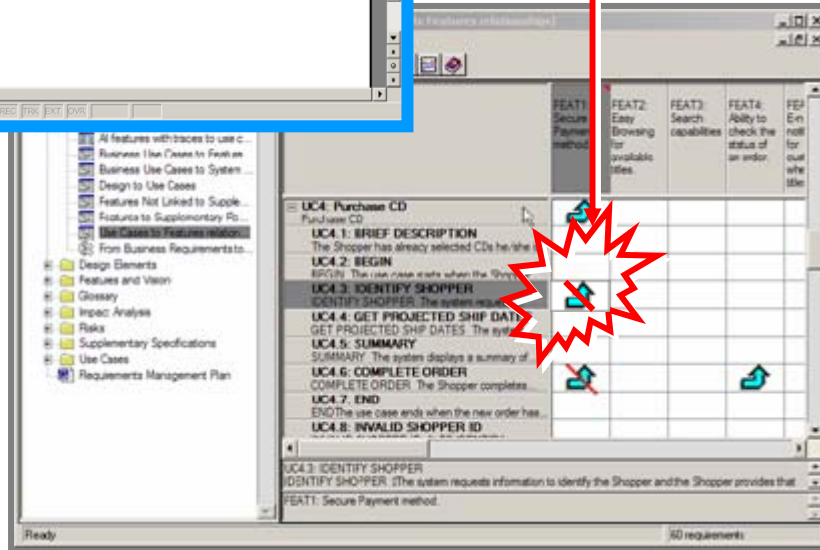
7 requirements



Communicating Changes and Their Impact



Email notification of changes
Suspect links



“With Rational RequisitePro's suspect links, my team members and I can immediately see changes that are made...”

Jason Oliver, Kodak



Robust Web Interface

Requirements	Type	Priority	Status
FEAT1 Secure payment method Secure payment method	Functional	Must	
FEAT2 Easy browsing Easy browsing for available titles	Functional	Should	
FEAT3 Search by multiple criteria Ability to search for CDs by multiple criteria	Functional	Must	
FEAT4 Ability to check status of an order Ability to check the status of an order	Functional	Should	
FEAT5 E-mail notification of new titles of interest E-mail notification for Shoppers when new titles that may interest them are added to the collection.	Functional	Could	
FEAT6 Highly scalable Highly scalable to include many titles and effective searching through those titles	Non-Functional	Must	
FEAT7 Ability to customize the Web site Shoppers should be able to customize the Web site	Functional	Should	
FEAT8 User registration good for future purchases Shoppers should be able to register once for all purchases; they should not be asked to re-enter personal information.	Functional	Should	
FEAT9 Shipping Status Shoppers should be able track any package that has been shipped to them	Functional	Should	
FEAT10 Ability to add/remove offerings Ability to add/remove CDs available for sale	Functional	Should	
FEAT11 Ability to check on customer orders Ability to check on Shopper orders	Functional	Must	
FEAT12 Maintain customer information Maintain Shopper information	Functional	Must	
FEAT13 Generate reports Generate reports	Functional	Should	
FEAT14 Use Legacy System Use existing legacy Warehouse System for shipping orders.	Functional	Must	
FEAT15 Interactive guide to site through online Help The Web site will include an interactive guide in the form of online Help	Functional	Could	

Security:

Enable security for this project

Enable LDAP authentication for this project

Documents:

Save documents in RequisitePro format
Select this check box to secure documents so that they cannot be opened successfully in Microsoft Word outside RequisitePro.

Enable extended editing of documents
Select this check box to allow changes in requirement text from outside a document (from views, RequisiteWeb, the RequisitePro Extensibility interface, or integrated tools).

Document Outlines:

Secondary Location:

Requirement Type:

Prefix:

Name:

Description:

Must Contain:

Externally Traceable:

Initial Number:

Color:

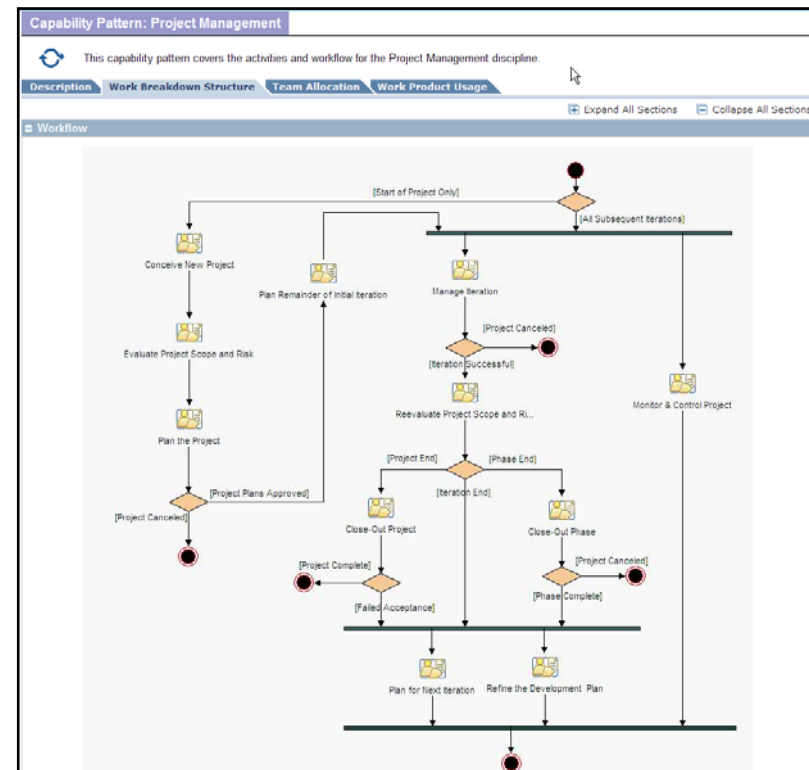
Style:

- Access and author requirements
- Administer projects
- No desktop installation required
- Optimized for geographically distributed teams



Project Management

- The Project Management Discipline provides the framework whereby a project is created and managed. In doing so, all other disciplines are utilized as part of the project work:
 - ▶ Requirement discipline
 - ▶ Analysis & Design discipline
 - ▶ Implementation discipline
 - ▶ Test discipline
 - ▶ Deployment discipline



Introducing Rational Software Architect and Modeler

Architecture Support

Java, J2EE, C++

UML2 Modeling

Architecture Discovery via Application Analysis

Patterns and Transformations

Team Environment

Enhanced Compare / Merge

Integrated RequisitePro Views

Process Advisor

ClearCaseLT included

CC and CQ fully integrated

Open Platform

Based on Eclipse 3 Shell

Broad support for WebSphere tools

Testing and Team tools work together

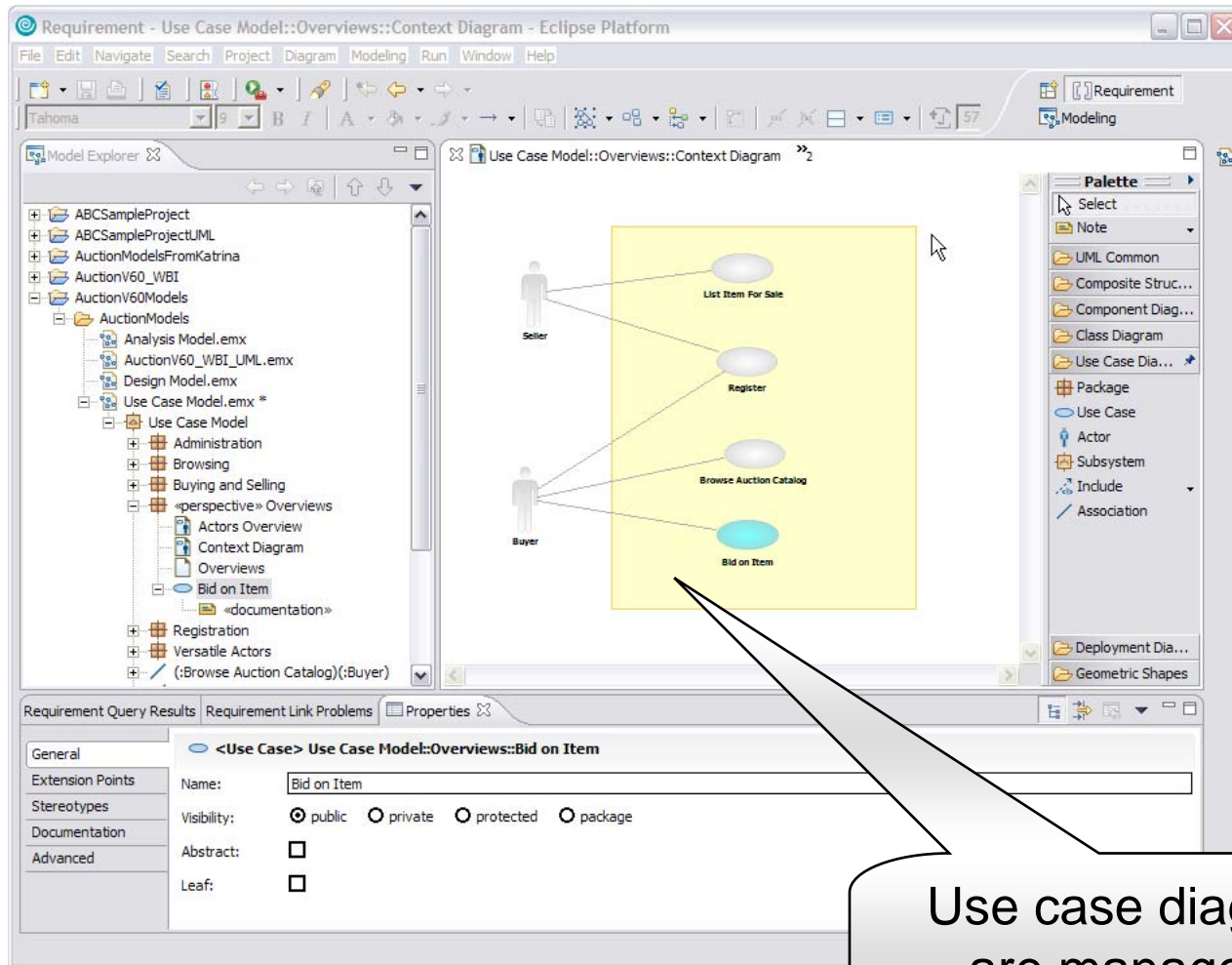
Rational Application Developer included



IBM Rational Software Architect



IBM Rational Software Architect/Modeler (RSA/RSM)



Use case diagrams
are managed in
RSA/RSM



RSA/RSM and RequisitePro Are Integrated

The screenshot displays the IBM Rational Software Development Platform interface. The main window is titled "Requirement - Use Case Model::Overviews::Context Diagram". The interface includes a menu bar (File, Edit, Navigate, Search, Project, Diagram, Modeling, Run, Window, Help), a toolbar, and several panes:

- Model Explorer:** Shows a project tree with folders like "ABC Sample Project", "AuctionModelsFromKatrina", and "AuctionV60_WBI".
- Requirement Explorer:** A tree view of requirements, with "UC1 Bid on Item" and its sub-requirements highlighted by a red circle.
- Context Diagram:** A UML Use Case Diagram showing actors "Seller" and "Buyer" connected to use cases: "List Item For Sale", "Register", "Browse Auction Catalog", and "Bid on Item". A yellow highlight is on the diagram.
- Requirement Query Results:** A table at the bottom showing a list of requirements with their properties, priorities, and statuses.

RequisitePro requirements explorer

RequisitePro View

Requirement	Property	Priority	Status	Difficulty	Stability	Risk
UC1 Bid on Item	Name		Incorporated	Medium	Medium	Technology
UC1.1 When browsing an item currently available via auction , a Buyer ma...	Brief Description		Incorporated			
UC1.2 Basic Flow	Basic Flow		Incorporated		High	
UC1.2.1 BID: The system presents options available to the Buyer. These...	Basic Flow	High	Incorporated	Low	High	
UC1.2.2 ENTER AMOUNT: The Buyer enters the bid amount. The entered...	Basic Flow	High	Incorporated	Low	High	
UC1.2.3 BUYER CONFIRMS BID: The system provides information that tell...	Basic Flow	High	Incorporated	Low	High	
UC1.2.4 POST BID: The system posts the bid for the auction. The enter...	Basic Flow	High	Incorporated	Medium	High	



Integration - Rational Software Architect/Modeler

The screenshot displays the Rational Software Architect/Modeler interface. At the top left is the 'Requirement Explorer' showing a tree view of project elements like 'Auction', 'Use Cases', and 'Requirements Management Plan'. The central workspace shows a 'Buying and Selling Analysis Level Use-Case Diagram' with actors 'Buyer' and 'Seller' connected to use cases 'Browse Auction Catalog' and 'Bid on Item'. At the bottom, the 'Requirement Query Results' view shows a table of requirements with columns for Requirement, Property, Priority, Status, and Difficulty.

Requirement	Property	Priority	Status	Difficulty
UC1 Bid on Item	Name		Incorporated	Medium
UC1.1 When browsing an item currently avail...	Brief Description		Incorporated	Medium
UC1.2 Basic Flow	Basic Flow		Incorporated	Medium
UC1.2.1 BID: The system presents options...	Basic Flow	High	Incorporated	Low
UC1.2.2 ENTER AMOUNT: The Buyer enters ...	Basic Flow	High	Incorporated	Low
UC1.2.3 BUYER CONFIRMS BID: The system...	Basic Flow	High	Incorporated	Low
POST BID: The system posts the bl...	Basic Flow	High	Incorporated	Medium
SEND EMAIL: The system sends an ...	Basic Flow	Low	Incorporated	High
SYSTEM CONFIRM BID: The system...	Basic Flow	High	Incorporated	Low

Access Requirements, Views and Documents in Requirements Explorer

Drag and Drop Requirements to create model elements or set traceability
Create requirements from model elements

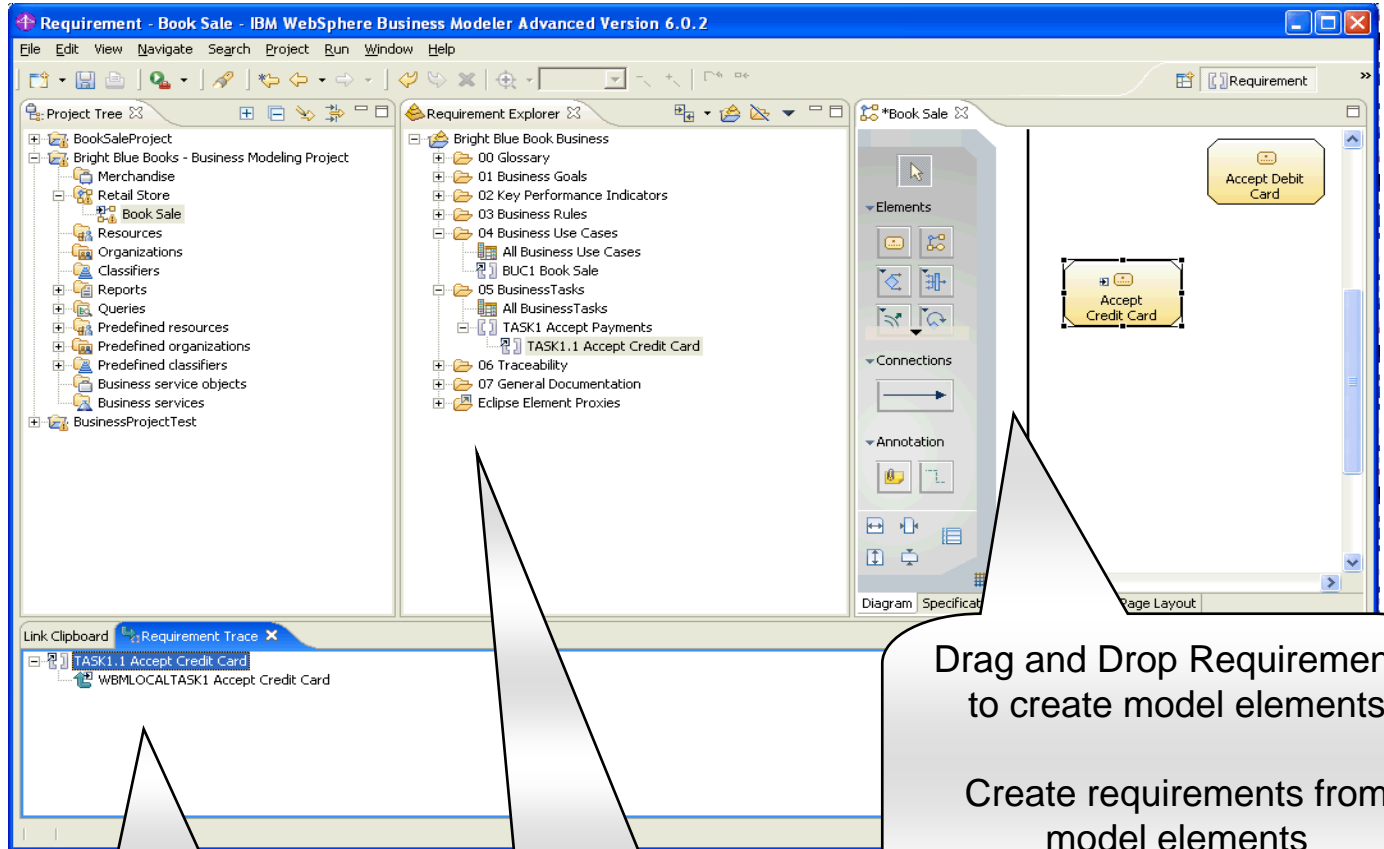
Understand the impact of a change via full lifecycle traceability

See Traceability Information in Requirement Trace View

View and Edit Requirements in Requirement Query Results View

Integration - IBM Websphere Business Modeler

- Ensure that applications meet business needs by tracing to business process models
- Create business requirements in RequisitePro



See Traceability Information in Requirement Trace View

Access Requirements, Views and Documents in Requirements Explorer

Drag and Drop Requirements to create model elements
Create requirements from model elements



Integration - IBM Rational ClearQuest Test Management

Requirements, Verdicts and Defects - ClearQuest Query Results

ClearQuest Query Results (Jan,Auction@AUCTION)

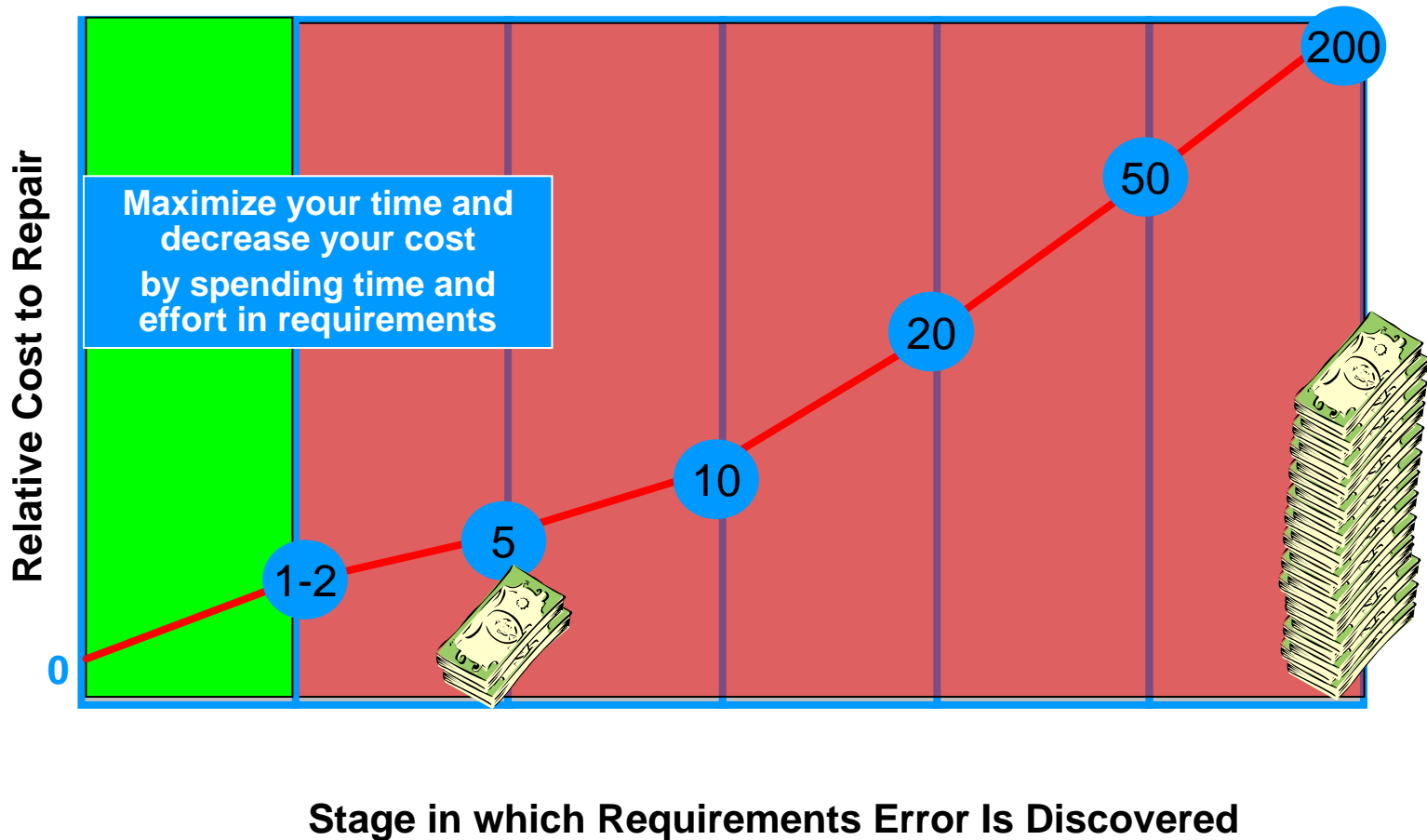
Tag	Requirement	Configured TC	Verdict	Defect Id	Defect Heading	Defect Priority	Defect State
+ FEAT12	The Buyer should be able to cancel his/her own bid before the bid is accepted.	AUCT00000180	fail	AUCT00000191	Cancel bid function does not actually cancel build	1-Resolve Immediately	Submitted
+ FEAT2	The Seller should be able to create an auction by describing an item or service	AUCT00000184	fail	AUCT00000200	Auction not accepting reserve bids	2-Give High Attention	Closed
+ UC4.2	Register Basic Flow	AUCT00000168	fail	AUCT00000199	System lets you register multiple accounts with same login	1-Resolve Immediately	Submitted

- Query to find
 - ▶ Test results associated to requirements
 - ▶ Defects associated to test results
 - ▶ Defects associated to tests associated to requirements
- Use cases and other requirements are the basis for test cases
- Traceability from requirements to tests and defects closes the loop on the software development cycle



Requirements Management – The Bottom Line

Keep your team on track and out of the red zone with IBM Rational RequisitePro



Agenda:

- Requirements Management and IBM Rational RequisitePro
- **Requirements Management and Use Cases**
- Rational Unified Process (RUP), RequisitePro, and Rational Software Modeler (RSM) Demo
- Business Modeling
- WebSphere Business Modeler and RSM demo

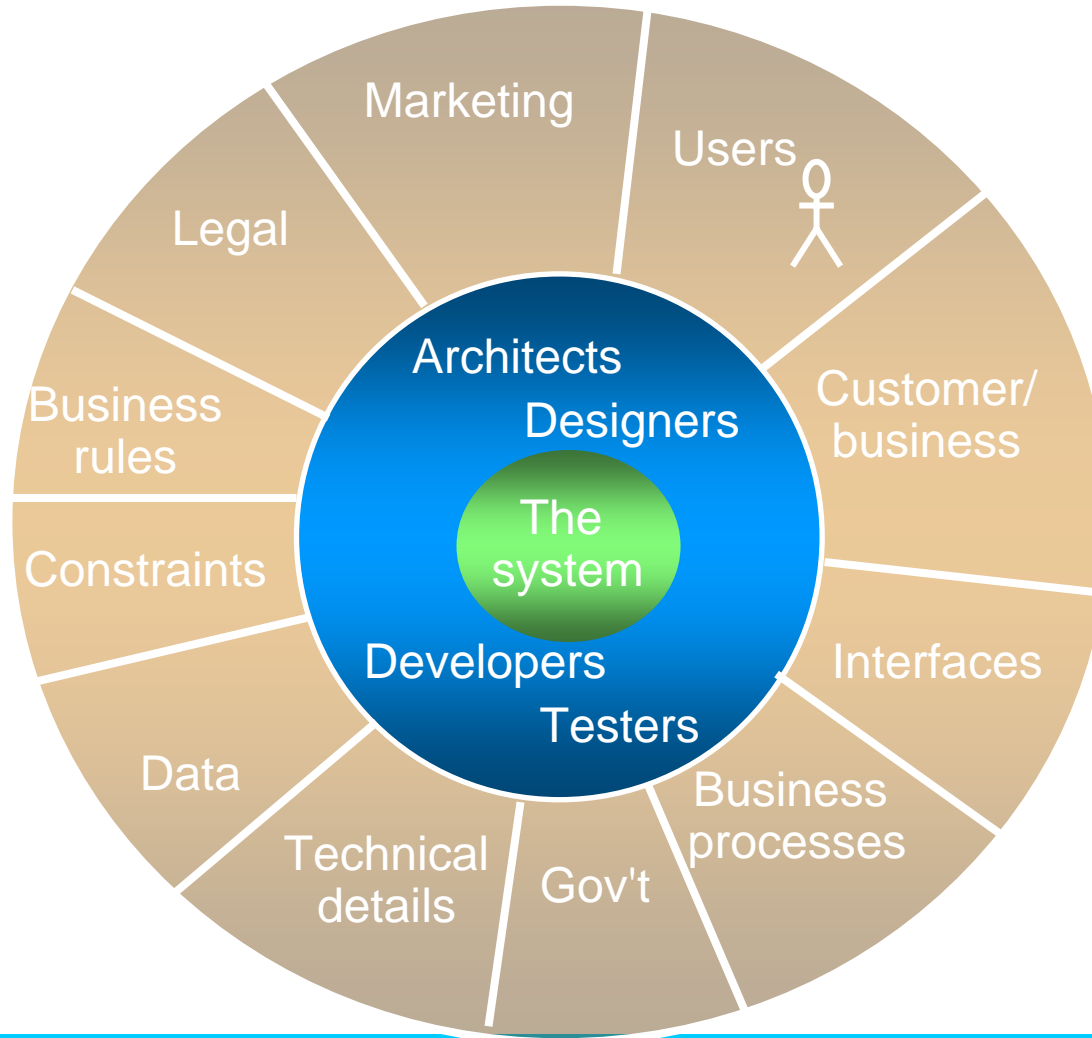


Requirements: Things The Dev Team Needs to Know

Requirements

Dev Team

System



Requirements and The Software Development Process

- Your software development process determines how requirements are collected and used
- The Rational Unified Process (RUP) will be our guide today
- RUP will guide us in these things:
 - ▶ How requirements are gathered and managed
 - Rational RequisitePro
 - Rational Software Architect and Rational Software Modeler (RSA/RSM)
 - WebSphere Business Integration Modeler
 - ▶ How requirements are used in designing and testing the code
 - RSA/RSM
 - Rational TestManager



Introducing The Rational Unified Process (RUP)

- A process framework to help you to decide
 - ▶ Who...
 - ▶ Does what...
 - ▶ To produce something...
 - ▶ When they do it...
 - ▶ And how that thing gets used...
 - ▶ To build and maintain a quality software system



Role



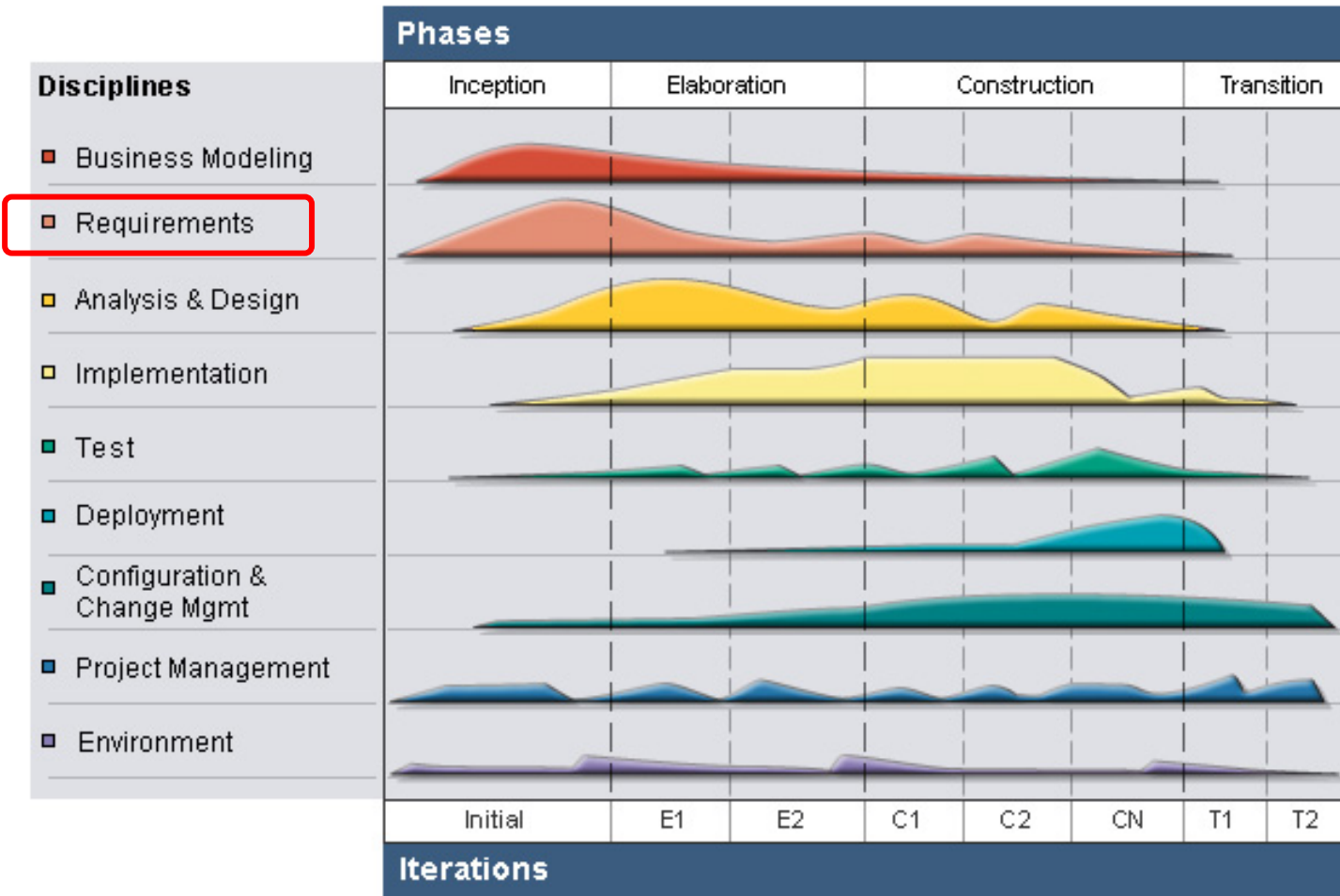
Activity



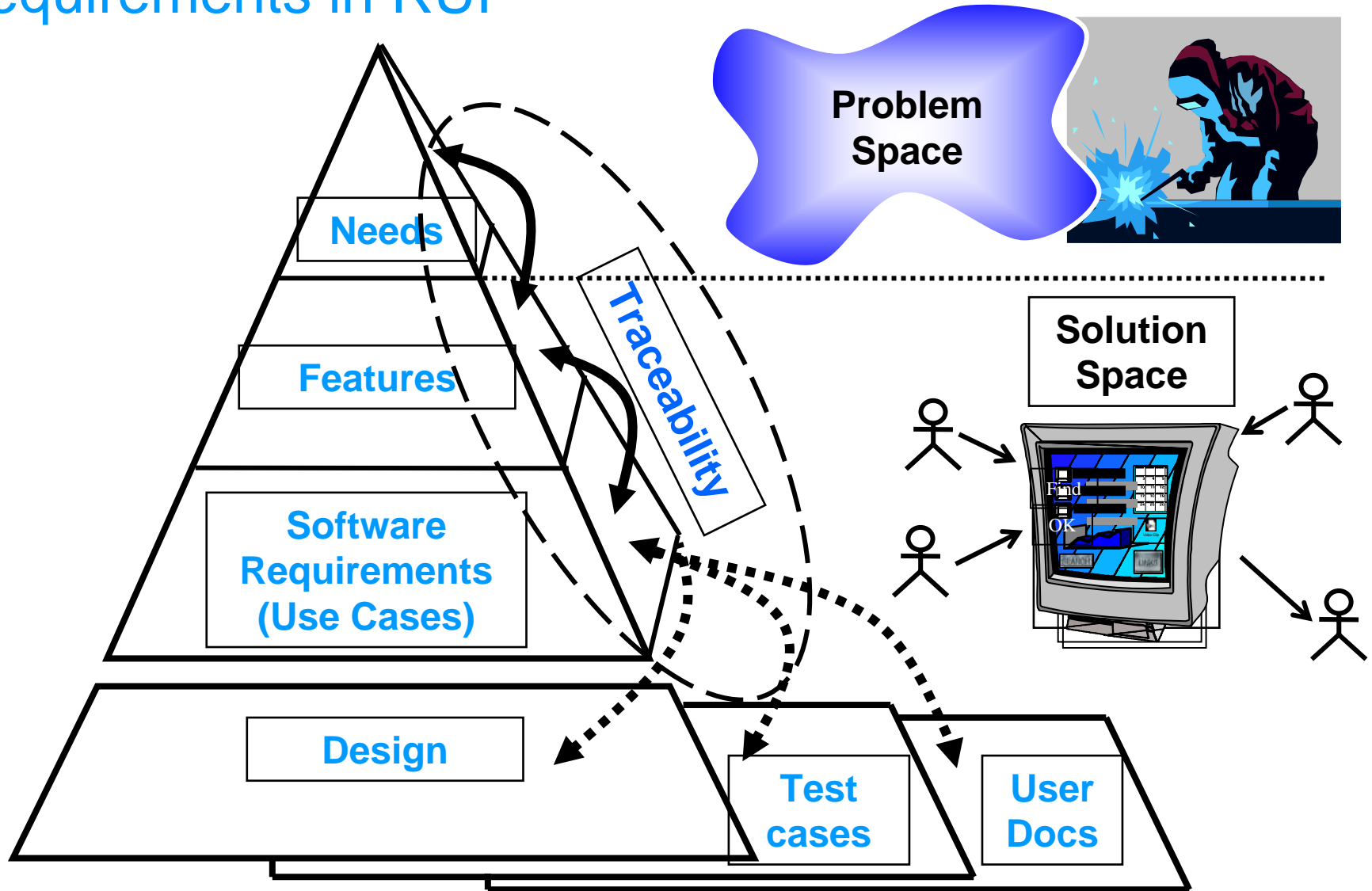
Artifact



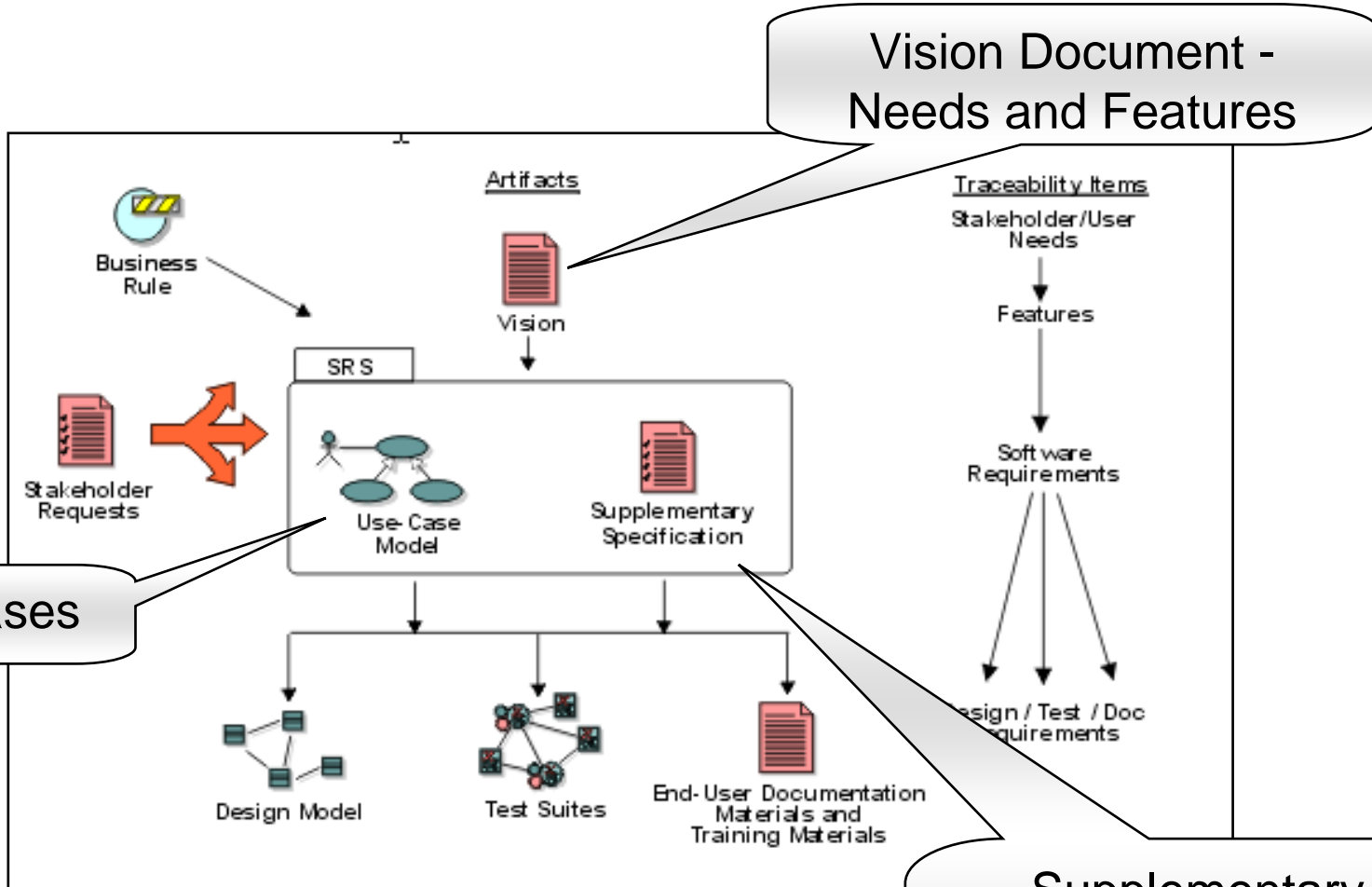
The Software Development Lifecycle



Requirements in RUP



Requirements in RUP - Another View



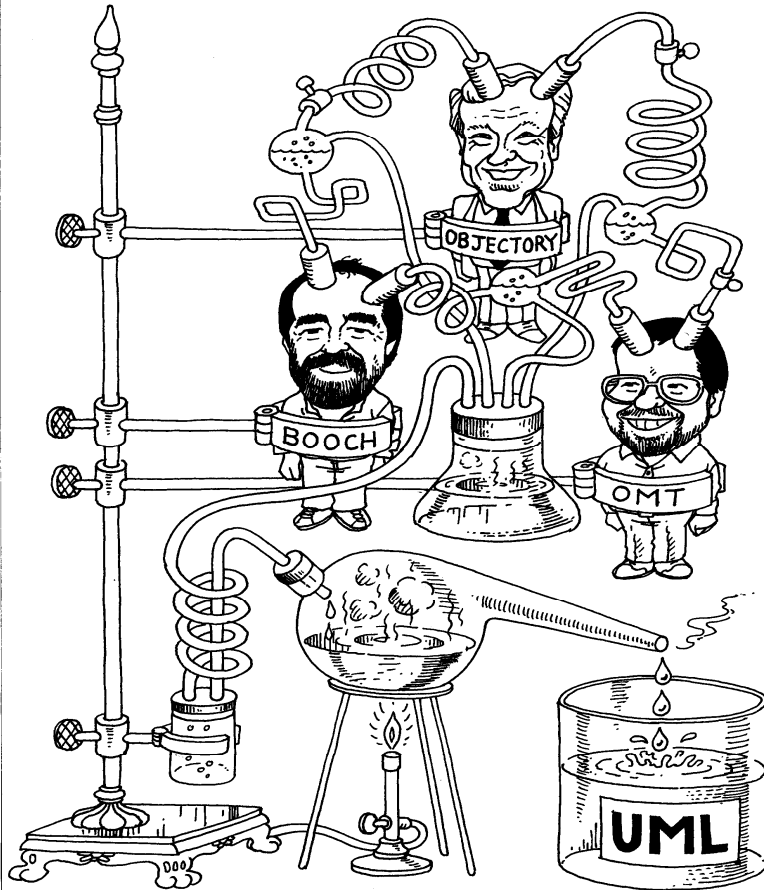
Vision Document - Needs and Features

Use Cases

Supplementary Specification - Non-functional Requirements



Use Cases Are Part of The Unified Modeling Language (UML)

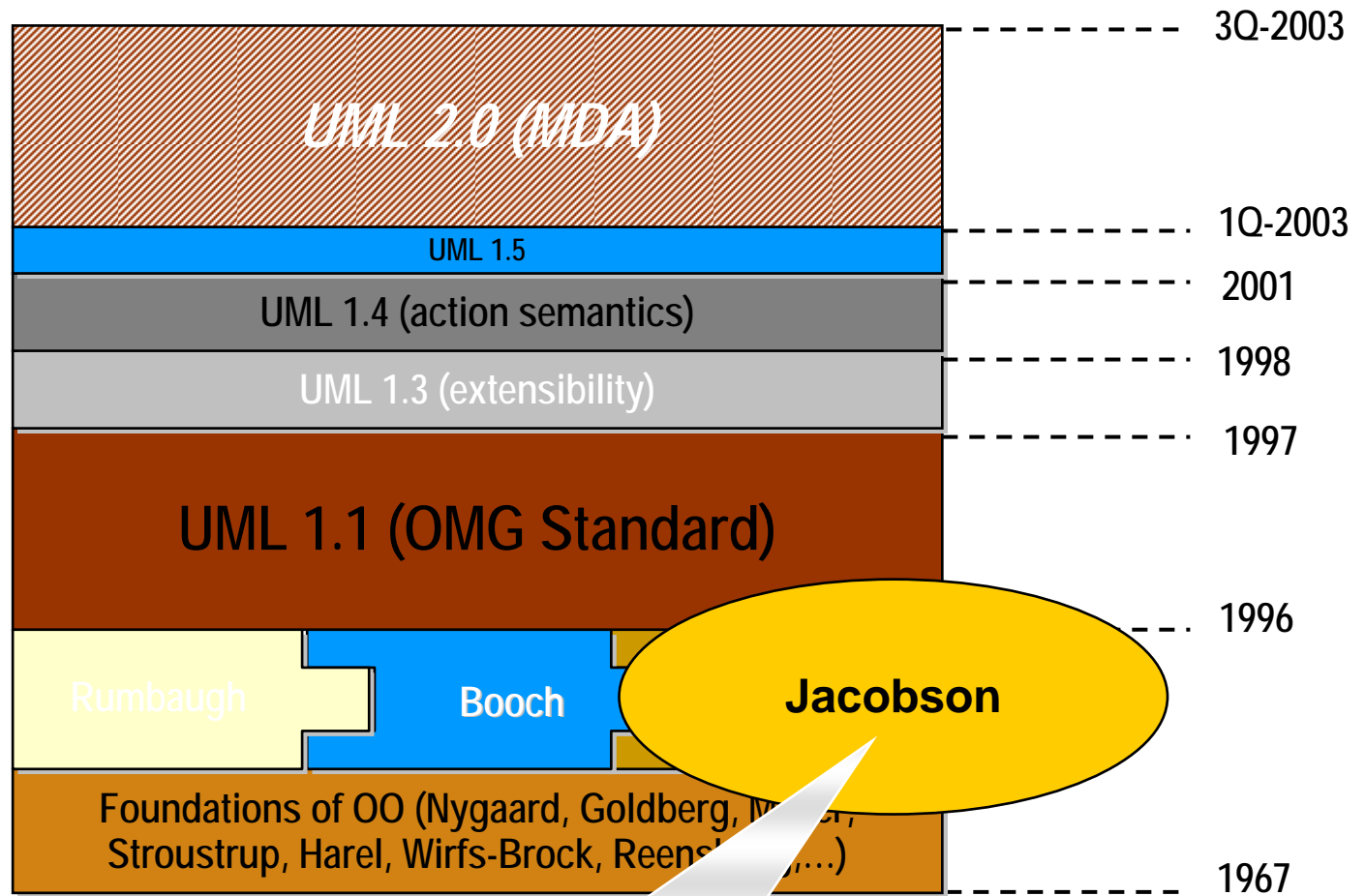


- The UML is the standard language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system



The Unified Modeling Language (UML)

The Evolution of UML



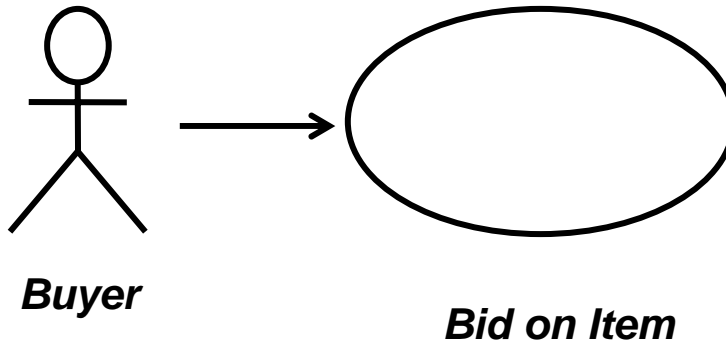
Origin of use cases



What is a Use Case?

- Use cases are shown in UML diagrams

Use cases are described in text



Use-Case Specification – Register for Courses

Brief Description

This use case allows a Student to register for course offerings in the current semester. The Student can also modify or delete course selections if changes are made within the add/drop period at the beginning of the semester. The Course Catalog System provides a list of all the course offerings for the current semester.

Actors

1. *Primary Actor – Student*
2. *Secondary Actor - Course Catalog System*

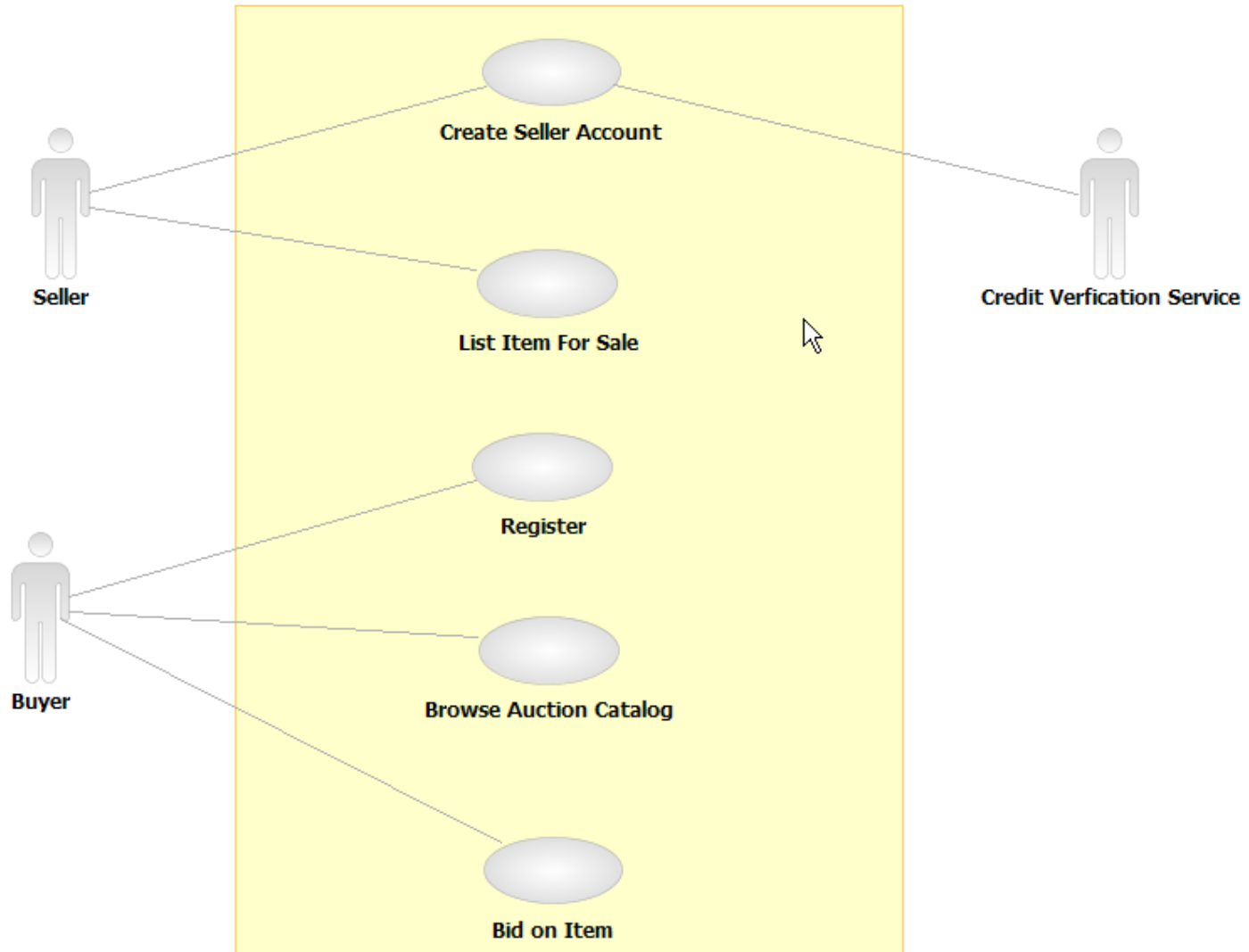
Flow of Events

1. *Basic Flow*

- 1.1. LOG ON.
This use case starts when a student accesses the Course Registration System. The student enters a student ID and password and the system validates the student.
- 1.2. CREATE SCHEDULE.
The system displays the functions available to the student. These functions are: Create A Schedule, Modify a Schedule and Delete a Schedule. The student selects "Create a Schedule".
- 1.3. SELECT COURSES
The system retrieves a list of available course offerings from the Course Catalog System and displays the list to the student. The Student selects up to 4 primary course offerings and 2 alternate course offerings from the list of available offerings. The student can add and delete courses as desired until choosing to submit the schedule.
- 1.4. SUBMIT SCHEDULE.
The student indicates that the schedule is complete. The system validates the courses selected and displays the schedule to the student. The system displays the confirmation number for the schedule. The system saves the student's schedule information. The use case ends.



Use Case Diagram - The Big Picture



Use Case Definition

A use case is the specification of a set of actions performed by a system, which yields an observable result that is, typically, **of value** for one or more actors or other stakeholders of the system. *(UML 2.0)*

- Beware: the UML does not specify how the text of a use case should be structured, organized or written
- How you write use cases will have a large impact on how easy they are to design from and test (or not)



The Contents of a RUP Use Case

Use Case Name

- 1 Brief Description
- 2 Actors
- 3 Flows of Events
 - 3.1 Main (basic) Flow
 - 3.1.1 Step 1
 - 3.1.2 Step 2
 - 3.1.3 Step ...
 - 3.2 Alternative Flows
 - 3.2.1 Alternative flow 1
 - 3.2.1.1 Step 1
 - 3.2.1.2 Step 2
 - 3.2.1.3 Step ...
 - 3.2.2 Alternative flow 2
 - 3.2.3 Alternative flow ..
- 4 Special Requirements
 - 4.1 Usability requirements
 - 4.2 Business rules
 - 4.x Other non-functional requirements...
- 5 Pre-conditions
- 6 Post-conditions
- 7 Extension Points

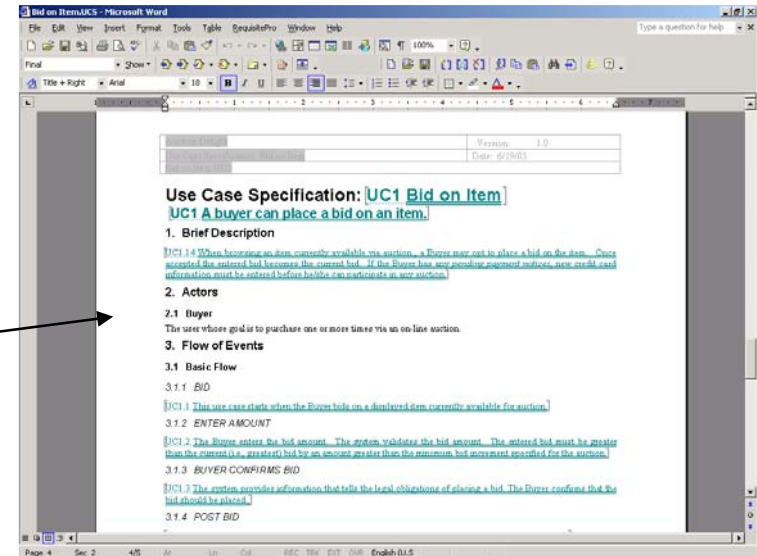
- One Basic Flow
 - ▶ Happy-Day Scenario
- Many Alternative Flows
 - ▶ Regular variants
 - ▶ Odd cases
 - ▶ Exceptional (error) flows



The Five Key Things in RequisitePro

1. Documents
2. Requirement types
3. Attributes
4. Views/queries
5. Relationships/traceability

The text of use cases is managed in RequisitePro



Document these decisions in the Requirements Management Plan (RMP)



Agenda:

- Requirements Management and IBM Rational RequisitePro
- Requirements Management and Use Cases
- **Rational Unified Process (RUP), RequisitePro, and Rational Software Modeler (RSM) Demo**
- Business Modeling
- WebSphere Business Modeler and RSM demo

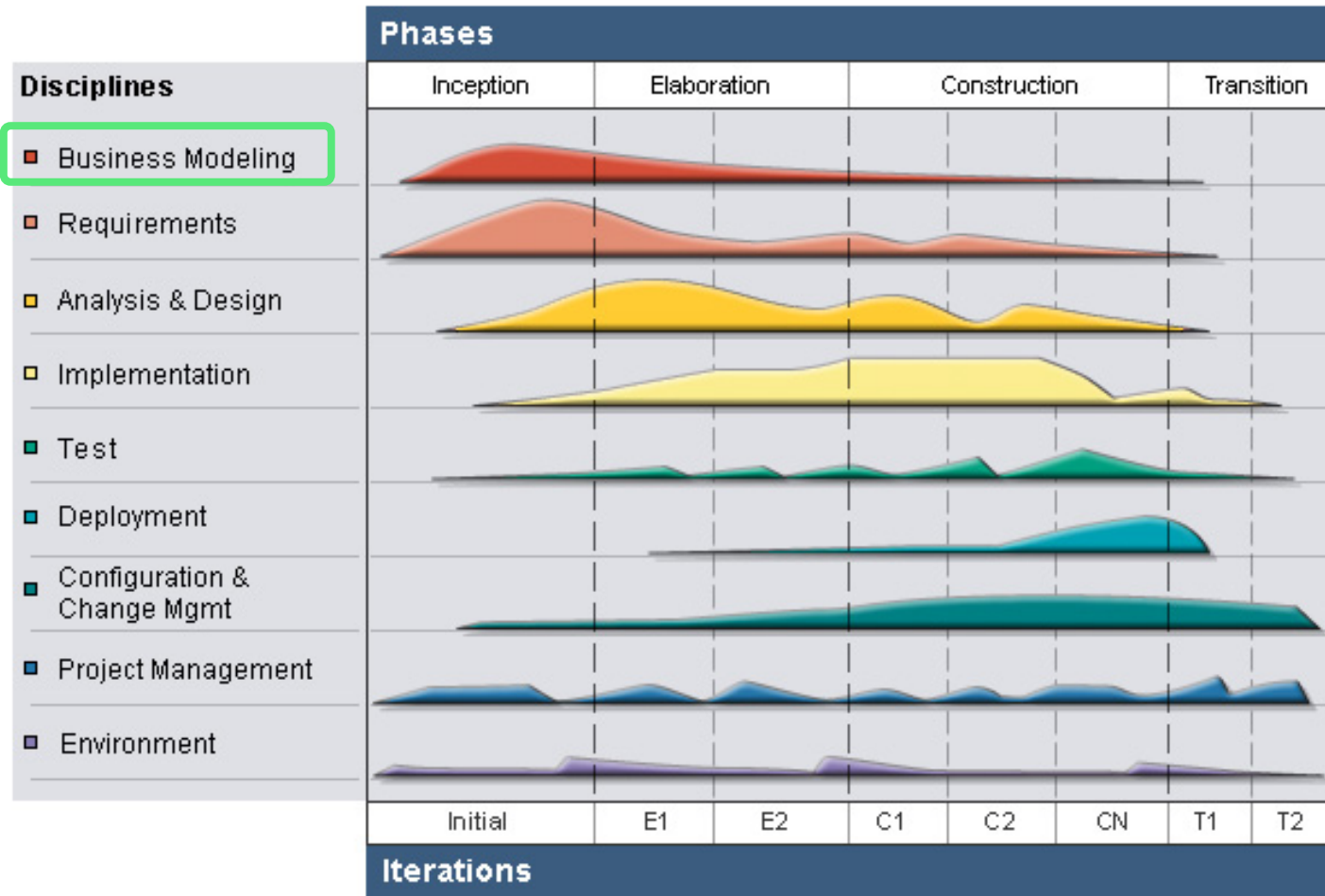


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Business Modeling



What is a Business Model?

- One or more diagrams of a business or organization showing:
 - ▶ Business processes
 - ▶ Tasks
 - ▶ Resources
 - ▶ Services
 - ▶ Entities

- Business models can be static or dynamic

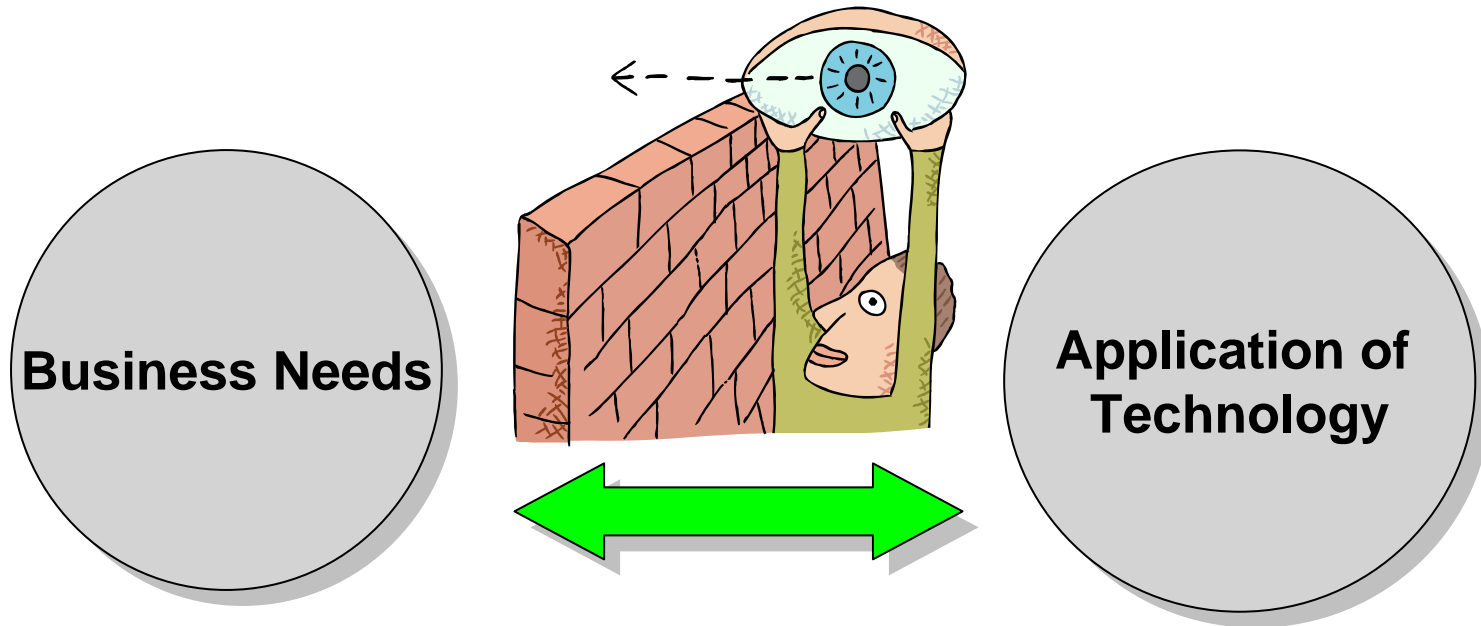


Value of Business Modeling for Software Development

- Ensure stakeholders have a common understanding of how the business works
 - ▶ Knowledge doesn't walk out the door when staff leaves
- Understand current problems in the business and identify improvement potentials
- Derive the business requirements needed to justify improvements
- Ensure software teams pay more than superficial attention to business needs



The Business and Technology Chasm Still Exists



Understanding the business identifies opportunities and requirements for systems

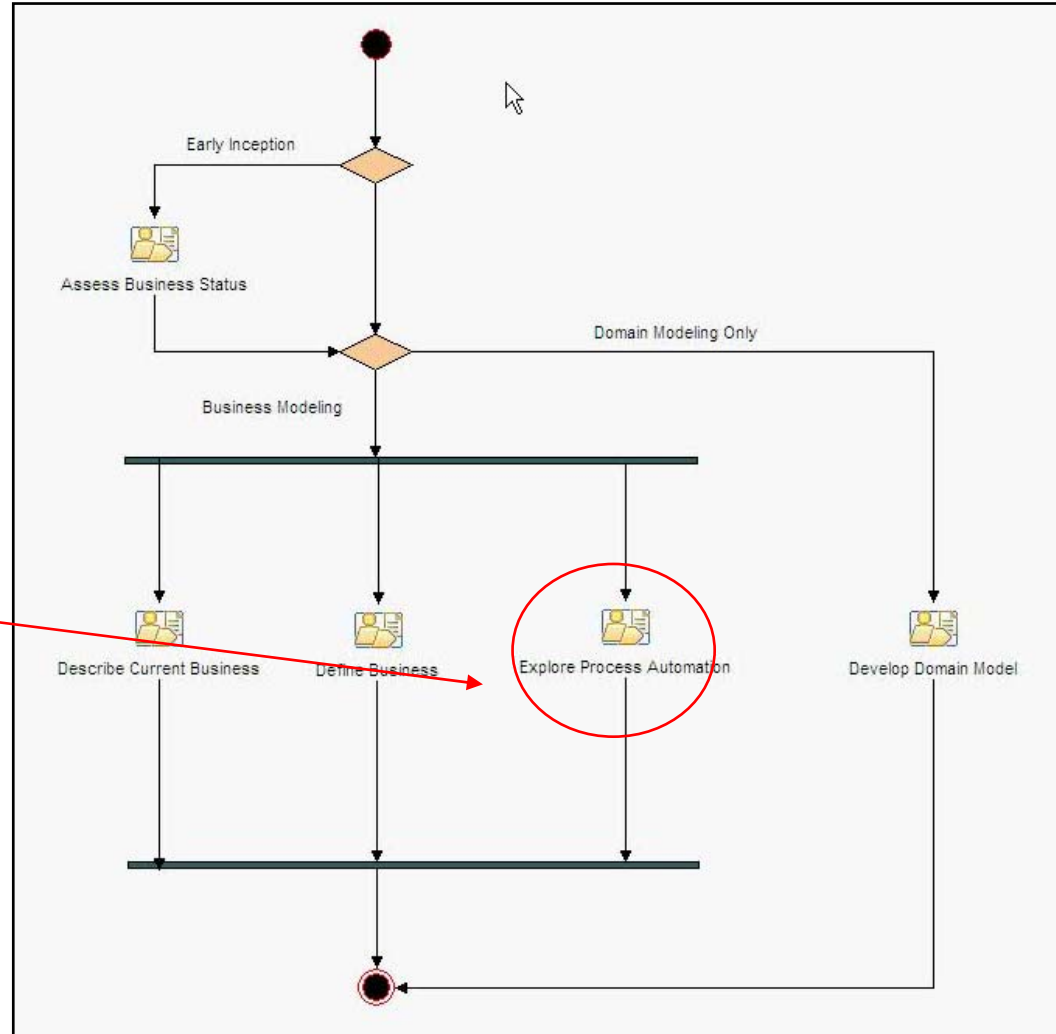
Without business modeling you might pick the wrong piece of the business to automate

The business model helps you identify system use cases

Business Modeling Workflow in RUP

Workflow details

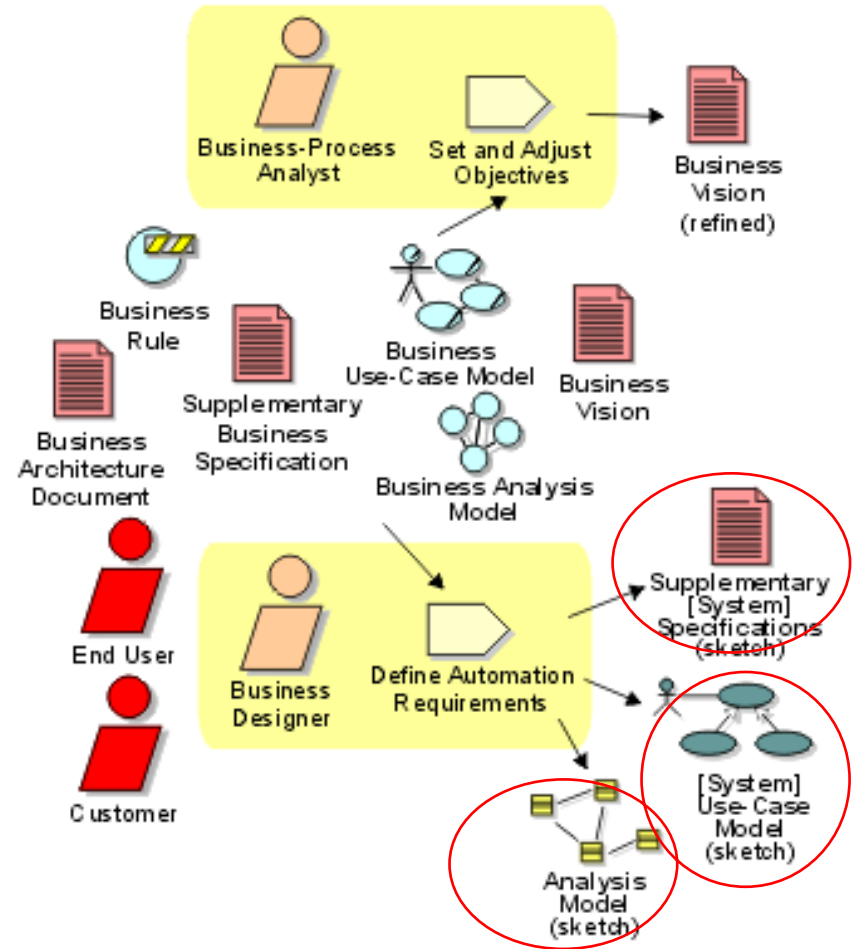
- Assess business status
- Describe current business
- Identify Business processes
- Refine Business process definitions
- Design business process realizations
- Refine Roles and responsibilities
- Explore process automation**
- Develop a domain model



Business Modeling Identifies Software Requirements

- Explore Process Automation

- Outputs are sketches of:
 - ▶ System use case model
 - ▶ Supplementary specification
 - ▶ Analysis model



Introducing WebSphere Business Modeler

- Realistic visual representations and analysis of the way your organization works
- Fully Integrated:
 - ▶ Eclipse-based
- Animated Simulations:
 - ▶ Identify bottlenecks and watch what-if scenarios
- Powerful Analysis:
 - ▶ Understand detailed time/cost metrics of the process
- Built-in Reporting:
 - ▶ Display information for different purposes and audience
- Eclipse based UI



WebSphere Business Modeler

The screenshot displays the IBM WebSphere Business Modeler Advanced Version 6.0.2 interface. The main workspace shows a business process flow diagram for an 'Order' process. The flow starts with an 'Order' resource entering a 'Receive and validate...' task, followed by 'Send order to Whse A', then 'Ship items from Whse A', and finally a decision diamond 'Any Items not shipped?'. The decision diamond has two outgoing paths: '16.5% Yes' leading to an 'Order' resource, and '83.5% No' leading to another 'Order' resource. The left-hand 'Project Tree' shows a hierarchical view of the project, including 'OrderProcessing', 'Business items', 'Loans', 'Order', 'Processes', and 'Resources'. The bottom panel contains a 'Simulation Control Panel' with a message: 'Simulation unavailable. There is no simulation profile available.' Below this, it shows 'Time that simulation has been running: 00:00:00' and a table with columns for 'Processes', 'Tasks', and 'Connections'. The table has headers for 'Process start time', 'Process end time', 'Total revenue', and 'Total cost', but the data rows are empty.



Rational Software Architect/Modeler

UML Business Modeling (and more)

The screenshot displays the IBM Rational Software Architect/Modeler interface. The central workspace shows a Business Use Case diagram with two use cases: 'List Item for Sale' and 'Accept and Process New Bids'. Each use case is connected to an actor: 'Seller' and 'Buyer'. The 'List Item for Sale' use case is associated with the 'Seller' actor, and the 'Accept and Process New Bids' use case is associated with the 'Buyer' actor. The diagram also shows a 'Seller' actor associated with the 'List Item for Sale' use case and a 'Buyer' actor associated with the 'Accept and Process New Bids' use case. The interface includes a Model Explorer on the left, a Palette on the right, and a Properties window at the bottom.

Model explorer

Business use case diagram

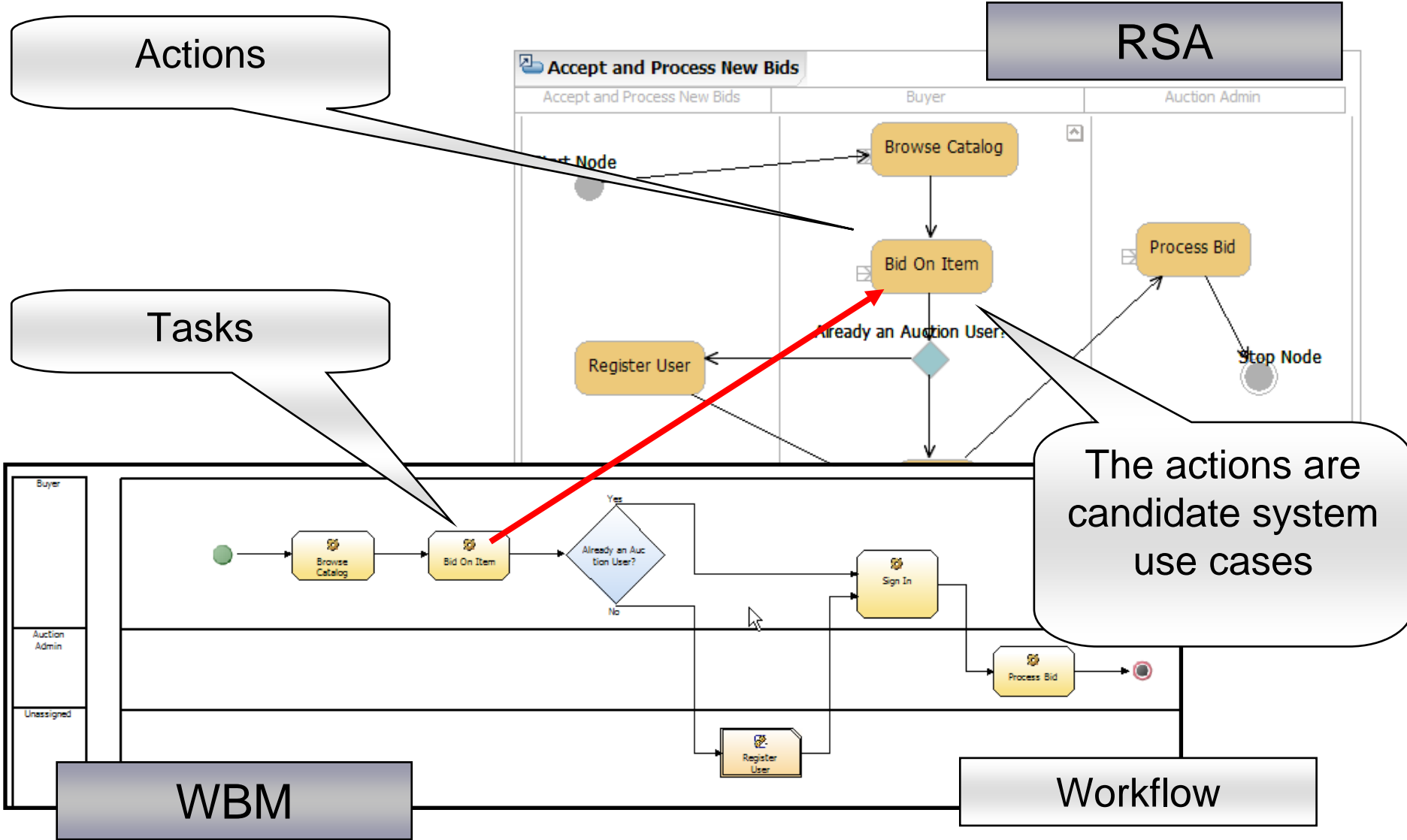


Mapping Between WBM and RSA/RSM

WBM	RSA/RSM
Process	Business Use Case & realization
Role	Business Actor and Business Worker and potential system actors
Process Diagram	Activity Diagram
Tasks	Business Worker Operations and candidate system use cases
Business Items	Business Entity Classes



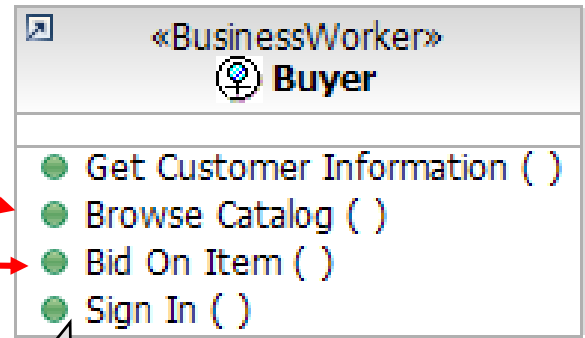
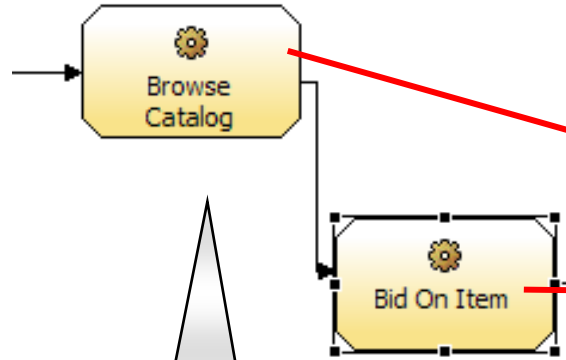
Process Diagrams <--> Activity Diagrams



Tasks <--> Business Worker Operations

WBM

RSA



The operations of the business worker are candidate system use cases



Business Models and Requirements

Customer Order

Parent template: Business Item/Order

Business Item attributes

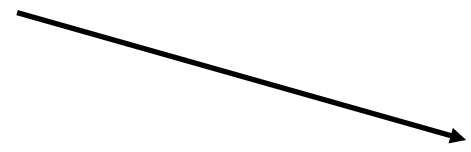
Attributes are editable fields that characterize the business item.

Name	Type
Last Name	String
First Name	String
Order Number	Integer
Order Date	Date
Delivery Date	Date
Customer Address	Address
Pay by Credit Card	Boolean
Pay by Cash on Check	Boolean
Credit Status	String
Order Item	ABC_Product
Available Order Item	Boolean

Entities

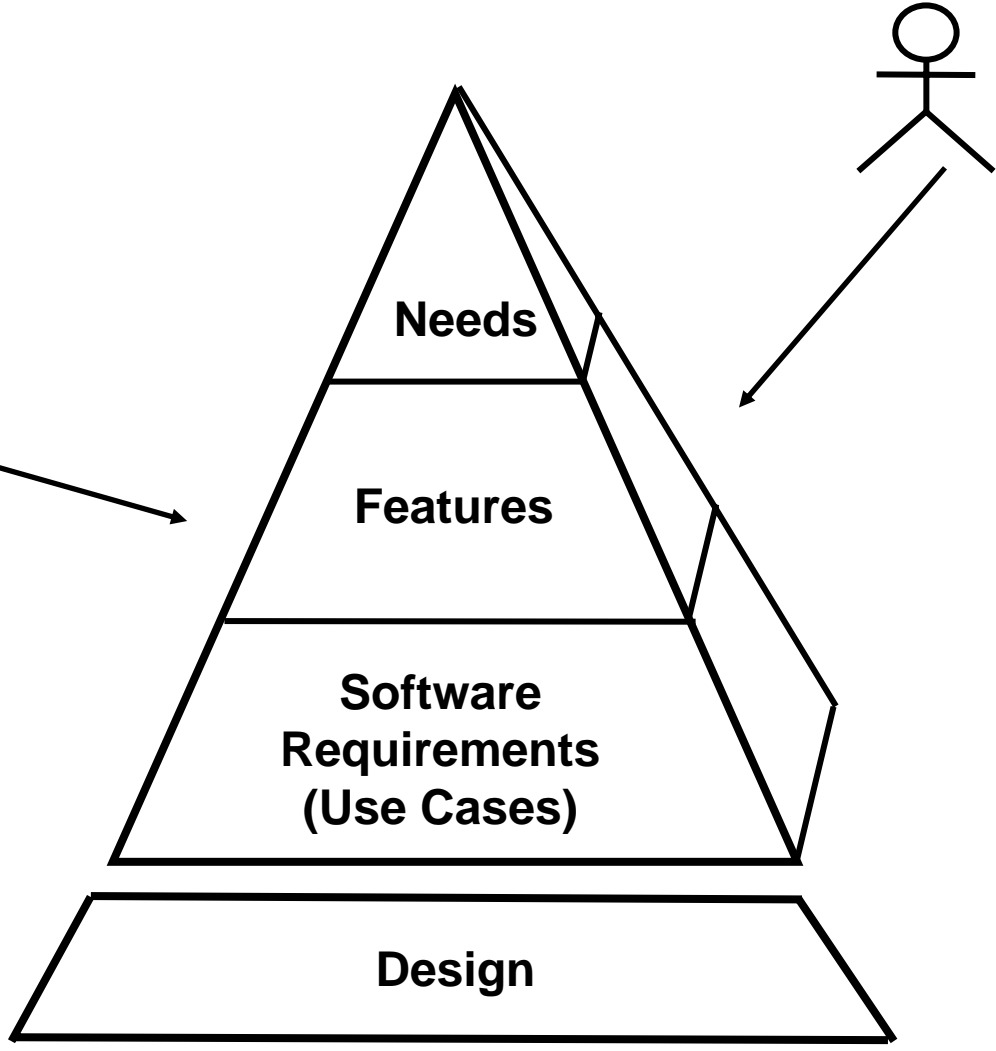


Tasks



- Accept and Process New Bid:
- Create Seller Account
- List Item for Sale
- Register User
- Run Auction

Business processes



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Thank
YOU

