

what makes you *
special?

Agenda – Requirements Management

- Introduction
- Requirements Management
- Introducing IBM Rational RequisitePro
- Summary
- Additional Information



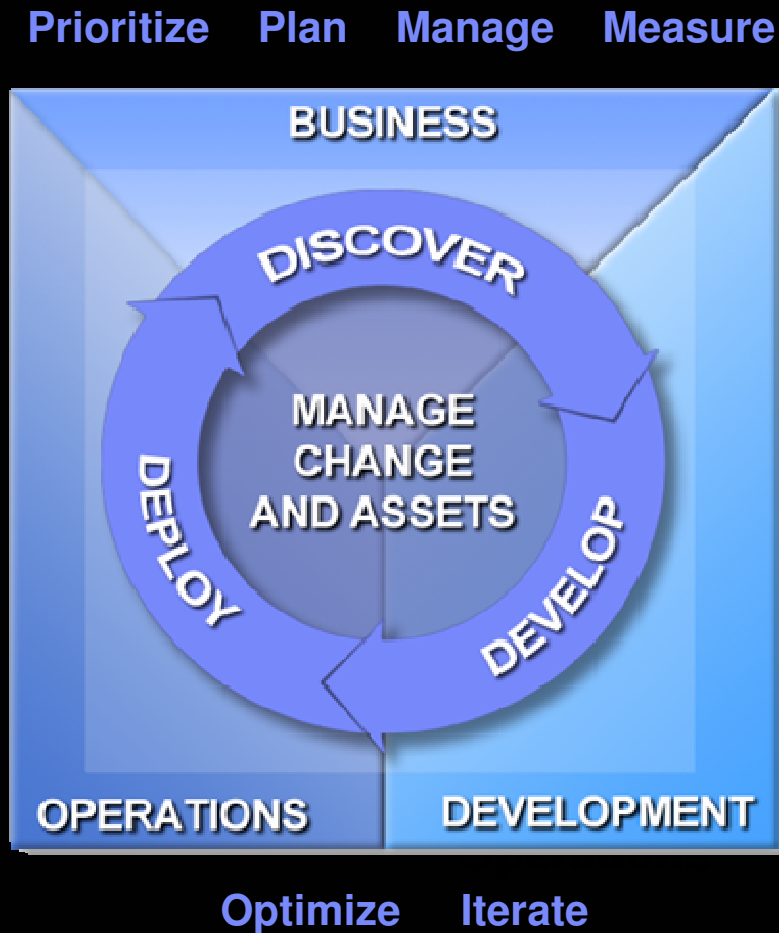
Rational® software

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Discover, develop, and deploy assets



- **Discover business & technology assets**
 - ▶ Business priorities
 - ▶ Requirements
 - ▶ Middleware and software assets

- **Develop at the speed of business**
 - ▶ Rapid application development
 - ▶ Model-driven architecture
 - ▶ Asset-based development
 - ▶ Direct-to-middleware productivity

- **Deploy to closed-loop environments**
 - ▶ Automated applications deployment
 - ▶ Streamlined composite application management
 - ▶ Direct-to-operations productivity



IT Lifecycle Management

Prioritize

Plan

Manage

Measure

WebSphere software

Rational software

IDC QUOTE – ITLM:

“IBM, of course, is extremely well positioned to help companies tackle the whole [ITLM] problem, given its comprehensive product portfolio, extensive partner programs, and worldwide Global Services organization.”

Melissa Webster, IDC, May 2005

Tivoli software

Operations

Test

Tester

Developer

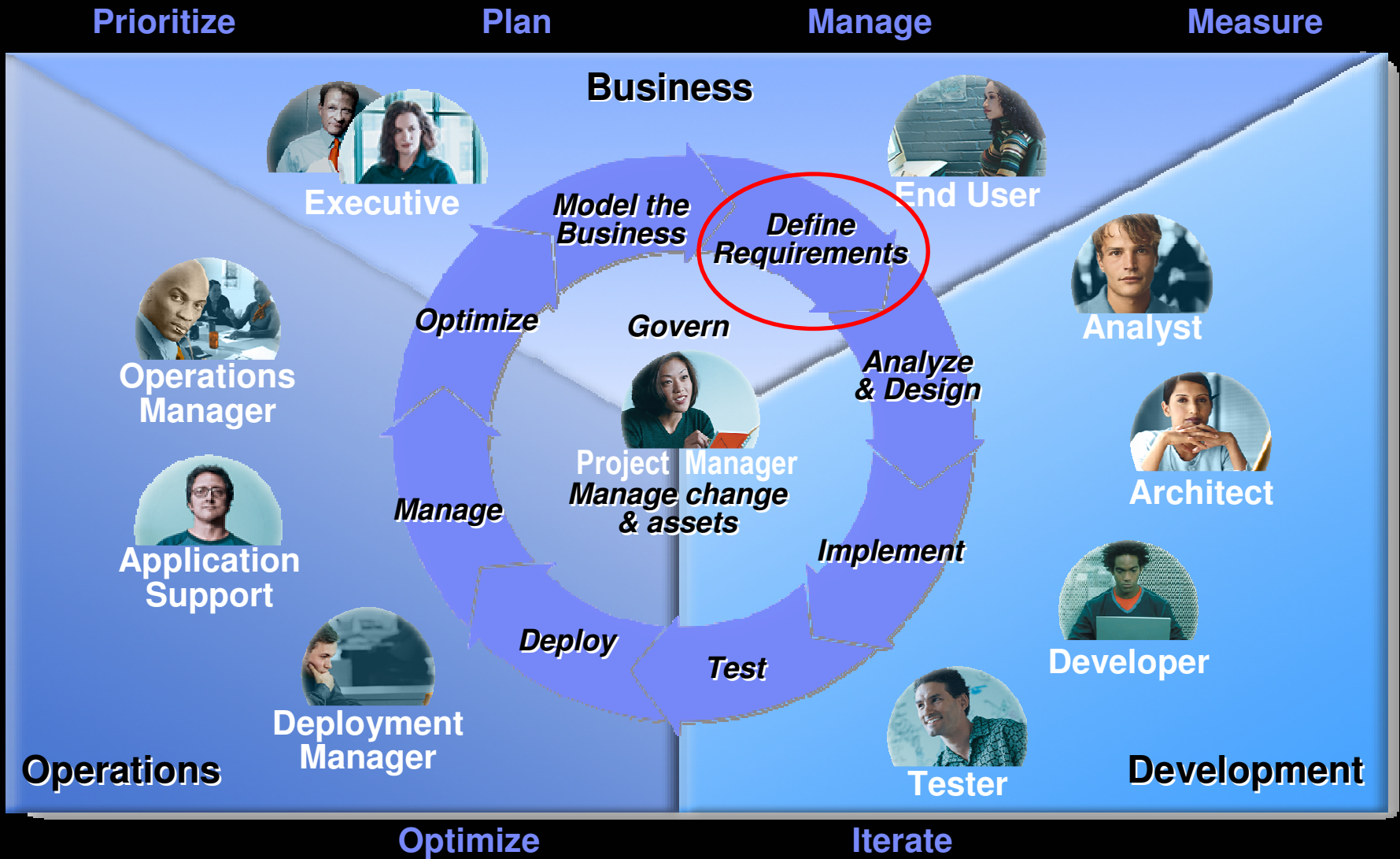
Development

Optimize

Iterate



IT Lifecycle Management



Project performance, both technically and in support of the business, is generally poor

Only 54% of required features and functions make it to the released product

Only 30% of IT projects add real value

**“34% of software projects succeed”
15% Failed and 51% were Challenged!**

Standish Group, CHAOS Report 2004

82% of projects run over time

57% of project failures are due to poorly scoped requirements

60% - 80% of an average company's IT budget is spent on maintaining existing applications

Intelligent Enterprise.com

50% of applications put into production are later rolled back

Gartner - 2004

Software related downtime cost industry almost **\$300 billion** annually.

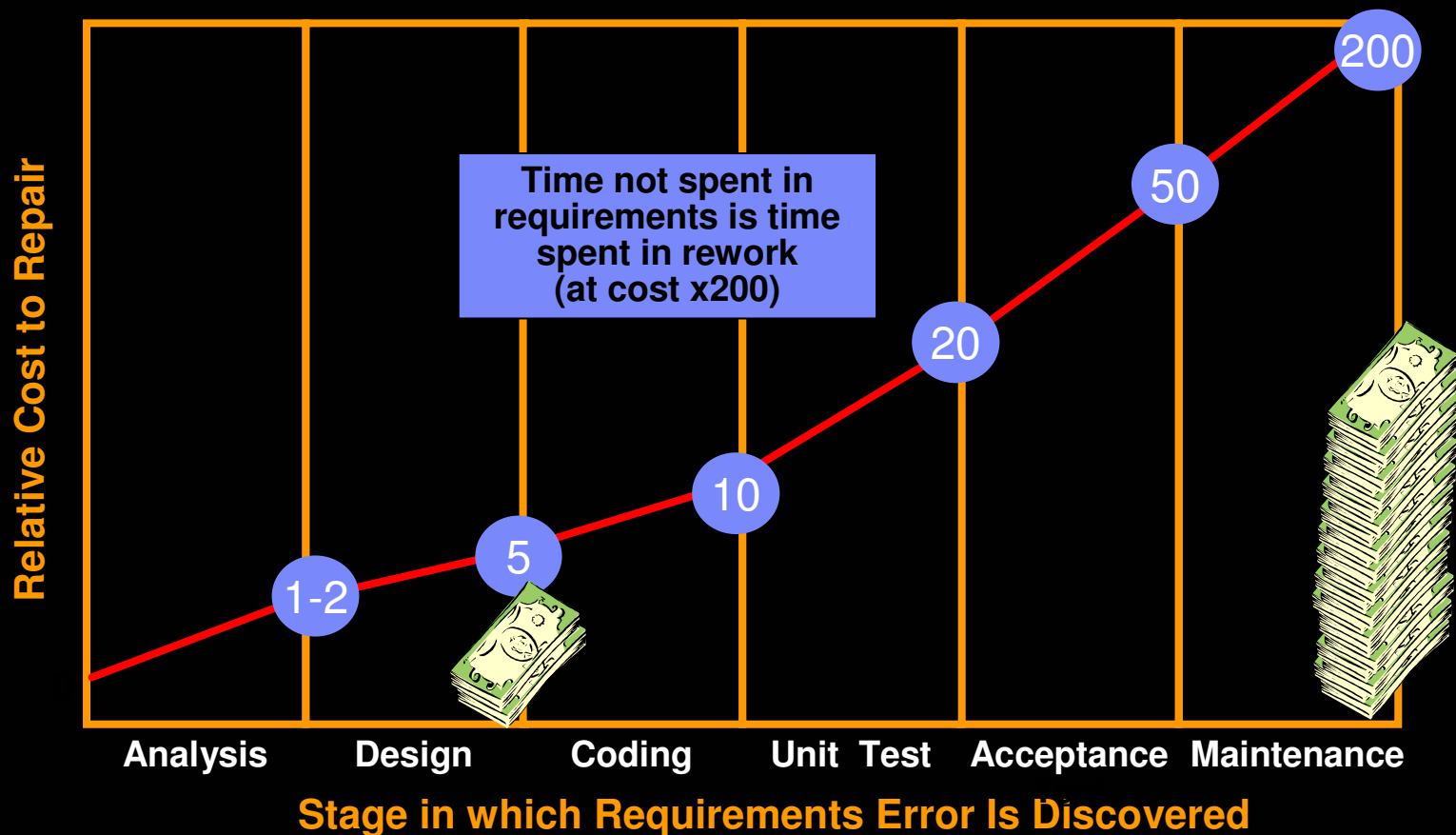
CENTS - Comparative Economic Normalization Technology Study



The Challenge: Managing Your Requirements

Unmanaged requirements cause unmanageable budgets

- Primary reason for excessive rework, delays, and poor quality



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What is Requirements Management?

A systematic approach to
eliciting, documenting,
organizing, and tracking
changing requirements

**Ensuring your team identifies,
builds, tests and documents
the right system for your customer**



Key challenges

- Overwhelming complexity
 - ▶ Abstraction, decomposition
Requirement structure
- Ambiguous and imprecise communication
 - ▶ Precise language (UML UseCases)
- Undetected inconsistencies
 - ▶ in requirements, designs, implementations and during tests
- Rapid change
 - ▶ Impact analysis, traceability
 - ▶ Integrated full lifecycle tools



Who should care about requirements ?



Analyst



Developer



Customer



Tester



Executive



Graphical Designer



Architect



Project Manager



Marketing



Key questions to address with Requirements Management

- Exactly what is this software supposed to do ?
- How, exactly, will we know when the software does exactly that and nothing else ?



Dimensions of Quality – Components of FURPS+

F unctionality	Feature set capabilities, security, generality	
U sability	Human factors aesthetics, consistency, documentation	
R eliability	Frequency/severity of failure, recoverability, predictability, accuracy, MTBF	
P erformance	Speed efficiency, resource usage, throughput, response time	
S upportability	Testability Adaptability Compatibility Serviceability Localizability	Extensibility Maintainability Configurability Installability Robustness

Functional Requirements

Non-Functional Requirements (system quality attributes)

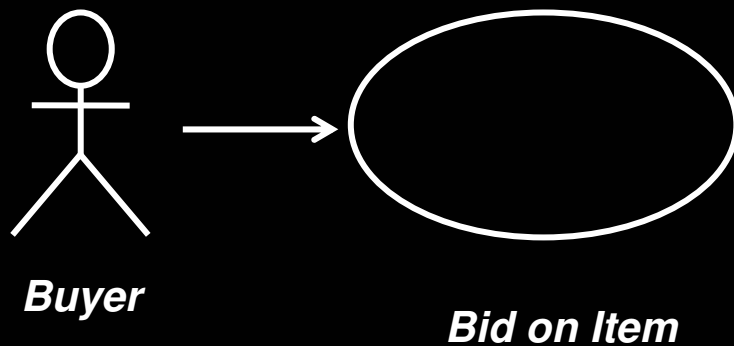
Grady, 1992



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*

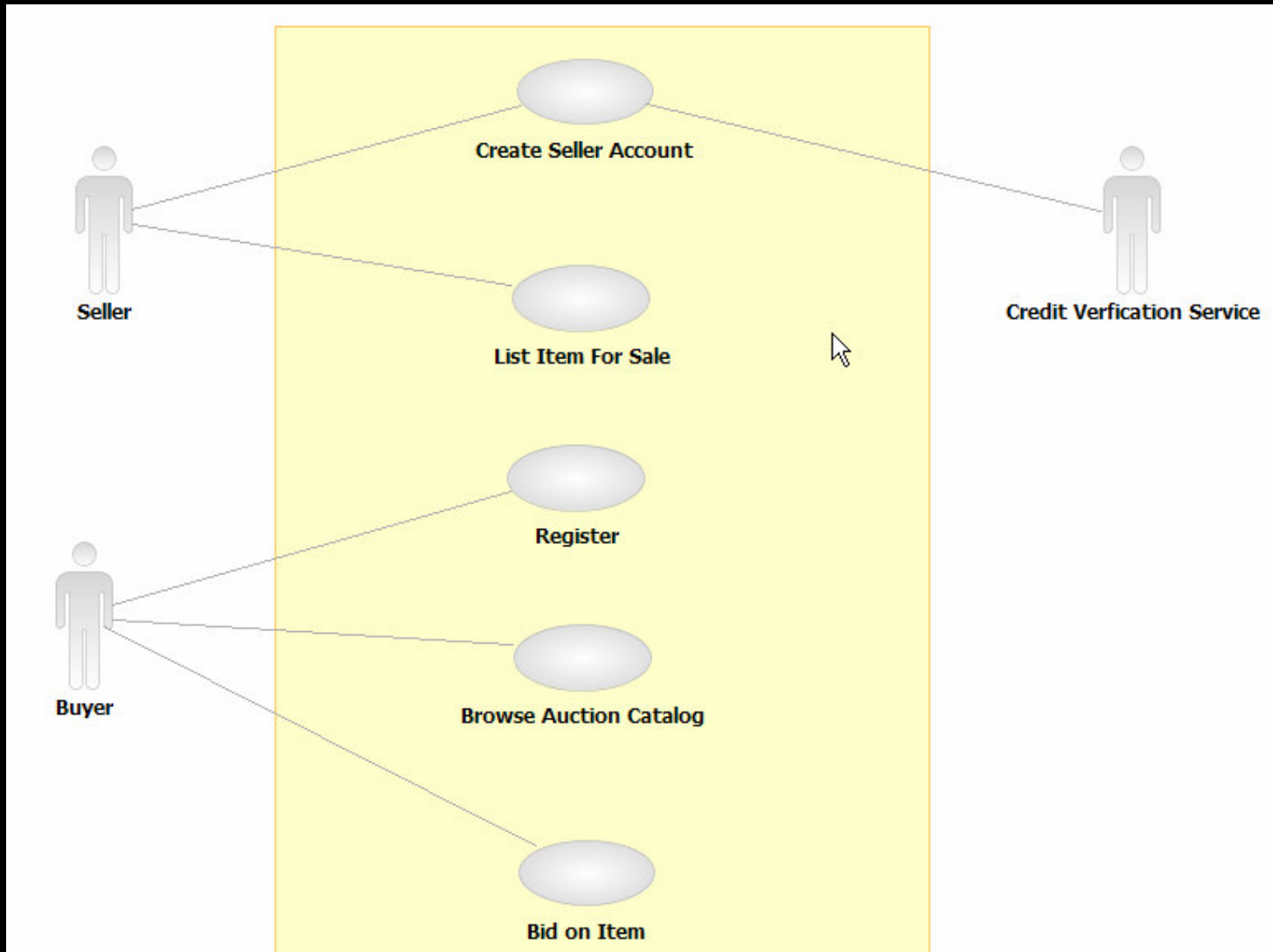
Flow of Events

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 systems saves the student's schedule information. The use case ends.



Use Case Diagram - The Big Picture



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Managing Requirements With RequisitePro

4. Product Features

4.1 [ClassicsCD.com Web Shop]

- [Secure Payment method]
- [Easy Browsing for available titles]
- [Ability to check the status of an order]
- [E-mail notification for customers when new titles are added that may be of interest to them.]
- [Highly Scalable to include many titles and effective searching through those titles.]
- [Customer should be able to customize the web site]

4.2 [Administration System]

- [Ability to add/remove offerings.]
- [Ability to check on customer orders.]
- [Generate reports.]

Microsoft Word – Requirements Editor

Rational RequisitePro - Learning Project - [FEAT: All Features]

Learning Project

- Features and Vision
 - ClassicsCD Vision Doc...
 - All Features*
 - Requirements Traced L...
 - FEAT1: ClassicsCD.co...
 - FEAT2: ClassicsCD Ad...
 - FEAT3: Interactive guid...
- Glossary
- Supplementary Requireme...
- Use Cases
- ClassicsCD Requirements ...

Requirements:	Priority	Status	Cost	Difficulty
FEAT1: ClassicsCD.com Web Shop	High	Approved		Low
FEAT1.1: Secure payment...	Medium	Incorporate		Low
FEAT1.2: Easy browsinq	Medium	Proposed		Medium
FEAT1.3: Ability to check status...	Low	Validated		Low
FEAT1.4: E-mail notification of...	Medium	Proposed		Medium
FEAT1.5: Highly scalable	Low	Proposed		High
FEAT1.6: Ability to customize the	High	Proposed		Low
FEAT1.7: User registration good...	Medium	Incorporate		Low
FEAT2: ClassicsCD...	Low	Validated		High
FEAT2.1: Ability to add/remove...	High	Proposed		Low
FEAT2.2: Ability to check on...	Medium	Incorporate		High
FEAT2.3: Maintain customer...	High	Proposed		Medium
FEAT2.4: Generate reports	Medium	Incorporate		Low
FEAT3: Interactive guide to site...	Low	Proposed		Medium
Click here to create a requirement>	Medium	Proposed		Medium

Database – Requirements Management

- ✓ A familiar way to work
- ✓ Contextual information
- ✓ Extensive formatting

- ✓ Security
- ✓ Organization
- ✓ Reporting and metrics

The Power of a Database and the Freedom of Word



RequisitePro key features

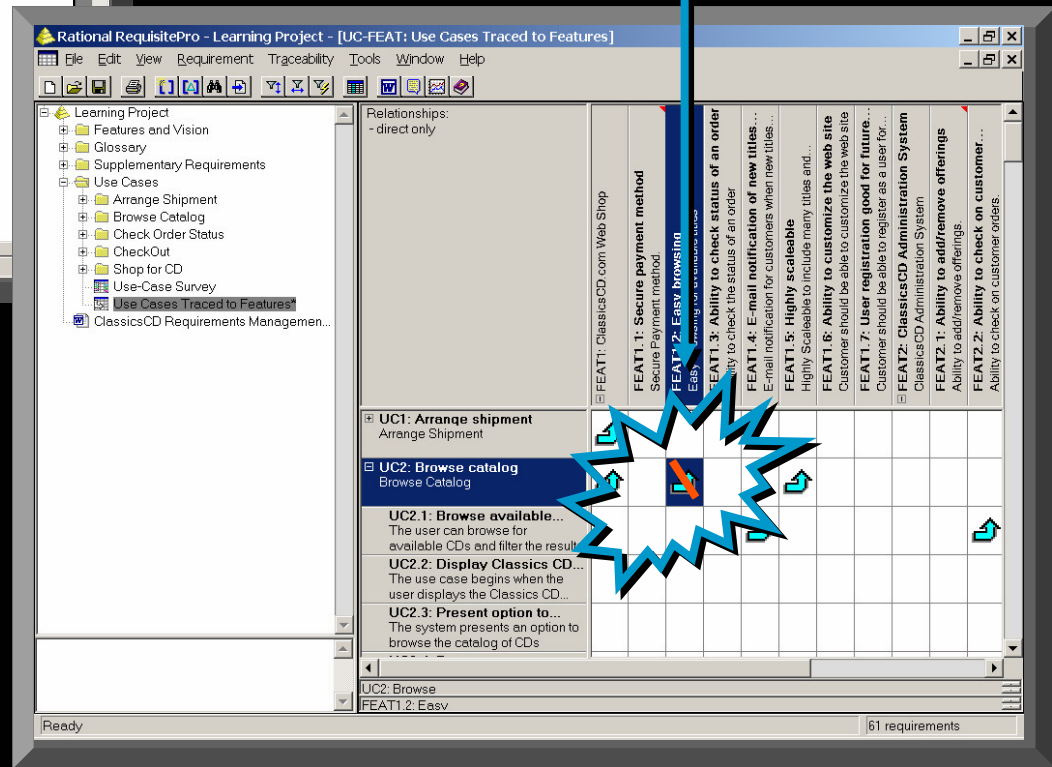
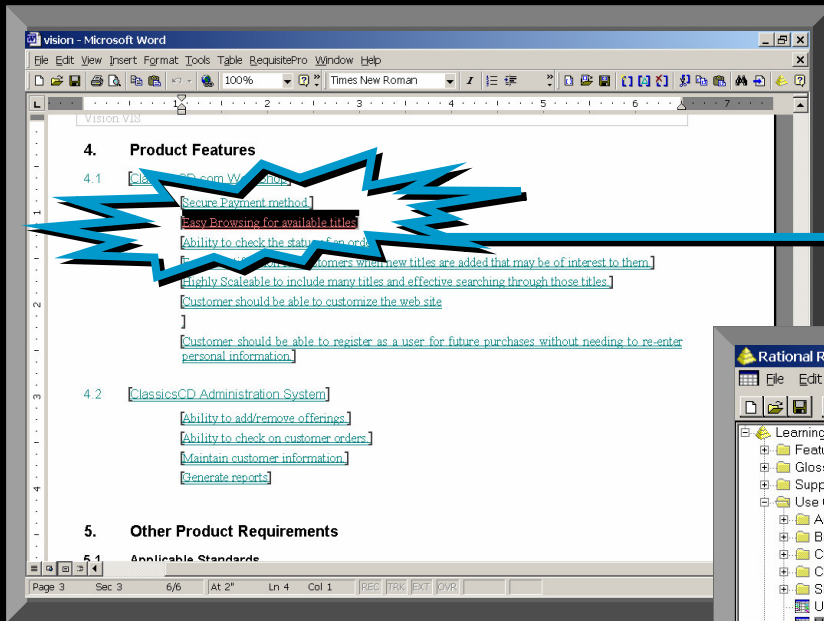
- Access the latest requirements
 - ▶ Secure, centralized repository
 - ▶ Dynamic linking to a database
- Organize and prioritize requirements
 - ▶ Requirement types
 - NEED, FEAT, UC
 - ▶ Requirement attributes
 - Priority, Status, Difficulty, Affect Architecture, Release
- Know the status of your project
 - ▶ Views (filtering, sorting), Metrics
- Traceability and suspect links
 - ▶ Make sure everyone is informed of changes
 - ▶ Understand the impact of accepting change



RequisitePro Shows the Impact of Change

"It's very easy to skip over requirements or make assumptions. RequisitePro drives us to make sure we've covered everything."

Linda Horne, Cygent



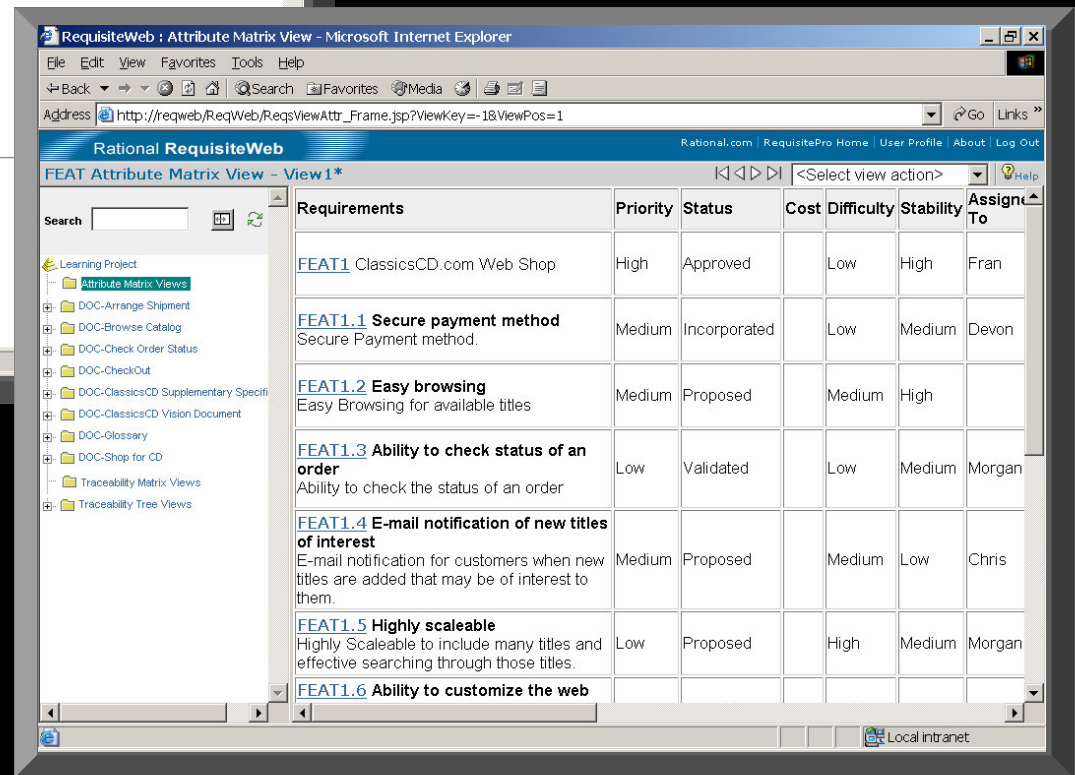
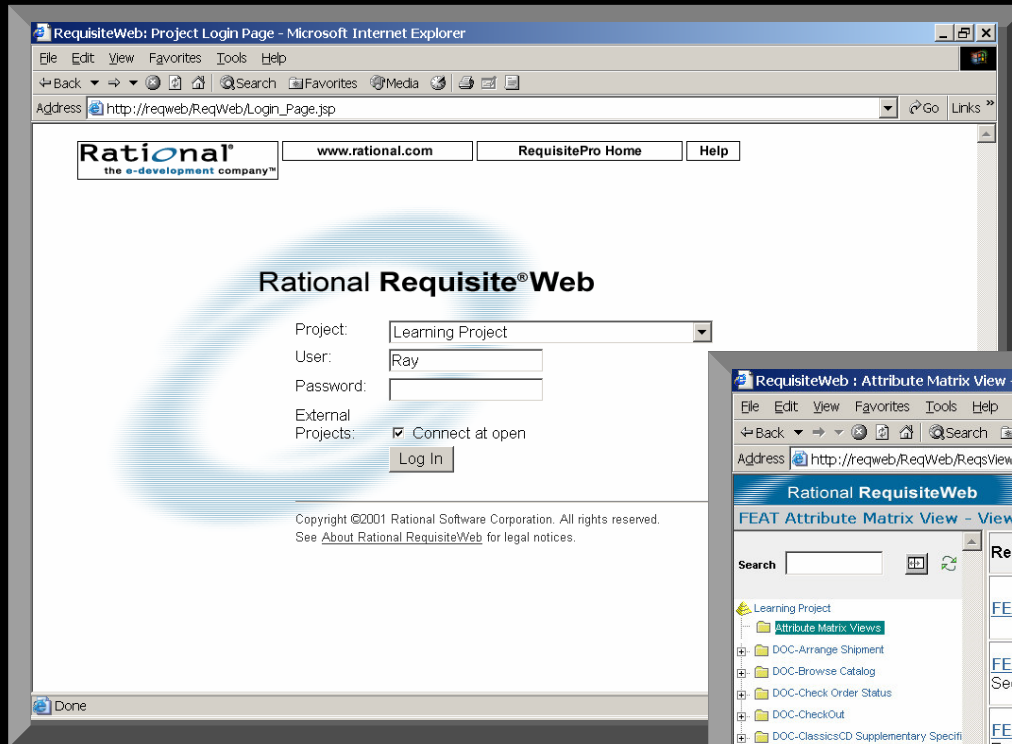
"With RequisitePro's suspect links, my team members and I can immediately see changes that are made..."

Jason Oliver, Kodak



Access Requirements From Any Location

**Distributed
access over
the Web**



RequisitePro Extensibility

```
'print all requirements
Sub PrintAllRequirements(oProject As ReqPro40.Project)

Dim a_oReqs As ReqPro40.Requirements
Dim a_oReq As ReqPro40.Requirement

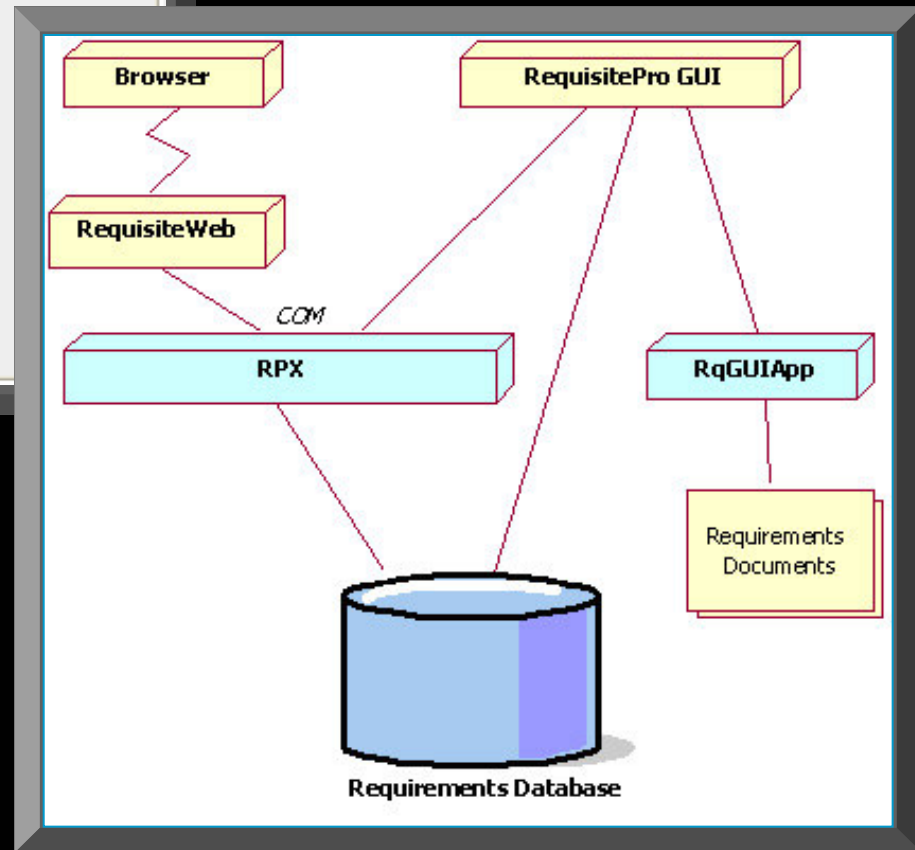
'retrieve all requirements
Set a_oReqs = oProject.GetRequirements("", eReqsLookup_All)

'iterate through requirements
While Not a_oReqs.IsEOF
Set a_oReq = a_oReqs.ItemCurrent

'print out tag and text to the debug window
Debug.Print a_oReq.Tag & " " & a_oReq.Text

a_oReqs.MoveNext
Wend

Set a_oReq = Nothing
Set a_oReqs = Nothing
End Sub
```



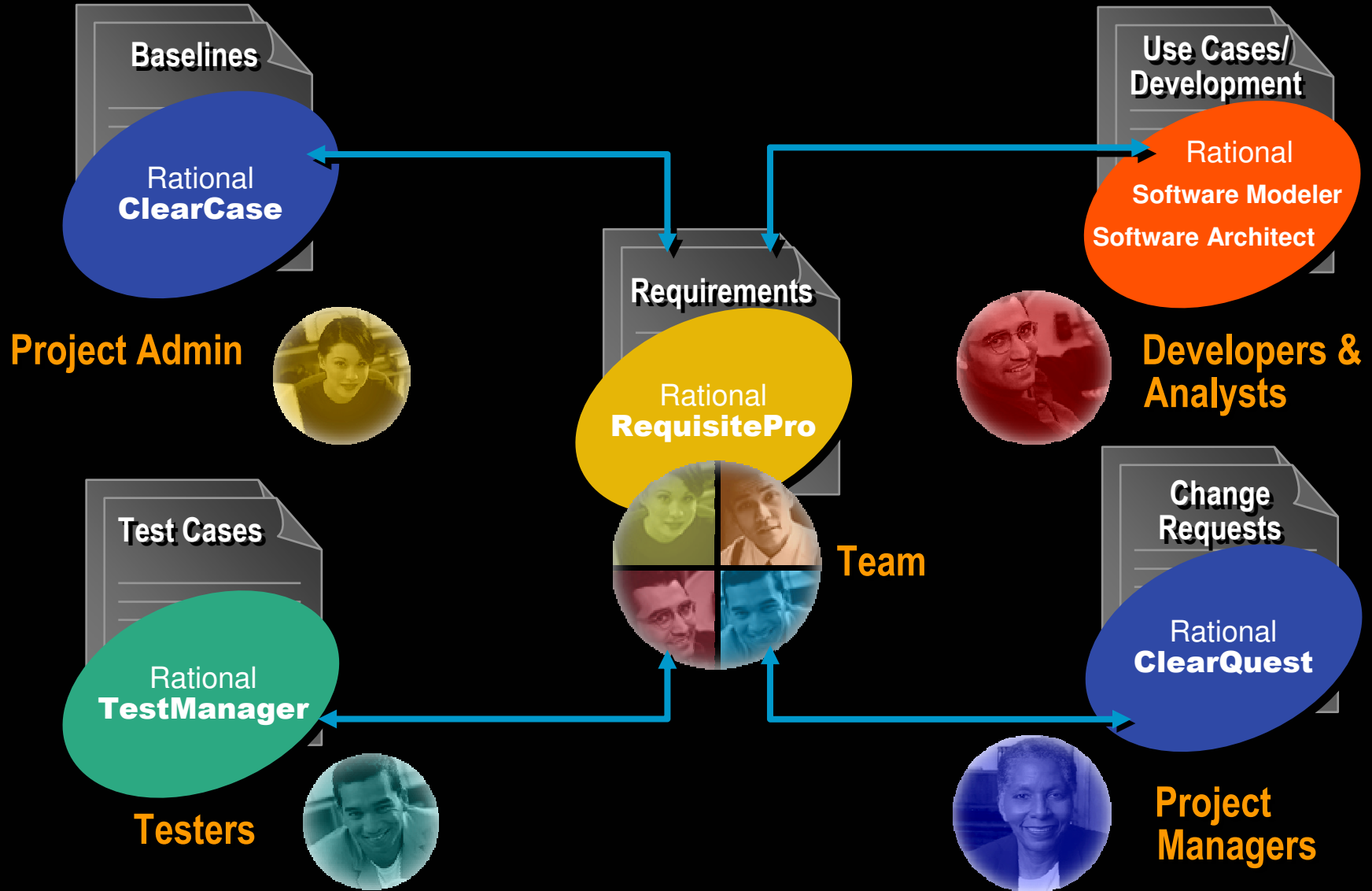
Technical resources and best practices for the Rational RequisitePro:

<http://www-128.ibm.com/developerworks/rational/products/requisitepro>

The screenshot shows the IBM developerWorks website for Rational RequisitePro. The browser window title is "developerWorks : Rational : Products : RequisitePro - Microsoft Internet Explorer". The address bar shows the URL "http://www-128.ibm.com/developerworks/rational/products/requisitepro". The page has a navigation menu with links for Home, Products, Services & solutions, Support & downloads, and My account. The main content area is titled "RequisitePro" and includes a sub-header "Implementing RequisitePro into your process development methodology". Below this is a diagram showing a flow of requirements through development stages. The main article text describes how IBM Rational RequisitePro's traceability linking capability helps the requirements tracking process. The right sidebar contains sections for "What's new!" and "Latest articles", listing various updates and articles related to RequisitePro and IBM Rational software.



Integrate Requirements Across Tools and Teams



Integration: Rational RequisitePro - Rational RSA/RSM

RequisitePro requirements explorer

RSA/RSM Use case diagram

RequisitePro View - Non-functional requirements with attributes

The screenshot displays the Rational RequisitePro interface. On the left, the Requirement Explorer shows a project structure for 'Auction' with folders for Coverage Analysis, Features and Vision, Glossary, Impact Analysis, Needs, and Supplementary Requirements. The main workspace shows a Use Case Model with actors 'Seller' and 'Buyer' connected to use cases like 'List Item For Sale' and 'Browse Auction'. A yellow highlight is placed over the 'List Item For Sale' use case. At the bottom, the Requirement Query Results table is visible, listing requirements with their priority and risk levels.

Requirement	Priority	Risk
SUPL1 The Auction Delight will be deployed on a RI-compliant J2EE deployment environment. In particular, it will run on the public-domai...	Medium	Technology - Medium
SUPL2 The user experience of the system is vital to it's success, so the system's performance must meet user's expectations for a syste...	High	Technology - Medium
SUPL3 On-line help must be available for buyers and sellers	Low	Technology - Low, Schedule - Medium
SUPL4 Keyword searches must complete on the server in no more than 5 seconds 90% of the time.	Medium	Technology - Medium, Schedule - Low
SUPL5 Any system problems, which occur within 1 hour of the end of an auction, and which affect the bidding on an item, should result i...	High	Technology - High, Schedule - Medium
SUPL6 The system must be available 24x7 with no scheduled down time visible to users.	Medium	Technology - High, Schedule - Medium
SUPL7 All financial transactions must be secure	High	Technology - Medium, Schedule - Low



Agenda

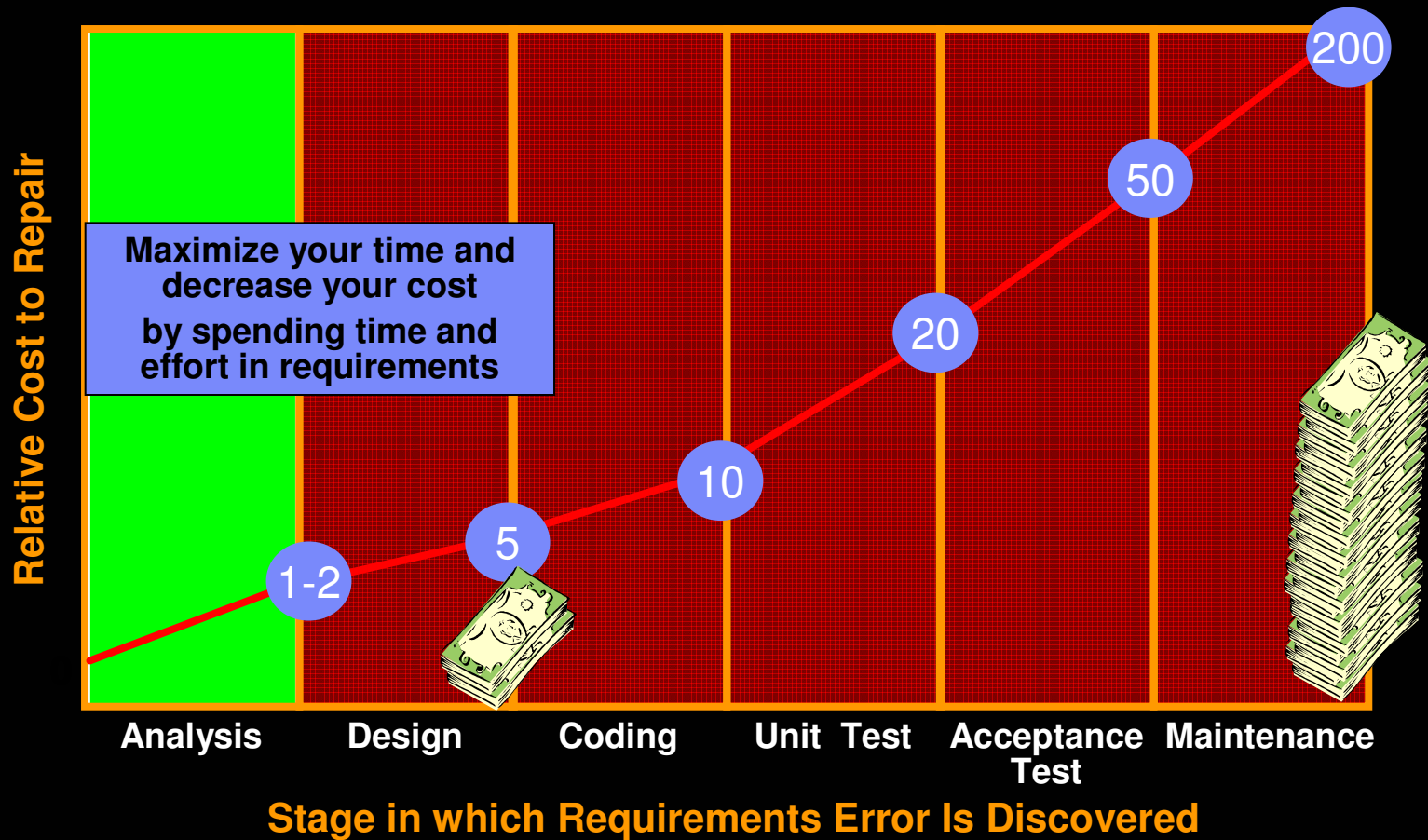
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Summarizing

Keep your team on track and out of the red zone

with IBM Rational RequisitePro



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RequisitePro Links...

- **IBM Rational Danmark:**
<http://www-306.ibm.com/software/dk/rational/>

- **Trial download:**
<http://www.ibm.com/developerworks/downloads/r/rrp>

- **Achieving ROI with Requirements Management Tools:**
<http://www3.software.ibm.com/ibmdl/pub/software/rational/web/reports/roirm.pdf>

- **IBM developerWorks:**
<http://www-136.ibm.com/developerworks/rational/products/requisitepro>
 - ▶ Rational RequisitePro Getting Started Guides
 - ▶ Deployment solutions for IBM Rational RequisitePro
 - ▶ RequisitePro extensibility script index

- **Web-based Training:**
<http://www-128.ibm.com/developerworks/rational/training/catalog.html#11>

- **Instructor-led Training:**
[http://www-5.ibm.com/services/learning/dk/ta-iris.nsf/\(ExtFileName\)/rationalclass?OpenDocument&Start=1&Count=50&Expand=1.2](http://www-5.ibm.com/services/learning/dk/ta-iris.nsf/(ExtFileName)/rationalclass?OpenDocument&Start=1&Count=50&Expand=1.2)



QUESTIONS

IBM Rational RequisitePro

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THANK YOU

