

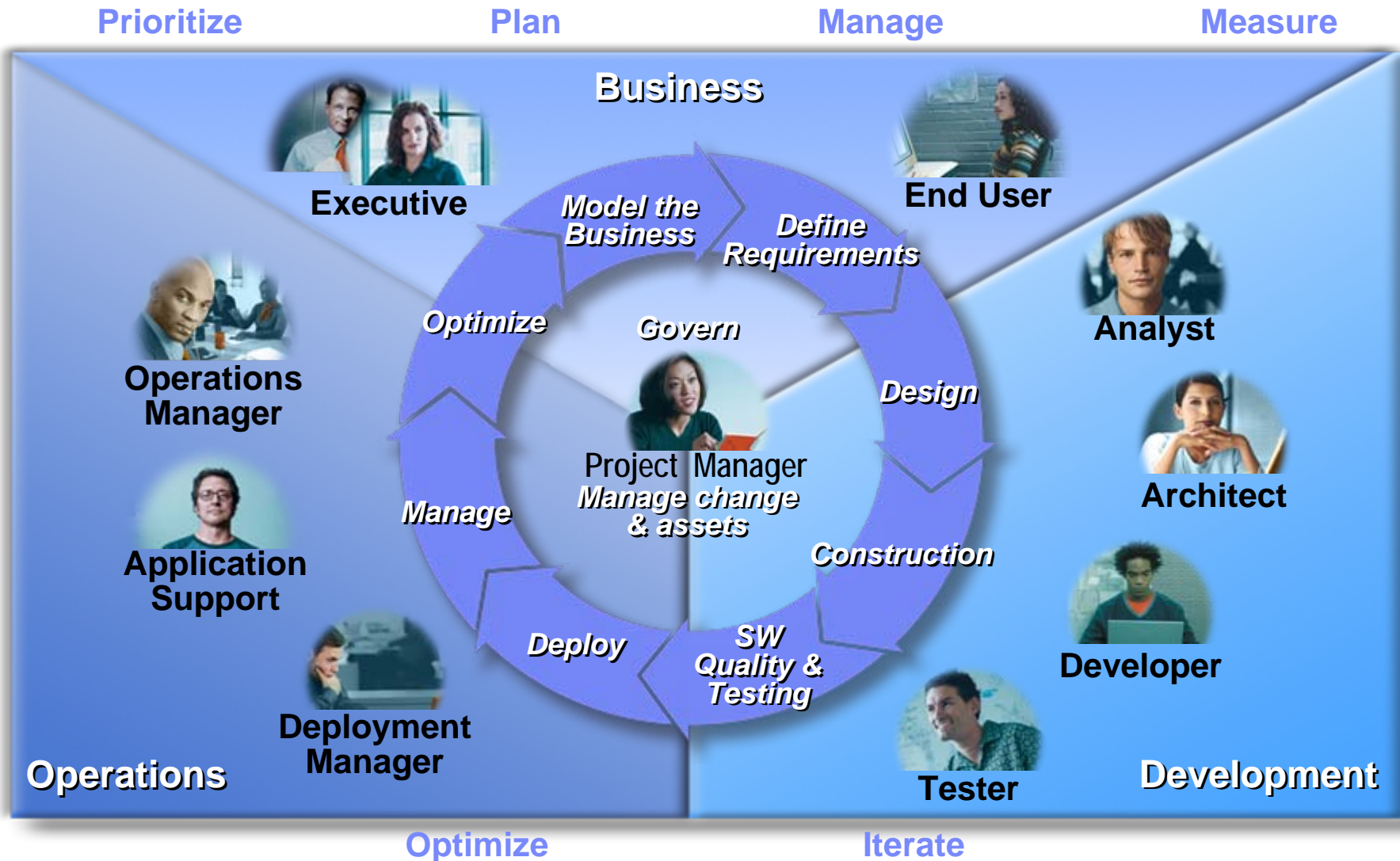


(a.k.a. SAME website as <http://RationalCentral.com> & <http://WebSphereCentral.com>)



The Business Driven Development Lifecycle

IBM Rational Software Development Platform



Business Driven Development Challenges

Business Drivers that Guide our IBM Software Development Platform

Discover



- Find reusable assets within existing transactions, apps, & systems
- Model & design architectures, applications, services, etc.
- Store and catalog assets for reuse

Develop



- Templates, patterns & asset-based development
- Transform assets into reusable components
- Optimize performance prior to deployment
- Manage teams & the development process
- Optimize interaction & procedures

Deploy



- Quality Assure: conformance testing, bug tracking, release management
- Systems Testing
- Manage runtimes over lifecycle
- Performance monitoring

57% of project failures are due to poorly scoped requirements

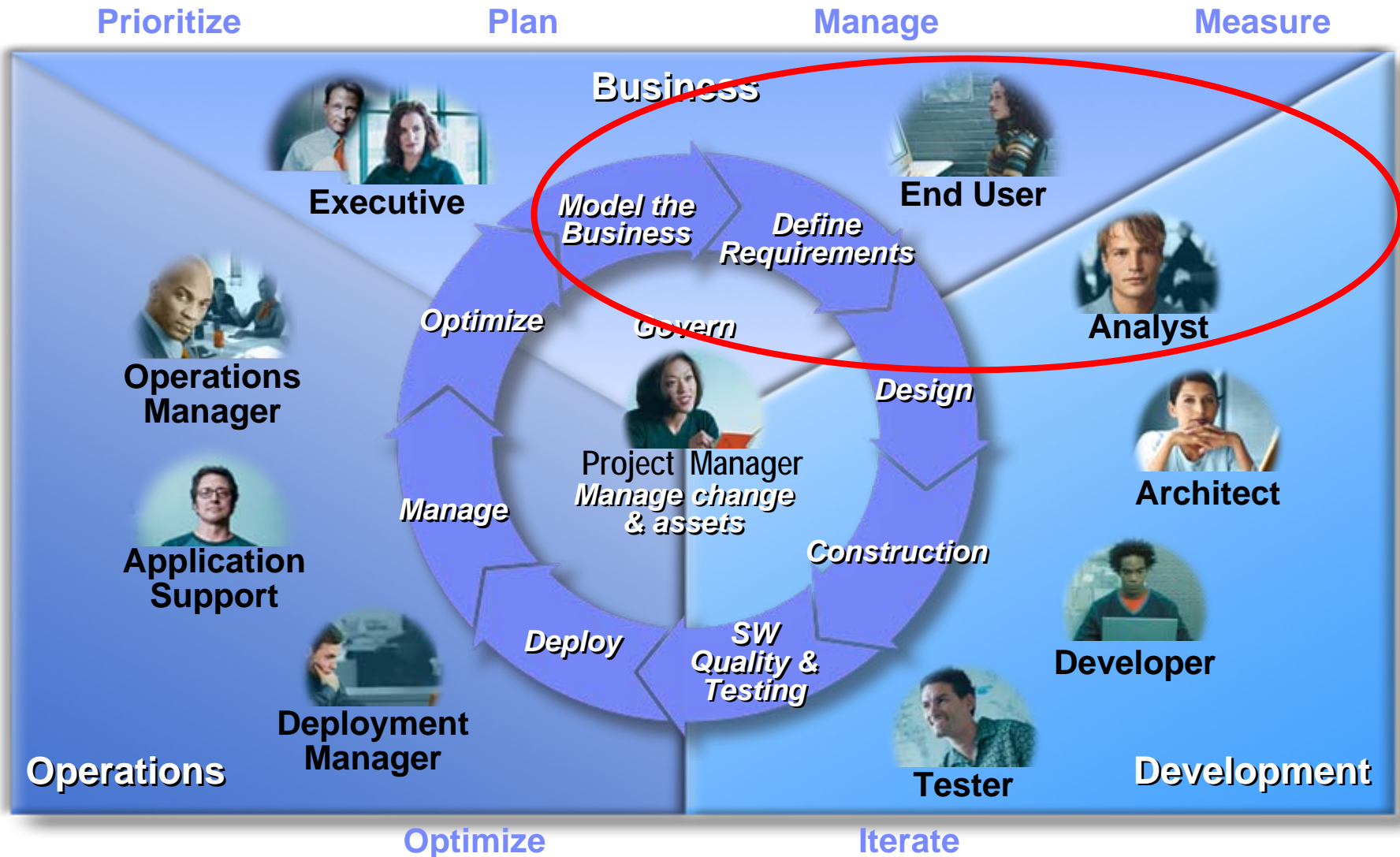
Only 54% of required features and functions make it to the released product

82% of projects run over time, 51% are over budget



The Business Driven Development Lifecycle

IBM Rational Software Development Platform



Requirements



Business Value

- **Customers, Stakeholders and Practitioners**
 - Business Analyst, Systems Analyst
- **Industry Performance**
 - 70 – 80 % of project failures are tied to poor analysis of requirements
- **Business Questions**
 - How are your system requirements effectively defined and communicated?
 - How do you ensure requirements make it into the final application?
 - What happens if your software development efforts don't satisfy the users of the system?

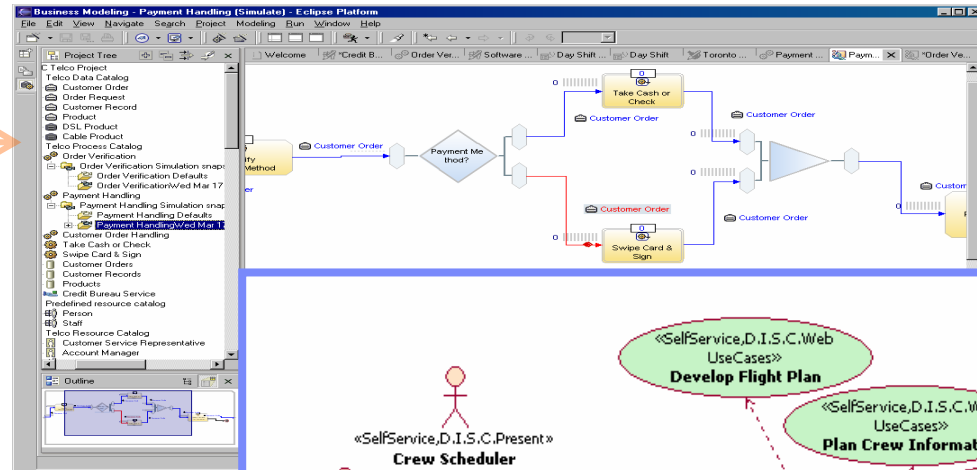


Step one: Model the business

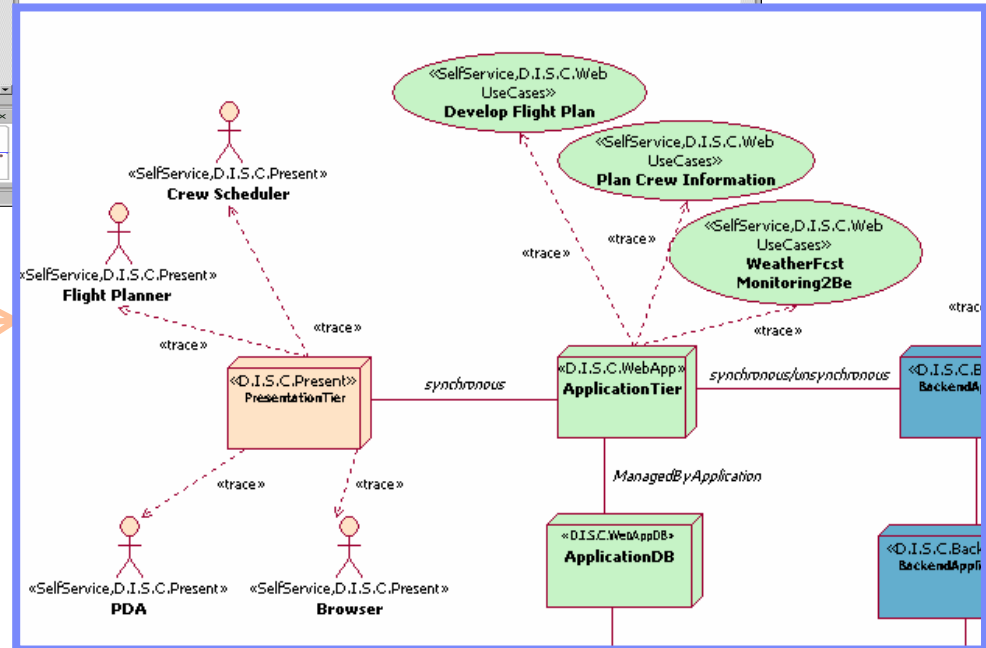
Document business processes and user interactions



Analyst models “as is” business process and explores alternative “to be” business processes



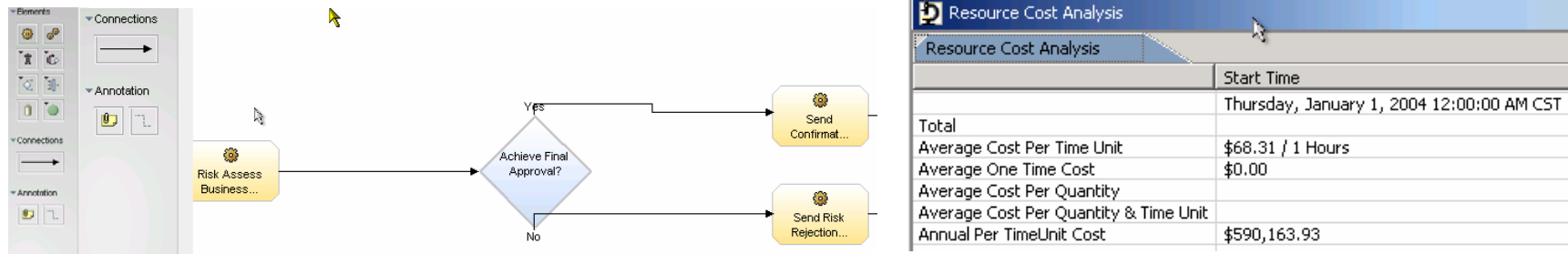
Analyst models “as is” and “to be” user interactions through use cases



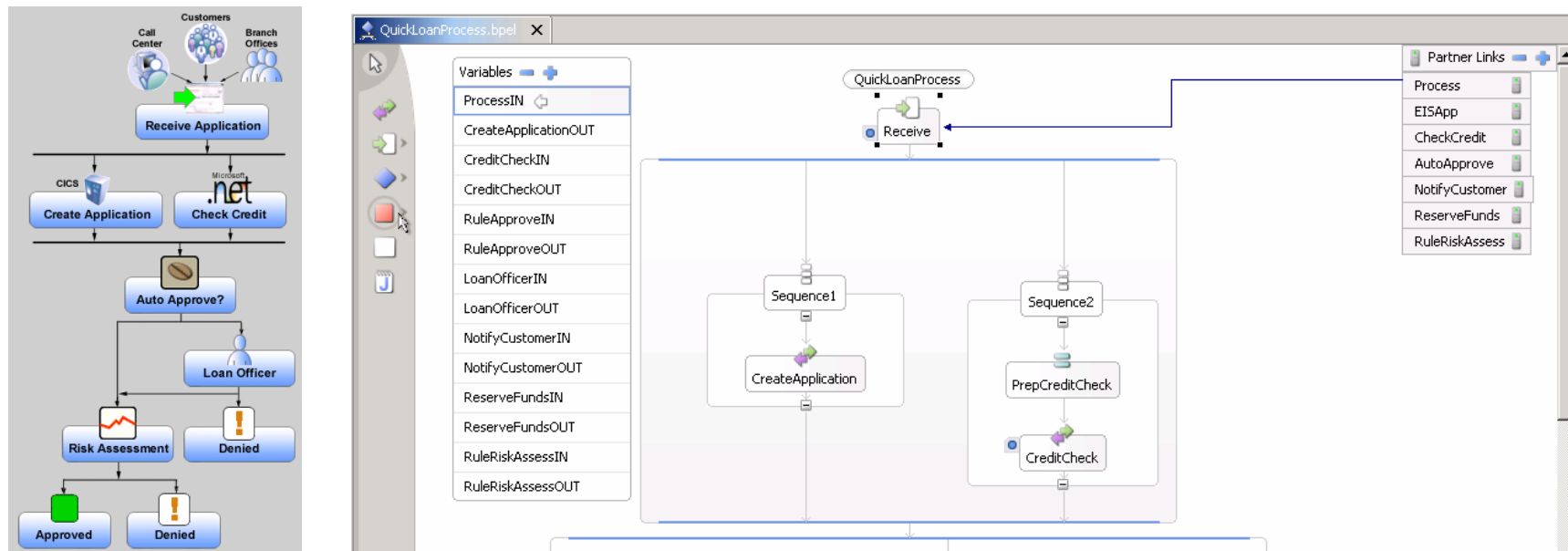
IBM WebSphere Business Integration Modeler
IBM Rational Software Architect

“Process Portal” Tools - Integrating People, Processes and Information

- Use your business model to simulate a process and assess cost savings

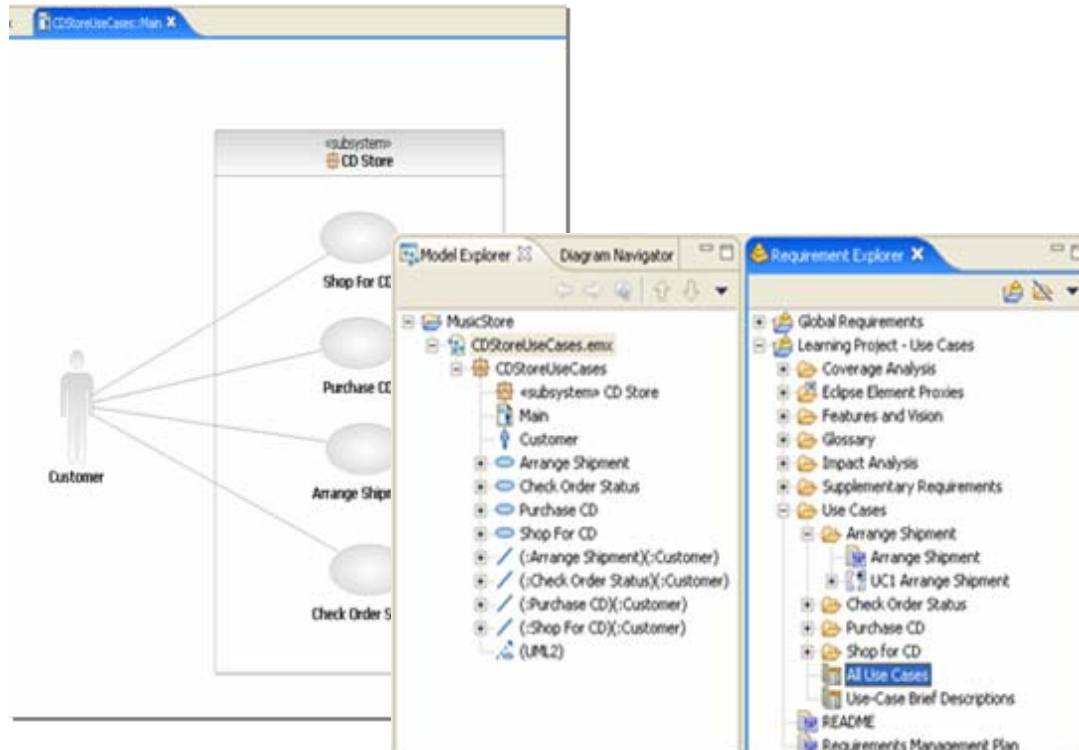


- Re-use business process model in visual J2EE workflow tools to build web services



Step two: Further Define business requirements

Document stakeholders and systems requirements

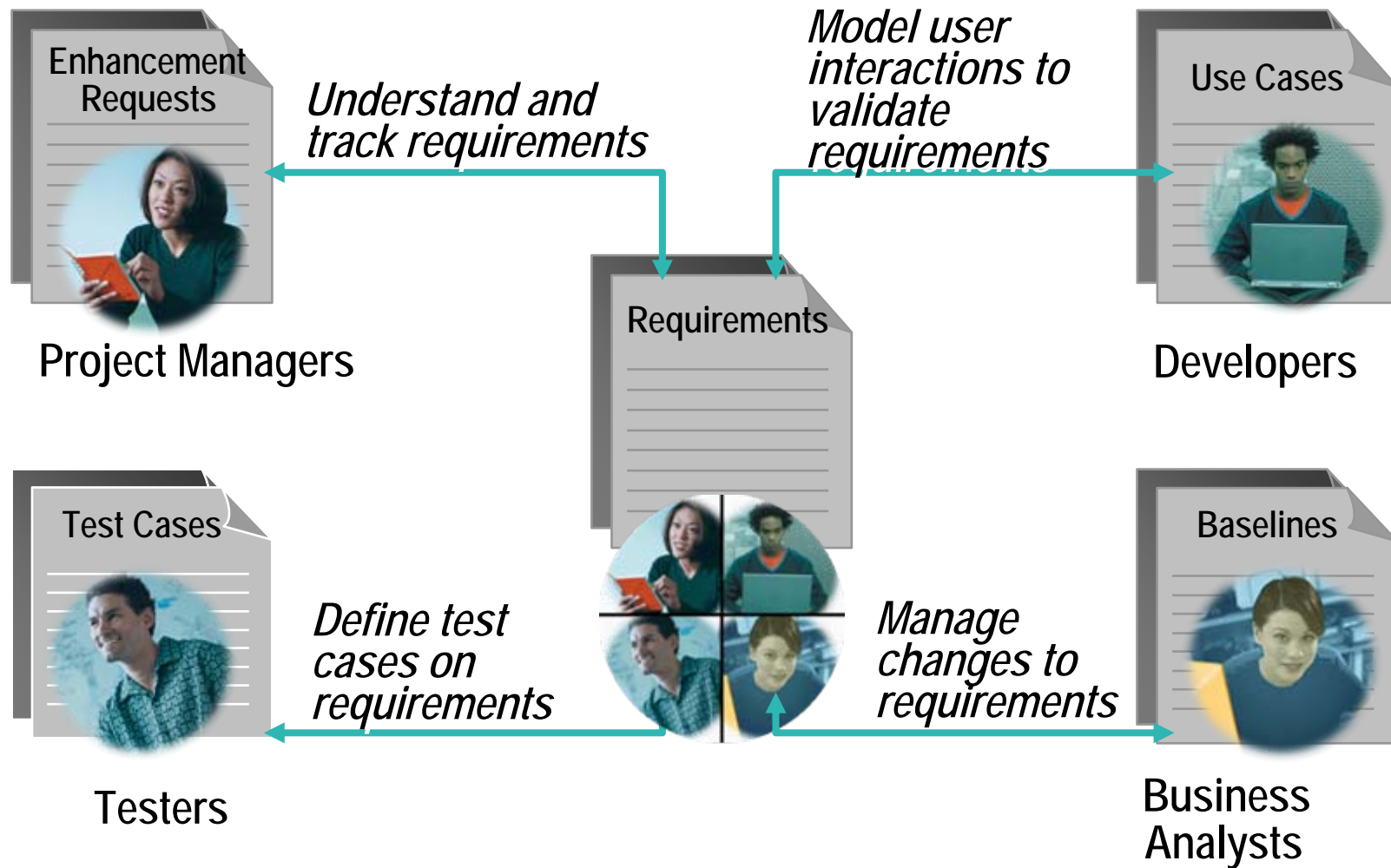


Analyst defines business requirements and refines them into software requirements and use cases

Requirement Query Results										
Requirement Link Problems			Properties							
Requirement	Property	Affects Architecture	Priority	Status	Difficulty	Contact	EnhancementR...	Defect	Unique ID	Location
UC1 Arrange Shipment	Name	False	Should	Proposed	Medium				342	Arrange
UC2 Check Order Status	Name	False	Should	Proposed	Medium	Rob Z.			320	Check Or
UC3 Purchase CD	Name	False	Must	Approved	High	Catherine Q.			309	Purchase
UC4 Shop For CD	Name	False	Must	Proposed	Medium	Jim X.			296	Shop For

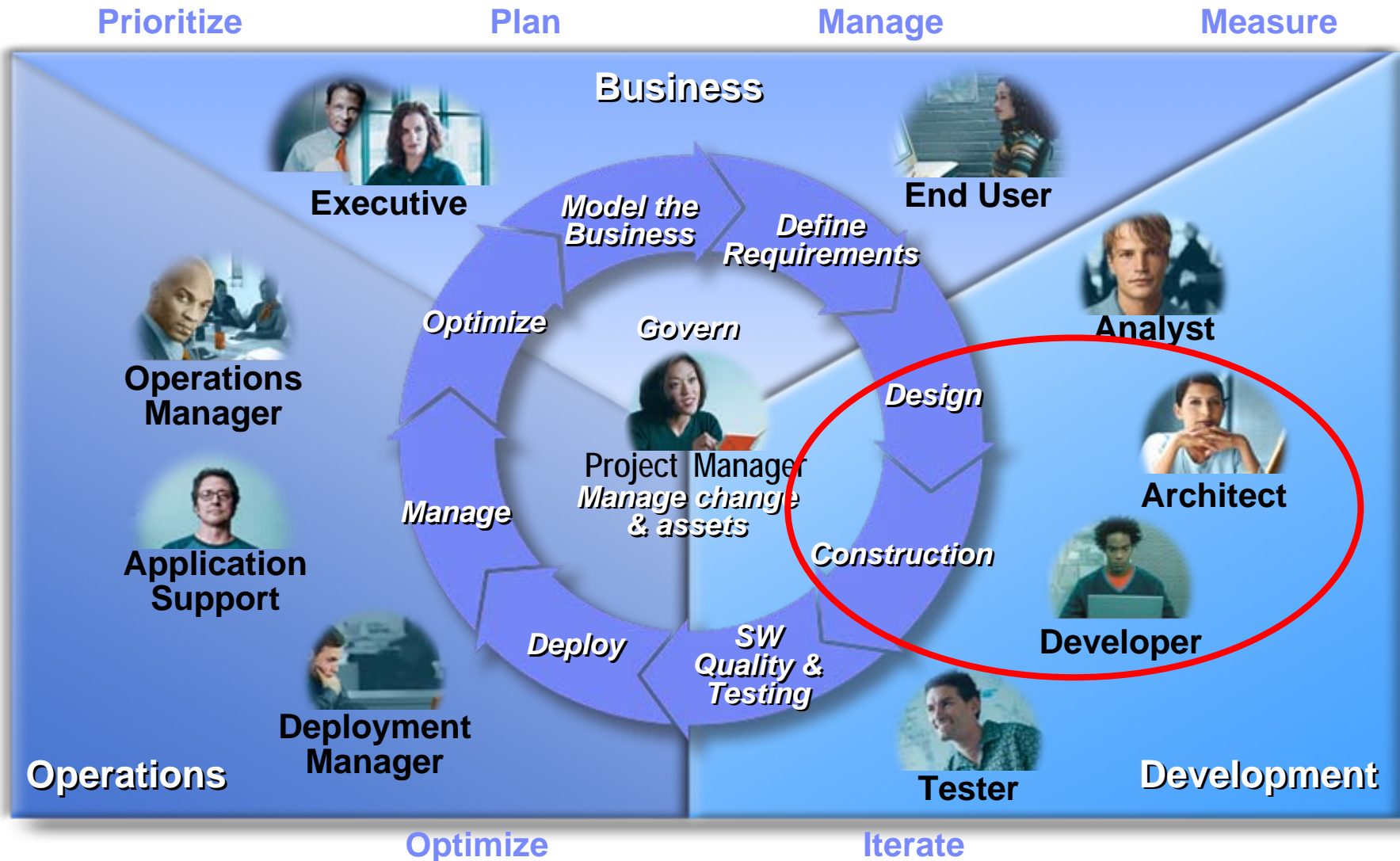
IBM Rational RequisitePro

Requirement Management Linkages are Critical



The Business Driven Development Lifecycle

IBM Rational Software Development Platform



Design and Construction



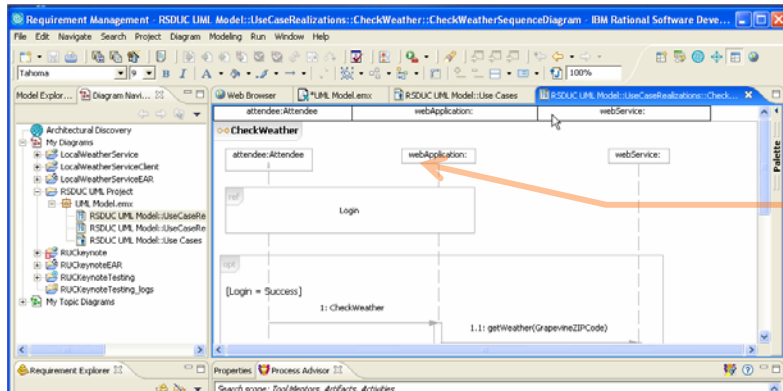
Business Value

- **Customers, Stakeholders and Practitioners**
 - Software Architect, Developer, Engineer
- **Industry Performance**
 - 65% of development projects fail to meet expectations
- **Business Questions**
 - How do you ensure that your teams accurately translate business requirements into functional applications?
 - How hard is it to enhance or modify your applications?
 - How do you model your applications today? (Microsoft Visio, paper, whiteboards, etc.)
 - Are you frustrated with the pace of software development?
 - Would you like to reduce the amount of manual coding?
 - Do you use Rapid Development techniques today?

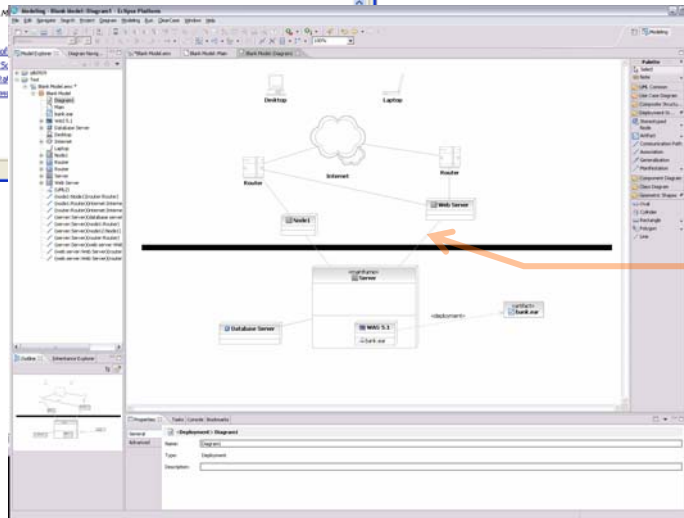


Step three: Analyze and design application

Minimize risks by understanding architectural dependencies



Architect imports business processes and refines application design, based on best practices, and existing assets

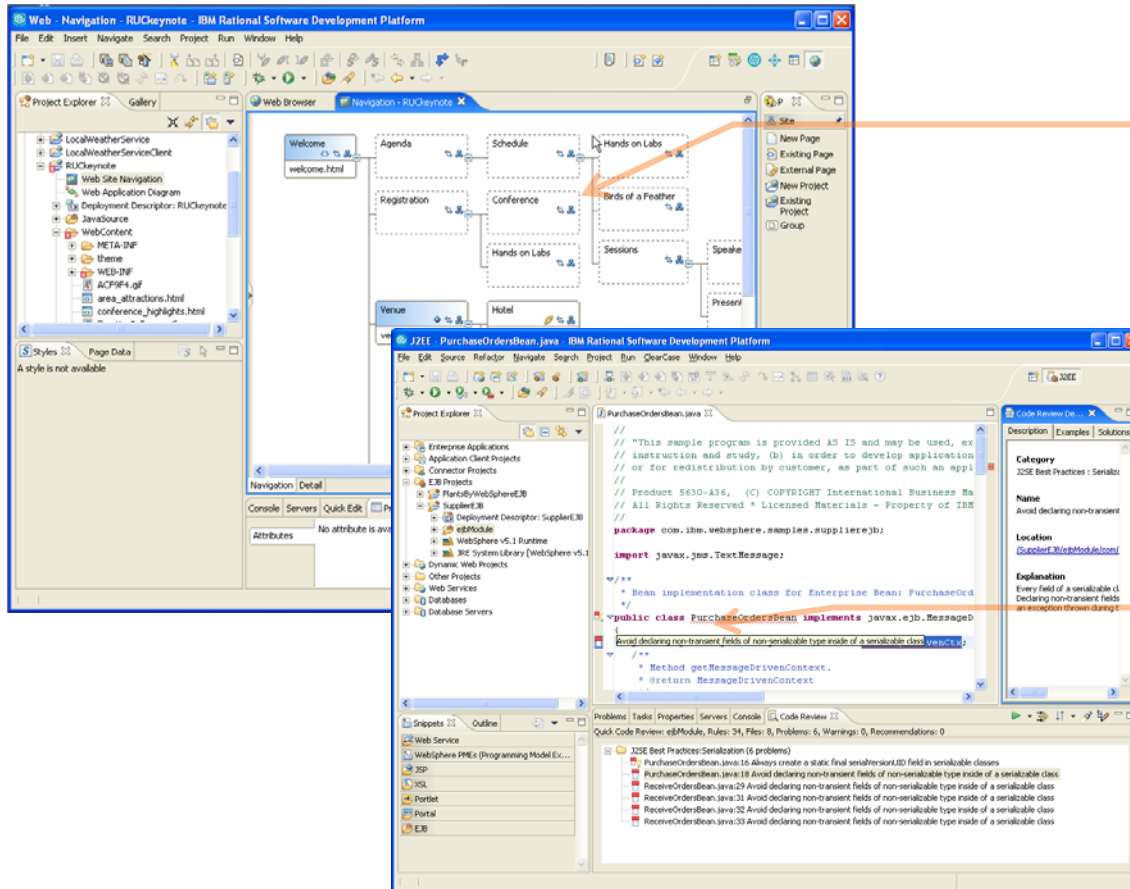


Architect models operational model

IBM Rational Software Architect

Step four: Construct Application

Build higher quality applications in less time



Developer implements application leveraging highly productive J2EE capabilities (JSF, SDO)

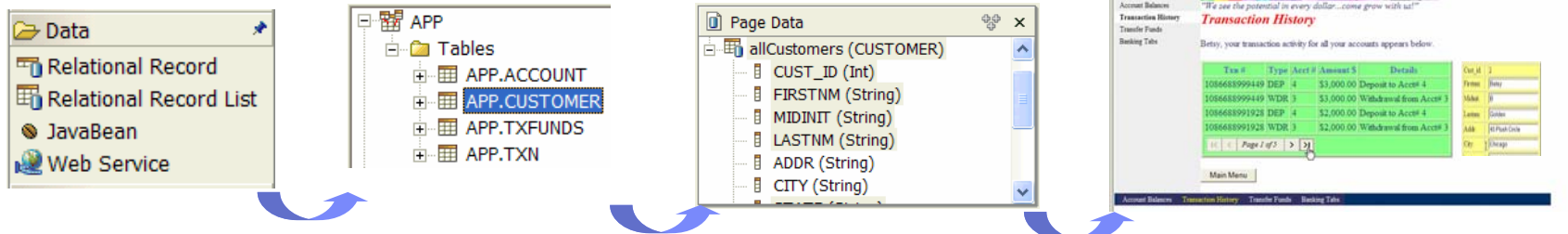


Developer leverages code analysis & unit testing to fix functional, performance, and security problems at the component level

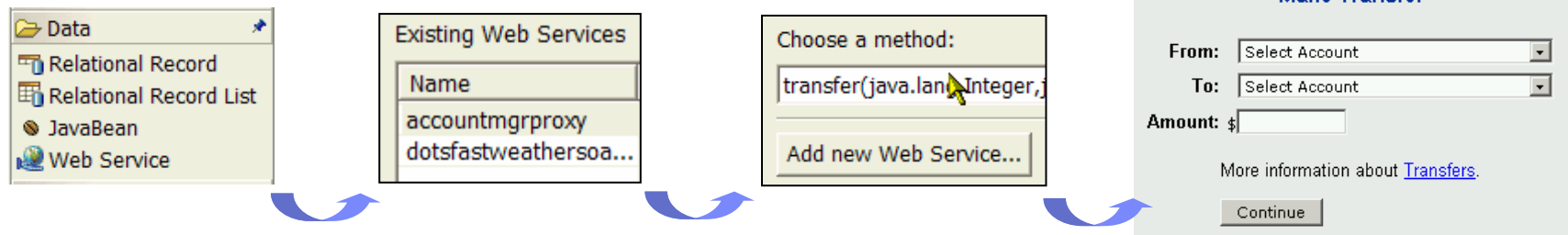
IBM Rational Application Developer

Simplifying J2EE and Portlet/Portal Development

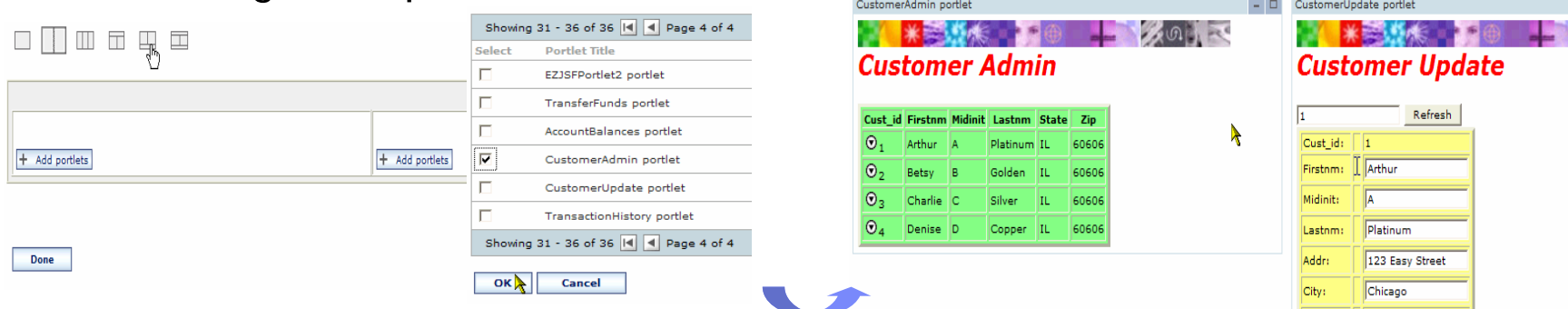
- Database development drag-n-drop ease-of-use ^{1 2}



- Web Services development drag-n-drop ease-of-use ^{1 2}



- Portals drag-n-drop ease-of-use ^{1 2}



Rich Thin Clients (Portal Portlets and/or Web Apps)

- Drag-n-drop development of J2EE/Portal applications (*No Coding Required*)

The screenshot displays the IBM WebSphere Portal interface within a Microsoft Internet Explorer browser. The browser's address bar shows the URL <http://yclidesktop.raleigh.ibm.com/wps/myportal/.scr/LoggedInIn>. The portal features a navigation bar with links such as 'Home', 'Banking Account', 'Portfolio', 'Mortgage/Loans', 'Bill Pay', and 'ExtremePlace'. The main content area is divided into several portlets:

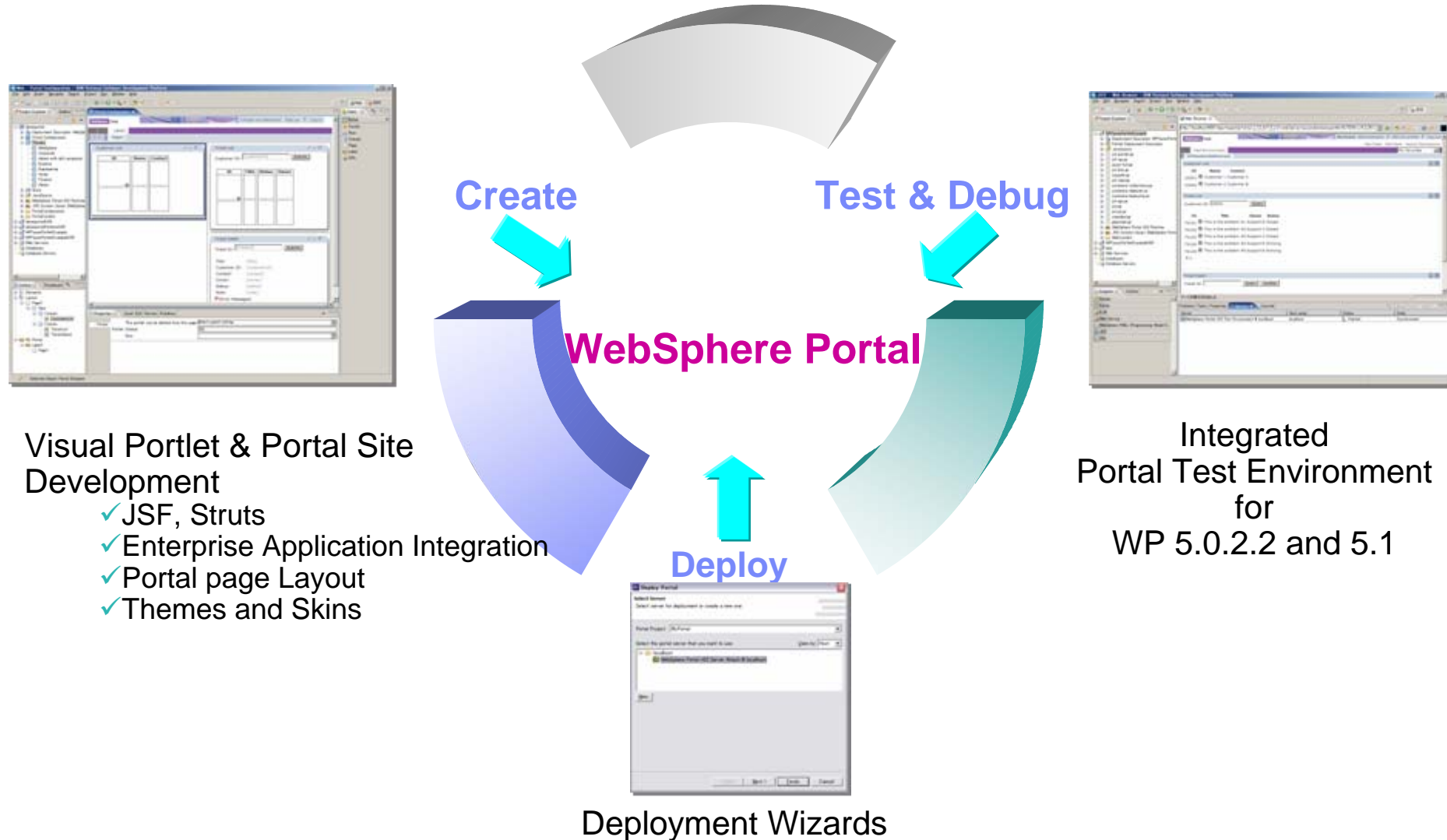
- Accounts**: A sidebar menu with links for 'Order Checks', 'Payment', and 'Help'.
- Bank Accounts**: A table listing accounts with columns for Account #, Account Type, and Balance.
- Account Details**: A section for 'Account Number: 96666' displaying a table of transactions with columns for Trans #, Amount, Date, Type, and Expense Purpose.
- Transfer Funds**: A 'Make Transfer' form with fields for 'From' (Select Account), 'To' (Select Account), and 'Amount' (\$).
- Expense Allocation**: A pie chart showing the distribution of expenses across various categories.

Callouts highlight specific features:

- Database Query**: Points to the 'Accounts' sidebar.
- Web Service**: Points to the 'Make Transfer' form.
- Tabbed Panels**: Points to the 'Banking Account' tab in the navigation bar.
- Graphing Controls**: Points to the 'Expense Allocation' pie chart.
- Spreadsheet Control**: Points to the 'Account Details' transaction table.

The bottom of the browser window shows the 'Local intranet' status.

RAD V6 - 1st Class Support for Portal/Portlet Development



Example: Financial Advisor Dashboard – Portlets and Portal Design

My Portal Administration Edit my profile ? Log out
New Page Edit Page Assign Permissions

Banking Finance
Financial Advisor Dashboard
Loans

BankCustomers portlet

Financial Advisor's Dashboard

Customers Portfolios Dashboard

Cust #	First Name	Last Name	City	State	Zip	Work Phone	\$ Invested	\$ Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,751.15	5.55%
2	Betsy	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.75	5.514%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$526,688.75	5.338%
4	Denise	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,625.00	2.125%

Customer Portfolios Performance

BankPortfolios portlet

Banking > Finance > Portfolio Management

Customer #

Analyze Customer Portfolio

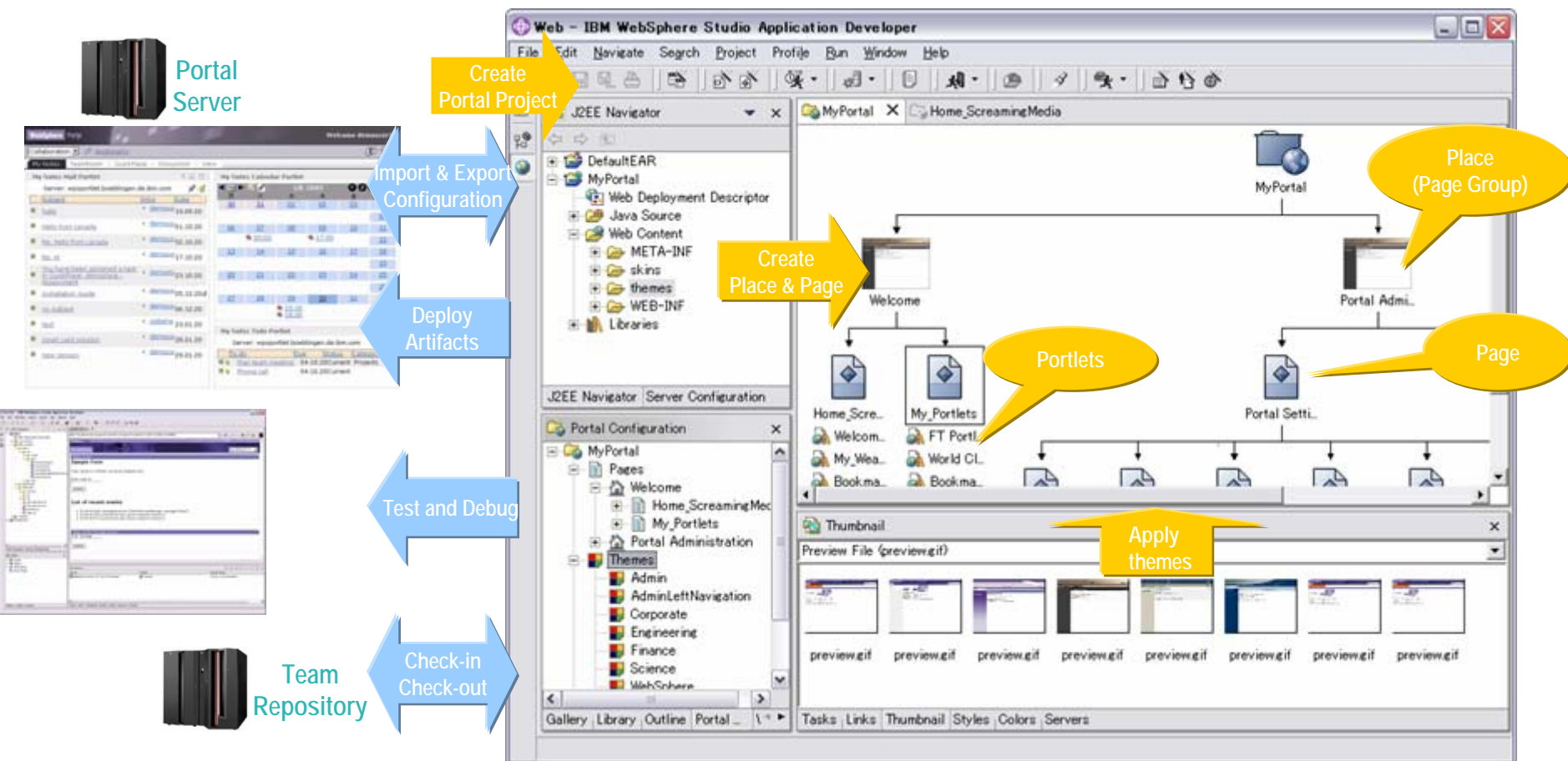
Portfolio details for **Arthur Platinum** appear below:

Invested: \$500,000.00 Projected: \$527,751.15 Rate of return: 5.55%

Portfolio Allocation Graphics Market Simulation

Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
101	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.124%	\$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00	2	4.249%	\$20,849.80
103	Blended - Moderate Life Strategy	6%	\$30,000.00	3	6.374%	\$31,912.20
104	Blended - Aggressive Life Strategy	7%	\$35,000.00	4	8.424%	\$37,948.40
105	Money Market	5%	\$25,000.00	1	2.124%	\$25,531.00
106	Bond - Stable Value	3%	\$15,000.00	1	2.125%	\$15,318.75
107	Bond - Total Market	5%	\$25,000.00	2	6.375%	\$26,593.75

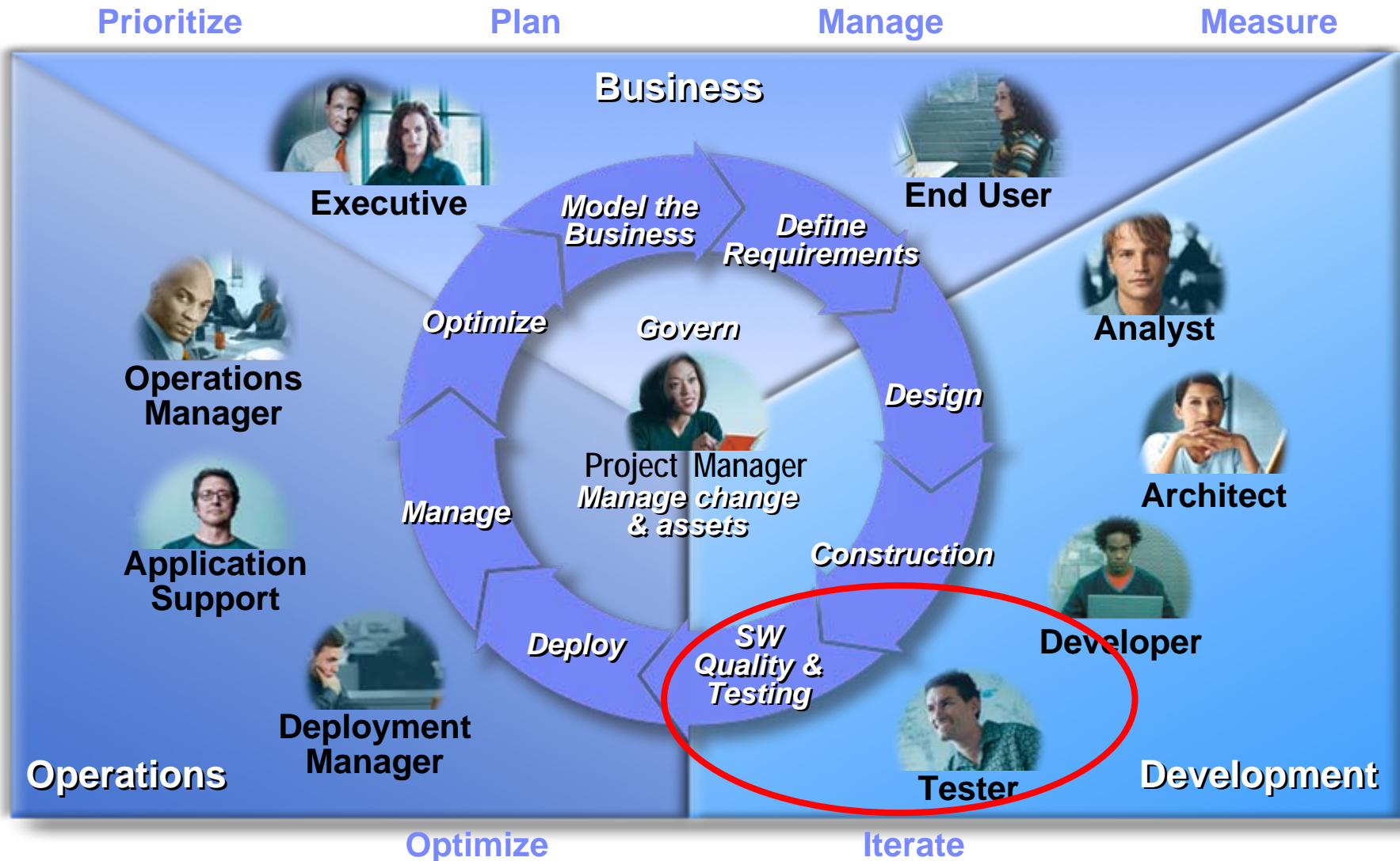
Portal Designer: Site, Page, Themes, Skins



Portal Site Designer

The Business Driven Development Lifecycle

IBM Rational Software Development Platform



Software Quality and Testing



- **Customers, Stakeholders and Practitioners**
 - Tester, Quality Control (QC) Analyst, Quality Assurance (QA) Analyst
- **Industry Performance**
 - Developers make up to 150 errors in every thousand lines of code
 - Only 14% of new web applications perform as planned in production
 - The average new web application is down nearly one day per week
- **Business Questions**
 - What would happen if you released a software product or application that you thought was fully tested, but ended up with poor performance or quality?
 - How do your developers test their applications while they code?
 - How do you ensure the application does what it is supposed to do?
 - Do you have to test both, traditional client/server applications as well as mainframe applications?
 - How do you manage your test cases?

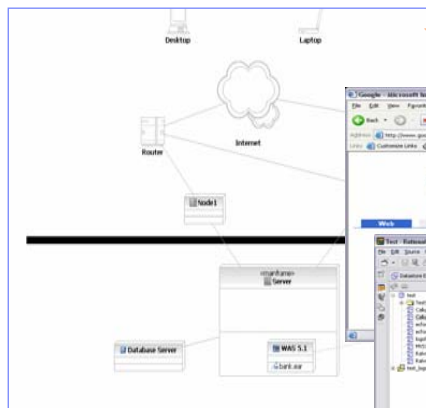


Step five: Test application

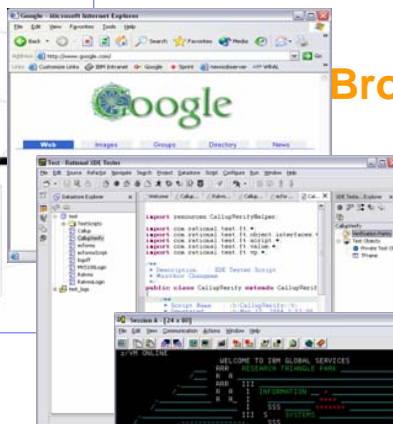
Validate functional requirements



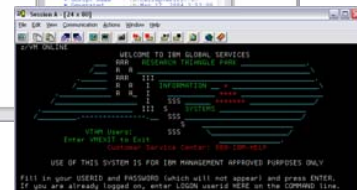
Deployment Manager leverages operational model to provision the test lab



Browser UI



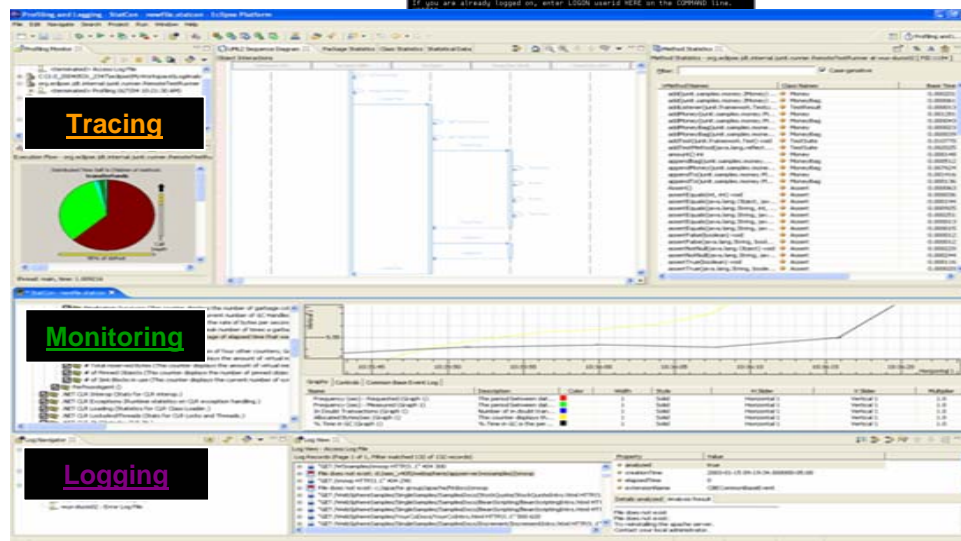
Java UI



Host UI



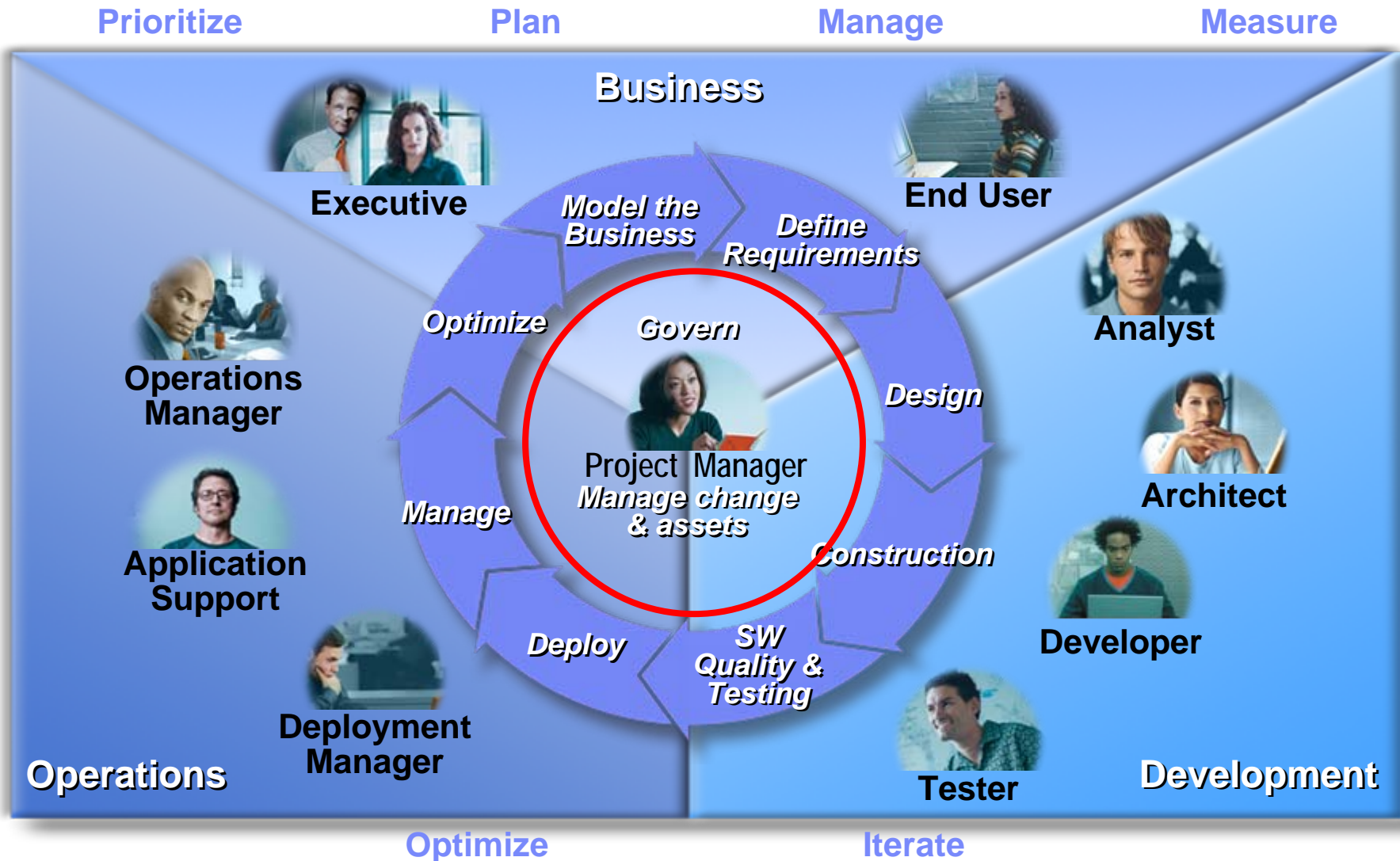
Tester performs automated and manual functional testing based on use cases derived from business requirements



IBM Rational Manual Tester
IBM Rational Functional Tester

The Business Driven Development Lifecycle

IBM Rational Software Development Platform



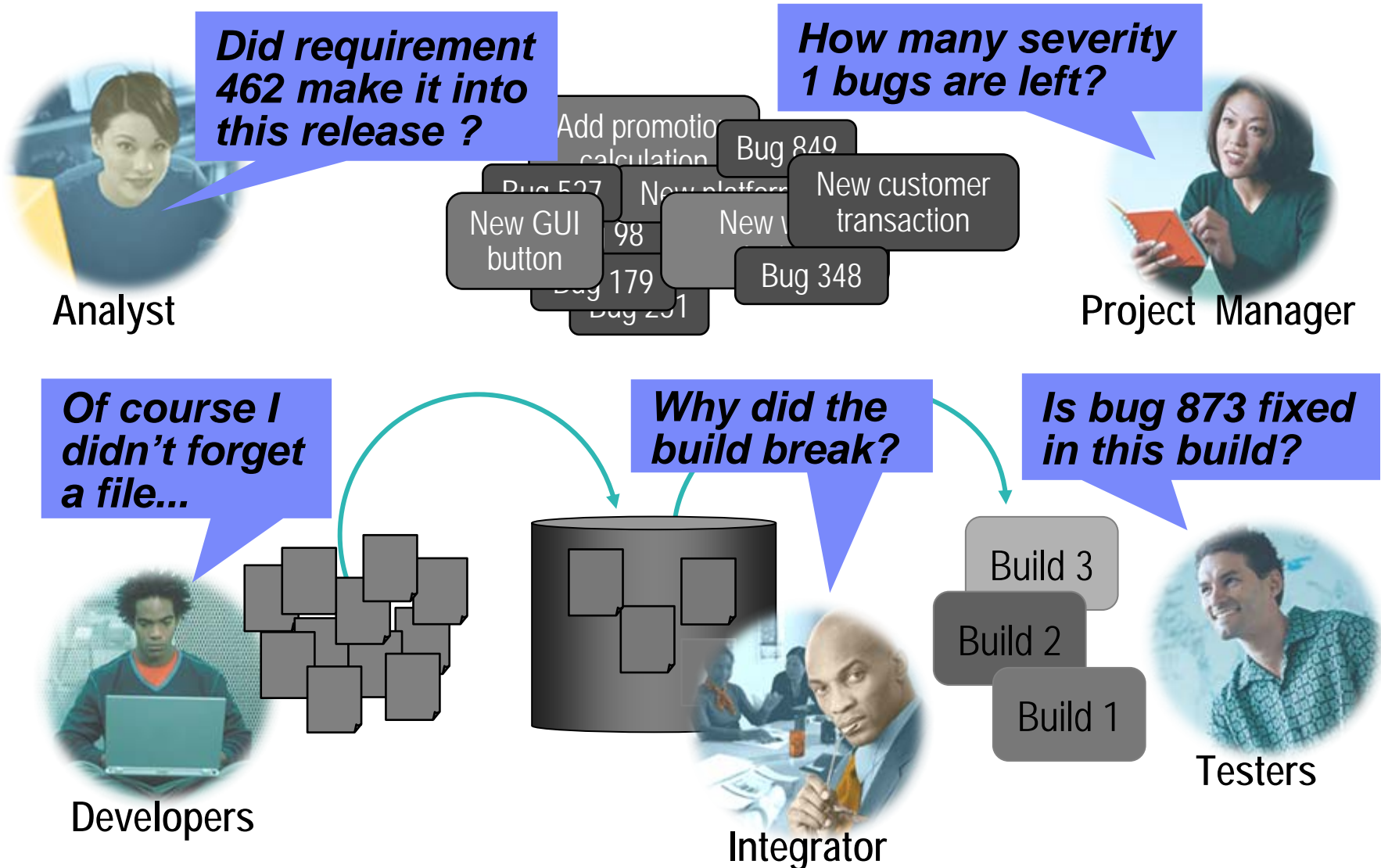
Change/Configuration Management



- **Customers, Stakeholders and Practitioners**
 - Project Manager, Configuration Manager, Release Manager, Integration Manager
- **Industry Performance**
 - Over 70% of software build errors are attributed to poor software configuration management. With good change management, this can be reduced by a factor of eight.
- **Business Questions**
 - What are you using for managing your software assets and change requests?
 - Do your software development teams need to do offshore, outsourced, or other geographically diverse development?
 - How hard is it for you to incorporate and manage evolving changes, such as defects and new requirements, into your system?



Managing Change: The Challenge



Unified Change Management: The Solution

- **Never forget a file again**

- **Organize Projects**
- **Track Project Status**
- **Easy to Adopt**

**Activities carried out
to plan and track
project status**

Activities

ClearQuest

**Activity
Activity
Activity**

Artifacts

ClearCase

**Assets generated and
modified throughout
the development
lifecycle**

- **Assemble Systems Consistently**
- **Manage Baselines**
- **Maintain Build Audit Trail**

ClearCase Integration Inside RAD/RSA

- Provides ClearCase perspective with multiple Eclipse views
- Improved performance in a WAN environment
- Leverages existing CC Web infrastructure
- Better support for disconnected mode and remote users
- Supports ClearCase ↔ ClearQuest interaction (UCM) in a WAN environment

ClearCase
Toolbars

ClearCase Navigator view

ClearCase Details view

ClearCase Search & Synchronize views

Name	Size	Modified Time	State
AdminFrame.java	3051	Mar 24, 2004 10:33:01 AM	Loaded
CDAdmin.java	2313	Mar 24, 2004 10:33:02 AM	Loaded
CDMainPane.java	17189	Mar 24, 2004 10:33:03 AM	Loaded
CustomerMainPane.java	17452	Mar 24, 2004 10:33:05 AM	Loaded
Fonts.java	3612	Mar 24, 2004 10:33:06 AM	Loaded
Logon.java	4761	Mar 17, 2004 1:20:46 PM	Checked Out
TaxMainPane.java	12131	Mar 24, 2004 11:06:15 AM	Loaded

Resource Name	Status	Full Path
TaxMainPane.java	Loaded	D:\csrc_views\sschurma_Rel3\Classics\Source\com\rational\cdshop\...
Logon.java	Checked Out	D:\csrc_views\sschurma_Rel3\Classics\Source\com\rational\cdshop\...

ClearQuest Integration Inside RAD/RSA

- A new client interface for ClearQuest based on Eclipse 3.0
- Provides complete CQ capabilities for developers and testers in the Eclipse IDE
- Replaces existing ClearQuest Result Set plugin,

Workspace view

CQ Toolbar

Result Set view

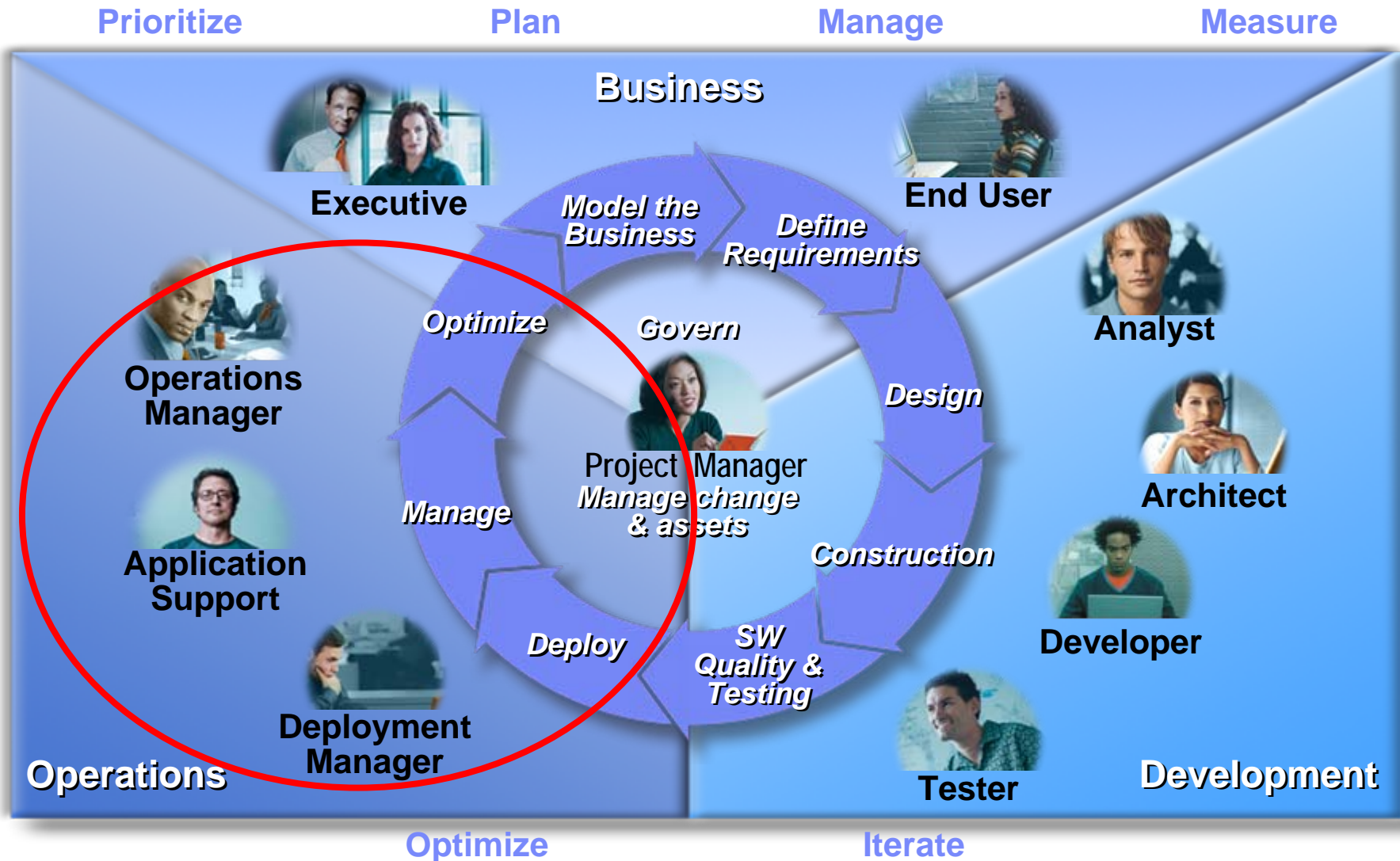
Record Details form view

Properties view

Console view

The Business Driven Development Lifecycle

IBM Rational Software Development Platform



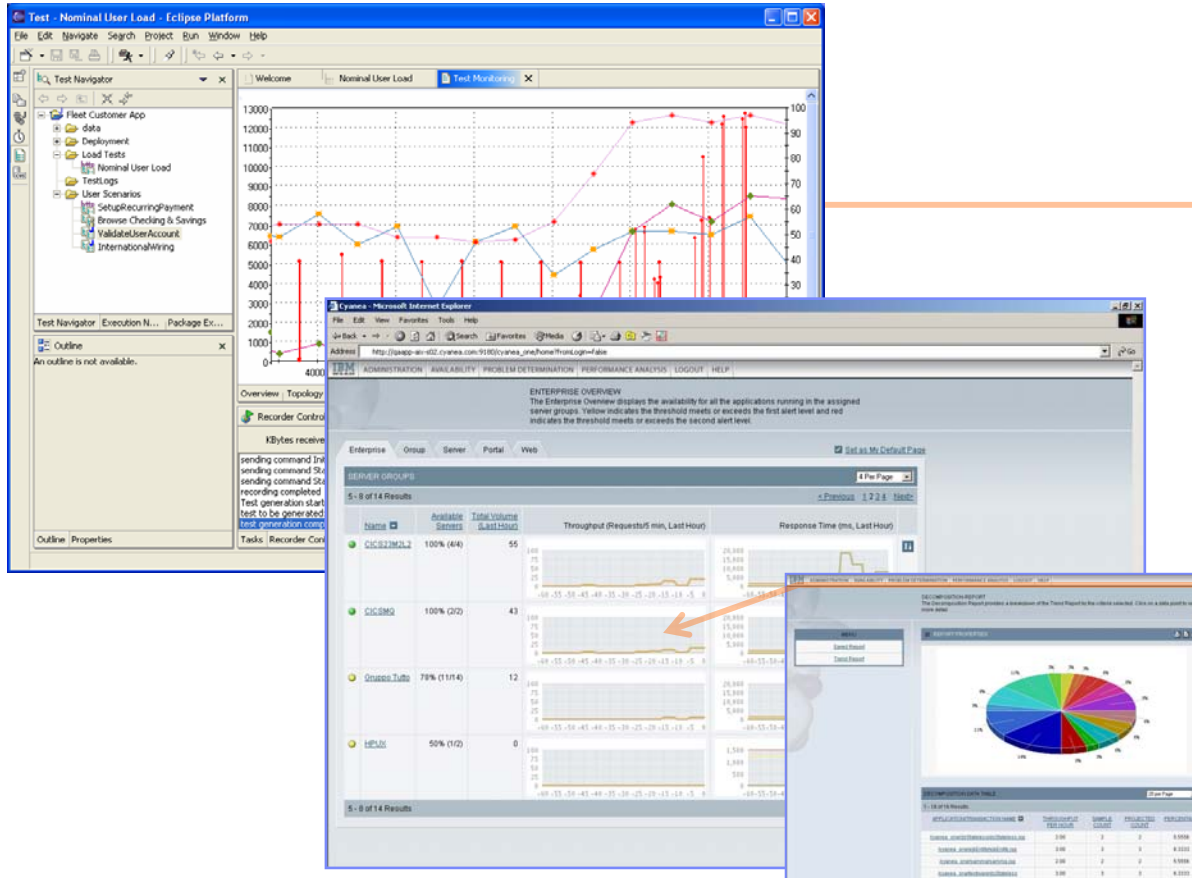


Business Values

-

Step six: Deploy

Plan capacity and ensure compliance with Service Level Agreements



Tester evaluates the scalability of the new application based on Service Level Agreements captured in business model



Deployment team builds capacity plans based on performance tests

*IBM WebSphere Studio Application Monitor
IBM Rational Performance Tester*

Step seven: Manage and Monitor

Monitor service levels with a centralized view into your network, systems, middleware, and application performance



Event Viewer: Group All - All

Time Received	Class	Hostname	Severity	Status	Message
October 11, 2004 4:23:33 PM...	TMTP-MS-Event	was60-332a	Minor	Open	The ViewAccountHistory transaction of the Home...
October 11, 2004 4:23:01 PM...	TMTP-STI-POLICY-VIOLATION	was60-331b	Warning	Open	Policy Name="Search_Books_by_Author"
October 11, 2004 4:22:00 PM...	WebSphereAS_high_Servlet_Resp...	was60-332a	Warning	Open	The servlet response time (17521 ms) of the ins...
October 11, 2004 4:22:00 PM...	WebSphereAS_high_CPU_Utilizati...	was60-332a	Warning	Open	The CPU utilization (91.450000) percent of the pr...
October 11, 2004 4:21:48 PM...	TEC_ITS_SUBNET_CONNECTIO...	sw519241-cs	Warning	Open	Subnet unreachable
October 11, 2004 4:20:59 PM...	TMW_LowAvailCausingManyProble...	was60-332a	Critical	Open	The amount of committed memory is approachin...
October 11, 2004 4:18:43 PM...	Domino_Database_Corruption	wma-dsyr	Warning	Open	One or more views of a database has corruption ...
October 11, 2004 4:17:10 PM...	TMW_ProcessHandleLeak	wma-dsyr	Warning	Open	Process arch.exe (PID 780) leaking handles.
October 11, 2004 4:17:02 PM...	TMW_ProcessHoggingCPU	was60-332a	Warning	Open	

IBM Tivoli Monitoring for Transaction Performance - Microsoft Internet Explorer

Address: http://140.9062/tnp/UT/isp/console/tivoliManager.jsp

Links: IBM Tivoli Monitoring for Transaction Performance, Java[tm] Pet Store Demo 1.3.1, Plants by WebSphere QoS, Plants by WebSphere

Tivoli. Monitoring for Transaction Performance

User Name: Administrator

My Work

- Configuration
 - Work with Discovery Policies
 - Work with Listening Policies
 - Work with Playback Policies
 - Work with Schedules
 - Work with Agent Groups
 - Work with Transaction Recordings
 - Work with Realms
- Reports
 - View Dig Board
 - View General Reports
 - View Component Events
- System Administration
- Downloads

Transaction: STI_FBW_thru_QoS

Bar chart showing performance metrics over time (09-26 15:00). Legend: No Violations (Green), Availability Violation (Red), Threshold Violation (Yellow).

Start Time: 2003 9 26 15:00
Stop Time: 2003 9 27 15:00
Apply (Alt+a)

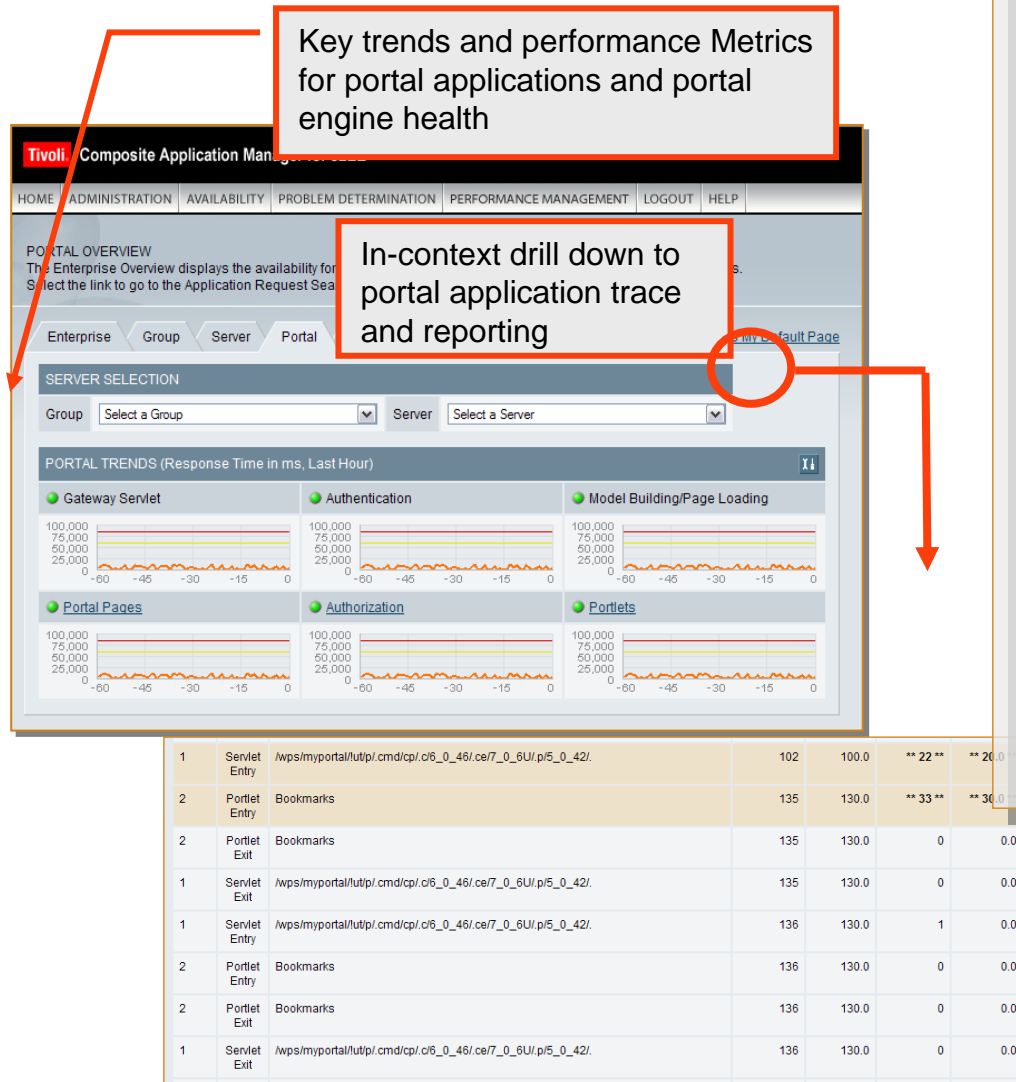


Operations Manager monitors application performance and is automatically notified of problems, enabling fast triage to the right stakeholders (application, DB, network, etc.)

IBM WSAM, Tivoli Enterprise Console, and IBM Tivoli Monitoring for Transaction Performance

Advanced WebSphere Portal Monitoring

WSAM 3.2



New ITCAM for J2EE Portal Monitoring Highlights

- Portal Overview page/tab
 - Trend views of recent performance of critical metrics
- Links to new trend PAR reports:
 - Gateway Servlet, Building Models, Page Loading, Authentication, Authorization
- Powerful Drill-down for deep portal diagnostics
 - Nested Request support for instance-level tracing on Pages and Portlets

Integrated Portal Transaction Monitoring

■ Performance Analysis

- ▶ Rich historical data
- ▶ Interactive graphical presentation
- ▶ Application demand characterization for accurate infrastructure sizing

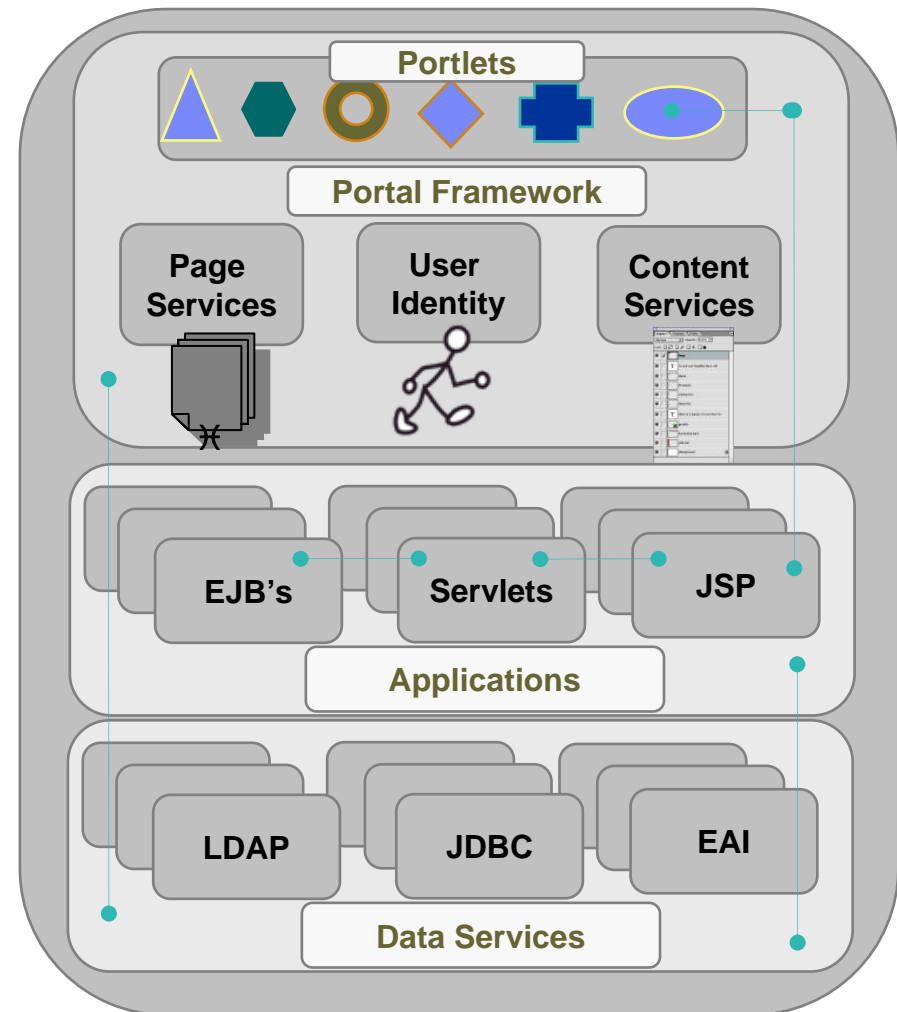
■ Problem Determination

- ▶ Quickly isolate problematic application components
- ▶ Drill-down from portlets to components to methods with few clicks

■ Transaction Tracing

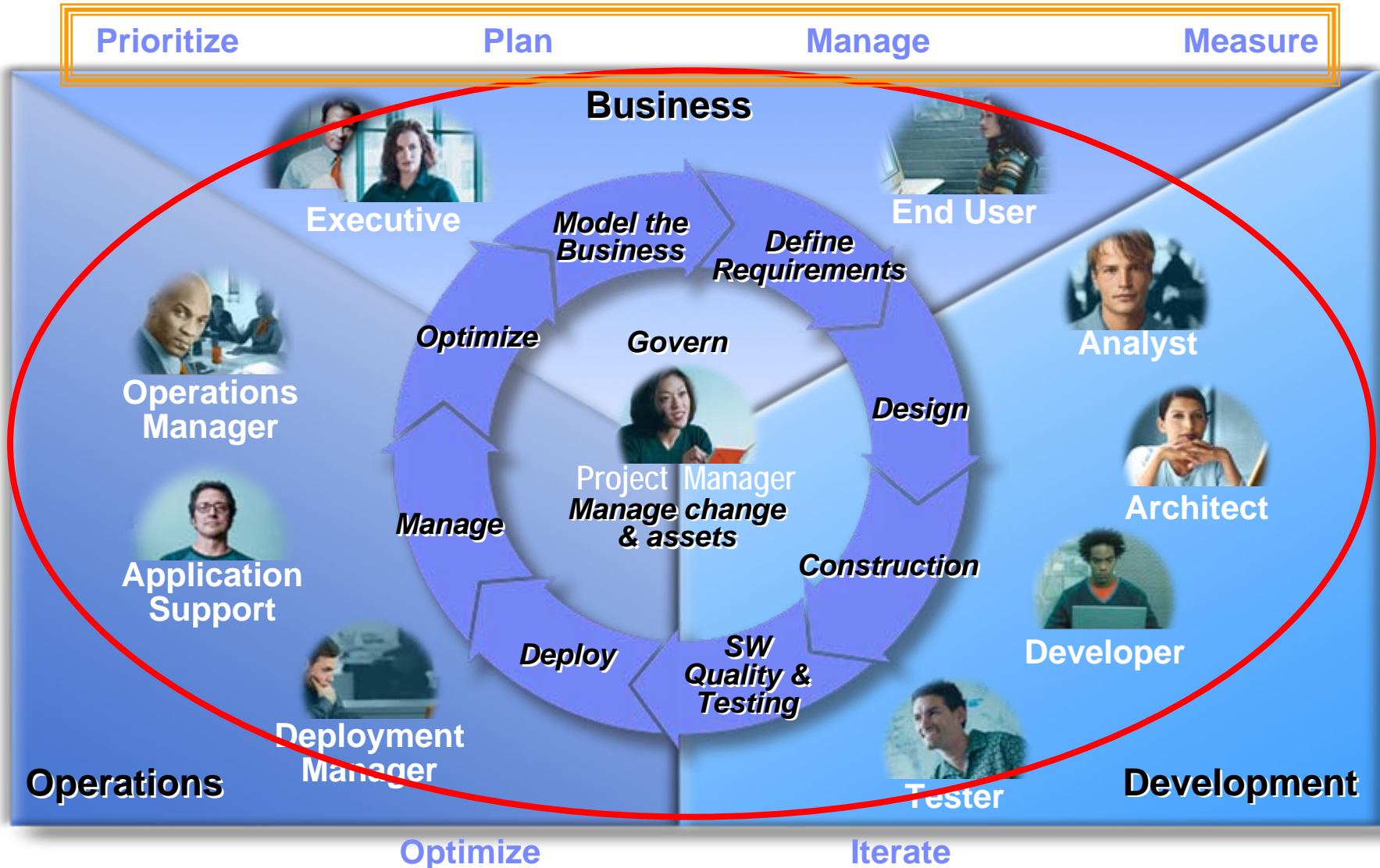
- ▶ Track and correlate portlet-initiated transactions throughout computing infrastructure

● ● << Managed Transaction Pathways



The Business Driven Development Lifecycle

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Prioritize, Plan, Manage and Measure

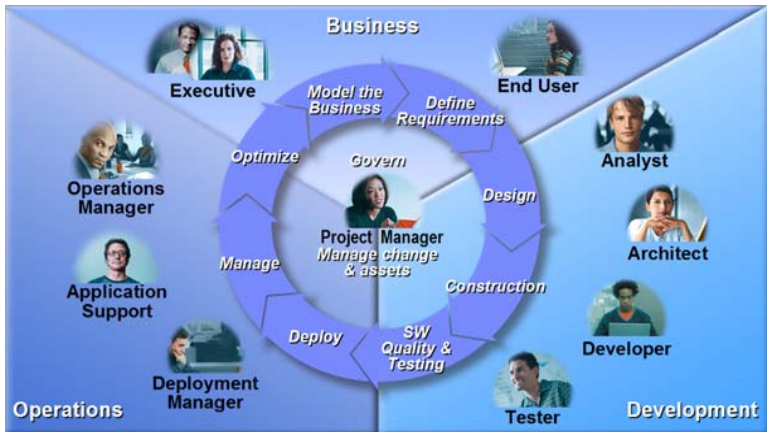
Align priorities, projects and people

- For executives
 - ▶ Visualize and balance portfolios
 - ▶ Make objective “save/kill” decisions
 - ▶ Move smoothly from initiatives to measurable programs and projects
- For project and program managers
 - ▶ Quickly ramp projects with reusable processes based on best practices
 - ▶ Balance workload and manage demand
 - ▶ Manage skills inventory and usage
 - ▶ Actively manage risks and issues
- For team members
 - ▶ Communicate, coordinate and collaborate globally

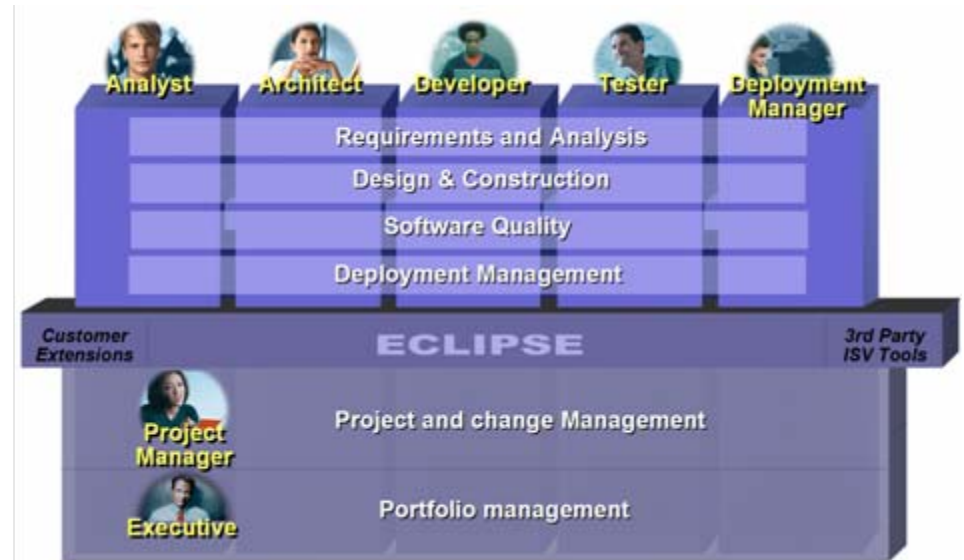


IBM Rational Portfolio Manager

SDP Summary - IBM Rational Software Development Platform



- V6 Lifecycle tools views are integrated into a single RAD IDE
- Industry challenges addressed

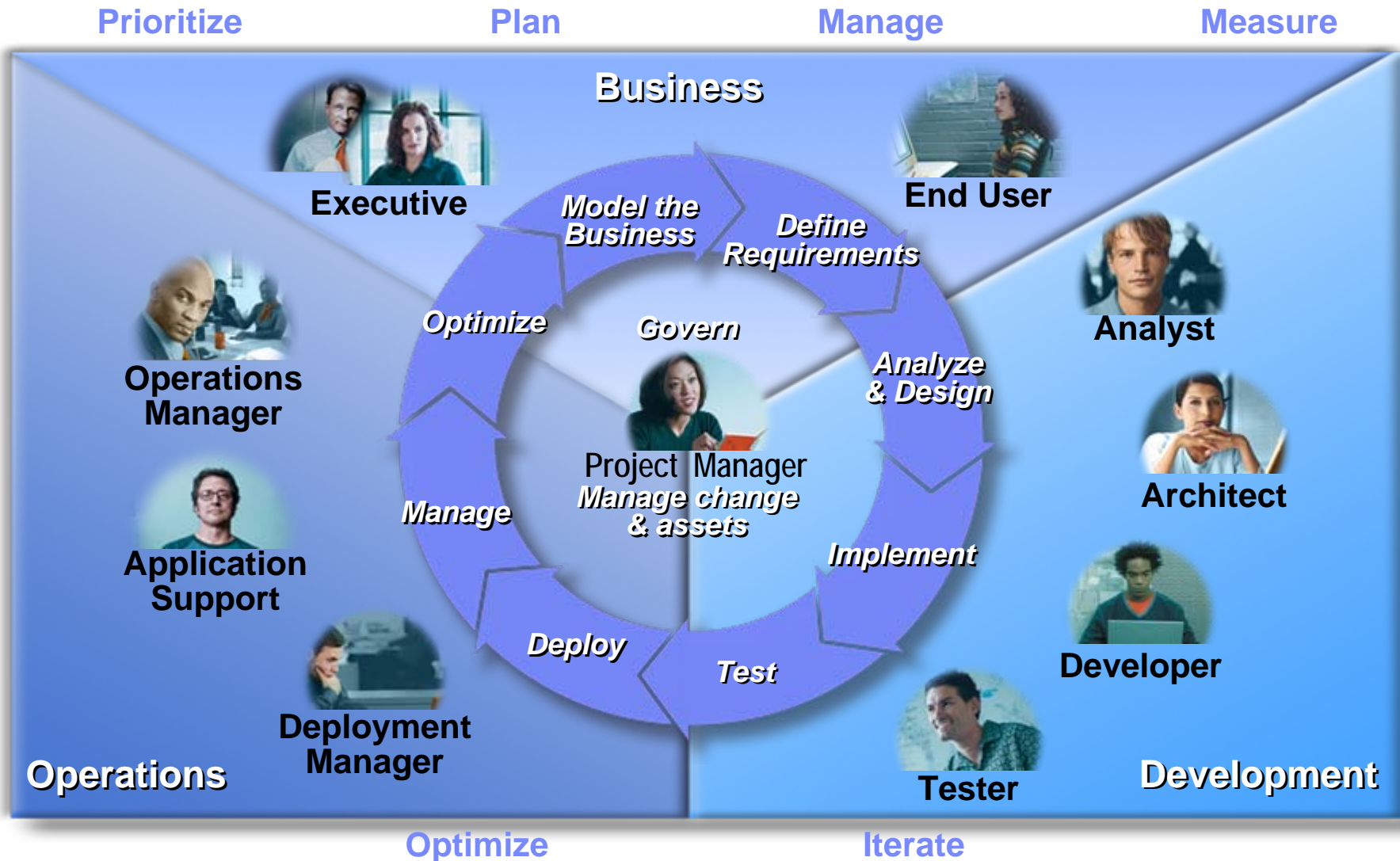


- Requirements: 70 – 80 % of project failures are tied to poor analysis of requirements
- Development: 65% of development projects fail to meet expectations
- SW Quality/Testing: Developers make up to 150 errors in every thousand lines of code
- SW Quality/Testing: Only 14% of new web applications perform as planned in production
- SW Quality/Testing: The average new web application is down nearly one day per week
- Change Mgmt: Over 70% of build errors are because of poor SW Config management.
- Portfolio Mgmt: Nearly 75% of problems are not identified by traditional project mgmt SW



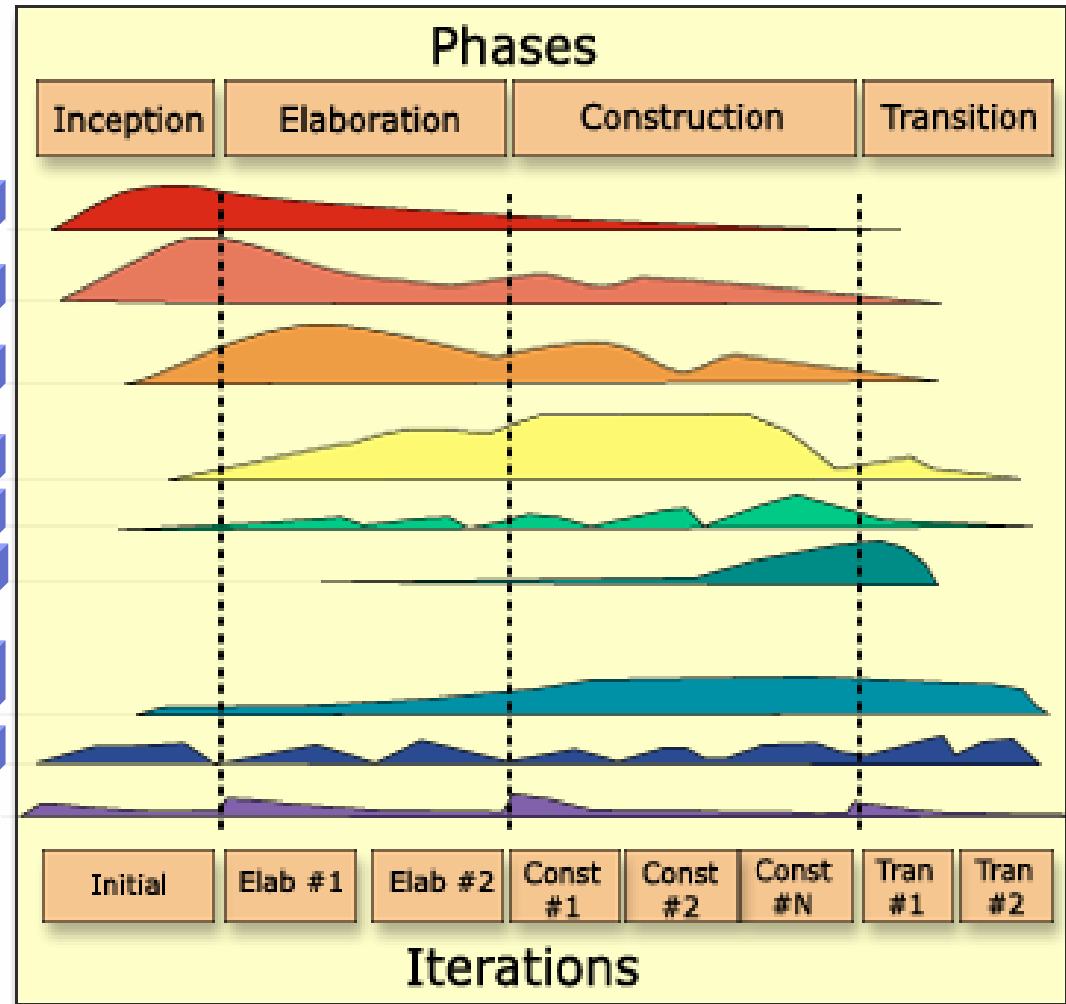
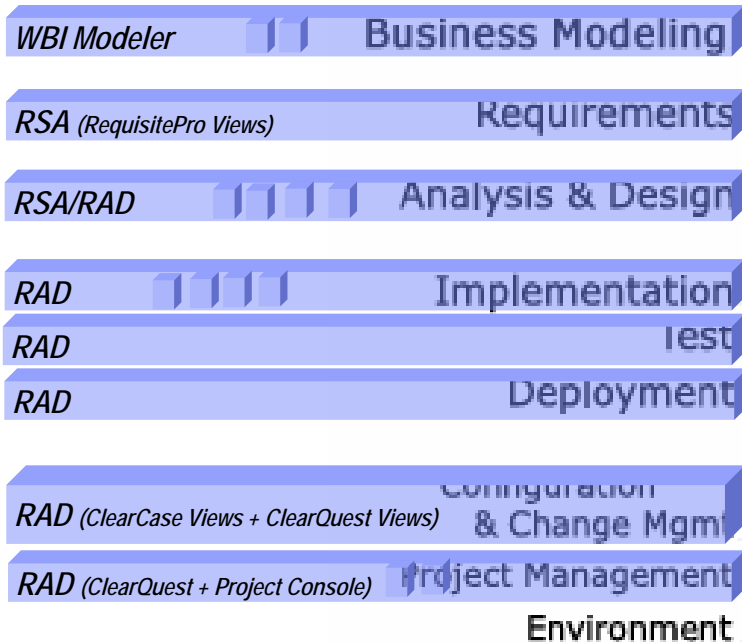
The Business Driven Development Lifecycle

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Lifecycle Tools – Across The Development Disciplines

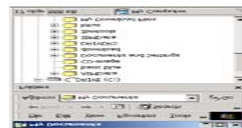
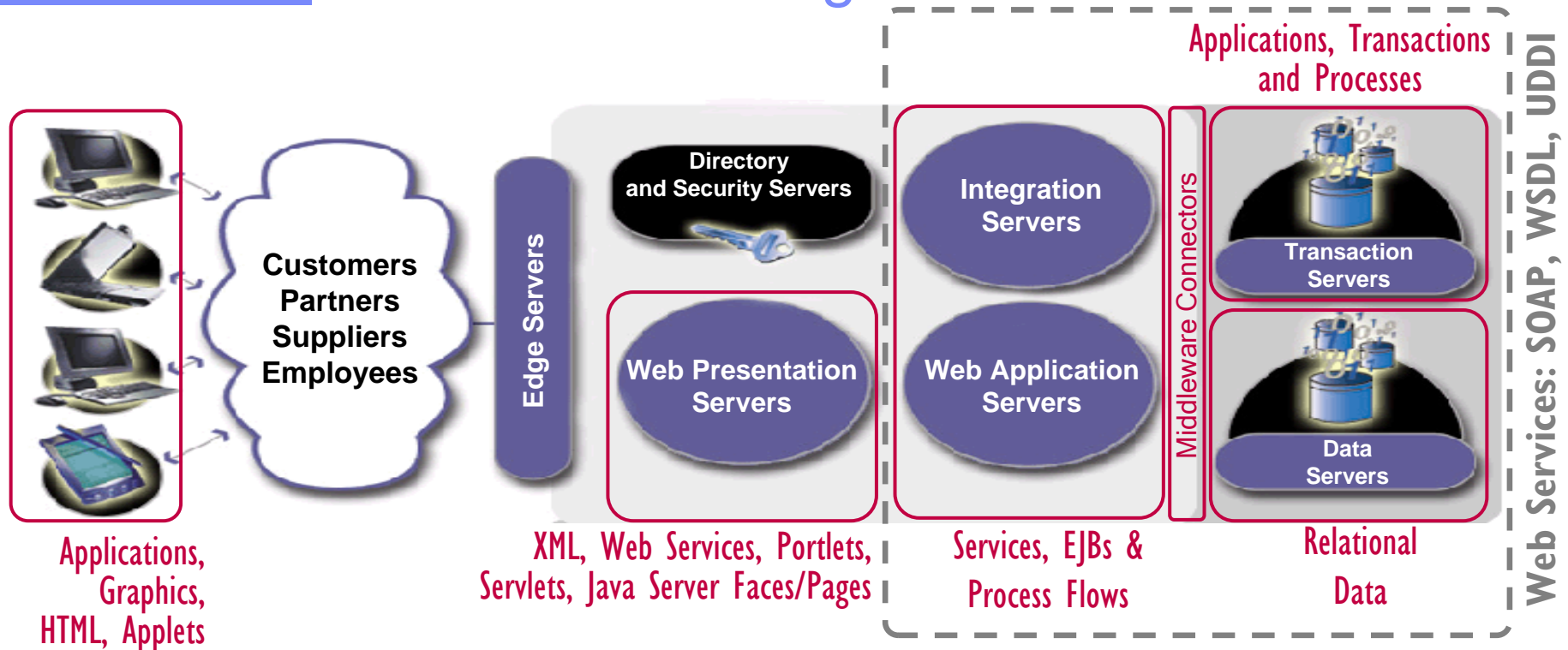
Disciplines



Simplified Packaging and Names

V4 & V5	V6
WSAD	RAD (Rational App Developer)
Rose XDE	RSM (Rational SW Modeler)
WSAD + XDE	RSA (Rational SW Architect)

Build Tools - End-2-End Design & Construction



Development Roles

Application Modeling



Web/Portal Development



Java/J2EE Development



XML Web Services Development



Database App Development



Business Process SOA Integration



Cobol, CICS/IMS, 4GL Development



RAD Top 10 of IBM AD Tools (Adaptable, Automated, Accelerated)

Adaptable - Eclipse-based Workbench

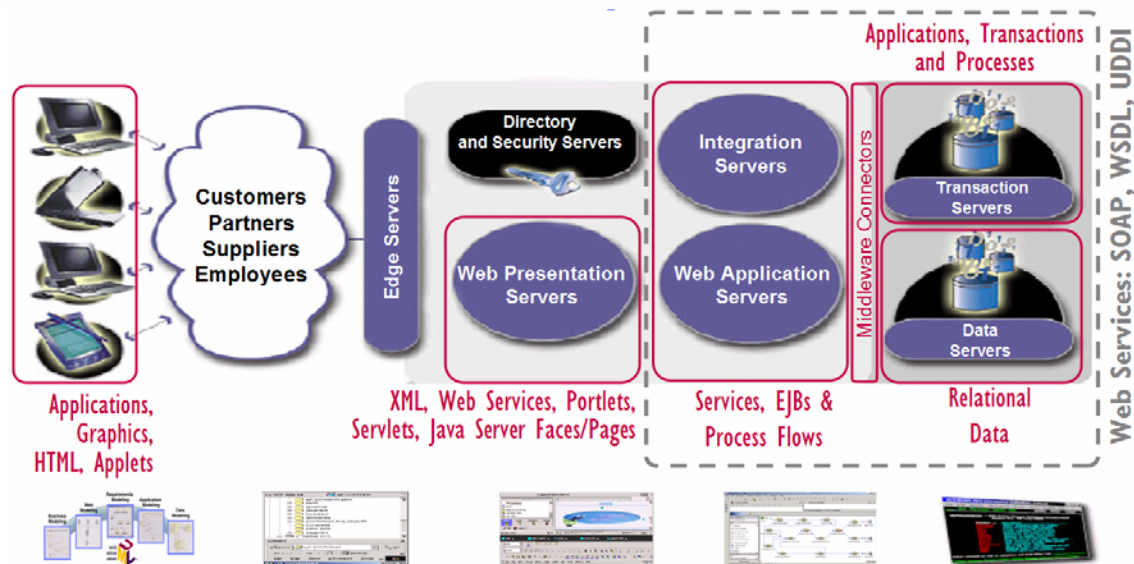
#1 Customizable **Perspectives** and **Views** support **roles-based** tools

Automated - IDE Infrastructure (Code, Build, Test, Debug, Deploy)

#2 **Dynamic build engine** incrementally updates and hot-deploys (on-the-fly, while you type)

#3 **Testing and Debugging** for Java, Web Services, XML, database and EJB

Accelerated - End-2-End Builders



V6 – Every Top 10 Category Is Enhanced

Adaptable - Eclipse-based Workbench

#1 Customizable **Perspectives** and **Views** support **roles-based** tools

Automated - IDE Infrastructure (Code, Build, Test, Debug, Deploy)

#2 Dynamic build engine incrementally updates and hot-deploys (on-the-fly, while you type)

#3 Testing and Debugging for Java, Web Services, XML, database and EJB

Accelerated - End-2-End Builders

#4 Java language coding tools □□□□

#5 Web App Builders: Pages, Sites, Portals, Portlets, Struts, JavaServer Faces □□□□□

#6 Web Services and XML Builders □□□

#7 Database Builders □

#8 J2EE and EJB Builders □

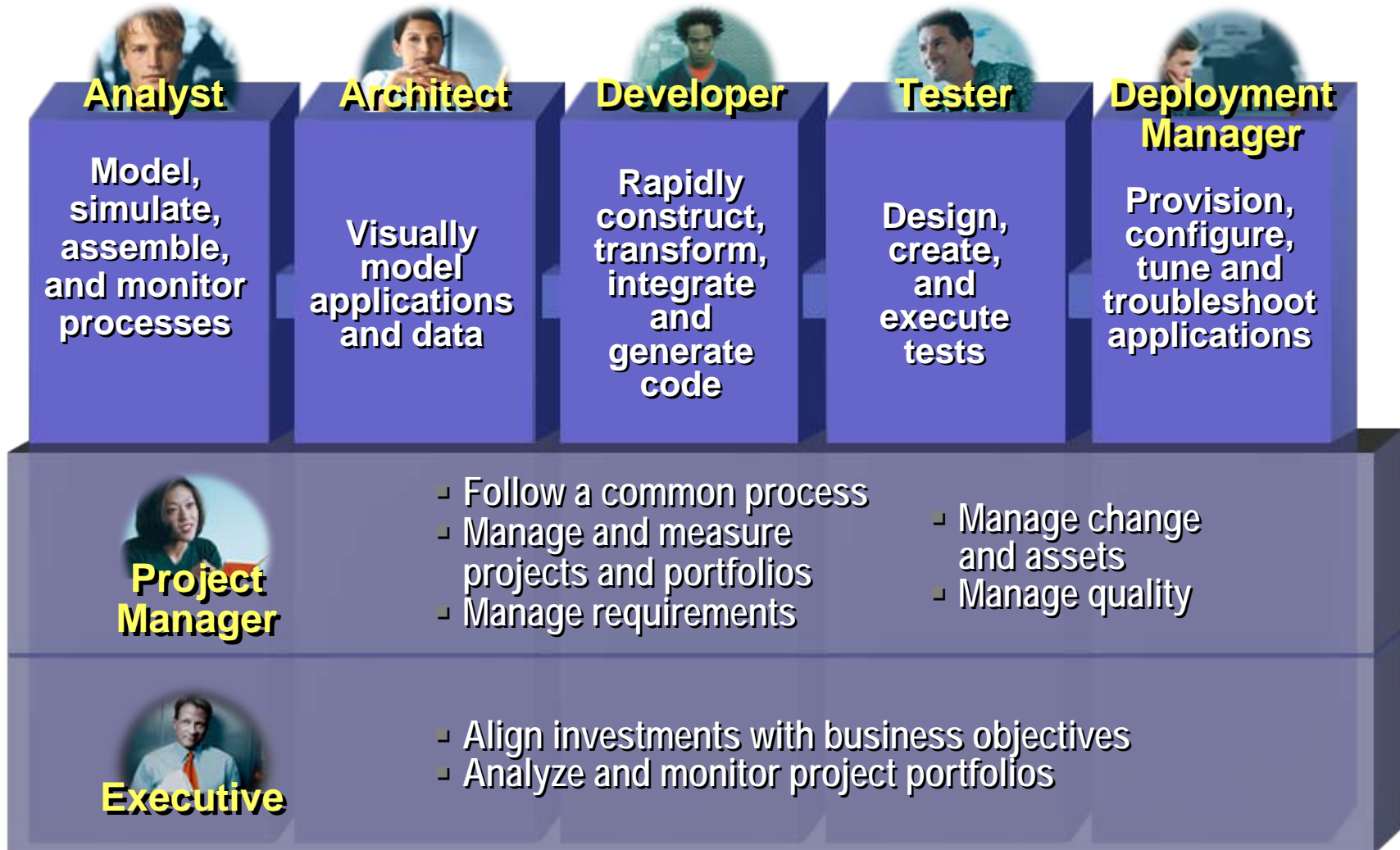
#9 SOA workflow builders (Service Oriented Architecture) □□

#10 Legacy/Enterprise development, integration and Web Services tools □□□



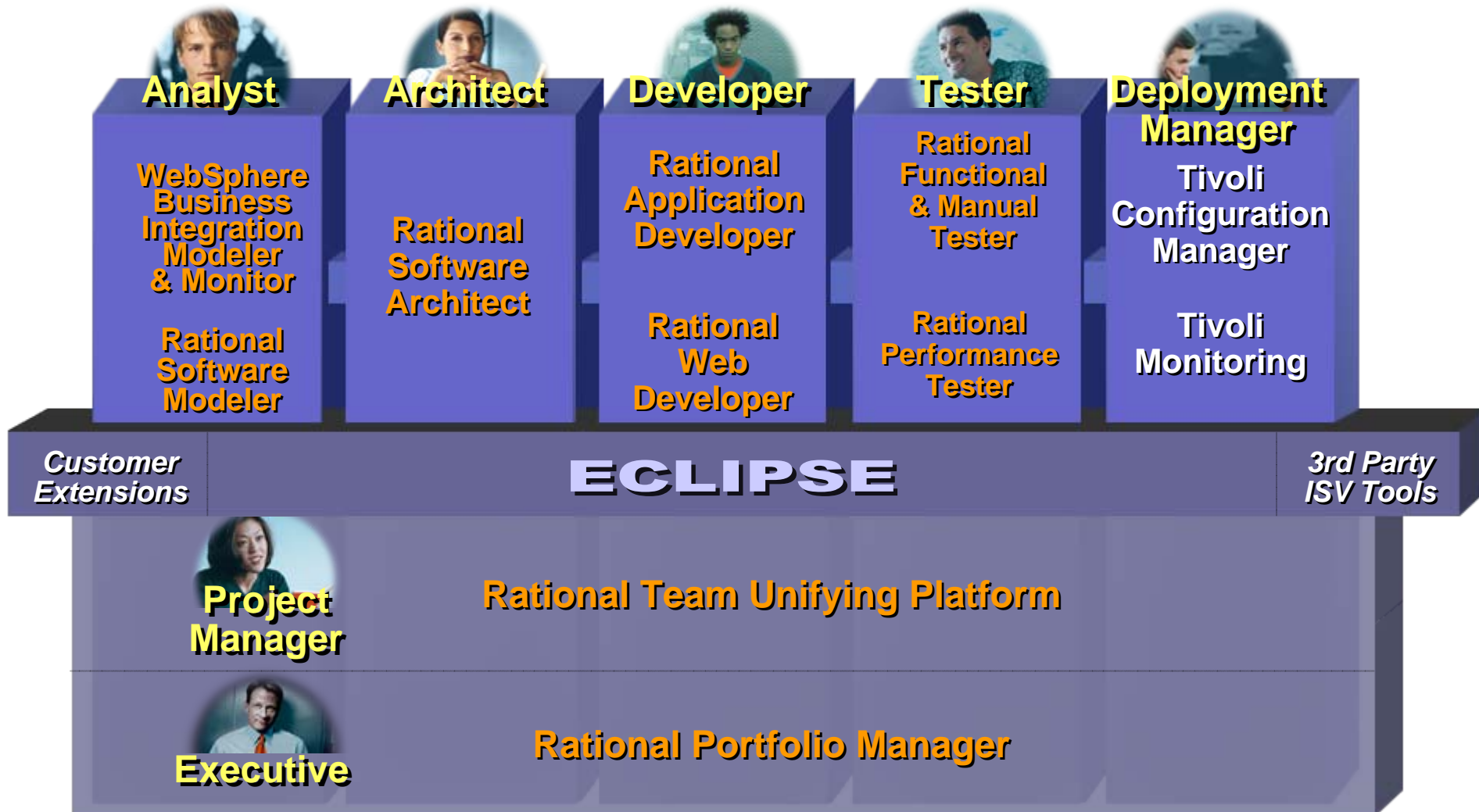
IBM Software Development Platform

Full Lifecycle Development



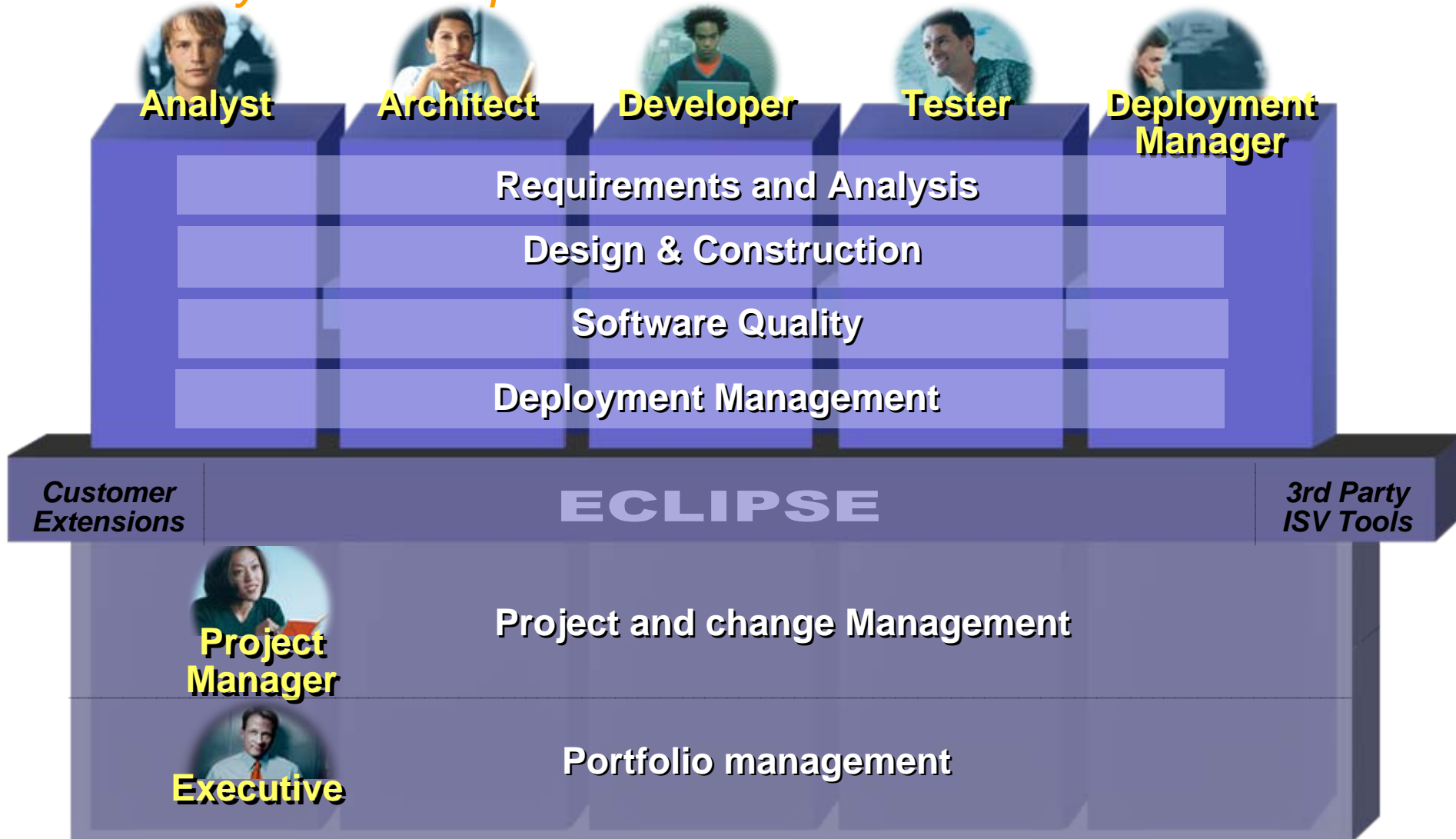
The IBM Software Development Platform

What's New and Enhanced

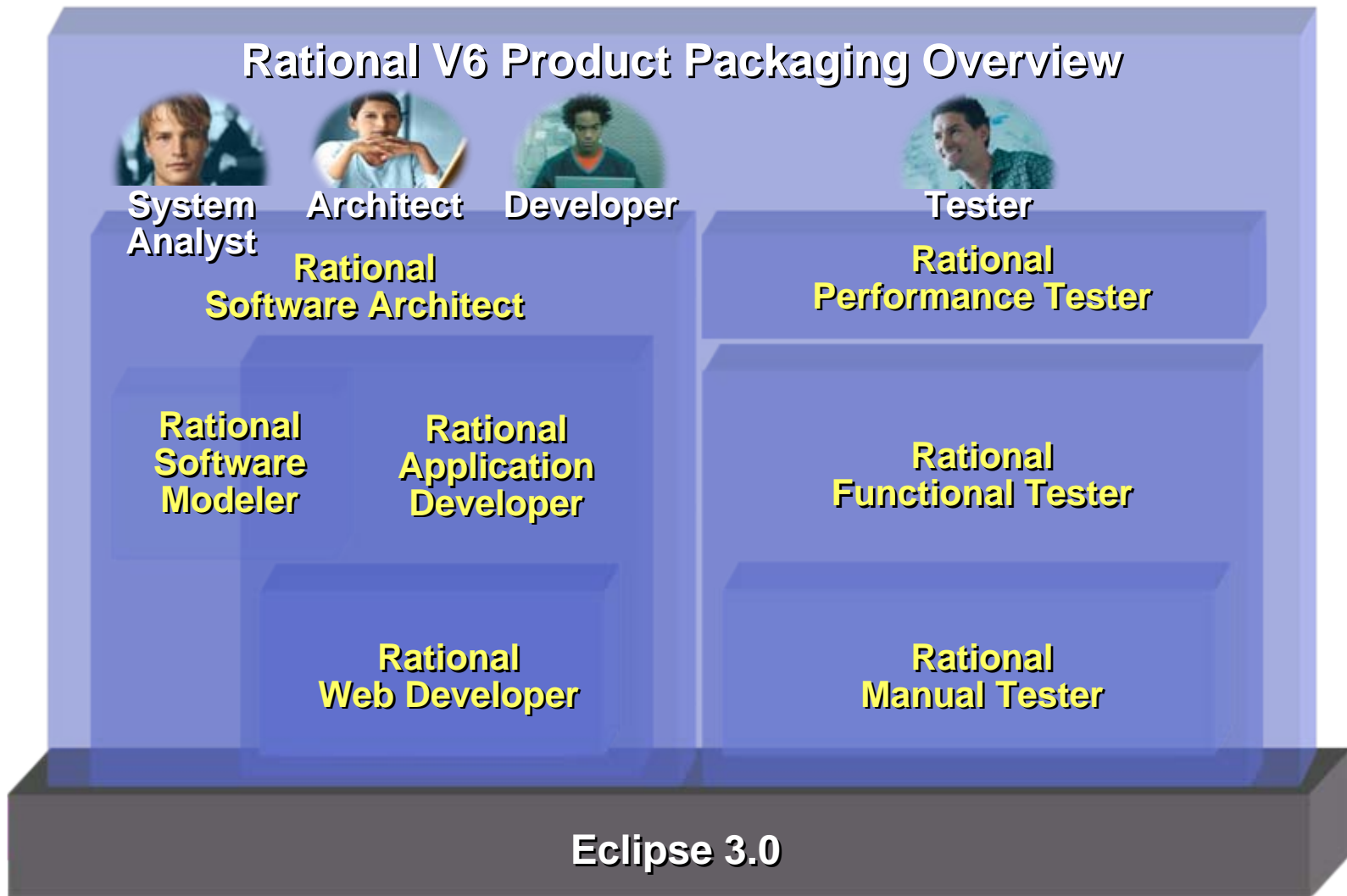


IBM Software Development Platform

Full Lifecycle Development



V6 Packaging Overview – Design, Construction and Software Quality Testing



V6 Design and construction tools

- UML 2.0
- Pattern/Transform Authoring
- Reusable Asset Browser

- UML Language Transforms
- Structural Review & Control
- C/C++ Development Tools

**IBM Rational
Software
Modeler**

**IBM Rational
Application Developer**

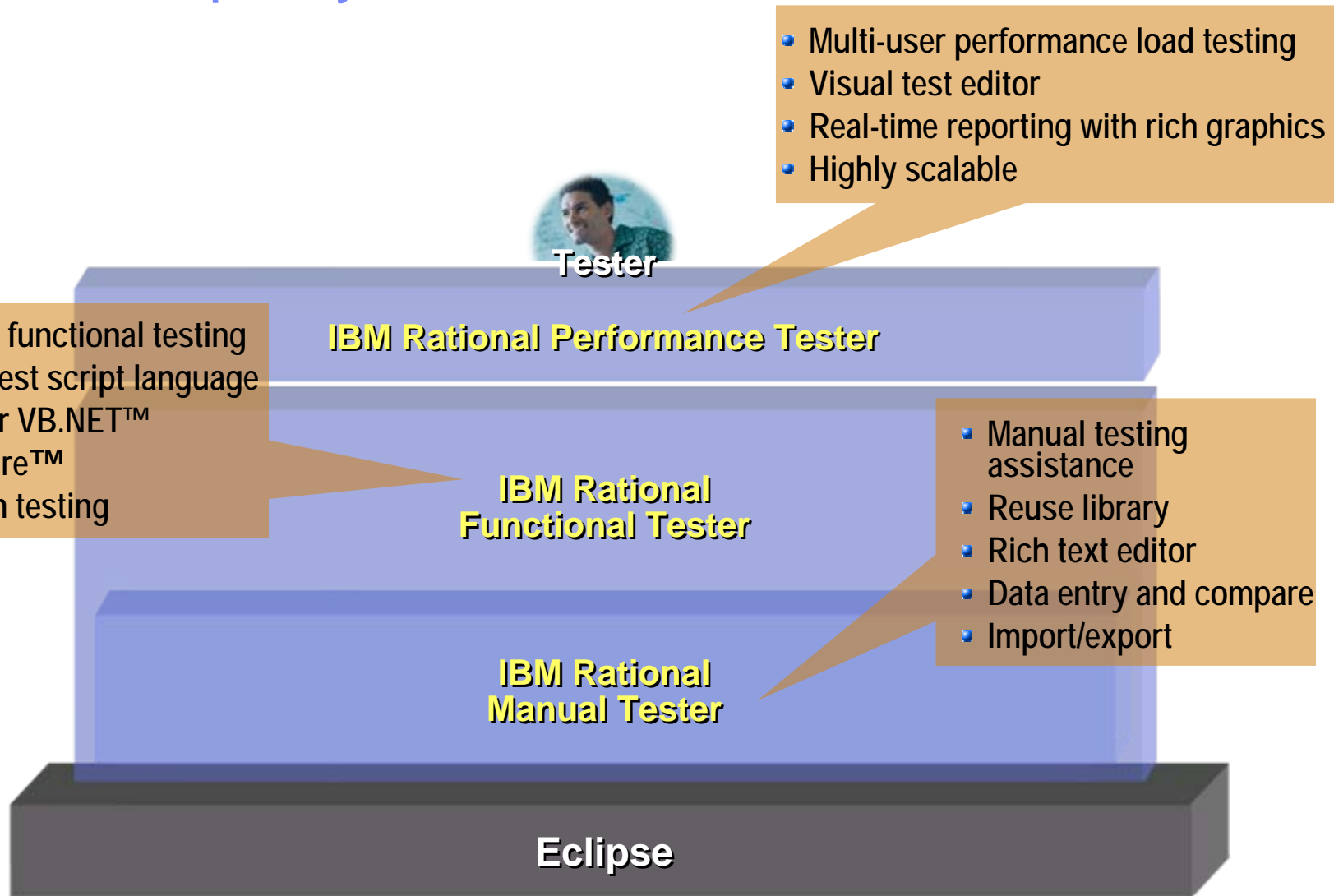
**IBM Rational
Web Developer**

Eclipse

- Web Development
- Web Services Development
- Rich Client Development
- XML & Database Tools
- Java Generation Tools
- Unit Test

- J2EE/EJB & Portal Development
- Component Testing
- Code Review & Runtime Analysis
- UML Visual Editors
- Configuration Management

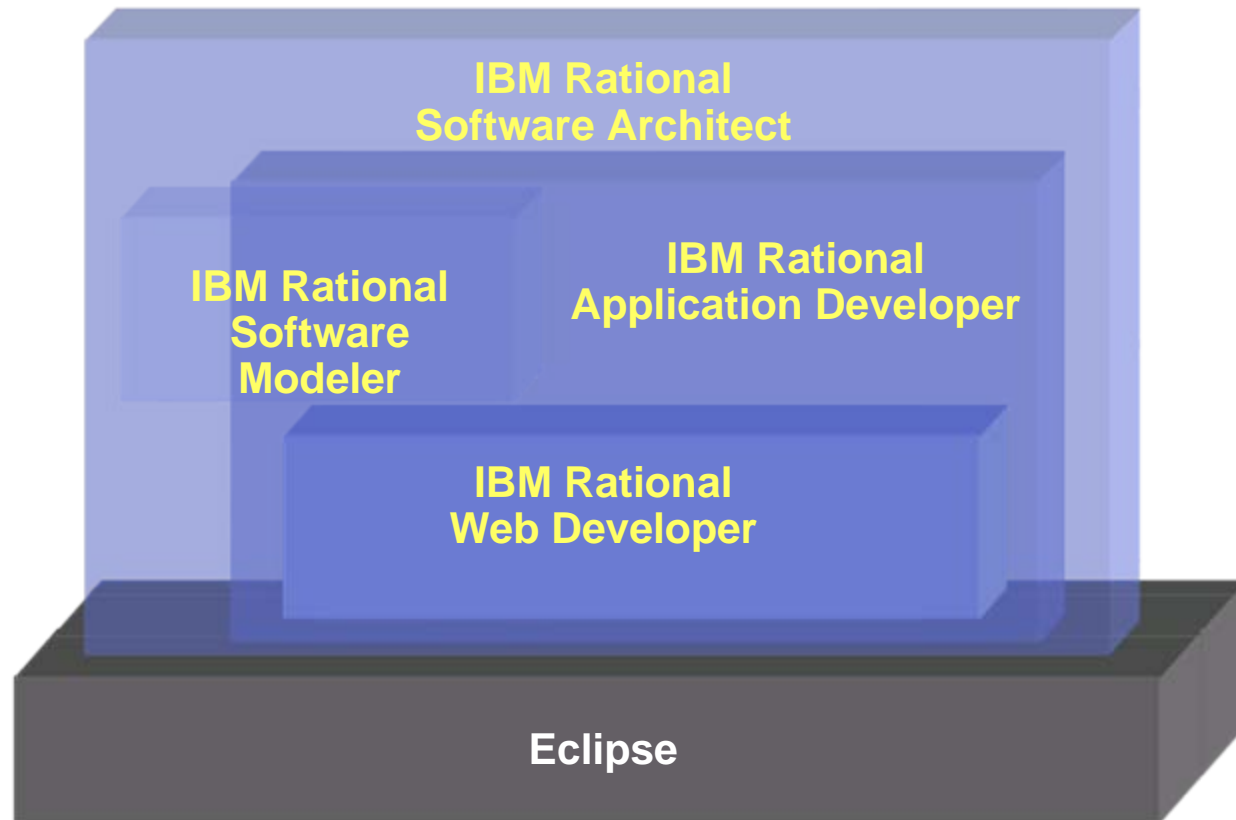
V6 Software quality tools





➔ V6 Product Features Stack Charts ➔

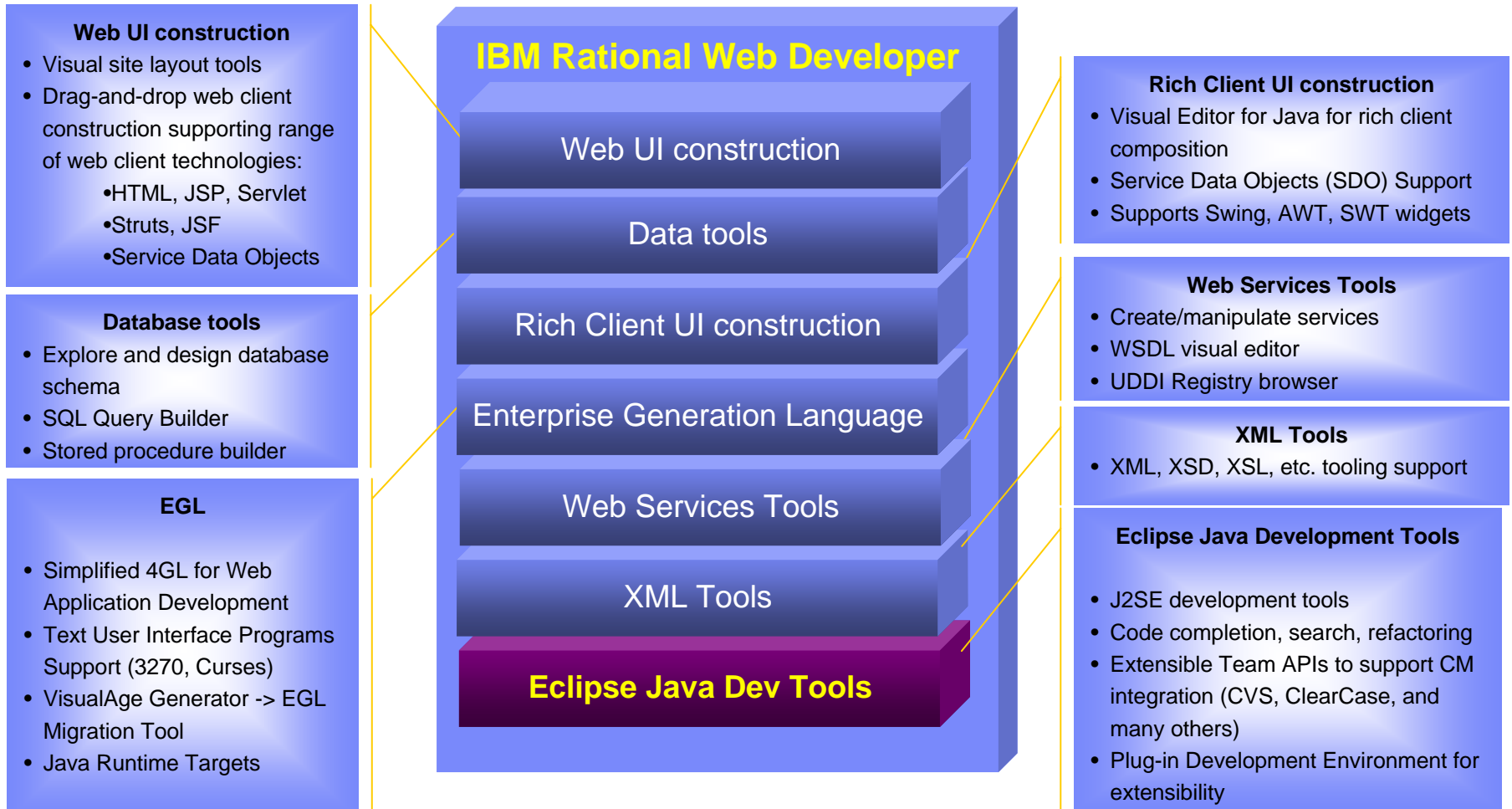
Design and construction tools



IBM Rational Web Developer

Follow on to WebSphere Studio Site Developer

New Rapid Application Development capabilities focused on ease of use



IBM Rational Application Developer

Follow on to WebSphere Studio Application Developer

J2EE/EJB Tooling

- J2EE construction tools
- Supports WebSphere and WebLogic
- Supports J2EE 1.3 and 1.4
- Rapid Deployment for WAS v6
- Integrated WAS test environments
- O/R mapping

Code Analysis Tools

- Both static source code analysis and dynamic runtime analysis
- Source code analysis for rule violation detection: Globalization, J2EE/J2SE Best Practices, Private API Usage, Performance
- Sequence diagram runtime trace with performance, thread and code coverage annotation
- Advanced memory leak detection
- Remote data collection across multiple servers
- User-defined run-time probes
- Interactive reports and metrics

IBM Rational Application Developer

Component/Unit Test

J2EE/EJB Tooling

Portal/Portlet Design Tools

Code Analysis Tools

UML Visual Editors

Rational Web Developer

RUP Configuration for J2EE

ClearCase LT

Component/Unit Test

- JUnit-based testing of Java components, EJBs and Web Services
- Test prioritization recommendation based on code analysis
- Automated test case generation through usage of test patterns
- Datapool editor for data-driven testing
- Optimized unit testing through a set of metrics in the test creation wizard
- Test creation wizard offers a set of test patterns to automatically generate test

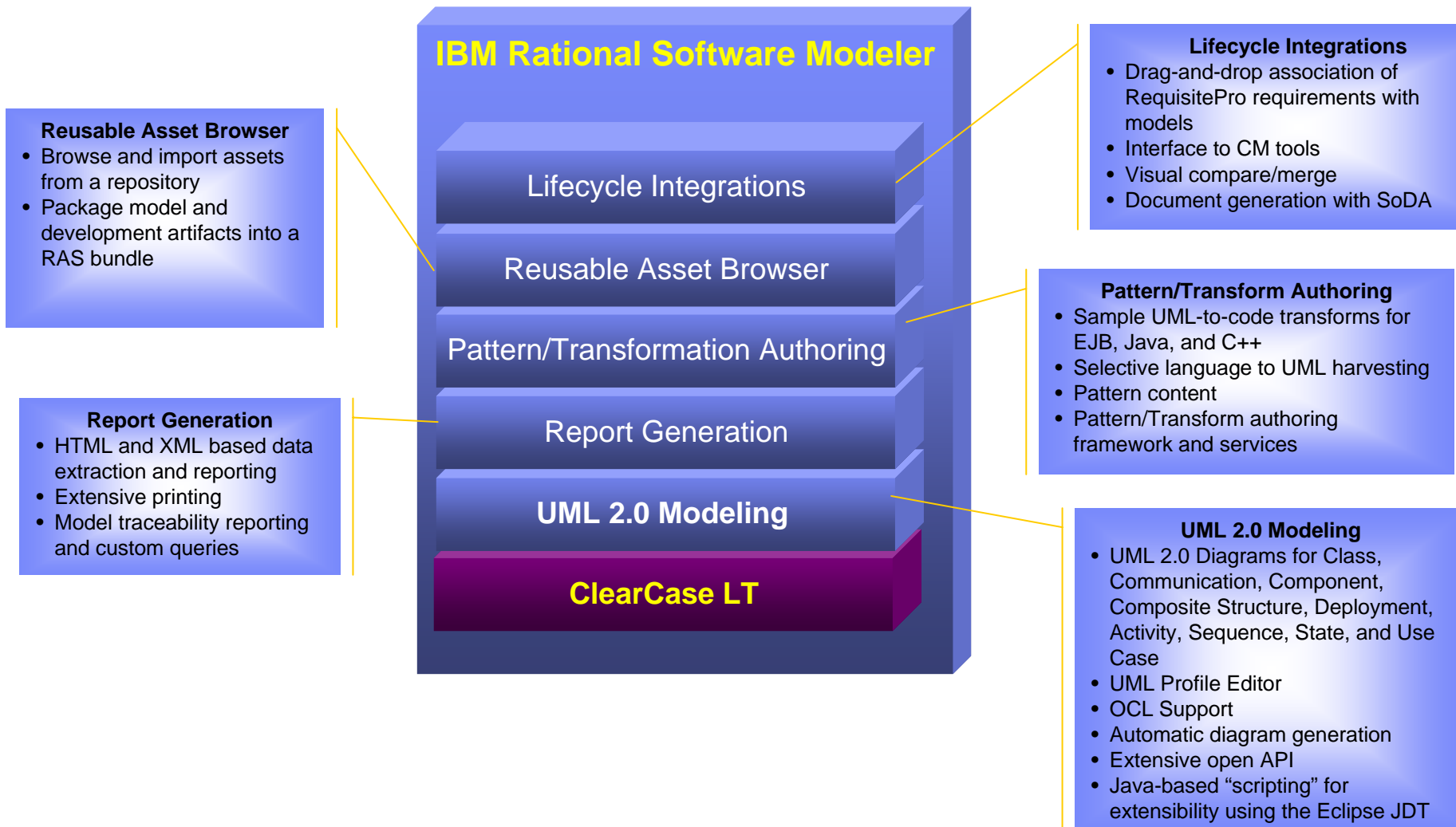
Portal/Portlet Design Tools

- Visual Portal site and page layout tools
- Visual Portlet layout and preview
- Integrated Portal test environment

UML Visual Editors

- Class diagrams for Java/EJB structure
- Sequence diagrams for method body visualization
- IDEF1X/IE diagrams for Database and XML schema
- Dynamic topic diagrams
- Javadoc integration
- Visual refactoring

IBM Rational Software Modeler



IBM Rational Software Architect

Application Analyzer

- Automatic anti-pattern and pattern detection
- Architectural discovery, analysis, metrics, and stability reporting
- Implementation level architectural rules

Modeler

- UML 2.0 Diagrams for Class, Communication, Component, Composite Structure, Deployment, Activity, Sequence, State, and Use Case
- OCL Support
- Automatic diagram generation
- Pattern content
- Pattern/Transform authoring framework and services
- Extensive open API
- Java-based "scripting" for extensibility
- HTML and XML based data extraction and reporting
- Extensive printing
- RAS tools

IBM Rational Software Architect

Java Structural Analysis

UML Language Transforms

Software Modeler

C/C++ Development Tools

Application Developer

RUP Configuration for SW Architects

ClearCase LT

Transformations

- Sample UML-to-code transforms for EJB, Java, and C++
- Selective language to UML harvesting

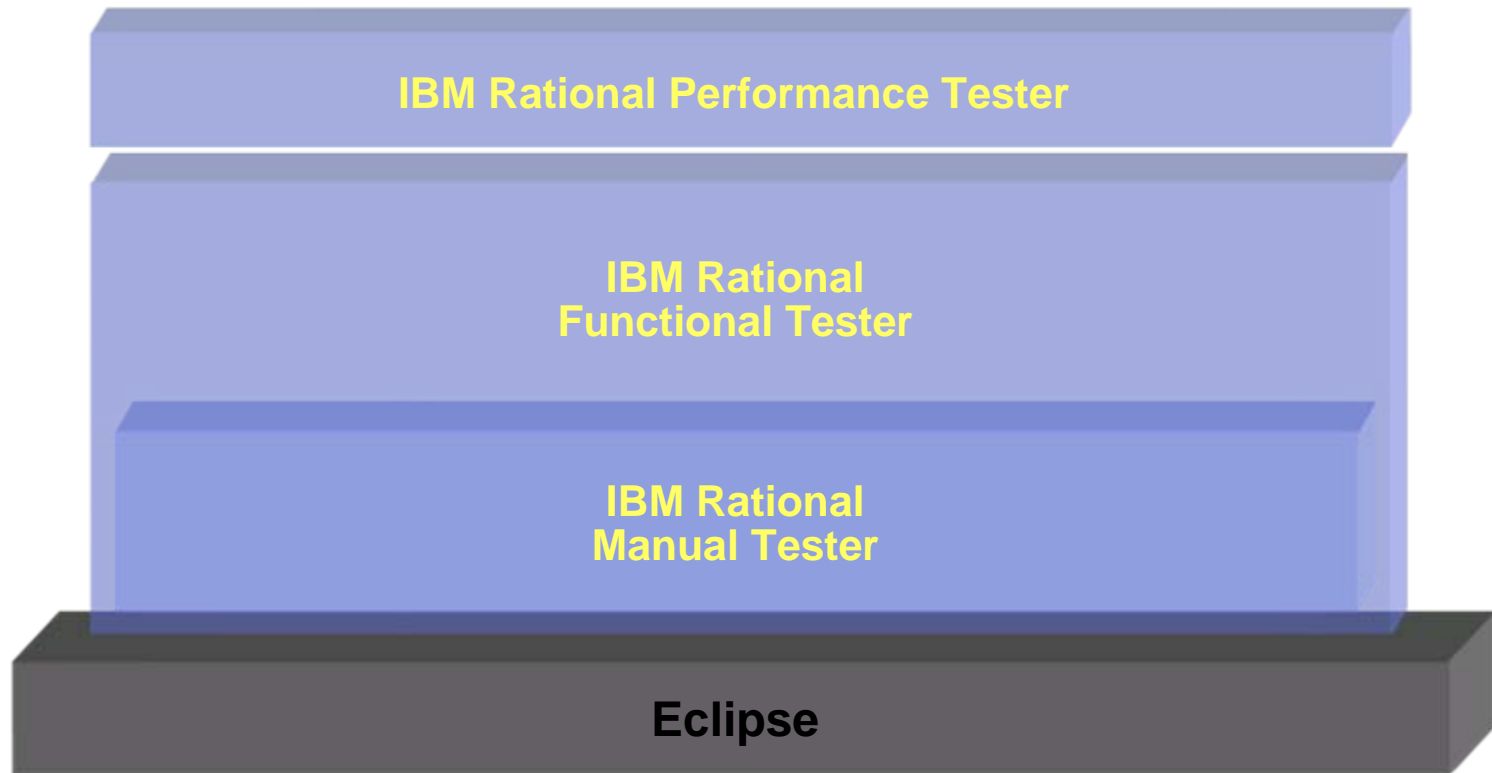
C/C++ Support

- C/C++ editors and build management
- Compiler and debugger integration
- UML code editors

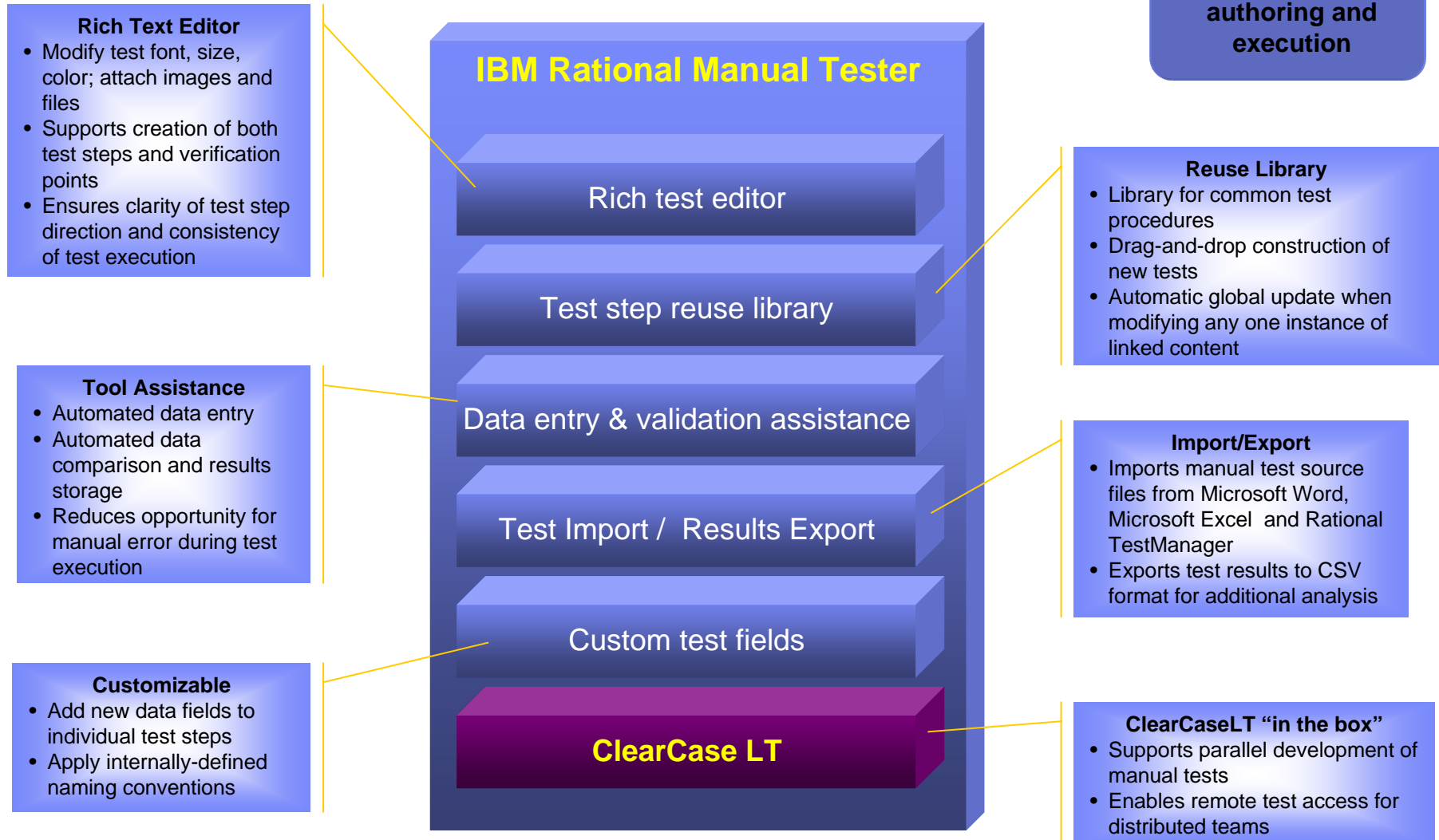
WSAD v6

- JSF, SDO, Struts
- Java GUI editor
- Web diagram editor
- Site designer
- Web Services development tools
- Database editing tools
- EGL
- EJB development tools
- UML code editors: EJB, Java, Data
- Static Analysis
- Runtime Analysis
- Component test automation
- Portal/Portlet development tools

Software quality tools



IBM Rational Manual Tester



IBM Rational Functional Tester

**Automated
functional
regression testing**

GUI Technologies

- Automates regression testing of Java, .NET, Web and terminal emulator-based applications

Data-driven Testing

- Simplified data-driven testing enabled by wizards and Excel-like data tables

Eclipse availability

- When using Java scripting, runs inside Eclipse/RSA/RAD shell
- Full Eclipse JDT features are accessible
- Accessible to developers from within their IDE

ClearCaseLT "in the box"

- Supports parallel development of manual tests
- Enables remote test access for distributed teams

IBM Rational Functional Tester

Tests Java, .NET, Web and terminal emulator-based apps

Java and VB.NET-based test scripts

Wizard and table-assisted data-driven tests

Linux-based test authoring

Eclipse Java Dev Tools

Manual Tester

ClearCase LT

Test Script Language

- User has choice of two test script languages – Java and VB.NET
- Use of Java implies editing and debugging in Eclipse/RAD/RSA-based editor
- Use of VB.NET implies usage of Microsoft VS.NET-based editor/debugger
- Identical capabilities in both editors

Improved Linux support

- Users can author and modify test scripts on Linux (no script recorder)
- Scripts can also be executed on Linux

Manual Tester in the box

- Customers receive one Manual Tester license per Functional Tester license
- Improve return on manual testing efforts while adopting automated test methods

IBM Rational Performance Tester

Load testing technology

- New load test recorder and execution engine
- Supports HTTP/S; additional protocol support

High scalability

- High scalability, low footprint due to hyper-threaded architecture
- Significant improvement over Robot technology

Platform Support

- Multiple platform support for load generation

ClearCaseLT “in the box”

- Supports parallel development of manual tests
- Enables remote test access for distributed teams

IBM Rational Performance Tester

HTTP/S load testing

Visual test construction and editing

High scalability hyper-threaded execution architecture

Graphical test scheduler and user profiler

Windows and Linux load generation support

Eclipse Java Dev Tools

ClearCase LT

Load and performance testing

Visual Test Editor

- Test viewer requires no coding for test modification and execution
- Automated identification and variation of dynamic data
- Insertion of Java code is supported for advanced customization needs

Test scheduler

- Graphical user profiling and transaction modeling
- Eases modeling of user populations

Eclipse-based

- Runs inside Eclipse/RSA/RAD shell
- Accessible to developers from within their IDE



➔ V6 Highlights ➔

V6 Highlights - Areas of Innovation - Enhancements and New Capabilities

■ Lifecycle Integrations (Enhanced Rational/WebSphere Eclipse based Integrations)

- Requirements Explorer View
- Model Explorer View
- ClearCase Views for managing changing artifacts
- ClearQuest Views for managing collaborative activities
- Testing Tools Views

■ RAD/RSA Design & Construction Tooling Enhancements

- JSF, SDO, Web Services, etc.
- J2EE 1.4/1.3/1.2 and WAS V6.x/V5.x
- Portal/Portlet Integration
- Enhanced Unit/Component Testing
- Code Review and Runtime Analysis for Profiling
- Built-in Coder-friendly UML Visualizations for Class/Sequence diagrams
- Crystal Reports
- And much more...

■ New UML2 Engine

- New code base
- End-2-End UML2 modeling
- Easier GUI development
- Transformations between models and generating Java/C/C++ code

■ Software Quality Testing Tools Enhancements (Manual, Functional and Performance Testing)



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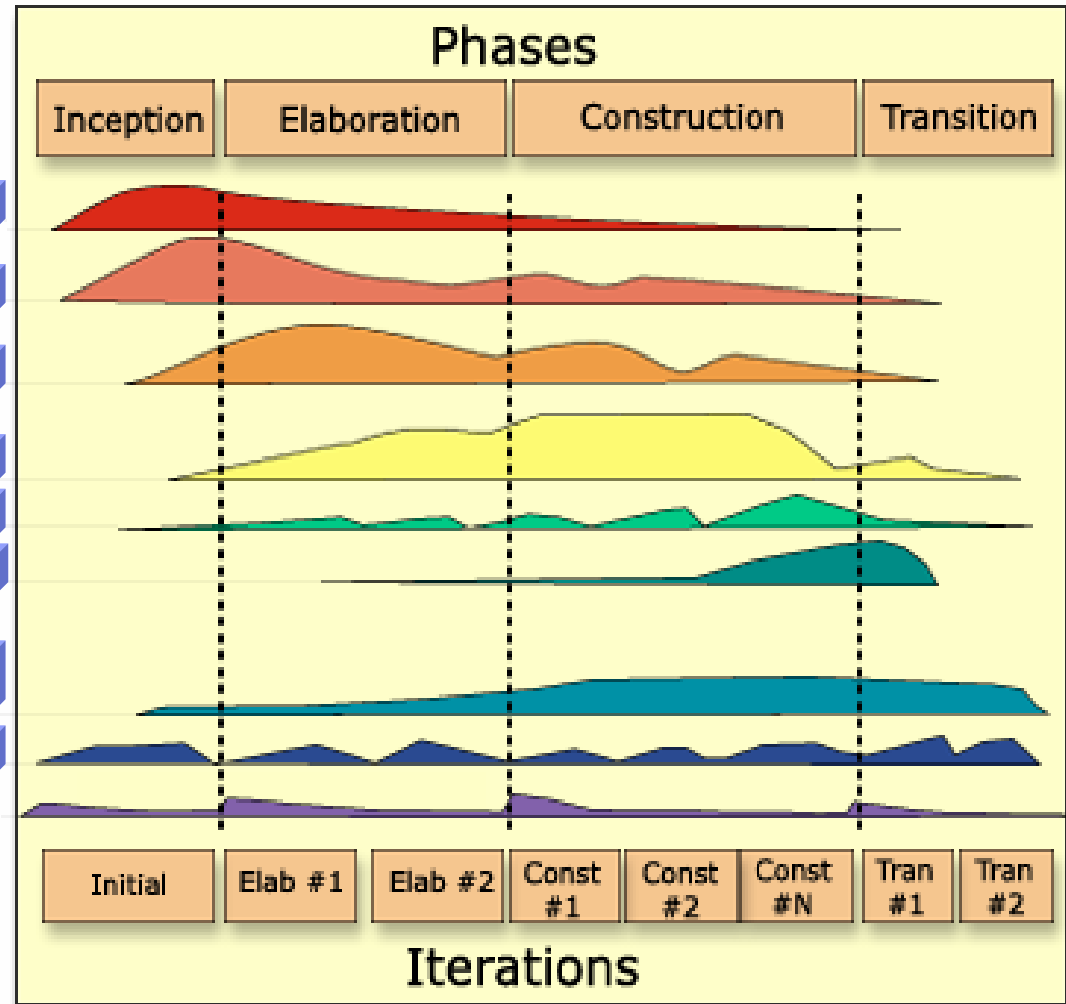
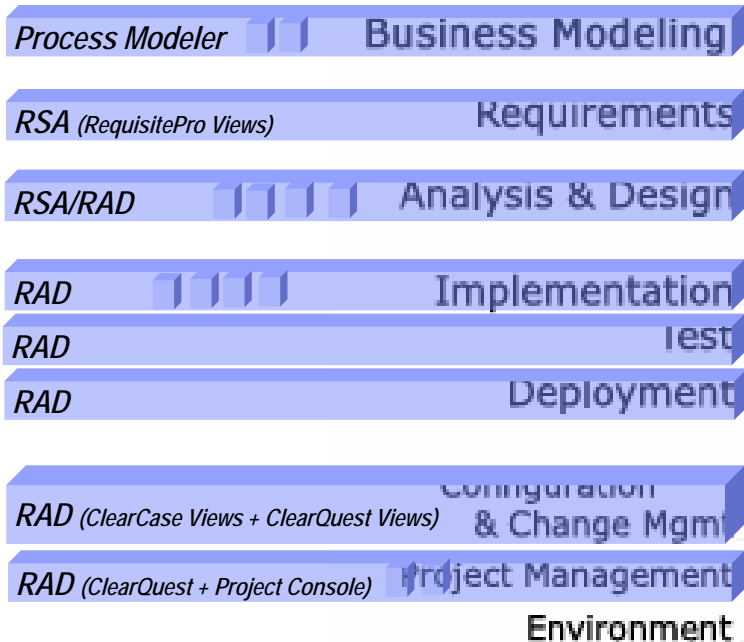
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Lifecycle Tools – Across The Development Disciplines

Disciplines



Simplified Packaging and Names

V4 & V5	V6
WSAD	RAD (Rational App Developer)
Rose XDE	RSM (Rational SW Modeler)
WSAD + XDE	RSA (Rational SW Architect)

Existing Tools In WSAD V5.x and RAD V6

Disciplines

Business Modeling

Requirements

UML 2-way Modeling

Analysis & Design

J2EE, Web Services, JSF, SDO...

Implementation

Unit Testing, etc.

Test

Automated J2EE Packaging

Deployment

Configuration
& Change Mgmt

Project Management

Environment

Simplified Packaging and Names

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Phases

Inception

Elaboration

Construction

Transition

Analyst

Model,
Simulate
and
Monitor
Business
Processes

Architect

Model
Application
Components,
Services
and
Data

Developer

Visually
Construct,
Hand Code
and
Generate
Applications

Tester

Design,
Create,
Execute
and
Report
Tests

Project Mgr

- Follow a common process
- Track project status
- Manage Change and assets
- Manage requirements
- Manage Quality

IBM's Eclipse Software Development Platform

New V6 Integrated Views/Perspectives

Disciplines

Process Modeler Business Modeling

RequisitePro Explorer Views Requirements

Analysis & Design

Implementation

Functional, Manual, Performance Test

Deployment

ClearCase Explorer Views Configuration & Change Mgmt

ClearQuest Explorer Views Project Management

Environment

Simplified Packaging and Names

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IBM's Eclipse Software Development Platform

Lifecycle Tools are Integrated as Views in V6 ¹

Disciplines

Business Modeling

Requirements

Analysis & Design

Implementation

Test

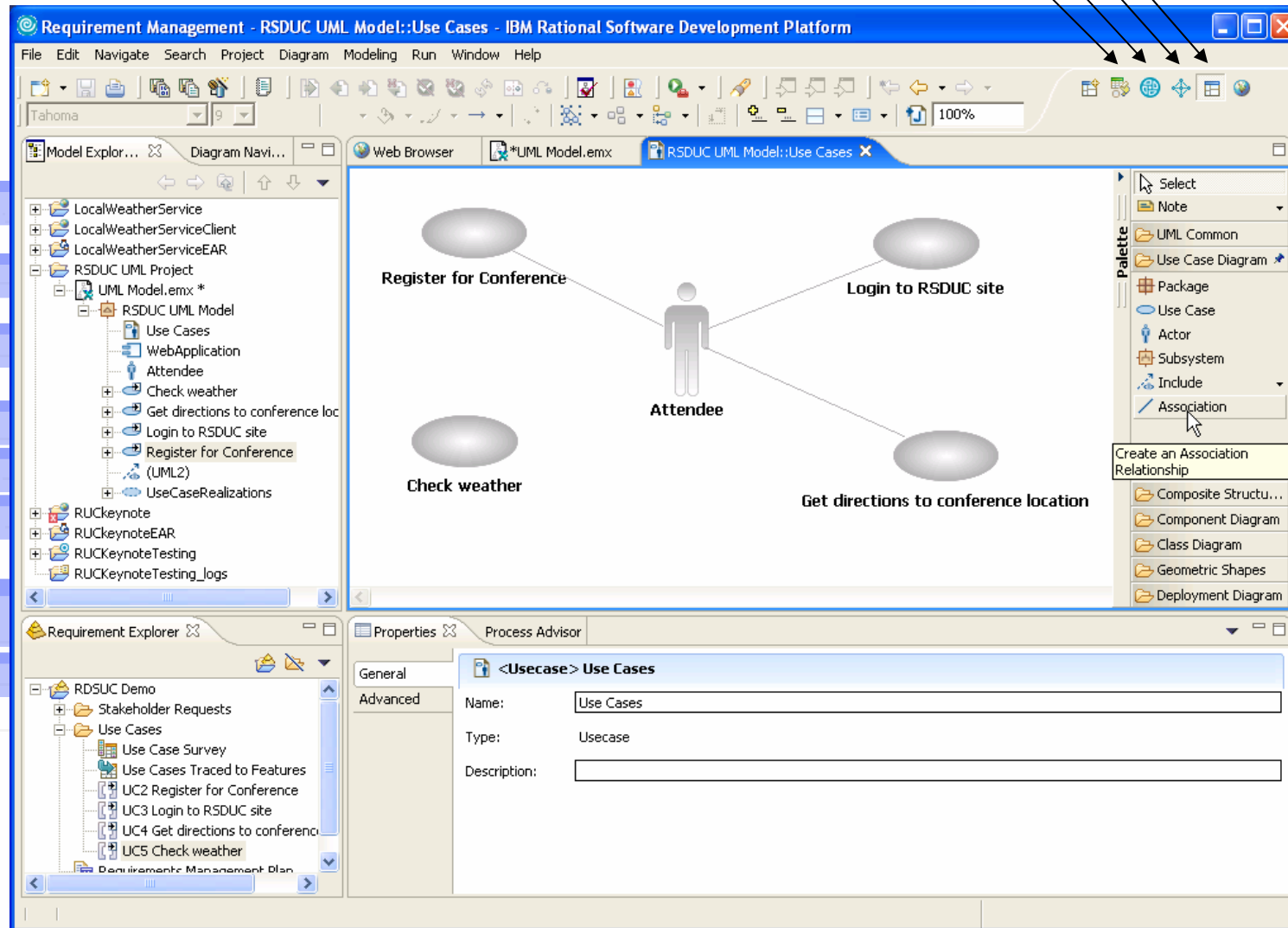
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■ Software Quality Testing Tools Enhancements (Manual, Functional and Performance Testing)



V6 – Every Top 10 Category Is Enhanced

Adaptable - Eclipse-based Workbench

#1 Customizable **Perspectives** and **Views** support **roles-based** tools

Automated - IDE Infrastructure (Code, Build, Test, Debug, Deploy)

#2 **Dynamic build engine** incrementally updates and hot-deploys (on-the-fly, while you type)

#3 **Testing and Debugging** for Java, Web Services, XML, database and EJB

Accelerated - End-2-End Builders

#4 Java language coding tools □□□□

#5 Web App Builders: Pages, Sites, Portals, Portlets, Struts, JavaServer Faces □□□□□

#6 Web Services and XML Builders □□□

#7 Database Builders □

#8 J2EE and EJB Builders □

#9 SOA workflow builders (Service Oriented Architecture) □□

#10 Legacy/Enterprise development, integration and Web Services tools □□□



Focusing on Ease of Learning

- **Learning Guide**

- Provides an introduction
- Discusses the value and benefits
- Describes the tools available with suggestions for using them
- Links to other education sources for prerequisite skills

WEB RESOURCES

In addition to information in the Welcome and the Help, the Web provides you with tips, articles, updates, and references to industry standards.



Rational Application Developer

Technical resources and best practices for Rational Application Developer



IBM Publications

Links to IBM Redbooks and other IBM publications



UML 2.0

OMG's home for Unified Modeling Language for architecting software



JavaServer Faces

Sun Microsystems's home for advancements in JSF Technology



Struts

Apache Software Foundation's open-source Java Web application framework



XML

OASIS's Web portal for XML developers and technologists

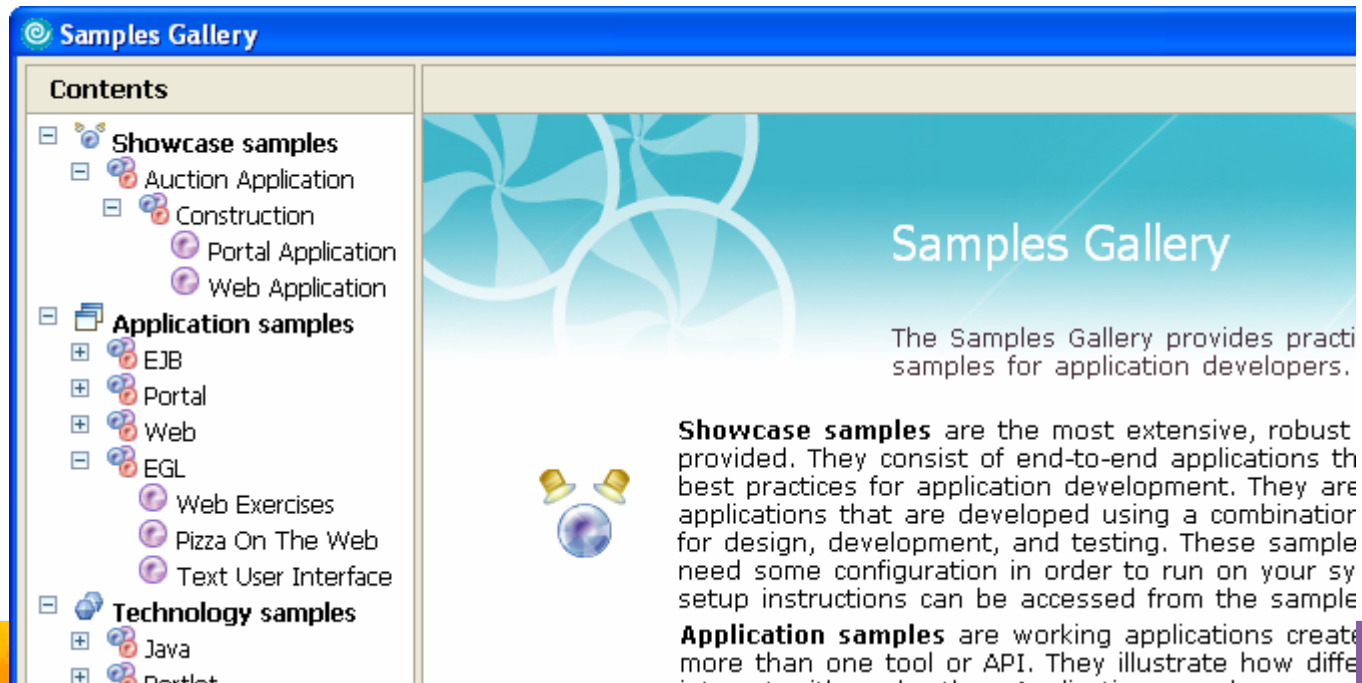
Focusing on Ease of Learning

- **Tutorial Gallery**
 - Easy way to access all tutorials
- **Sample Gallery**
 - Easy one-stop shopping for samples and their documentation
 - Descriptions and purpose identified
 - Setup requirements reduced or eliminated
 - One click – make this a project

Studio Categories

Showcase
Samples
Sample
Applications
Technology
Samples

sub categories
too...



Eclipse V3 enhancements

- **More responsive User Interface**
 - From enhanced concurrency support and asynchronous task management
- **New look and feel**
 - Based on user feedback
- **Reduced User Interface complexity through progressive disclosure**
 - Capabilities support enables a tool to filter the views, wizards, actions, etc available initially available to use
 - At trigger points more advanced function is revealed
 - Users can adjust the amount of initial function
Teams can share preference settings
 - Expanded user settings/preferences support with multiple scopes
- **Most existing V2.x Eclipse tools work with Eclipse 3.x and RAD V6**
 - High degree of binary compatibility between V2.x Eclipse plug-ins and Eclipse V3-based products
 - Please consult your vendor to determine the status of the tools you use



J2EE 1.4/1.3/1.2

- **Web Services and XML support**

- Standards / Portability - XML Schema definitions for all deployment descriptors
- JAX-P 1.2 - New properties for XML parsers
- JAX-R - XML registry API
- JAX-RPC - APIs for representing WSDL-based services as RPCs in Java (&vice-versa)
- JSR 109 - Web services programming and deployment model
- SAAJ 1.1 - SOAP Attachments API for Java

- **Other**

- Servlet 2.4
- JSP 2.0
- Extensible deployment descriptors
- Request/response listeners
- Expression Language
- Simple Tag Extension

- **JDBC 3.0**

- Meta data and cursor support

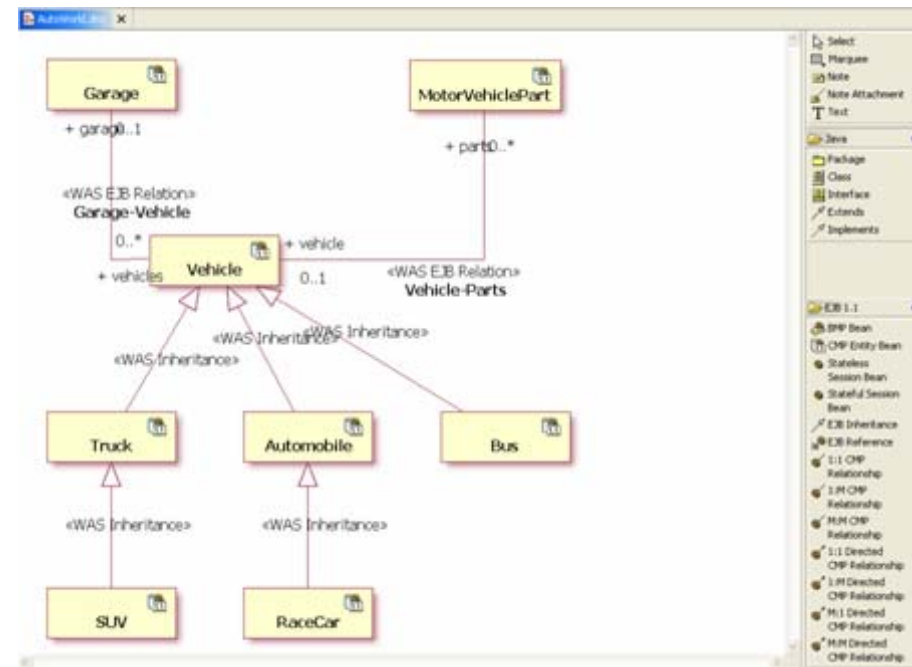
- **Messaging**

- EJB 2.1
- Typed message beans (used for any inbound JCA including pluggable JMS provider)
- Timer service Web service end-point support



UML 2 Diagram Editing – Visually Browse/Edit

- **Expanded UML editing**
 - UML class diagrams for Java, EJB
 - IDEF1X, and IE editing for data objects
 - Edit/refactor through diagrams
- **Browse, Navigate and Query through diagrams**
 - Topic diagrams for automatic diagram creation
 - UML 2.0 interaction diagrams for visualizing method bodies
- **Javadoc integration for diagrams**
 - Improved printing support
- **Usability and workflow improvements**
 - Assisted diagramming
 - Browse diagrams
 - In-diagram editing
 - Diagram Explorer
- **Low overhead way of adopting UML and visual development**



J2EE Development *Automated by JSF*

Input → Process → Output

- **Input**

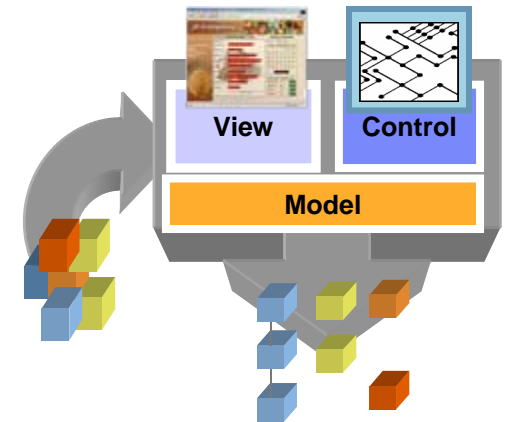
- Constructing web page forms, formatting, validation, etc.
- GUI widget richness
- Calling appropriate “Action” when button pressed, etc.
- Passing data to business logic

- **Processing**

- Integrating to web services, databases, backends, biz logic, etc.
- Maintaining user session and application state information
- MVC layering, page flow and business logic modularity

- **Output**

- Forwarding control to results screen/page
- Displaying data, GUI controls, formatting, etc.



Developing Richer Thin Client Applications, More Quickly

- Drag-n-drop development of J2EE applications (*No Coding Required*)

The screenshot displays the IBM WebSphere Portal interface within a Microsoft Internet Explorer browser. The browser's address bar shows the URL: <http://yclidesktop.raleigh.ibm.com/wps/myportal/.scr/LoggedInIn>. The portal features a navigation bar with links such as 'Home', 'Banking Account', 'Portfolio', 'Mortgage/Loans', 'Bill Pay', and 'ExtremePlace'. The main content area is divided into several sections:

- Accounts:** A sidebar menu with links for 'Order Checks', 'Payment', and 'Help'.
- Banking Accounts:** A table displaying account information.

Account #	Account Type	Balance
96,666	Credit	2,000.00
74,444	Checking	1,432.44
85,555	Saving	2,567.56
- Account Details:** A section for 'Account Number: 96666' containing a table of transactions.

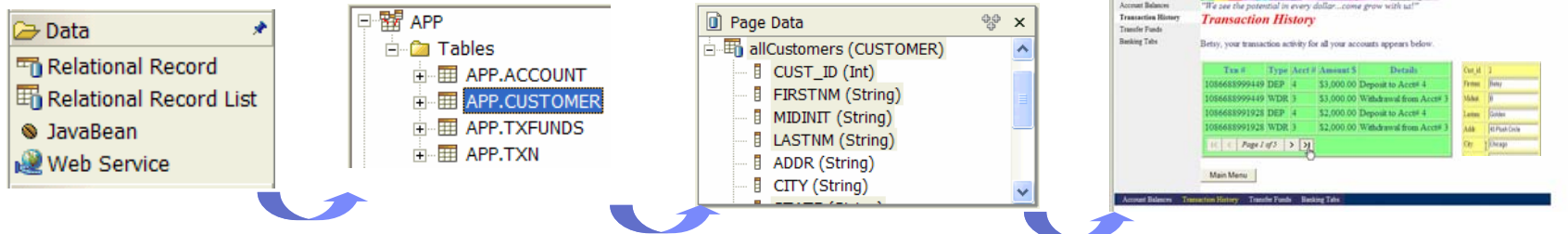
Trans #	Amount	Date	Type	Expense Purpose
355	72.62	2000-11-06	Visa	Taxes
356	31.78	2001-06-16	Visa	Entertainment/Travel
357	61.02	2000-08-25	Visa	Clothing
358	21.75	2000-01-25	Visa	Transportation
359	13.01	2001-03-24	Visa	Telephone
360	24.51	2002-01-20	Visa	Transportation
361	15.87	2001-02-11	Visa	Food
362	13.81	2001-05-23	Visa	Telephone
- Transfer Funds:** A section titled 'Make Transfer' with dropdown menus for 'From:' and 'To:' accounts, and a text field for 'Amount: \$'. A 'Continue' button is located below the form.
- Expense Allocation:** A pie chart showing the distribution of expenses across various categories. The legend includes: Medical/Dental, Mortgage/Rent, Food, Gas/Electric, Cloth, Insurance, Dependent Care, Taxes, Entertainment/Travel, Transportation, and Telephone.

Callouts highlight specific features:

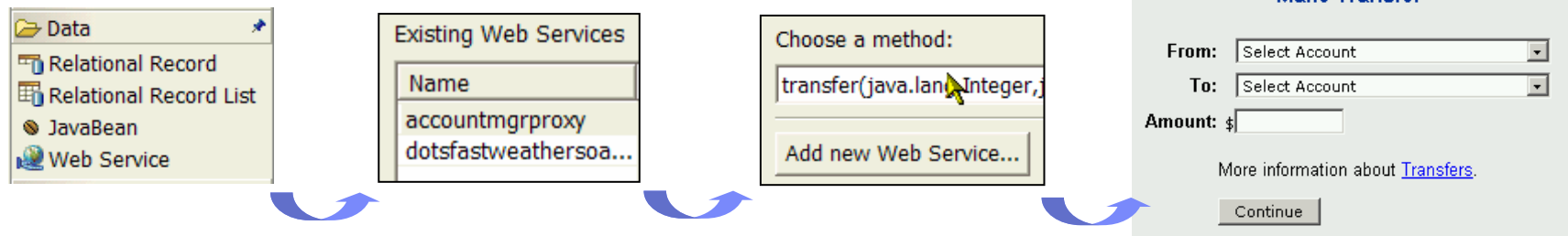
- Database Query:** Points to the 'Banking Accounts' table.
- Web Service:** Points to the 'Make Transfer' form.
- Graphing Controls:** Points to the 'Expense Allocation' pie chart.
- Tabbed Panels:** Points to the 'Account Details' section.
- Spreadsheet Control:** Points to the 'Expense Allocation' pie chart.

Simplifying J2EE & Portal Development – JSF, SDO and Web Services

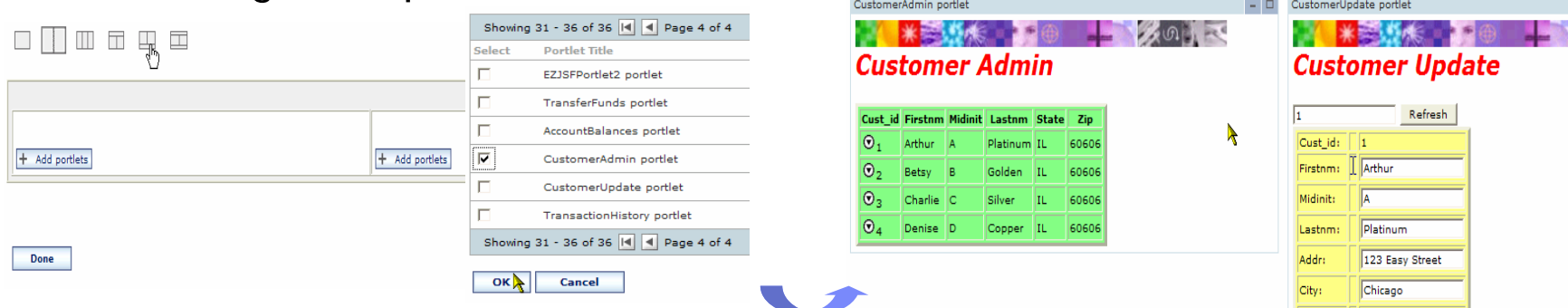
- Database development drag-n-drop ease-of-use ^{1 2}



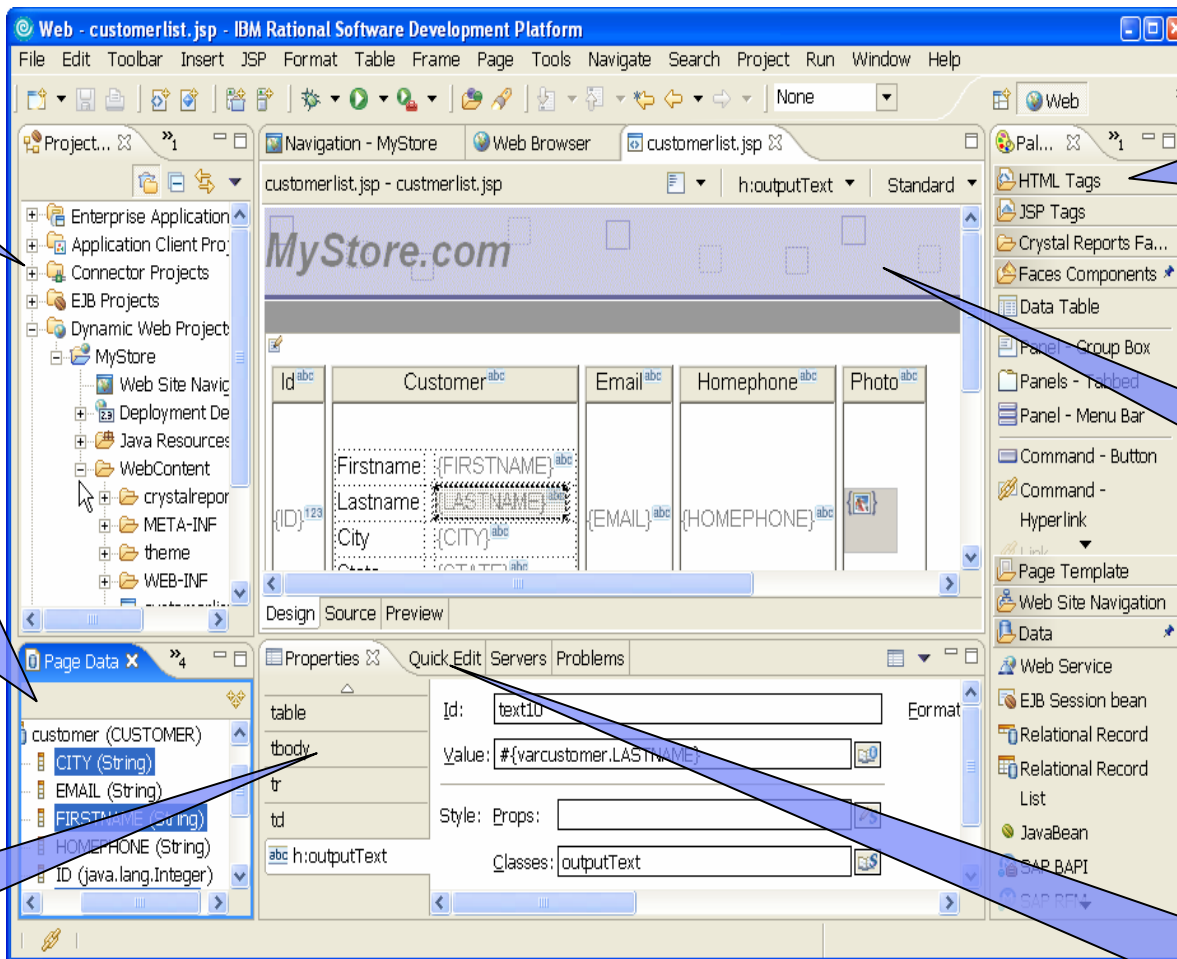
- Web Services development drag-n-drop ease-of-use ^{1 2}



- Portals drag-n-drop ease-of-use ^{1 2}



JSF Tool Views in RAD



Simplified "Project Explorer" hides the complexity of J2EE

The Data View lets you configure and drag and drop data to automatically create a data bound UI

SDO, Web Services, JavaBeans and EJBs access and update data without writing any code!

Property views allow easy customization of the selected component

Construct pages by dragging and dropping rich web components from a customizable Palette

Page templates separate out common page elements in a single template file

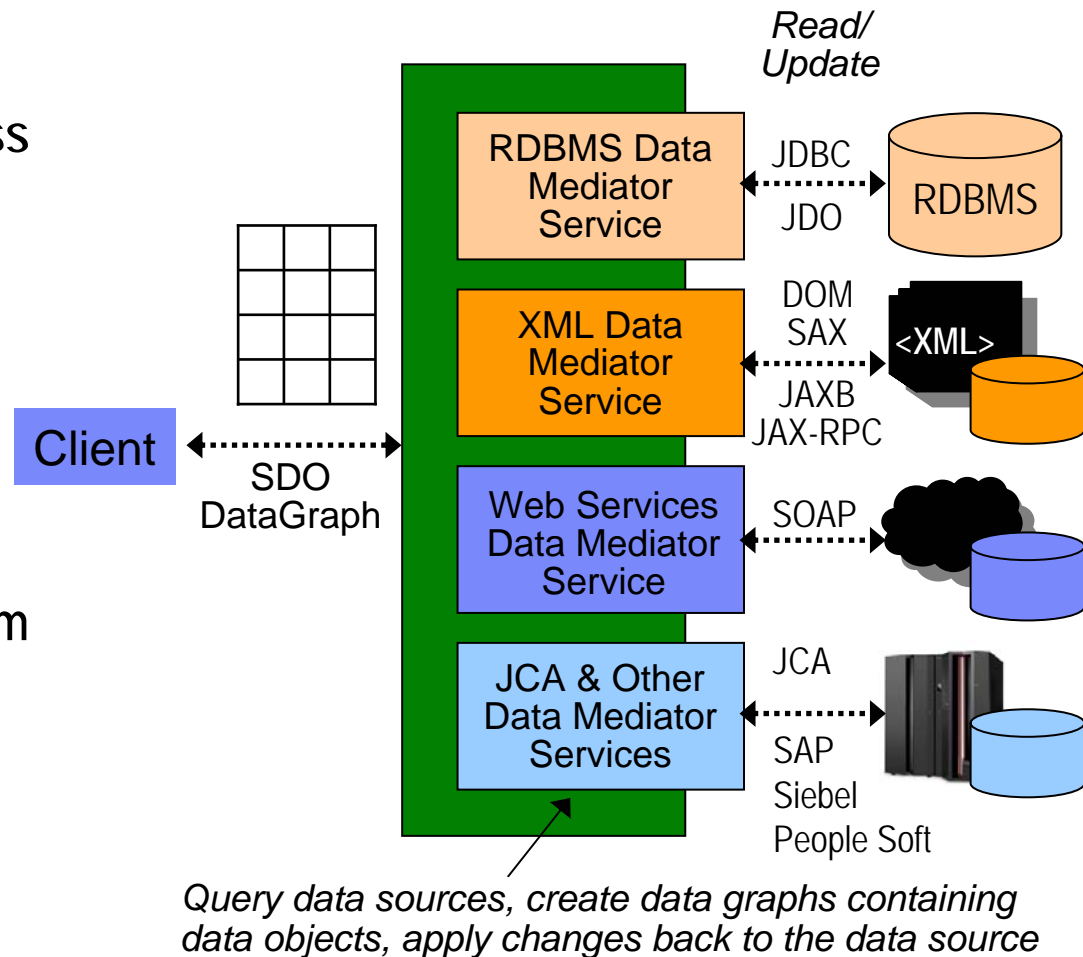
The Quick Edit View allows scripting of client or server side events in Java or JavaScript.

Code assist writes the code for you!

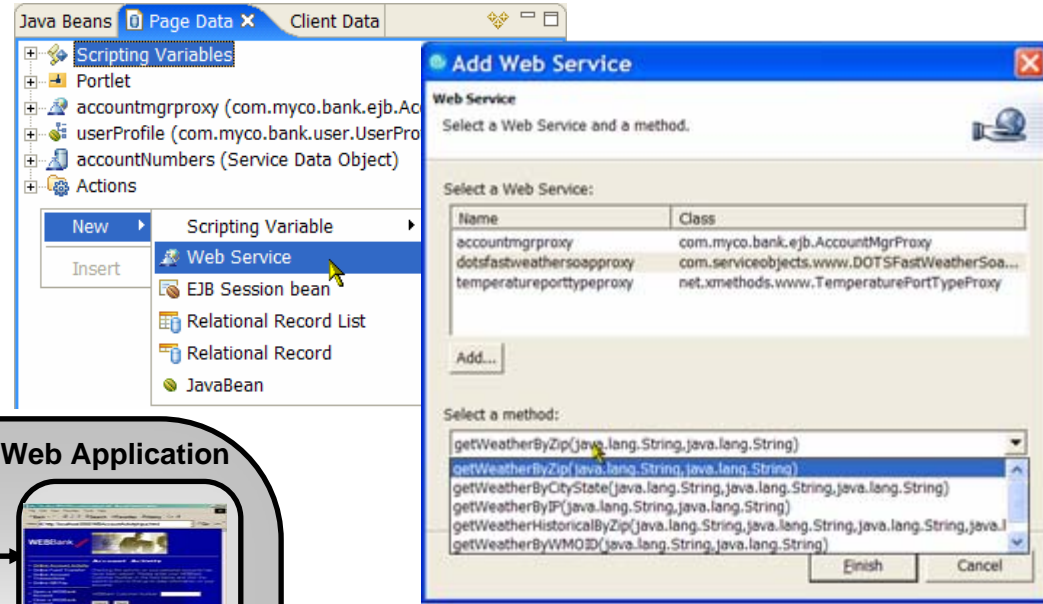
- Accelerate GUI, Web Services, Database, Portlet and MVC development
- Visual drag-n-drop development of UI, events, actions, page navigation, etc.
- Simplify J2EE development for non-Java programmers and VB/MS.NET developers
- Enhance Web Application Development for J2EE experts

Service Data Objects (SDO): Unified Access to Heterogeneous Data Sources

- Provides a common programming interface to access data from multiple heterogeneous sources
- Supports both static and dynamic data APIs
- Supports connected and disconnected operation
- Decouples application code from data access code
- Designed for use with tools to increase programmer productivity

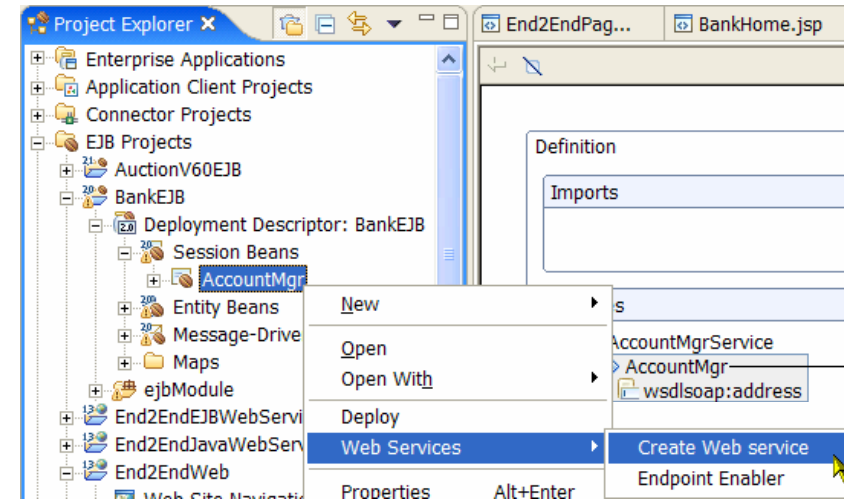
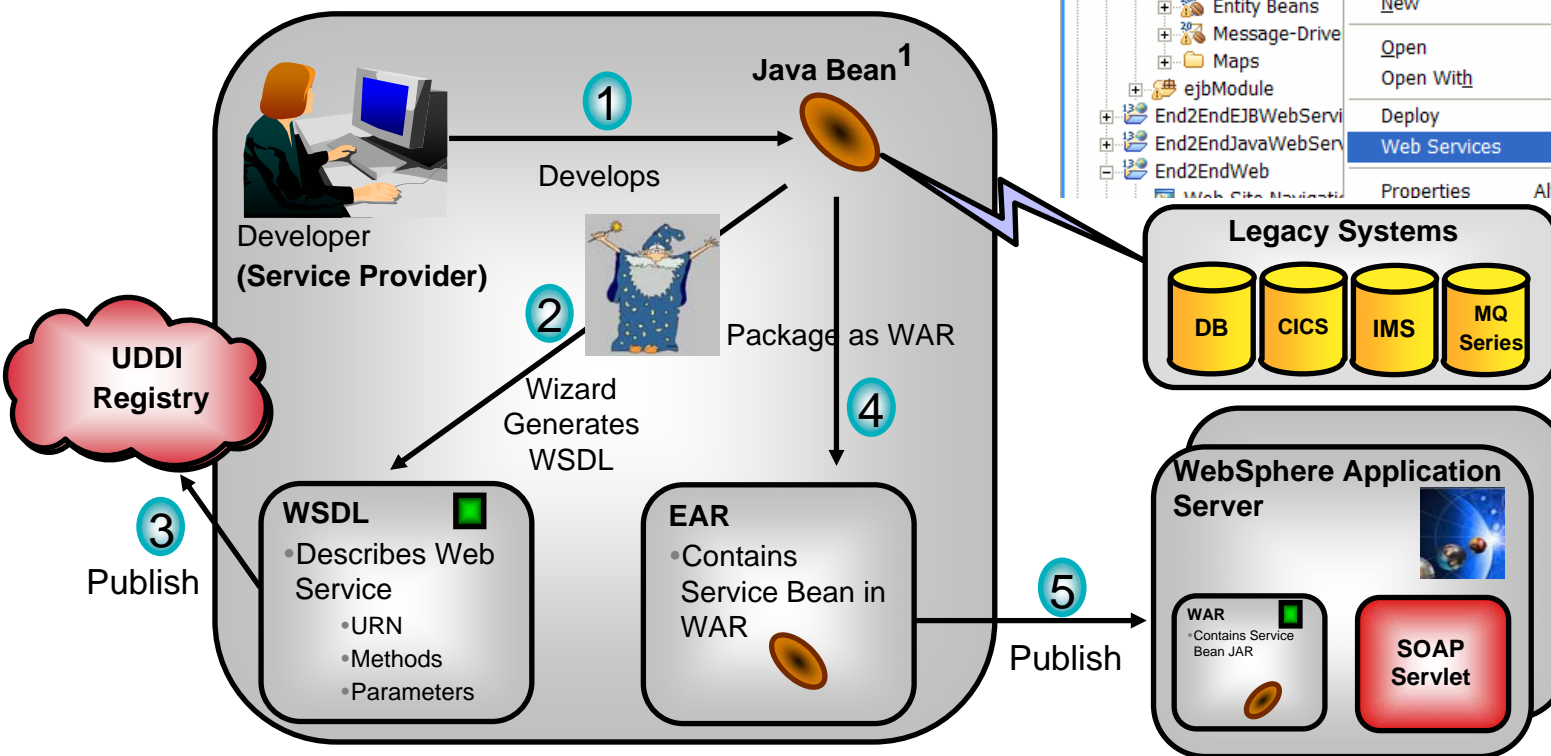


Service Data Objects (SDO) is a specification created by IBM & BEA, submitted to JCP as JSR 235 in December 2003. Expert Group Formation Stage, not part of J2EE yet



¹Good Note: A Java app/component can be generated (a.k.a Web Service **Proxy Bean**) that can call existing Web Services, including: web services accessible JavaBeans, EJBs, database queries, URLs, Microsoft .NET web services, any web service on the internet, etc.

Building a Web Service (No Coding Required!)



¹ Good Note, a Web Service can be built from a variety of artifacts such as JavaBeans, EJBs, database queries, etc.

V6 “WebSphere Rapid Deploy” (WRD)

- To simplify the development experience for WebSphere applications by:
 - Increase the seamlessness of the iterative Build/Test cycle
 - Reduce or eliminate server restarts
 - During initial artifact creation (i.e. create Java, EJBs, Web Services, etc.)
 - During iterative build scenarios (i.e. coding the logic in Java, etc.)
- To simplify the deployment experience for WebSphere applications by:
 - Automating the process of installing an application on WebSphere
 - Reducing the amount of information that must be configured manually on WAS (i.e. Datasources, etc.)
 - Automating the process of activating incremental changes to an application on a running server (i.e. Add/Change code/configuration of an application)



Dynamic Development (Avoiding the “RESTART” Situations)

- Two main stages in RAD V6 dynamic development

- Creating New Artifacts
- Changing Existing Artifacts

 AUTOMATIC hot re-deployment of changes

 Manual quick APPLICATION level restart

 Manual SERVER restart

WS Rapid Deploy (WRD) Dynamic Development Scenarios		
Development Activity	WAS5.1	WAS6.0
Create EAR Project	Plan to Restart Server	Dynamic (WRD)
Create Web Project	Plan to Restart Server	Dynamic (WRD)
Create EJB Project	Plan to Restart Server	Dynamic (WRD)
Create EJB with Logic	Restart Server (Manually)	Dynamic (WRD)
Change EJB	Restart Project EAR (Manually)	Dynamic (WRD)
Create JSP	Dynamic (Web Container)	Dynamic (Web Container)
Change JSP	Dynamic (Web Container)	Dynamic (Web Container)
Create JavaBean in Web Project	Dynamic (Web Container)	Dynamic (Web Container)
Change JavaBean in Web Project	Dynamic (Web Container)	Dynamic (Web Container)
Create JavaBean in regular Java Project and Reference from EJB or Web project artifacts	Restart Project EAR (Manually)	Dynamic (WRD)
Change JavaBean in regular Java Project	Restart Project EAR (Manually)	Dynamic (WRD)
Create Web Service (Exposing a JavaBean or EJB)	Restart Server	Dynamic (WRD)
Change a Web Service	Restart Server	Dynamic (WRD)

Component Test Automation

- Enable easy creation, execution, and maintenance of dynamic unit tests of J2EE components including:



- Java classes (J2SE 1.4)



- EJBs (1.1, 2.0 and 2.1, supporting both remote and local interfaces)



- Web Services (J2EE based, and .Net Web Services)

- Based on the JUnit framework
- Provide testing guidance
 - What to test first based on static metrics
- Automated test case generation
 - Based on test patterns
- Data driven testing
- Automated regression testing
- Integrated with Code Coverage
- Implementation of the OMG Testing Profile

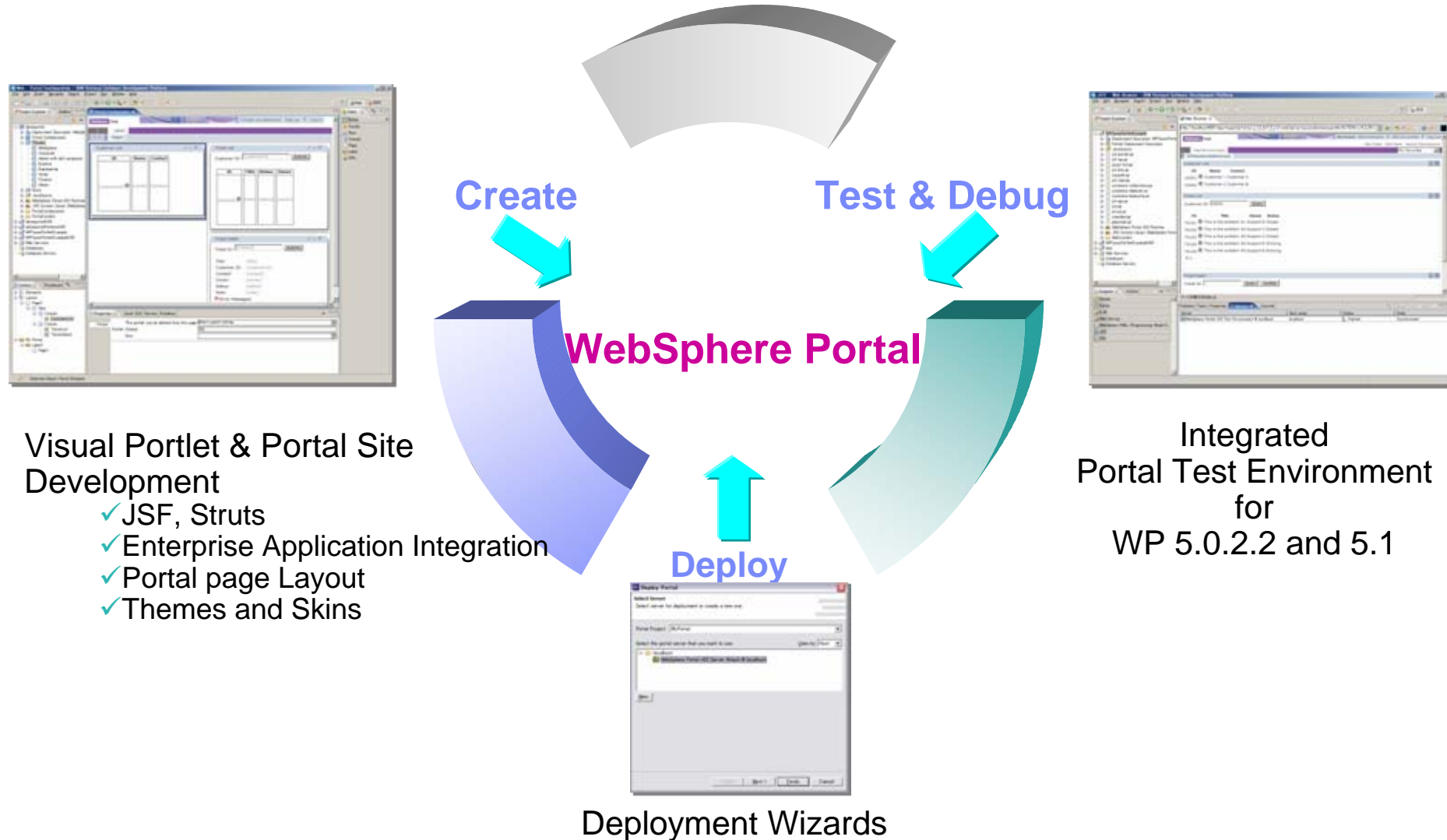


Code Reviews

- Analyze Project/Workspace to find problems of various types:
 - Globalization
 - J2EE Best Practices
 - J2SE Best Practices
 - Private API Usage
 - Performance
 - Naming Conventions
- Produce interactive reports with violations and metrics
- Provides explanations, examples, and quick fixes for problems
- Allow users to create, enable and disable validation rules
- Allow users to create their own rules based on rule templates
 - Complete Code Review (200+ rules)
 - Quick Code Review (34 rules)

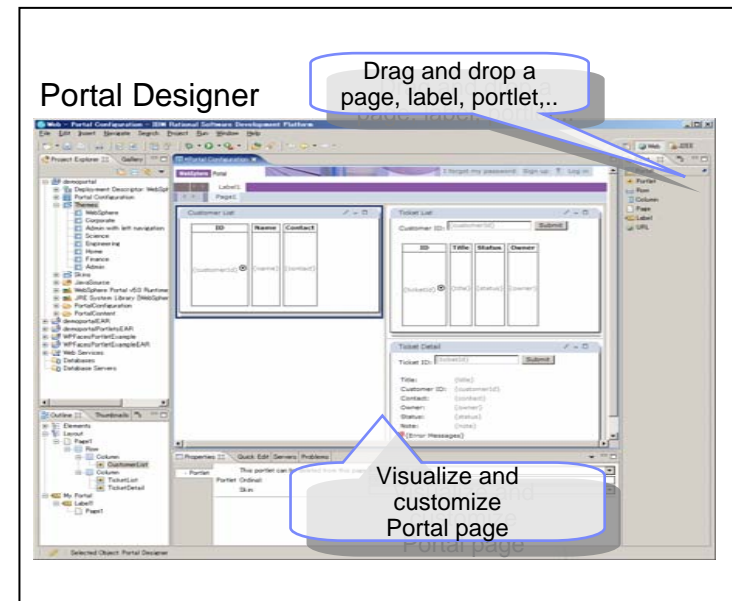
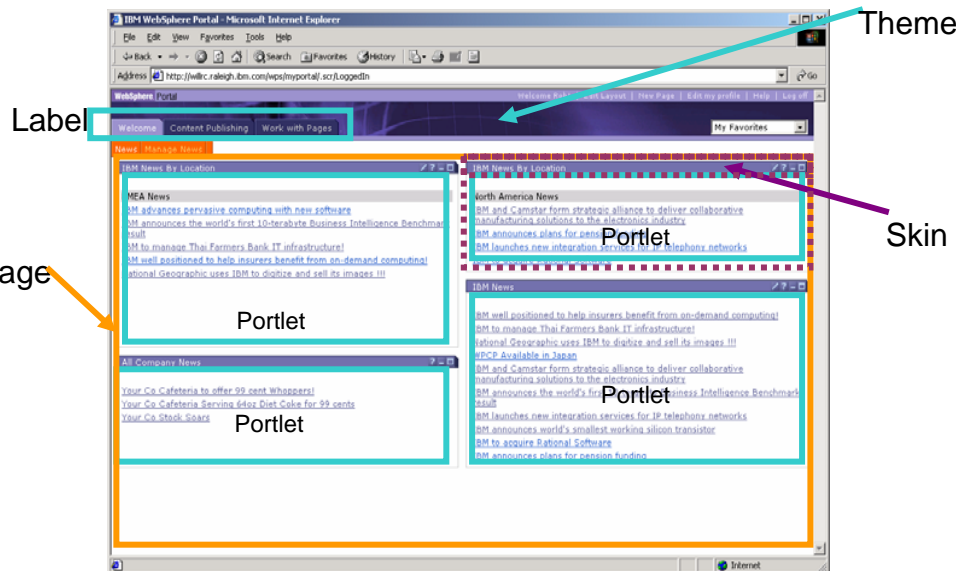
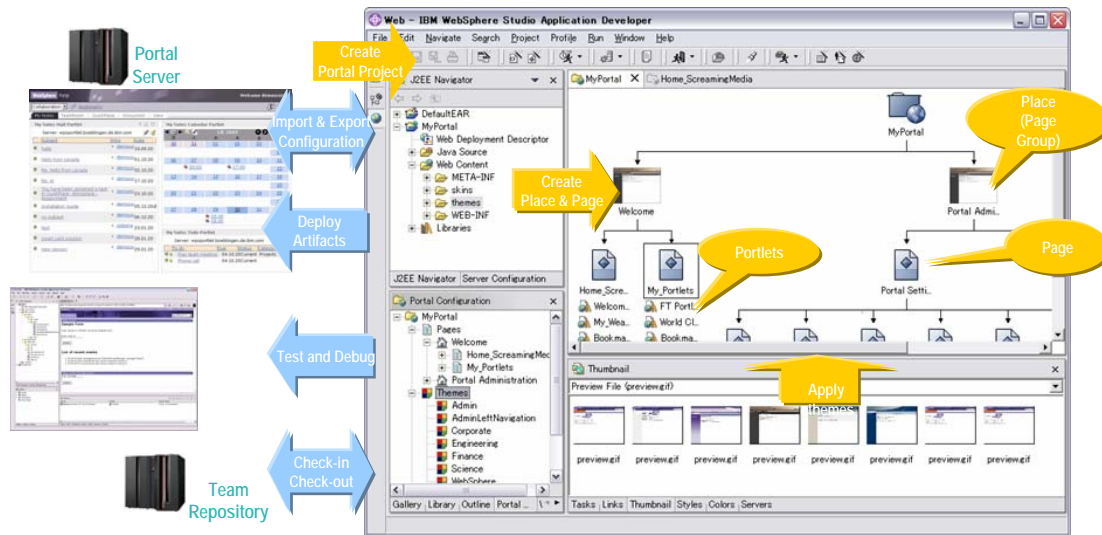
The screenshot displays the IBM Code Review tool interface. At the top, there is a search bar and buttons for 'New...', 'Remove', 'Move...', 'Expand All', and 'Collapse All'. Below this is a tree view of rule categories, all of which are checked. The categories include Coding Style (14 rules), Design Principles (5 rules), Globalization (47 rules), J2SE Best Practices (65 rules), Naming Conventions (2 rules), Performance (26 rules), Private API (4 rules), and Structural Analysis (6 rules). Under Structural Analysis, the 'Breakable' category is expanded, showing two rules: 'Avoid components that depend on > 10 other components' and 'Avoid packages that depend on > 10 other packages'. Below the tree view is a tabbed interface with tabs for 'Problem', 'Examples', 'Solutions', 'Properties', and 'Resource Filters'. The 'Problem' tab is active, showing details for a problem in the 'Structural Analysis : Breakable' category. The problem name is 'Avoid components that depend on > 10 other components'. The description states: 'A Breakable is a component that has many immediate dependencies. Such'. At the bottom, there is a list of rules under the 'Memory' category (13 rules, 13 enabled). The rules include: 'Always call super.finalize() in the finalize()', 'Avoid calling finalize() unless in the finalize()', 'Avoid declaring finalize() public', 'Avoid returning from finally', 'Avoid the throw statement inside of finally', 'Avoid instantiating unnecessary temporary objects', 'Avoid java.lang.String + operator in String concatenation', 'Avoid calling java.lang.Runtime.gc()', 'Avoid calling java.lang.Runtime.runFinalization()', 'Avoid calling java.lang.Runtime.runFinalization()', 'Avoid instantiating Booleans using new Boolean()', 'Avoid instantiating Strings using new String()', and 'Avoid using static collections'. To the right of the rule list are buttons for 'Move rule...', 'Show Search Box', 'Expand All', 'Export...', and 'Import...'.

RAD V6 - 1st Class Support for Portal/Portlet Development



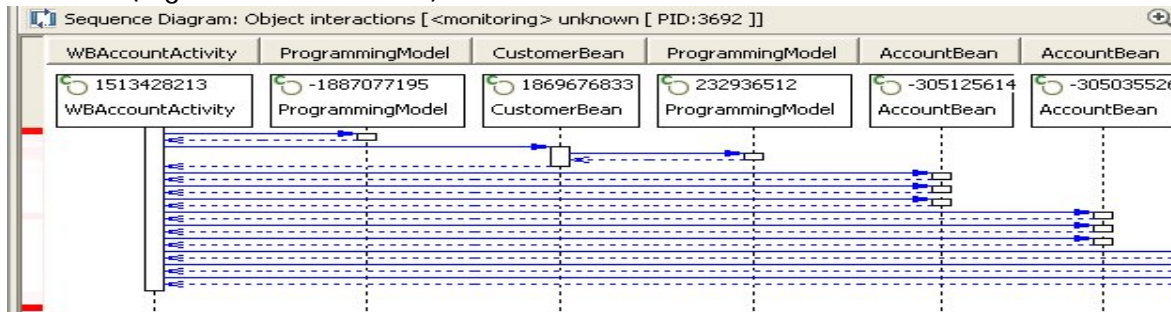
Portal Designer: Site, Page, Themes, Skins

1234



Runtime Analysis ¹²

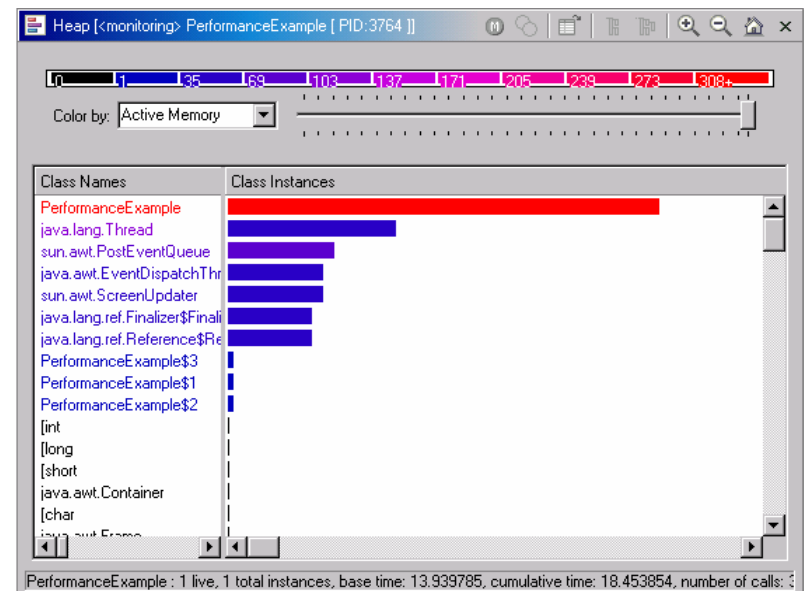
- Sequence Diagram, Method Invocation, heap, etc. views in Profiling Perspective
 - Shows the Execution flow of the application
 - User can drill down from sequence diagram into the application code or launch other Performance Analysis views (e.g. Method Statistics)



Class Method Statistics [<monitoring> InOut [PID:1532]]

Filter: ☒ Case sensitive

<Class Names	Package	Base Time	Average Base Time	Cumulative Time	Calls
Thread	java.lang	0.000000	0.000000	0.000000	0
StringBuffer	java.lang	0.364748	0.060791	0.364748	6
String	java.lang	0.000047	0.000047	0.000047	1
Object	java.lang	0.000000	0.000000	0.000000	0
LocalizedPrint...	com.ibm...	0.532924	0.106585	0.532924	5
Launcher\$App...	sun.misc	0.000000	0.000000	0.000000	0
InputStreamR...	java.io	0.009068	0.004534	0.009068	2
InputStrea...	java.io	0.009068	0.004534	0.009068	2
InOut	java.util	0.015468	0.003867	23.350155	4
Date	java.util	0.003361	0.000840	0.003361	4
ClassLoader	java.lang	0.001030	0.000258	0.001030	4
BufferedReader	java.io	22.282958	5.570740	22.282958	4
[short		0.000000	0.000000	0.000000	0
[Object		0.000000	0.000000	0.000000	0
[long		0.000000	0.000000	0.000000	0
[int		0.000000	0.000000	0.000000	0
[float		0.000000	0.000000	0.000000	0
[double		0.000000	0.000000	0.000000	0
[char		0.000000	0.000000	0.000000	0
[byte		0.000000	0.000000	0.000000	0
[boolean		0.000000	0.000000	0.000000	0



V6 Highlights - Areas of Innovation - Enhancements and New Capabilities

■ Lifecycle Integrations (Enhanced Rational/WebSphere Eclipse based Integrations)

- Requirements Explorer View
- Model Explorer View
- ClearCase Views for managing changing artifacts
- ClearQuest Views for managing collaborative activities
- Testing Tools Views

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- Built-in Coder-friendly UML Visualizations for Class/Sequence diagrams
- Crystal Reports
- And much more...

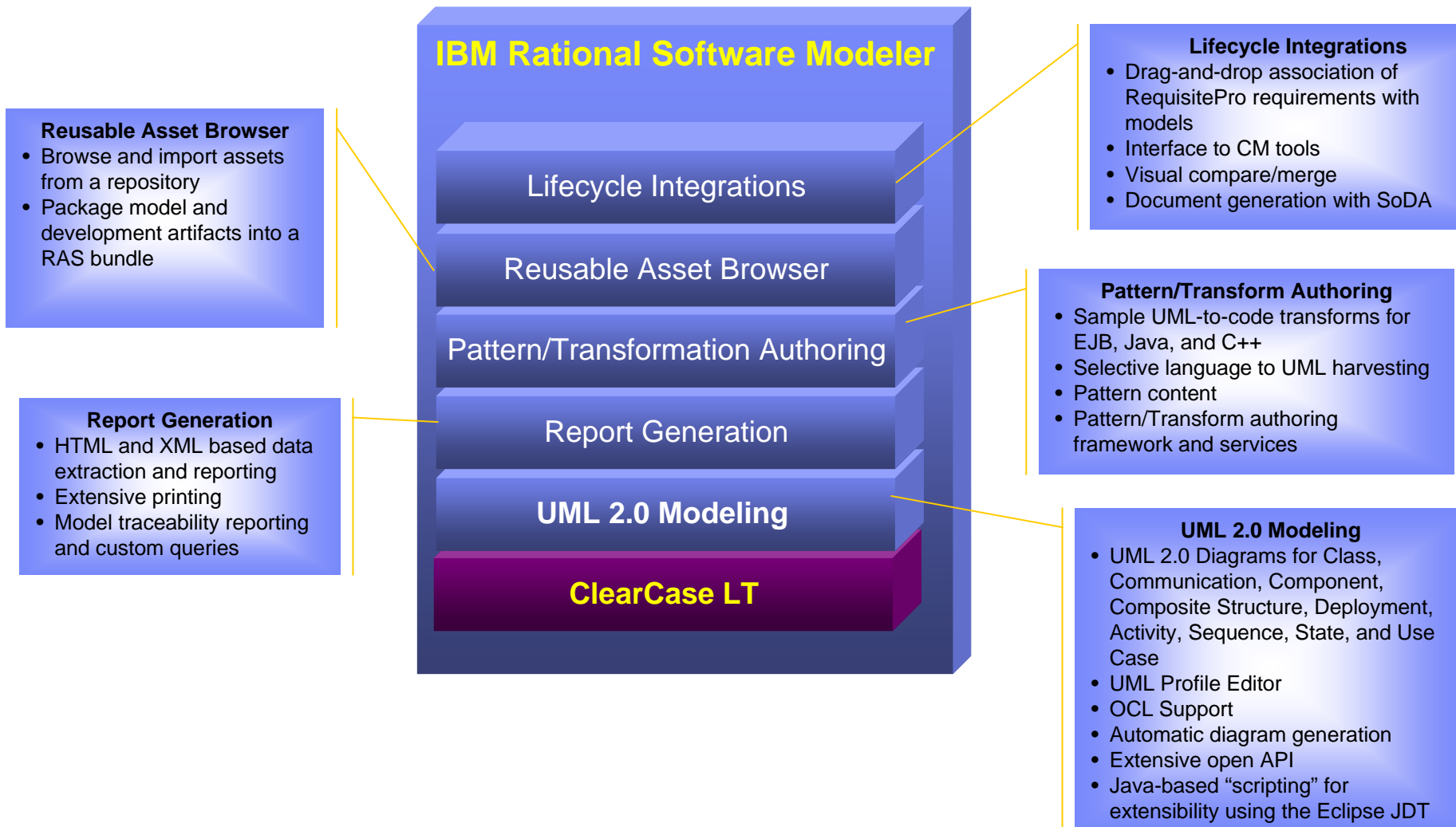
■ New UML2 Engine

- New code base
- End-2-End UML2 modeling
- Easier GUI development
- Transformations between models and generating Java/C/C++ code

■ Software Quality Testing Tools Enhancements (Manual, Functional and Performance Testing)



IBM Rational Software Modeler



IBM Rational Software Architect

Application Analyzer

- Automatic anti-pattern and pattern detection
- Architectural discovery, analysis, metrics, and stability reporting
- Implementation level architectural rules

Modeler

- UML 2.0 Diagrams for Class, Communication, Component, Composite Structure, Deployment, Activity, Sequence, State, and Use Case
- OCL Support
- Automatic diagram generation
- Pattern content
- Pattern/Transform authoring framework and services
- Extensive open API
- Java-based "scripting" for extensibility
- HTML and XML based data extraction and reporting
- Extensive printing
- RAS tools

IBM Rational Software Architect

Java Structural Analysis

UML Language Transforms

Software Modeler

C/C++ Development Tools

Application Developer

RUP Configuration for SW Architects

ClearCase LT

Transformations

- Sample UML-to-code transforms for EJB, Java, and C++
- Selective language to UML harvesting

C/C++ Support

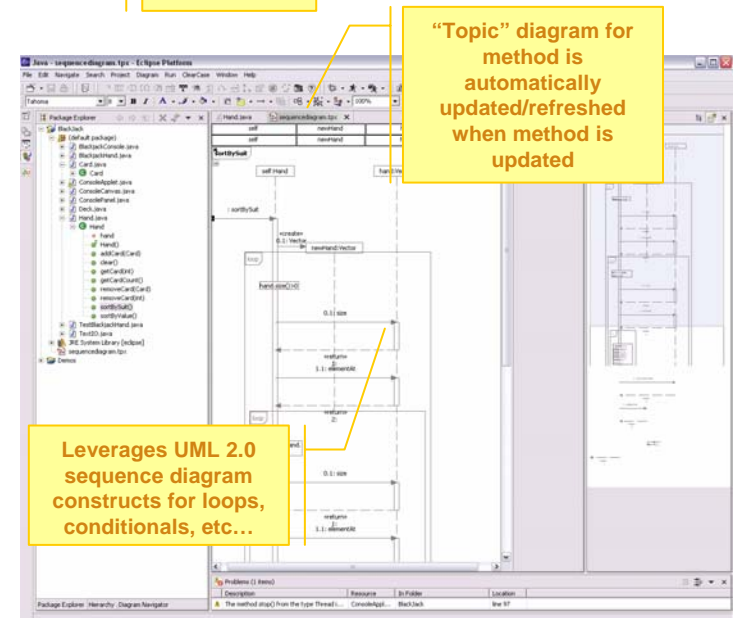
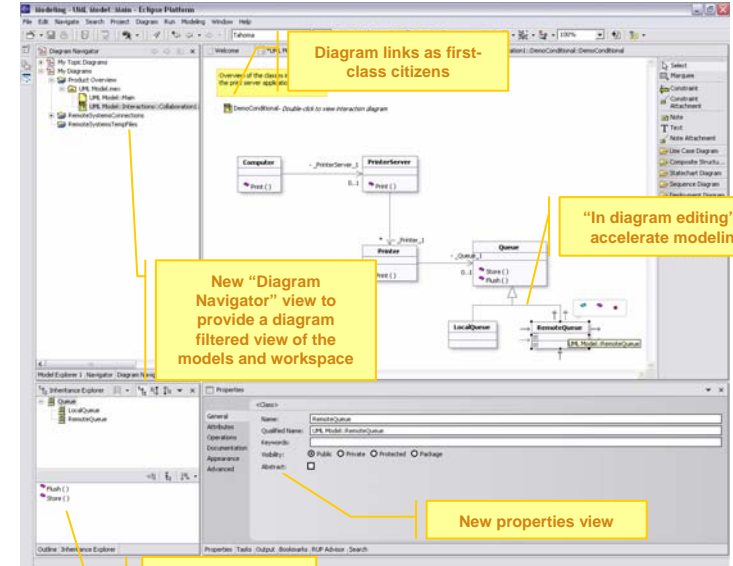
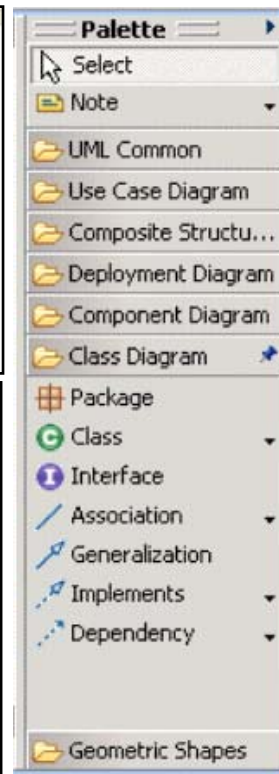
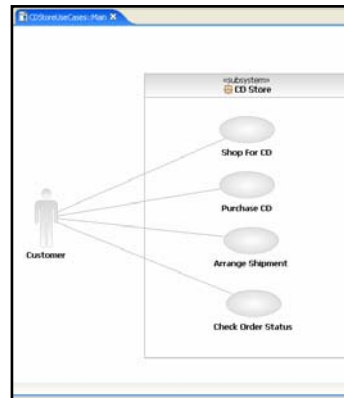
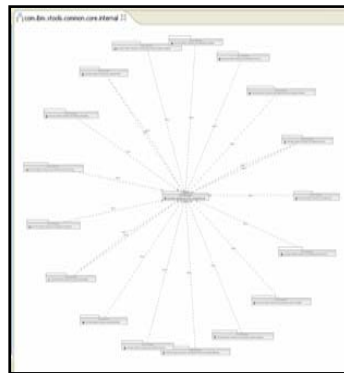
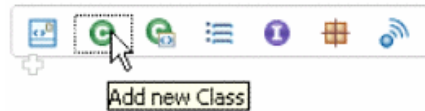
- C/C++ editors and build management
- Compiler and debugger integration
- UML code editors

WSAD v6

- JSF, SDO, Struts
- Java GUI editor
- Web diagram editor
- Site designer
- Web Services development tools
- Database editing tools
- EGL
- EJB development tools
- UML code editors: EJB, Java, Data
- Static Analysis
- Runtime Analysis
- Component test automation
- Portal/Portlet development tools

New UML Modeling Ease-of-Use

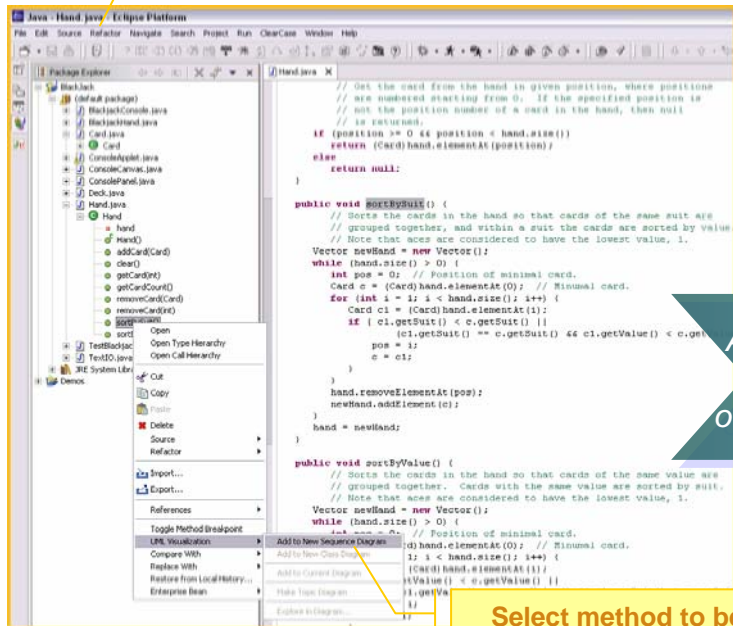
- Simplify creating UML2 diagrams with contextually appropriate UML element creation, via popup toolbars
- Visualize Java code using dynamic code introspection that provides hyperlinked diagrams (Class and Sequence diagrams)
- New custom views to improve the editing experience



UML Visualization for Java Classes, Relationships and Methods

- Facilitates understanding and application's behavior by providing visualization of detailed code
- Diagrams can be integrated in Javadoc reports

Integrated with the Java Package view

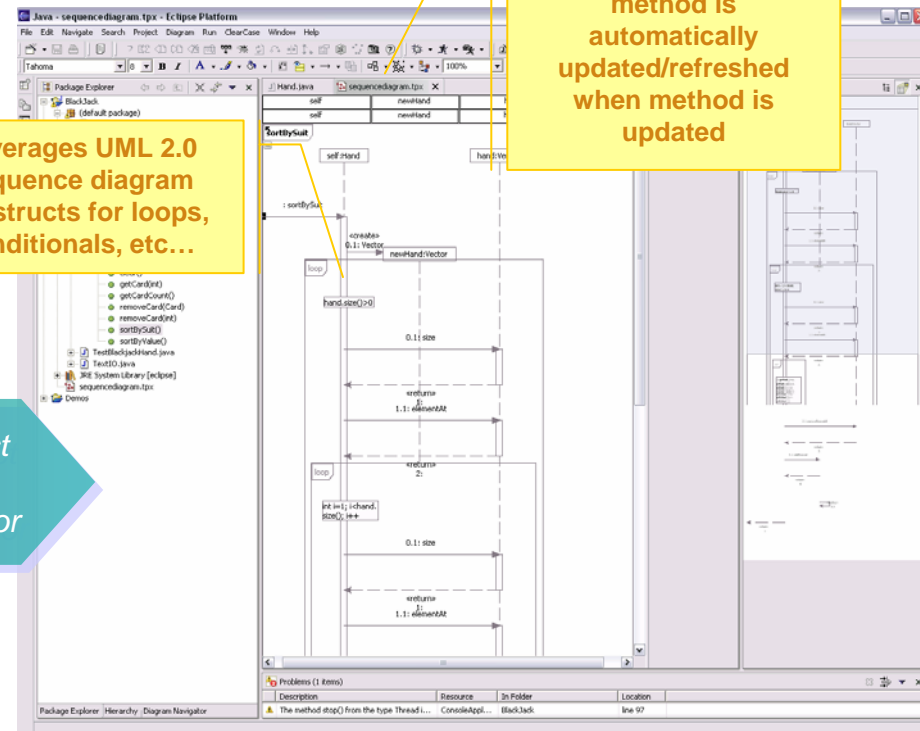


Leverages UML 2.0 sequence diagram constructs for loops, conditionals, etc...

Alternate abstract view of method behavior

Select method to be visualized using UML

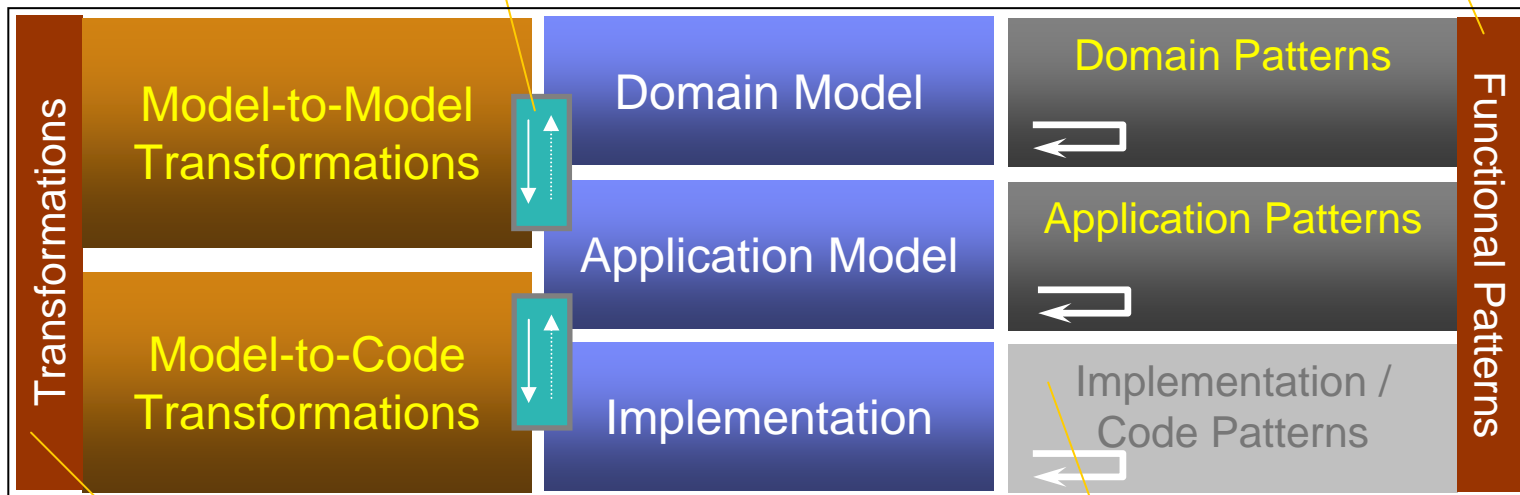
"Topic" diagram for method is automatically updated/refreshed when method is updated



Patterns and transformations

Transformations can be authored to create traceability links between the source and the target of the transformation.

Patterns can be authored/applied and used as recipes or building blocks to refine a model or implementation at its level of abstraction.



Rule/constraints-based transformations can be authored to transform models in a batch style operation. Transformations are authored using Java and the Eclipse PDE. Transformations can leverage functional patterns when they execute.

In a future release, the patterns capabilities will be extended to the implementation level (ex.: J2EE patterns).



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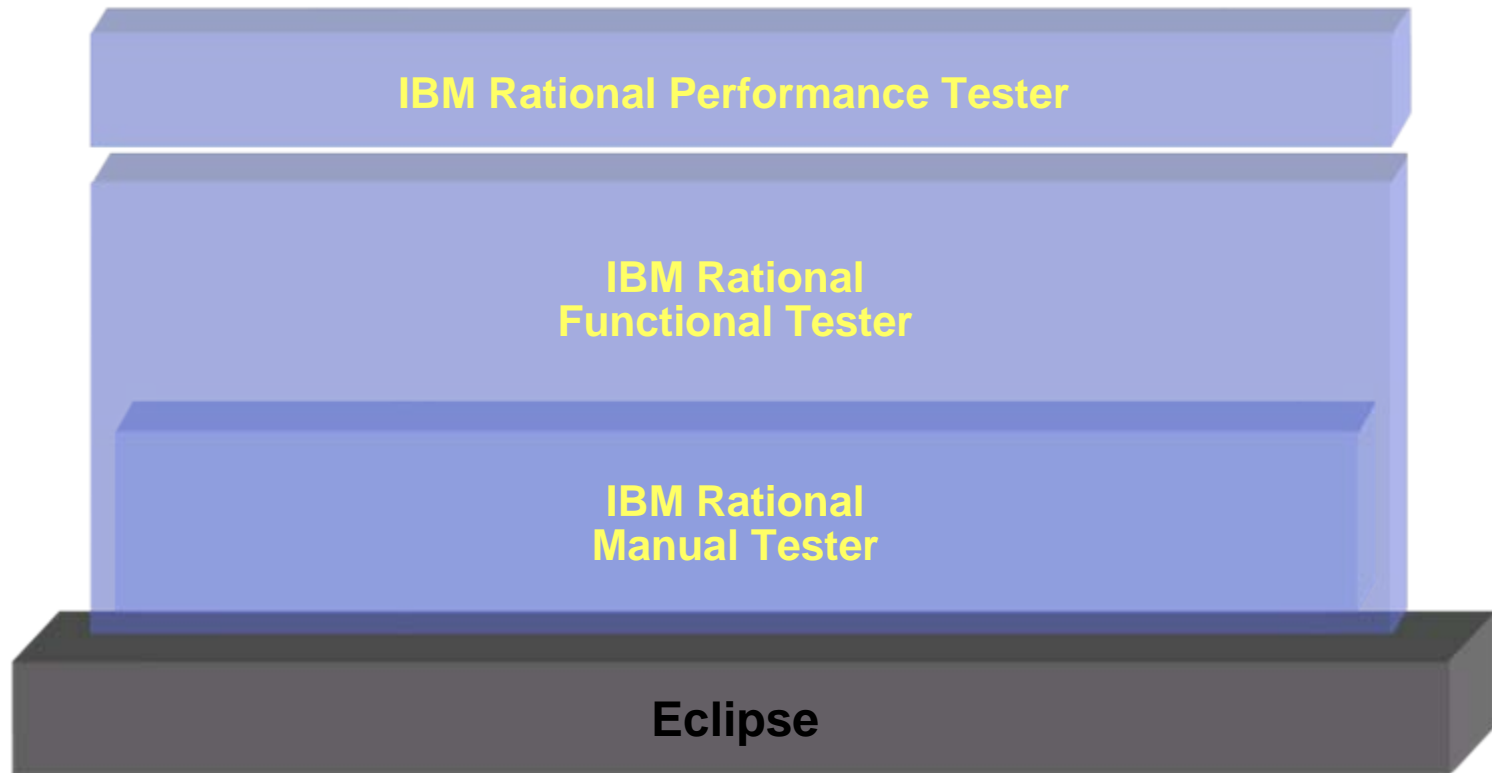
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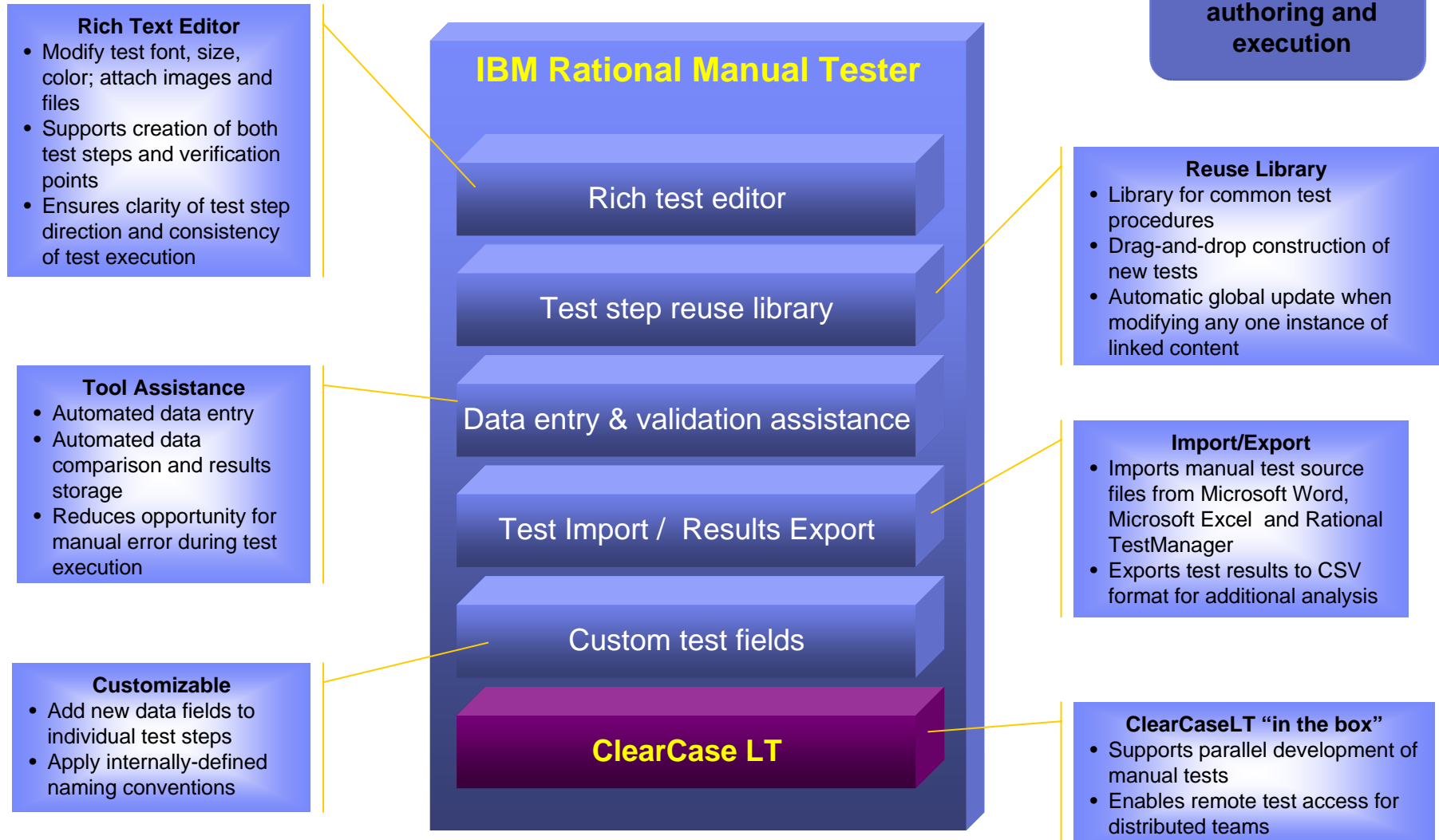
■ Software Quality Testing Tools Enhancements (Manual, Functional and Performance Testing)



Software quality tools



IBM Rational Manual Tester



Manual Tester - Manual test authoring and execution

- *What*
 - ▶ Manual test authoring, organization and execution
- *For*
 - ▶ Business analysts
 - ▶ Testers
- *Why*
 - ▶ Reduce impact of software change and human error on manual testing efforts



Rich test editor

Test step reuse library

Customizable fields

Attached images and files

Central repository for distributed team access

The screenshot shows the IBM Rational Manual Tester application. The main window displays a test script for 'Sell Fund' with steps like 'Launch Browser', 'Enter Address', 'Logon For Trading', 'Confirm that the', 'Enter User Name', 'Enter Password', 'Select "Start in:"', 'Does the "Submit"', 'Check the "Remer"', 'Click "Submit"', 'Logged in ok?', 'Navigate to Trading', 'Click "Investing"', 'Click "Executions"', 'Verify that tradin', 'Sell Mutual Fund', 'Click "Mutual Fun', 'TEST', and 'Click Boxes'. The 'Outline' pane on the left shows the test structure. The 'Reuse' pane on the right shows a library of reusable test steps. The main editor area shows a screenshot of a web browser with a 'Launch Browser' step. The 'Properties' pane on the right shows customizable fields for the test step.

IBM Rational Functional Tester

**Automated
functional
regression testing**

GUI Technologies

- Automates regression testing of Java, .NET, Web and terminal emulator-based applications

Data-driven Testing

- Simplified data-driven testing enabled by wizards and Excel-like data tables

Eclipse availability

- When using Java scripting, runs inside Eclipse/RSA/RAD shell
- Full Eclipse JDT features are accessible
- Accessible to developers from within their IDE

ClearCaseLT “in the box”

- Supports parallel development of manual tests
- Enables remote test access for distributed teams

IBM Rational Functional Tester

Tests Java, .NET, Web and terminal emulator-based apps

Java and VB.NET-based test scripts

Wizard and table-assisted data-driven tests

Linux-based test authoring

Eclipse Java Dev Tools

Manual Tester

ClearCase LT

Test Script Language

- User has choice of two test script languages – Java and VB.NET
- Use of Java implies editing and debugging in Eclipse/RAD/RSA-based editor
- Use of VB.NET implies usage of Microsoft VS.NET-based editor/debugger
- Identical capabilities in both editors

Improved Linux support

- Users can author and modify test scripts on Linux (no script recorder)
- Scripts can also be executed on Linux

Manual Tester in the box

- Customers receive one Manual Tester license per Functional Tester license
- Improve return on manual testing efforts while adopting automated test methods

Functional Testing - Automated functional regression testing

What

- Functional and regression test automation
- Activity automation

For

- Project specific QA teams
- Experienced testers
- GUI developers

Why

- Ensure proper use case implementation before deployment
- Support fact-based evaluations of project readiness and application quality

Tester

Eclipse or VS.NET-based editor and debugger

ScriptAssure™ for test script resiliency

Version control ready

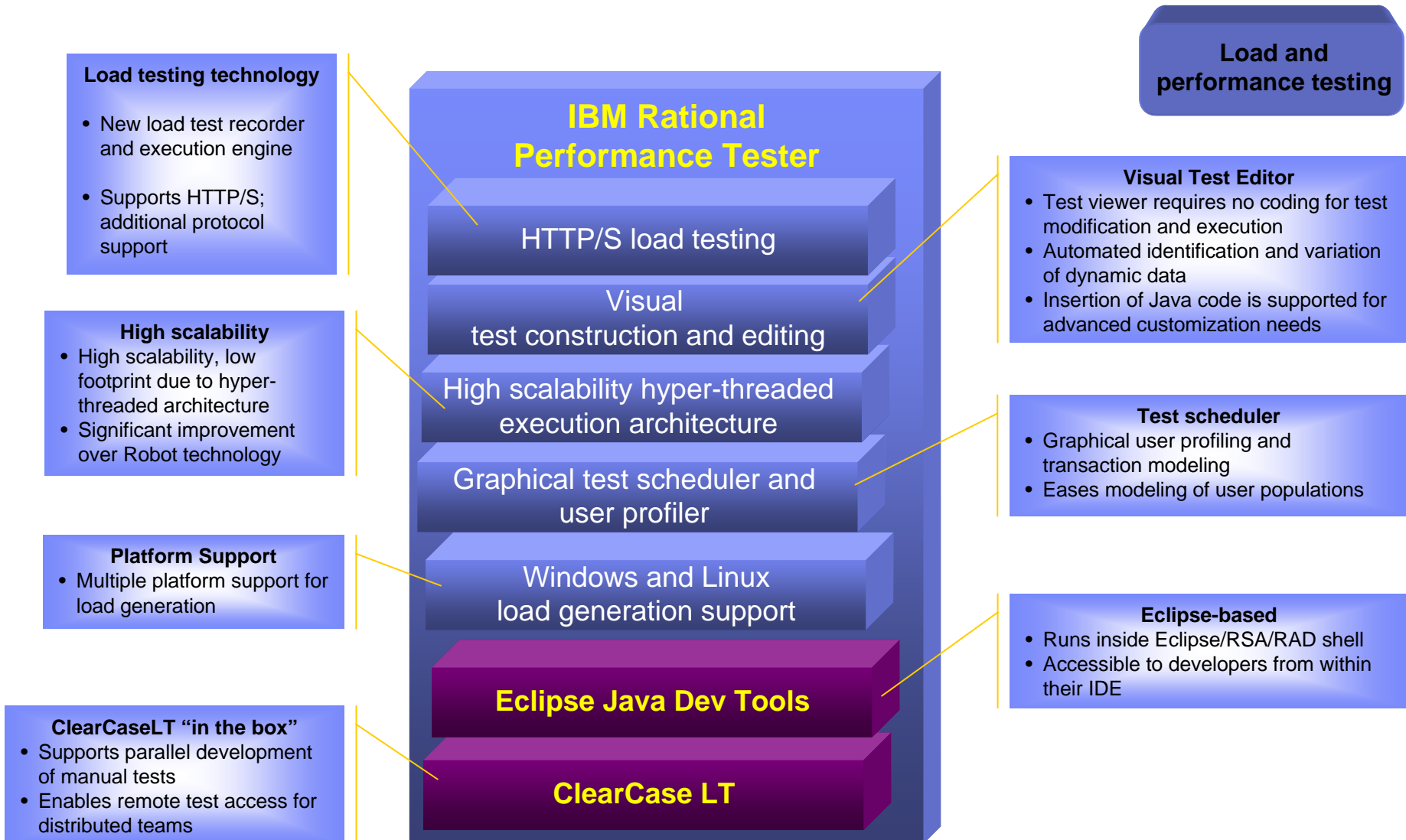
Java, VS.NET, Web and terminal-based application support

Data-driven test assistance

Java in Eclipse or VB.NET in VS.NET

	CardNumberInc...	creditCombo	ExpirationDateText	NameText	StreetText	CityStateZipText	Ph
0	44444444444444	Visa	0505	Trent Culpito	75 Wall St 22nd Fl	NY, NY 12212	21
	123412341234	Amex	0206	Brian Fred	1212 Foo Ln	NY, NY 12214	12

IBM Rational Performance Tester



Performance Testing - Load and performance testing

- *What*
 - ▶ Load and performance testing
- *For*
 - ▶ Testers
 - ▶ Deployment Managers
- *Why*
 - ▶ Validation of Web-application scalability under variable multi-user loads prior to deployment



Deployment
Manager

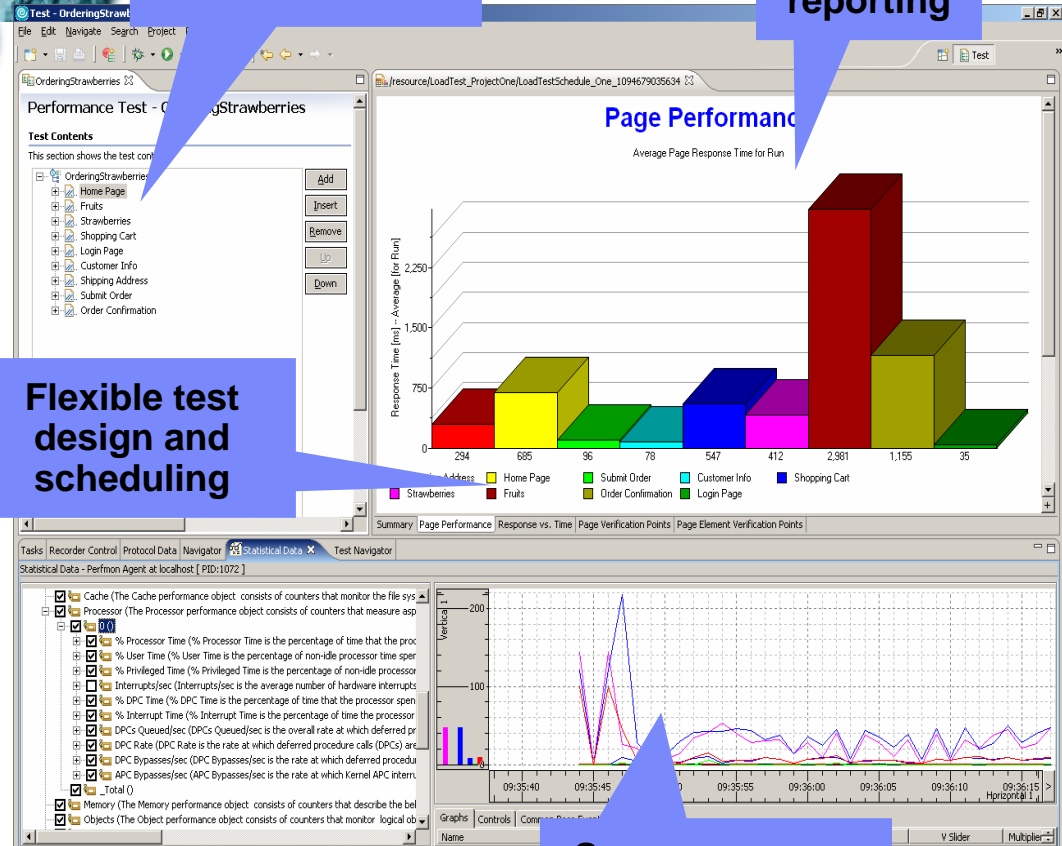
Tester

Visual test editor

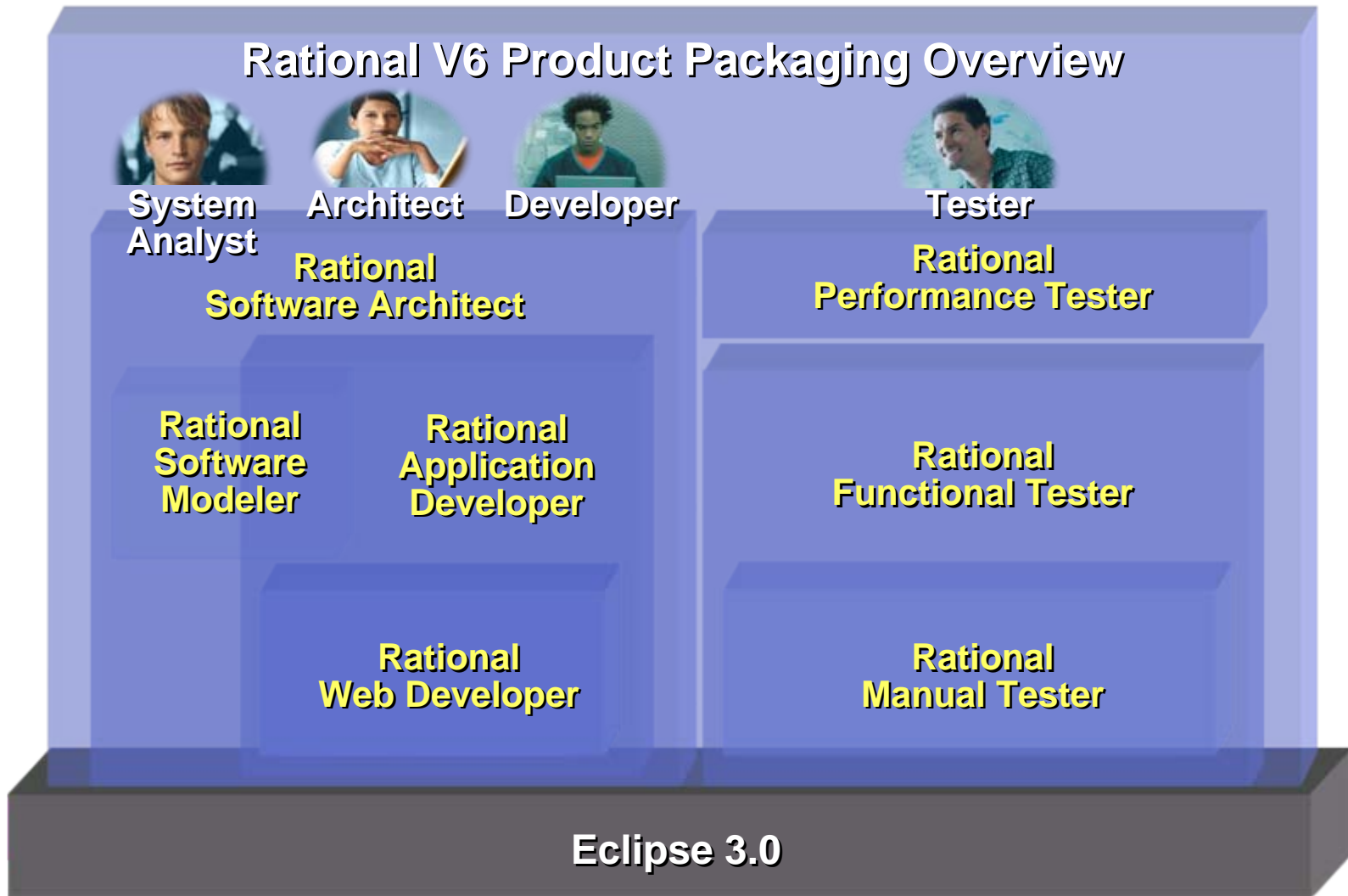
Real-time
reporting

Flexible test
design and
scheduling

Server resource
data collection



V6 Packaging Overview – Design, Construction and Software Quality Testing



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New Infocenter, including “Education Assistant”

- New Infocenter
<http://ibm.com/software/webervers/appserv/infocenter.html>
- Education Assistant
 - Presentations narrated with sound
 - Tutorials
 - Reference information
- Installed with WAS and on ibm.com

WebSphere Application Server Library - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ibm.com/software/webervers/appserv/infocenter.html>

United States [change] Terms of use

Home Products Services & solutions Support & downloads My account

Software > Application Servers > WebSphere Application Server >

WebSphere Application Server WebSphere software

V 6.0 V 5.1.x V 5.0.x V 4.0.x

WebSphere Application Server Version 6.0.x Information Center

Express - distributed platforms Show | Hide

WebSphere Application Server - distributed platforms Show | Hide

Network Deployment - distributed platforms Show | Hide

Documentation - Information center format
[WebSphere Application Server Network Deployment, Version 6.0.x](#)
[WebSphere Help System plug-in: Network Deployment](#)
[WebSphere Help System plug-in: Javadoc](#)

Documentation - Book format
[Migrating, coexisting, and interoperating](#) (PDF)
[Installing your application serving environment](#) (PDF)
[Administering applications and their environment](#) (PDF)
[Setting up the application serving environment](#) (PDF)
[Using the administrative clients](#) (PDF)
[Securing applications and their environment](#) (PDF)
[Developing and deploying applications](#) (PDF)
[Troubleshooting and support](#) (PDF)

Evaluation and overview
[Literature: Case studies, data sheets, and more](#)

Tutorials, samples and demos
[IBM Education Assistant](#)
[Accessing the Samples Gallery \(requires product installation\)](#)

Release notes
[Release notes](#)

Supported hardware and software
[Supported hardware and software](#)
[Supported hardware](#)
[Supported software](#)

Papers and articles
[WebSphere Application Server zone on developerWorks](#)
[WebSphere Developer Technical Journal](#)
[White papers](#)
[Links recommended by product support](#)

Supplemental books
[WebSphere Redbooks Domain](#)

Related software

- WebSphere Application Server - Express
- WebSphere Application Server
- WebSphere Application Server Network Deployment
- WebSphere Application Server for iSeries
- WebSphere Application Server for z/OS
- WebSphere Extended Deployment
- Rational Application Developer for WebSphere Software
- Rational Web Developer for WebSphere Software
- Macromedia ColdFusion MX for WebSphere

Related solutions

- WebSphere Business Integration Server Foundation
- WebSphere Industry Solutions

Resources

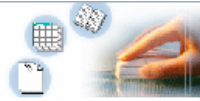
- WebSphere Help System [?]

Related libraries

- WebSphere Application Server for iSeries library
- WebSphere Application Server Express library
- IBM HTTP Server library
- WebSphere Application Server - Edge Components library
- WebSphere Extended Deployment library
- WebSphere Business Integration Server Foundation library
- WebSphere Business Integration Server Foundation for z/OS library

“Education Assistant” – RAD V6 – Modules

IBM Education Assistant



Select your configuration:

IBM® Rational® Application Developer V6.0 ▼

Select how to display results:

Task based view ▼

Go

Click on links below to view educational material.

Application development	IBM Rational Application Developer V6
Getting started	Tool overview Eclipse overview
Installation and migration	Installation and migration
J2EE™ application development	Developing Java™ and J2EE applications with Unified Markup Language (UML) Analyzing coding practices in Java and J2EE applications J2EE Web and EJB™ development
Web application development	Developing Web applications (including J2EE Web applications) Developing Web applications with JavaServer™ Faces (JSF)
Portal application development	Developing portal applications

- New Infocenter
<http://ibm.com/software/webservers/appserv/infocenter.html>
- Education Assistant
 - Presentations narrated with sound
 - Tutorials
 - Reference information

Data application development	Developing applications with Service Data Objects (SDO) Developing applications for databases
XML application development	XML application development
Web services applications	Developing Web services applications Securing Web services applications Testing Web services applications
Test, debug and profile applications	Testing applications with WebSphere Application Server V6 Component testing applications Debugging Java and J2EE applications Profiling Java and J2EE applications
Applying security	Applying J2EE security to EJBs and Web applications



RAD V6 Tutorial Demo Series (<http://JavaDevTools.com>)

Executives and Managers

- Watch and Learn:* Simply view the "Tutorial Demo" movies to see ROI in action...in just minutes!

Architects and Developers

- Watch and Do:* Use the "Tutorial Demo" movies to build the reference applications from scratch!

#1 End-2-End Application

End-2-End Page (End2EndPage.jsp and java)
Call All

Type of Calls Input-->Submit-->Results

Temperature Web Service FastWeather Web Service

Zip Code: 11101 Cond: Clear
City: Long Island City
License Key: WS14-PBJ1-K0Y3 State: New York
Temp°F: 28

Submit

Diagrams

Web Services:
o Temperature (www.xmethods.net)
o FastWeather (ServiceObjects.com)

XML:
o Create XML Doc
o Receive XML Doc

Create XML Doc Read XML Doc

Id: 123
Info: Hi XML!
Submit

XML: <?xml version="1.0" encoding="UTF-8"?> <E2E>
Doc: <ID>123</ID> <INFO>Hi XML!</INFO> </E2E>

JSF:
Client-side data:
o Table
o Graphs

COUNTER COUNT
CounterA 111
CounterB 200
Page 1 of 2 |<|> Jump to page: |

Counter Usage

Counter Usage

#2 Quick Success Apps

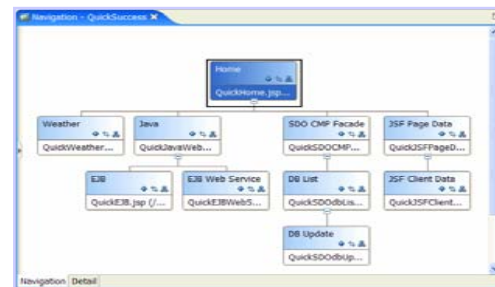
Navigation - QuickSuccess Web Browser

http://localhost:9080/QuickSuccess/faces/QuickHome.jsp

Welcome to the Quick Success Gallery

Home
Weather
Java
EJB
EJB Web Service
SDO CMP Facade
DB List
JSF Page Data
JSF Client Data

Portfolio Performance



#3 Banking & Finance

Financial Advisor Dashboard

BankCustomers portfolio

Customer	First Name	Last Name	City	State	Zip	Work Phone	\$ Invested	\$ Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,751.17	5.55%
2	Betty	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.79	5.51%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$536,468.79	5.33%
4	Dennis	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,425.00	2.12%

Customer Portfolios Performance

Banking > Finance > Portfolio Management

Customer # 1

Analyze Customer Portfolio

Portfolio details for Arthur Platinum appear below
Invested: \$500,000.00 Projected: \$527,751.17 Rate of return: 5.55%

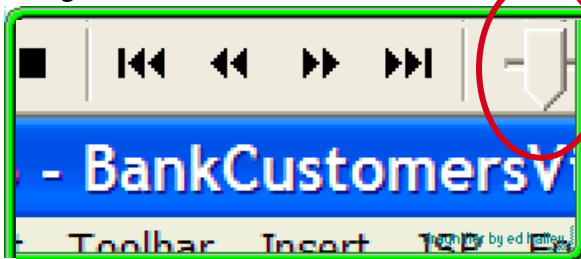
Portfolio	Allocation	Graphics	Market Simulation
Fund Asset #	Fund Name	% of Portfolio	\$ Invested Risk % Return \$ Projected
101	Blended - Income Plus Life Strategy	5%	\$25,000.00 1 2.124% \$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00 2 2.240% \$20,499.00
103	Blended - Moderate Life Strategy	6%	\$30,000.00 3 6.374% \$31,612.30
104	Blended - Aggressive Life Strategy	7%	\$35,000.00 4 8.424% \$37,949.40
105	Money Market	5%	\$25,000.00 1 2.124% \$25,531.00
106	Bond - Stable Value	5%	\$25,000.00 1 2.127% \$25,518.79
107	Bond - Total Market	5%	\$25,000.00 2 8.372% \$26,952.71

RAD V6 Tutorial Demo Series – How They Work...

- The embedded movie player has playback controls like a DVD player.
- The SLIDER allows accelerated forward/reverse playback control.



Magnified View of Slider



Web - Web Browser - IBM Rational Software Development Platform

File Edit Navigate Search Project Run Window Help

BankCustomersView.jsp BankPortfoliosView.jsp Web Browser X

http://localhost:9081/wps/myportal/ut/p/_s_7_0_A/7_0_407/.cmd/ad/.ar/1847068225/.pm/-/.c/6_0_3T3/.ce/7_0_40A/.p/5_0_3T1/.d/

BankCustomers portlet

Bank Customers

Customers Portfolios Dashboard

Cust #	First Name	Last Name	Address	City	State	Zip	e-mail	Work Phone
1	Arthur	Platinum	123 Easy Street	Long Island	NY	11101	Cash.A.Plenty@mail.com	773-123-1111
2	Betsy	Golden	45 Plush Circle	Arlington	VA	22202	Gold.P.Lated@mail.com	773-123-2222
3	Charlie	Silver	67 Humble Avenue	Fort Lauderdale	FL	33303	Simply.E.Nuff@mail.com	773-123-3333
4	Denise	Copper	89 Trailer Park Drive	Burghill	OH	44404	Always.N.Debt@mail.com	773-123-4444

BankPortfolios portlet

Bank Portfolio Management

Customer #

Analyze Customer Portfolio

Portfolio Allocation Graphics Market Simulation

Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
301	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.125%	\$25,531.25
302	Blended - Conservative Life Strategy	5%	\$25,000.00	2	4.25%	\$26,062.50
303	Blended - Moderate Life Strategy	5%	\$25,000.00	3	6.375%	\$26,593.75
304	Blended - Aggressive Life Strategy	5%	\$25,000.00	4	8.425%	\$27,106.25
305	Money Market	5%	\$25,000.00	1	2.125%	\$25,531.25
306	Bond - Stable Value	10%	\$50,000.00	1	2.125%	\$51,062.50

Paused 00:59:01:06

End-2-End Application

Demo

"Accelerate development...
increase productivity...
maximize ROI !\$! "

Iterative Development Demos

➔ Model, Build, Test, Debug, Deploy

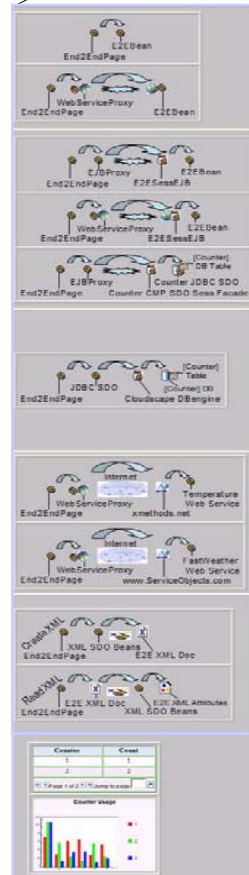
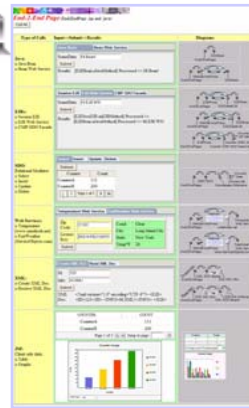
- UML Model Visualizations
- Dynamic Development
- Automated Deployment

J2EE+ Builder Demos

➔ Includes JSF, SDO, Web Services

- Java
- Databases
- Web Services
- Drag-n-Drop GUI

#1

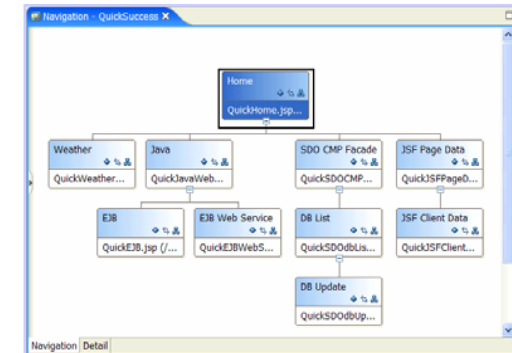
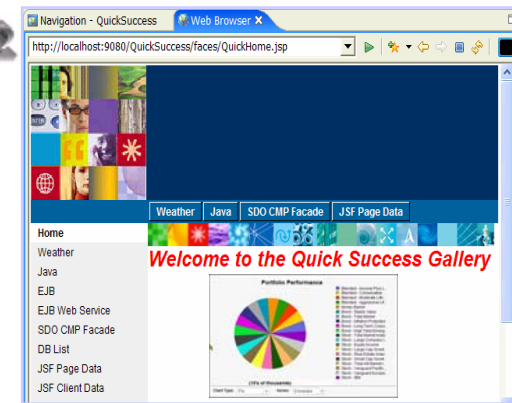


Quick Success Applications

Demo

- Easy build scenarios
- You watch or build
- < 10 minutes each

#2

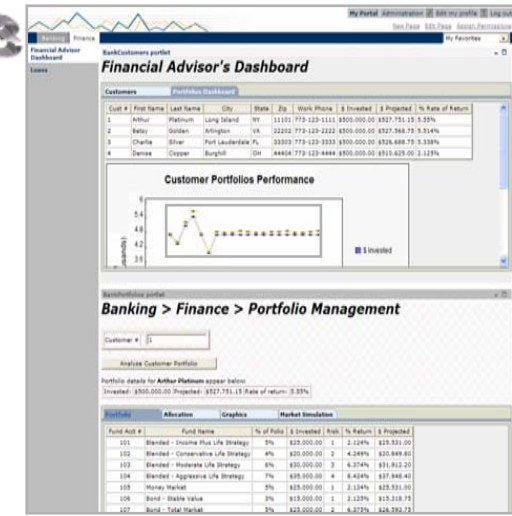


Banking & Finance Web/Portal Applications

Demo

- Banking Accounts
- Portfolio Management
- Financial Advisor Dashboard

#3



End-2-End Application

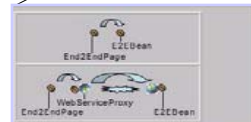
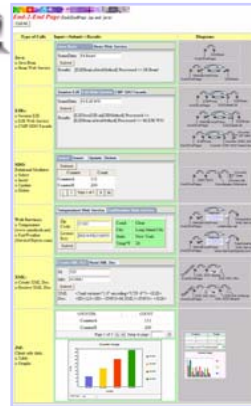
"Accelerate development...
increase productivity...
maximize ROI !\$! "

Iterative Development Demos

- ➔ Model, Build, Test, Debug, Deploy
- UML Visualizations
- Dynamic Development
- On-the-fly code changes
- Incremental build engine
- Testing for Java, EJBs, Web Services, etc...
- Dynamic Interactive Debugger
- Automated Application Packaging and Deployment

J2EE+ Builder Demos

- ➔ Includes JSF, SDO, Web Services
- Java and EJBs (Session, CMP)
- Service Data Objects (SDO)
- SDO CMP Session Facades
- XML and XSD Schemas
- XML SDO JavaBean Bindings
- JavaServer Faces (JSF)
- Database and SQL
- Web Services Creation and Consumption



End-2-End Page (End2EndPage.jsp and java)

Call All

Type of Calls	Input>>Submit>>Results	Diagrams						
Java: <ul style="list-style-type: none">o Java Beano Bean Web Service	<div>Java Bean Bean Web Service</div> <div>SomeData: Hi Bean!</div> <div>Submit</div> <div>Results: [E2EBean.aJavaMethod] Processed >> Hi Bean!</div>							
EJBs: <ul style="list-style-type: none">o Session EJBo EJB Web Serviceo CMP SDO Facade	<div>Session EJB EJB Web Service CMP SDO Facade</div> <div>SomeData: Hi EJB WS!</div> <div>Submit</div> <div>Results: [E2ESessEJB.aEJBMethod] Processed >> [E2EBean.aJavaMethod] Processed >> Hi EJB WS!</div>							
SDO: Relational Mediator: <ul style="list-style-type: none">o Selecto Inserto Updateo Delete	<div>Select Insert Update Delete</div> <div>Refresh</div> <table border="1"><thead><tr><th>Counter</th><th>Count</th></tr></thead><tbody><tr><td>CounterA</td><td>111</td></tr><tr><td>CounterB</td><td>200</td></tr></tbody></table> <div>Page 1 of 2</div>	Counter	Count	CounterA	111	CounterB	200	
Counter	Count							
CounterA	111							
CounterB	200							
Web Services: <ul style="list-style-type: none">o Temperature (www.xmethods.net)o FastWeather (ServiceObjects.com)	<div>Temperature Web Service FastWeather Web Service</div> <div>Zip Code: 11101 Cond: Clear</div> <div>City: Long Island City</div> <div>License Key: WS14-PBJ1-KKY3 State: New York</div> <div>Temp*F 28</div> <div>Submit</div>							
XML: <ul style="list-style-type: none">o Create XML Doco Recieve XML Doc	<div>Create XML Doc Read XML Doc</div> <div>Id: 123 Info: Hi XML!</div> <div>Submit</div> <div>XML: <?xml version="1.0" encoding="UTF-8"?><E2E> Doc: <ID>123</ID><INFO>Hi XML!</INFO></E2E></div>							
JSF: Client-side data: <ul style="list-style-type: none">o Tableo Graphs	<table border="1"><thead><tr><th>COUNTER</th><th>COUNT</th></tr></thead><tbody><tr><td>CounterA</td><td>111</td></tr><tr><td>CounterB</td><td>200</td></tr></tbody></table> <div>Page 1 of 2 Jump to page: []</div> <div>Counter Usage</div>	COUNTER	COUNT	CounterA	111	CounterB	200	
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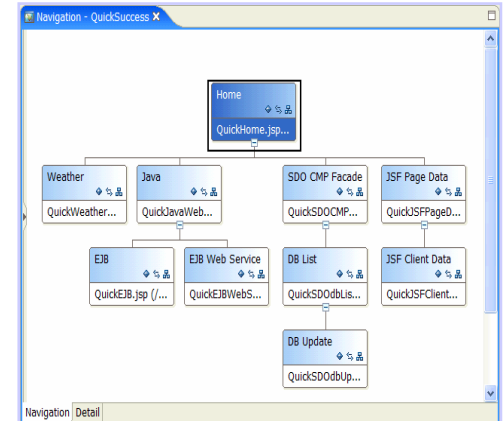
Quick Success Gallery Applications

- Easy J2EE build scenarios
- Internet Weather Web Service
- JavaBean Web Service
- EJB Web Service
- Service Data Objects (SDO)
 - Database Mediator: Select, Insert, Update, Delete
- Java Server Faces (JSF)
 - Rich UI Controls, Charts/Graphs, drag-n-drop
 - Custom coding, Event Driven, MVC Framework

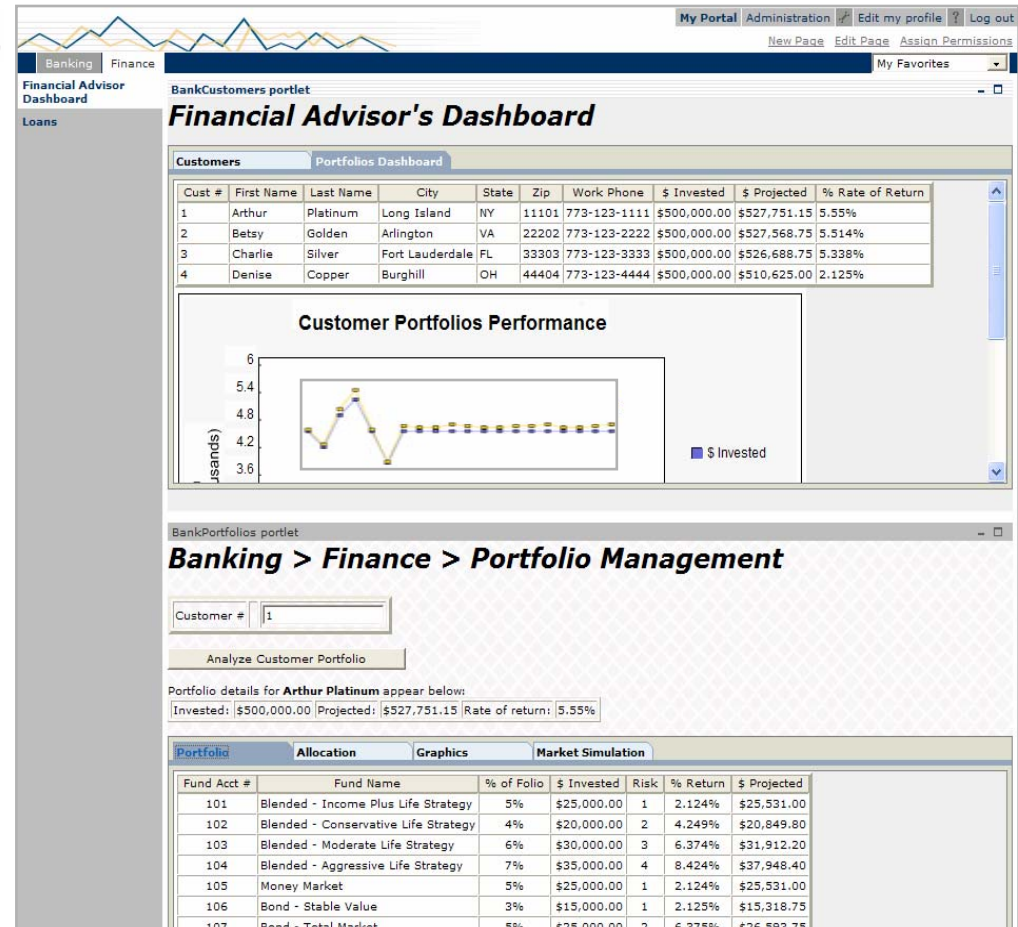
Banking & Finance Web/Portal Applications

- Transfer Funds
- Transaction History
- Account Management
- Portfolio Management
- Asset Allocation
- Graphical portfolio analysis
- Stock Market Simulation
- Mutual Funds, Stocks, Bonds, Money Mkt

#2

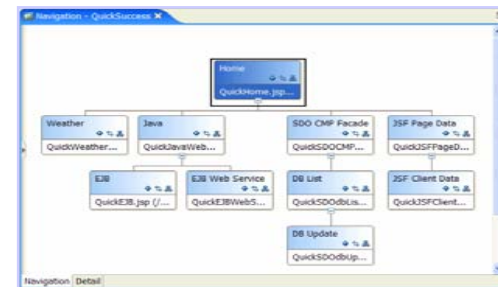


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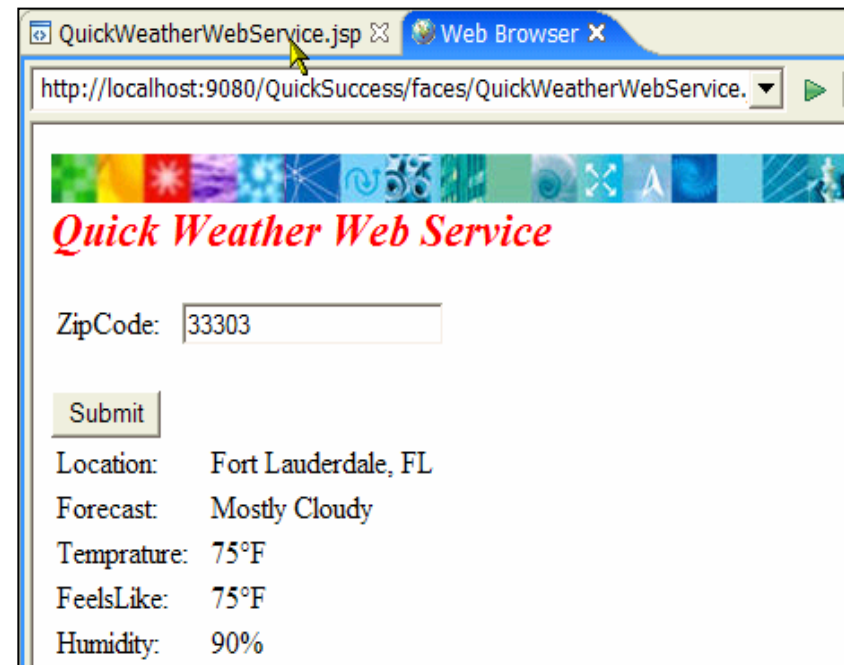
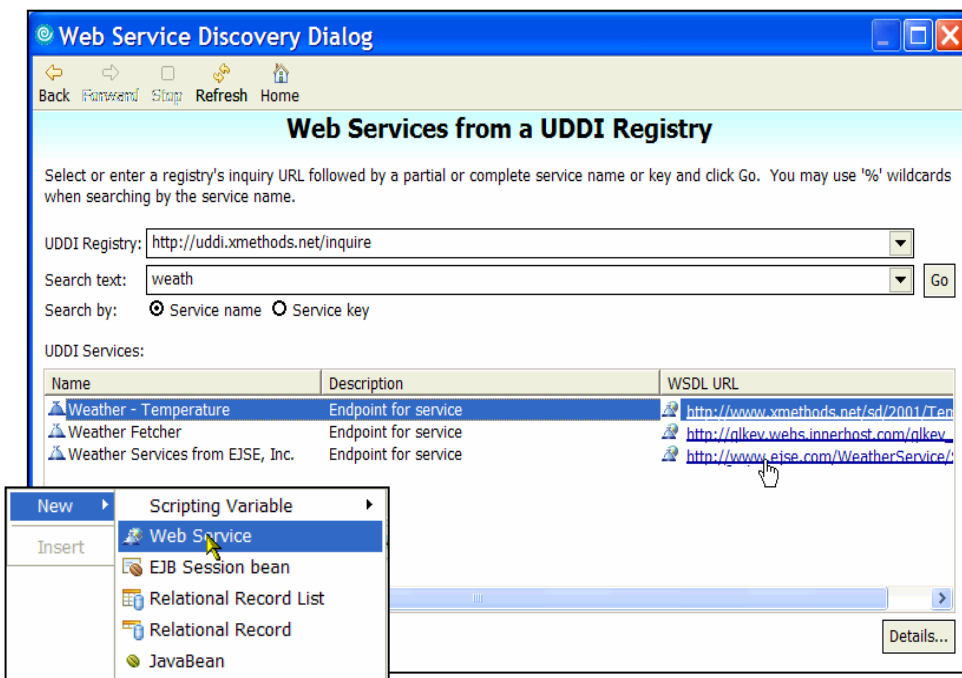
Quick Success Scenarios – Ad Hoc Build Tasks

- Weather Web Service – Consuming an internet based Web Service
- Java Web Service – Creating and consuming a JavaBean Web Service
- Session EJB - Creating, coding, testing, and web service enablement
- CMP EJBs – Mapping to a relational database
- CMP SDO Facade – Creating an SDO façade for a CMP EJB
- SDO CRUD – Create, retrieve, update and delete relational data
- JSF Client Data – Enhanced Browser cached JSF UI Components
- Web Site Designer – Constructing and configuring web site navigation



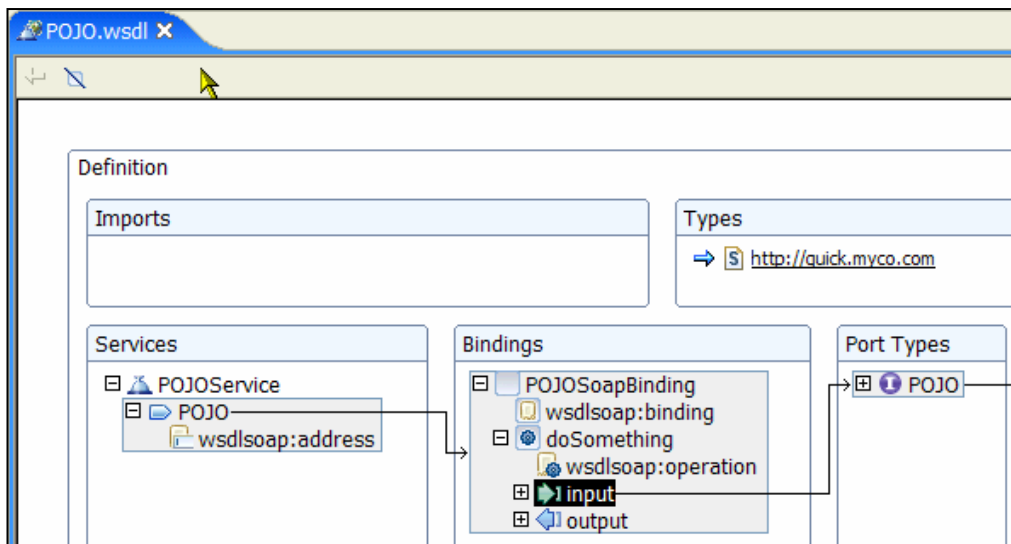
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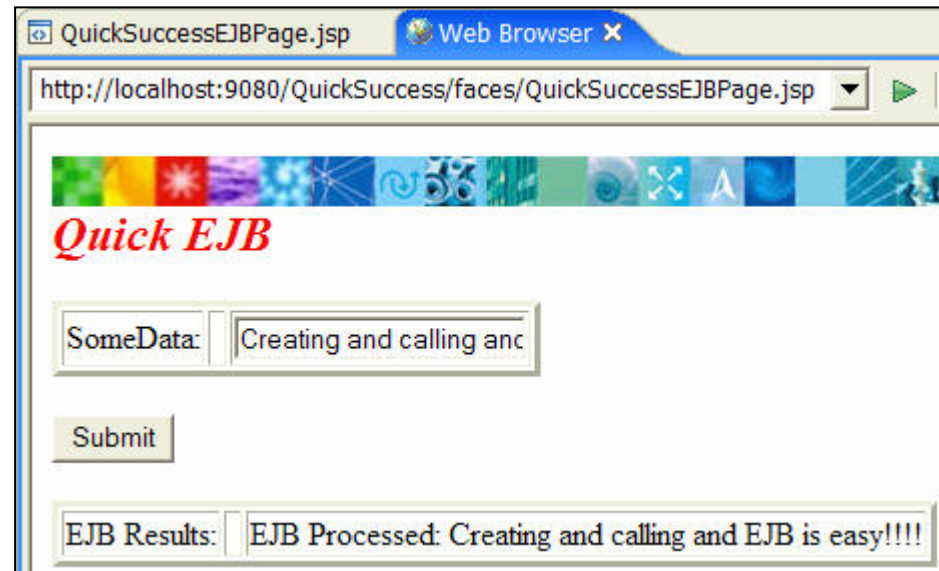
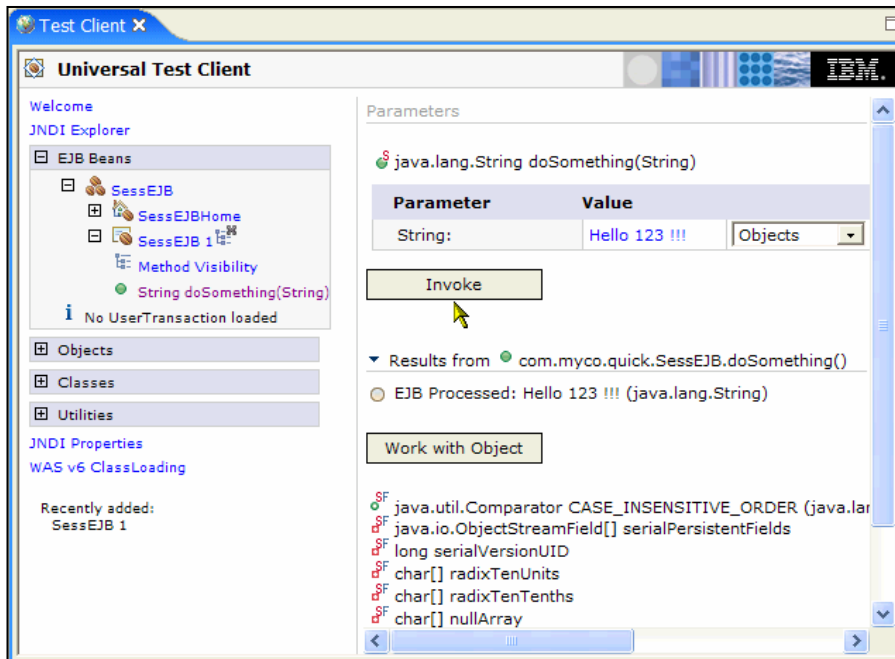
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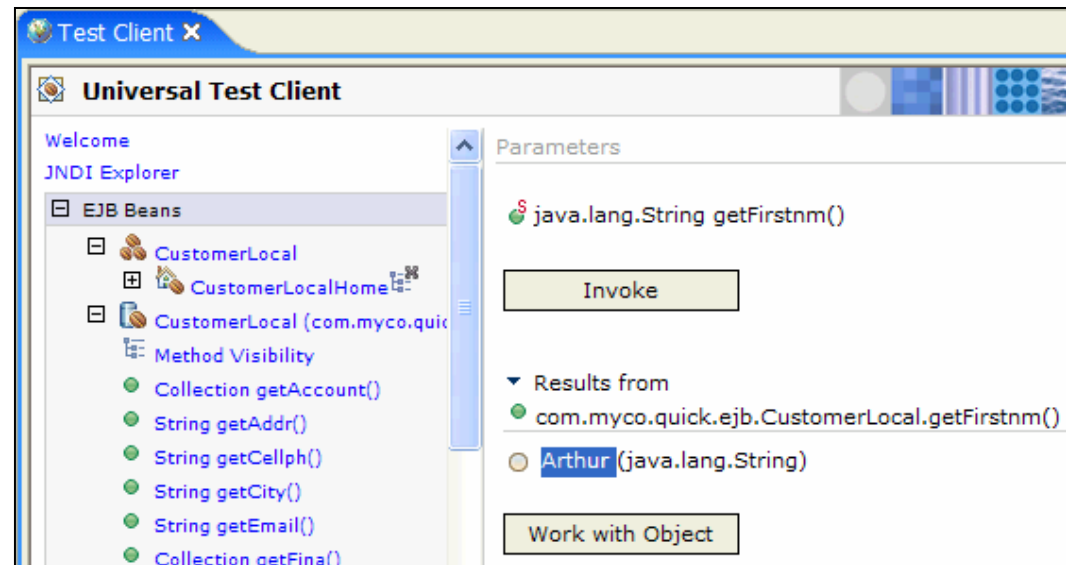
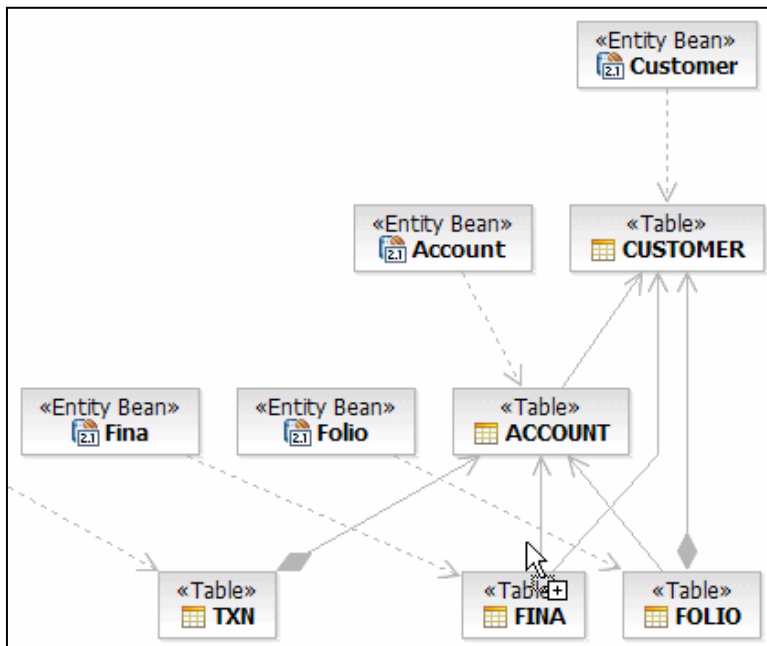
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Create Session Bean Facade

Session Bean Facade
Create a session bean facade for CMP entity beans.

Name:

Package Name:

Source Location:

Available CMP beans:

- Customer**
- Account
- Fina
- Folio
- Txn

QuickSDOCMPFacadePage.jsp Web Browser

http://localhost:9080/QuickSuccess/faces/QuickSDOCMPFacadePage.

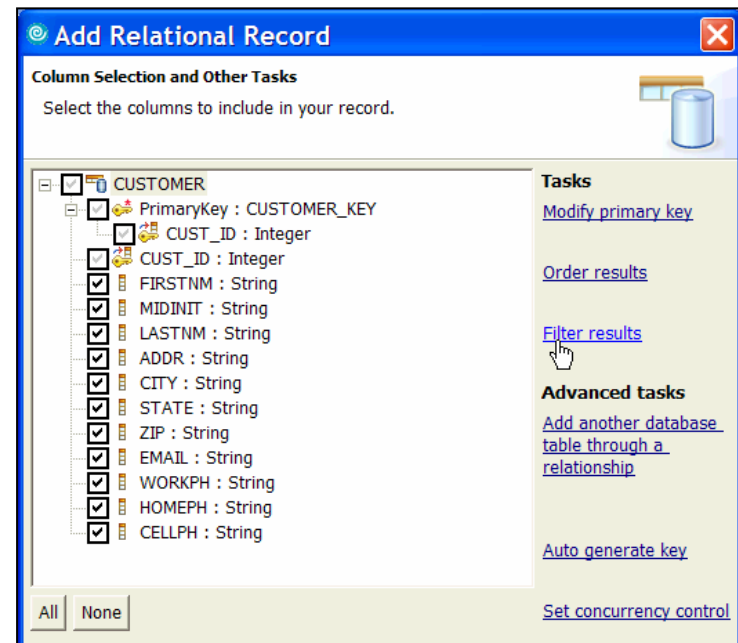
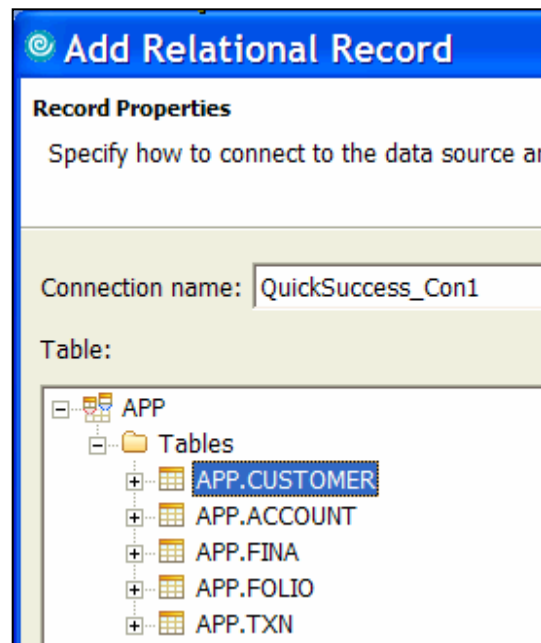
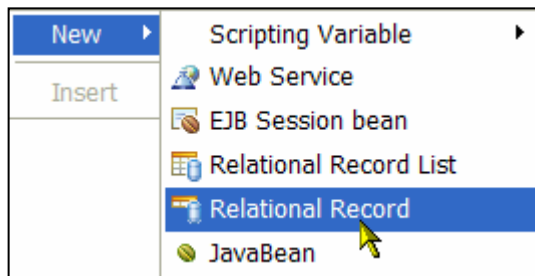
Quick SDO CMP EJB Session Bean Facade

Submit

Cust_id	Firstnm	Lastnm	Addr	City	State	Zip
1	Arthur	Platinum	123 Easy Street	Long Island	NY	11101
2	Betsy	Golden	45 Plush Circle	Arlington	VA	22202
3	Charlie	Silver	67 Humble Avenue	Fort Lauderdale	FL	33303
4	Denise	Copper	89 Trailer Park Drive	Burghill	OH	44404

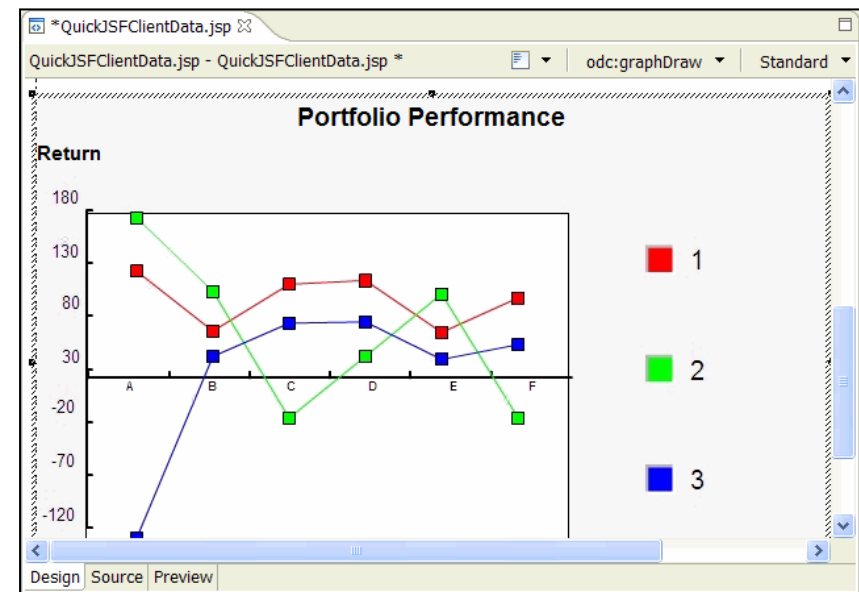
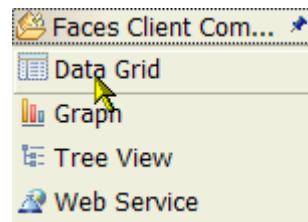
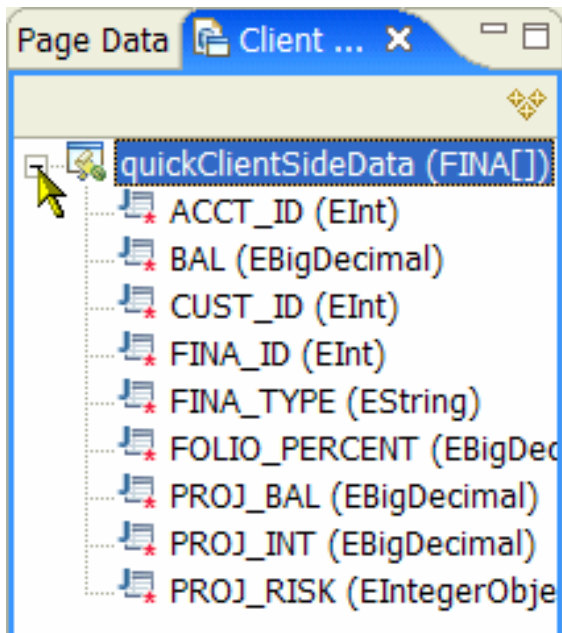
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End-2-End Scenario – Soup-2-Nuts J2EE Build Tasks

- Solution Overview – Single JSP captures all build and run scenarios
- Java Beans – Create, code, test, debug and JSF integration
- Dynamic Development – Changing code on-the-fly and debugging
- UML Visualization – Exploring application artifacts
- Performance Profiling – Analyzing performance with graphics and reports

End-2-End Page (End2EndPage.jsp and .java)

Call All

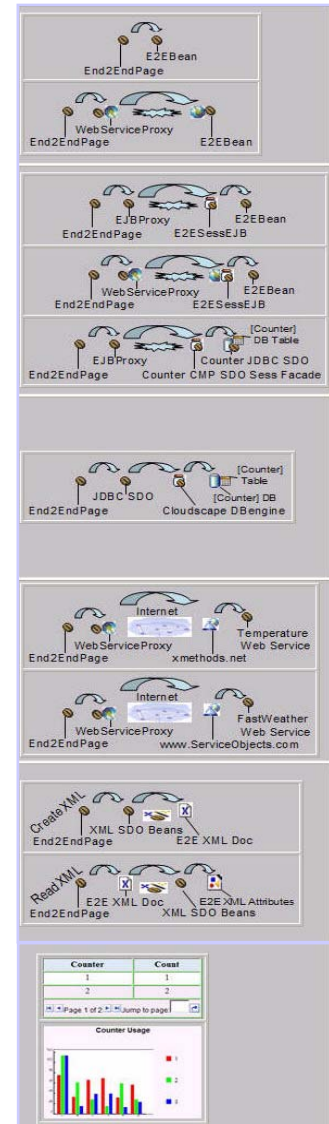
Type of Calls	Input>>Submit>>Results	Diagrams												
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service Zip Code: 11101 Cond: Clear License Key: WS14-PBJ1-KXY3 City: Long Island City State: New York Temp°F: 28 Submit	Diagrams End2EndPage, WebServiceProxy, xmethods.net, Temperature Web Service, Internet, FastWeather Web Service, www.ServiceObjects.com												
XML: o Create XML Doc o Recieve XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML! Submit XML: <?xml version="1.0" encoding="UTF-8"?> <E2E> Doc: <ID>123</ID> <INFO>Hi XML!</INFO> </E2E>	Create XML, XML 5.00 Beans, E2E XML Doc, Read XML, E2E XML Doc, E2E XML Beans, End2EndPage												
JSF: Client-side data: o Table o Graphs	<table border="1"> <thead> <tr> <th>COUNTER</th> <th>COUNT</th> </tr> </thead> <tbody> <tr> <td>CounterA</td> <td>111</td> </tr> <tr> <td>CounterB</td> <td>200</td> </tr> </tbody> </table> Page 1 of 2 Jump to page: <input type="text"/> Counter Usage Bar chart showing Counter Usage (Y-axis: # Hits, X-axis: Counter). Legend: CounterA (blue), CounterB (yellow), CounterC (red), CounterD (green).	COUNTER	COUNT	CounterA	111	CounterB	200	<table border="1"> <thead> <tr> <th>Counter</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2</td> <td>2</td> </tr> </tbody> </table> Counter Usage Bar chart showing Counter Usage (Y-axis: # Hits, X-axis: Counter). Legend: CounterA (blue), CounterB (yellow), CounterC (red), CounterD (green).	Counter	Count	1	1	2	2
COUNTER	COUNT													
CounterA	111													
CounterB	200													
Counter	Count													
1	1													
2	2													

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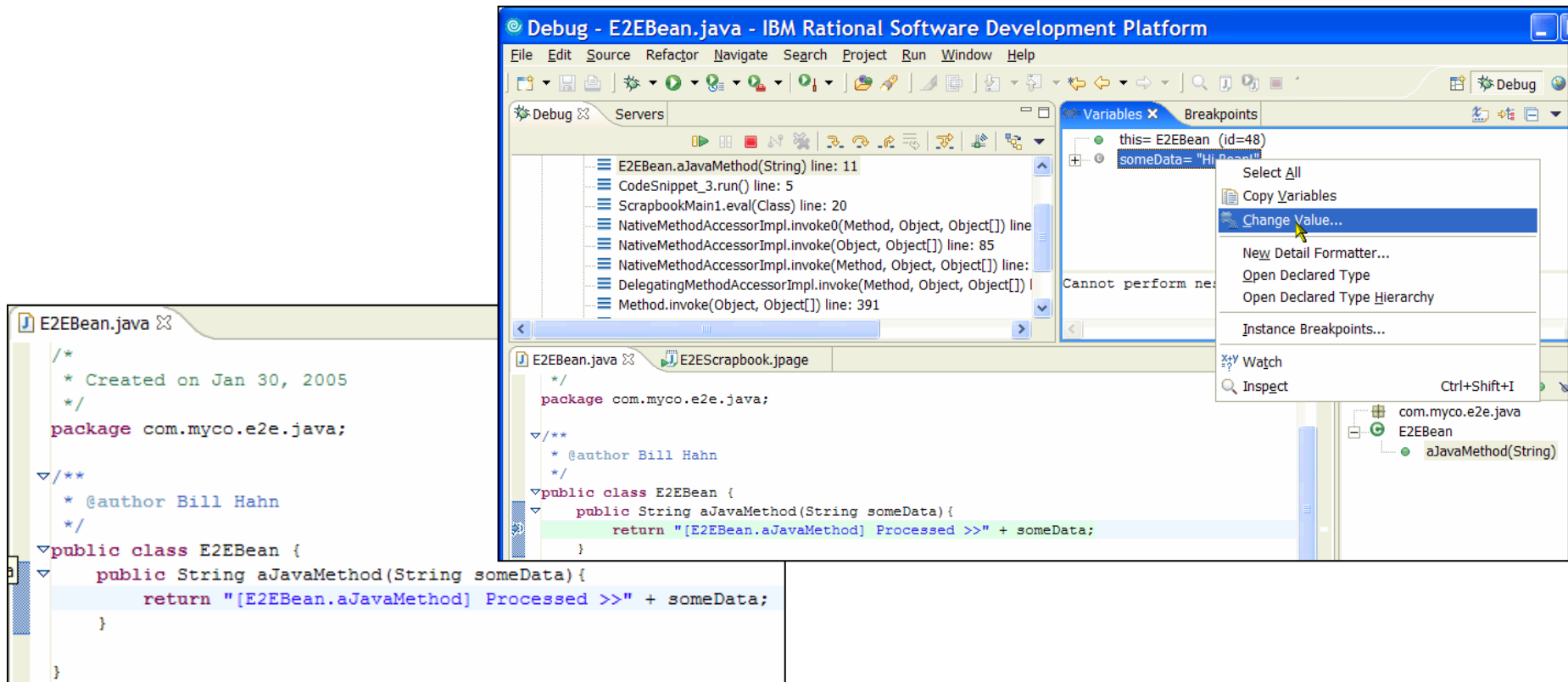
End-2-End Page (End2EndPage.jsp and .java)
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Type of Calls	Input->Submit->Results	Diagrams						
Web Services: o Temperature (www.xmethods.net) o FastWeather (ServiceObjects.com)	Temperature Web Service FastWeather Web Service Zip Code: 11101 Cond: Clear License Key: WS14-PBJ1-KCY3 City: Long Island City State: New York Submit Temp°F: 28							
XML: o Create XML Doc o Recieve XML Doc	Create XML Doc Read XML Doc Id: 123 Info: Hi XML Submit XML: <?xml version="1.0" encoding="UTF-8"?> <E2E> Doc: <ID>123</ID> <INFO>Hi XML</INFO> </E2E>							
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COUNTER	COUNT							
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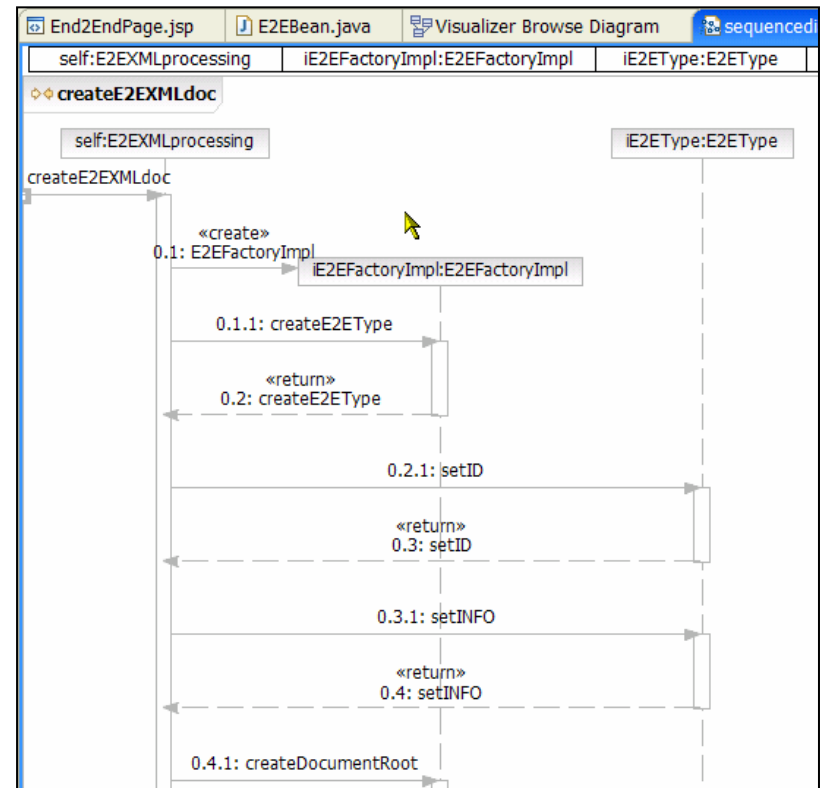
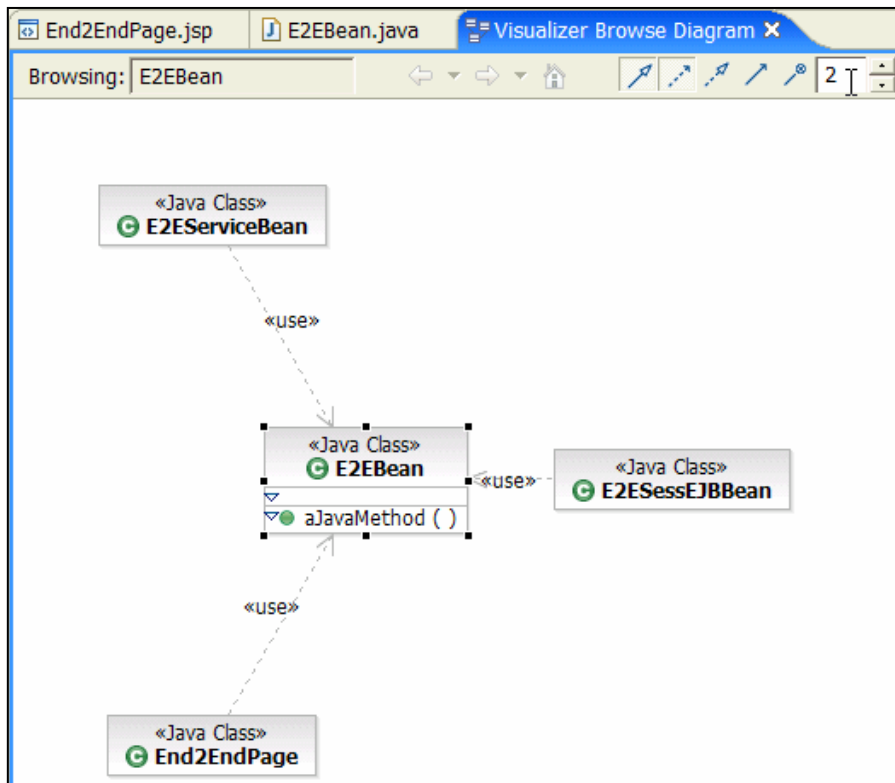
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Type of Calls	Input>>Submit>>Results	Diagrams
Java: o Java Bean o Bean Web Service	<div> <div>Java Bean Bean Web Service</div> <div> SomeData: <input type="text"/> <input type="button" value="Submit"/> Results: [E2EServiceBean.aWSJavaMethod] Processed >> [E2EBean.aJavaMethod] Processed >> [BP #2] </div> </div>	
EJBs: o Session EJB o EJB Web Service o CMP SDO Facade	<div> <div>Session EJB EJB Web Service CMP SDO Facade</div> <div> SomeData: <input type="text"/> <input type="button" value="Submit"/> Results: [E2ESessEJB.anEJBMethod] Processed >> [E2EBean.aJavaMethod] Processed >> [BP #3] </div> </div>	

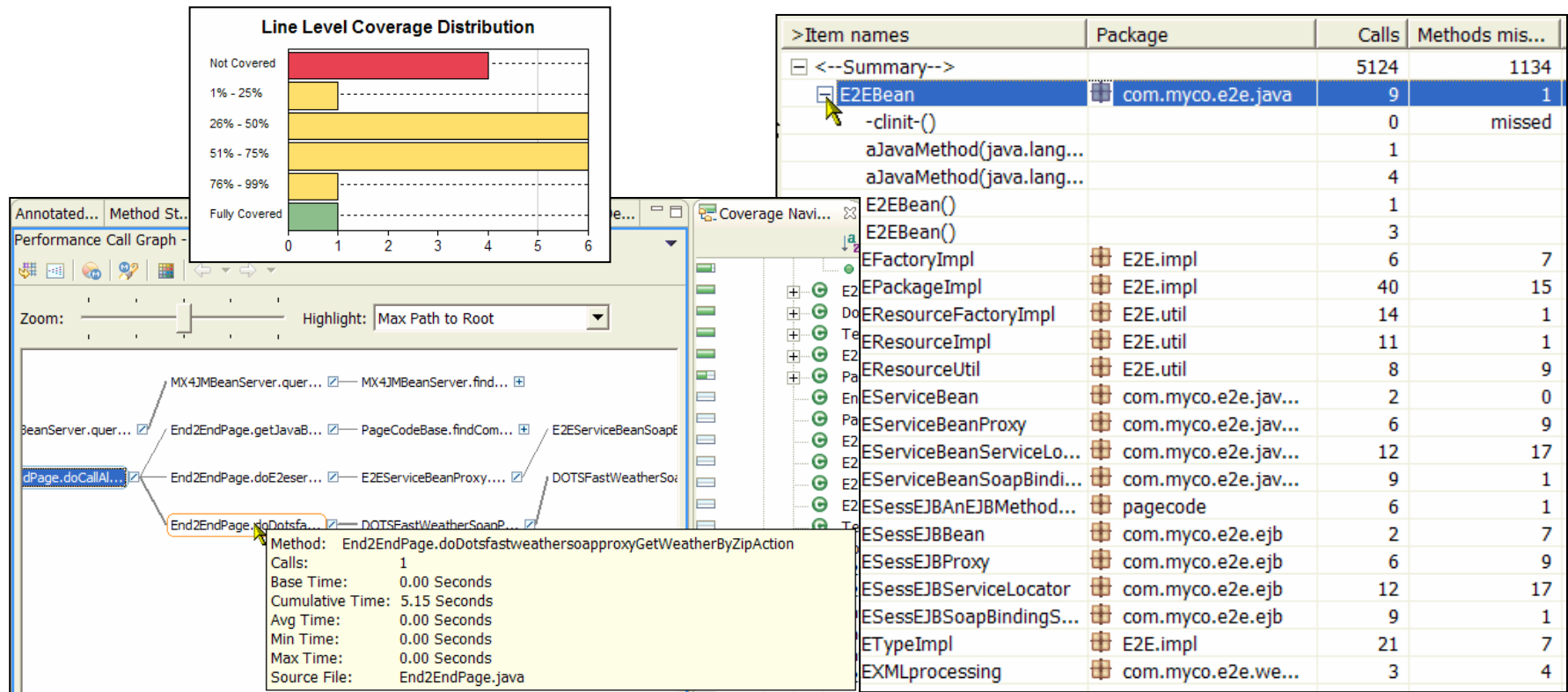
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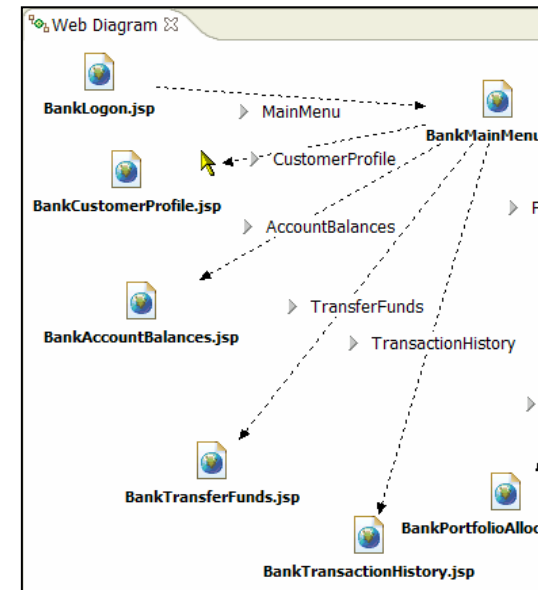
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Banking & Finance Scenario – Applying End-2-End tasks

- Logon and Main Menu – Logon, user profile managed bean and SDOs
- Transfer Funds – Web Services, SDOs and dynamically populated combo boxes
- Portfolio Management – Asset allocation, performance graphs and market simulation
- Web Site Design – Web site look-n-feel, hierarchy and navigation
- Dynamic Development – Changing code on-the-fly and debugging
- UML Visualization – Exploring application code with UML Diagrams
- Code Review – Best practices, code proposals and extensible rules
- Profiling Performance – Analyzing performance with graphics and reports



Banking & Finance Scenario – Applying End-2-End tasks

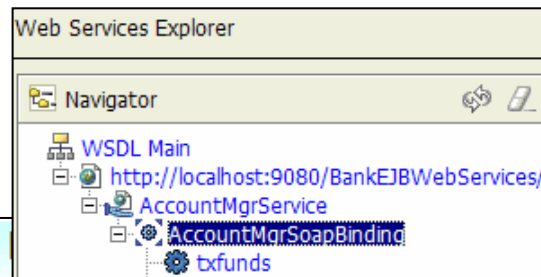
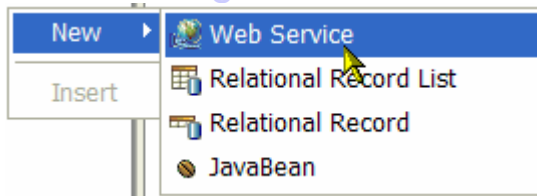
- Web Diagram, Logon and Main Menu – Logon, user profile managed bean and SDOs
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- Portfolio Management – Asset allocation, performance graphs and market simulation
- Web Site Design – Web site look-n-feel, hierarchy and navigation
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The screenshot illustrates the development of a Logon page in the IBM WebSphere IDE. The interface is divided into several panels:

- Project Navigator:** Shows the project structure for JSPWeb, including Web Site Navigation, Web Deployment Descriptor, Java Resources, WebContent, images, and CustomerAdmin.jsp.
- Web Browser:** Displays the Logon.jsp page. The page features a header with a colorful banner and the title "Logon". Below the title is a form with two input fields: "Customer ID#" and "Password". A tooltip points to the "Customer ID#" field, indicating where to bind the "customerNumber" to the control "text1".
- Page Data:** Shows the JSP scripting context, including sessionScope, applicationScope, requestScope, and param. The "customerNumber" (java.lang.String) is highlighted under sessionScope.
- Attributes:** Shows the configuration for the h:inputText control. The "Id" is set to "text1" and the "Value" is set to "#{sessionScope.customerNumber}".

Banking & Finance Scenario – Applying End-2-End tasks

- Logon and Main Menu – Logon, user profile managed bean and SDOs
- **Transfer Funds** – Web Services, SDOs and dynamically populated combo boxes
- Portfolio Management – Asset allocation, performance graphs and market simulation
- Web Site Design – Web site look-n-feel, hierarchy and navigation
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- UML Visualization – Exploring application code with UML Diagrams
- Code Review – Best practices, code proposals and extensible rules
- Profiling Performance – Analyzing performance with graphics and reports

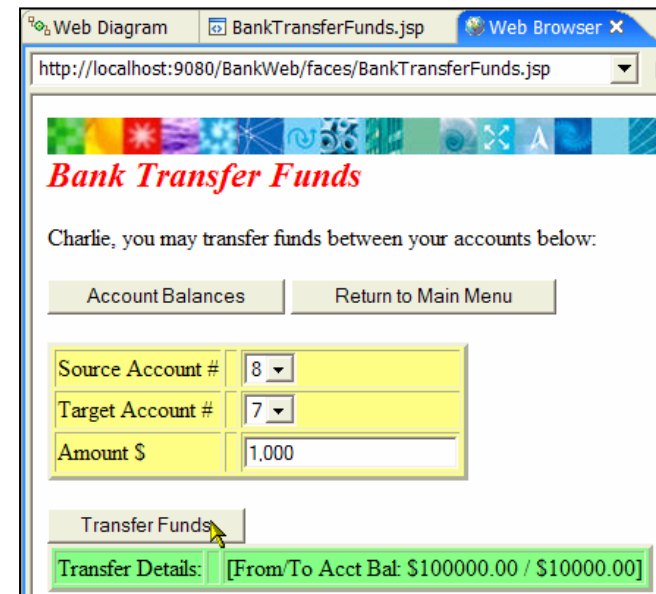


Web Service Discovery

[Web Services from a UDDI Registry](#)
Search for Web services by name or key in a public or private UDDI registry.

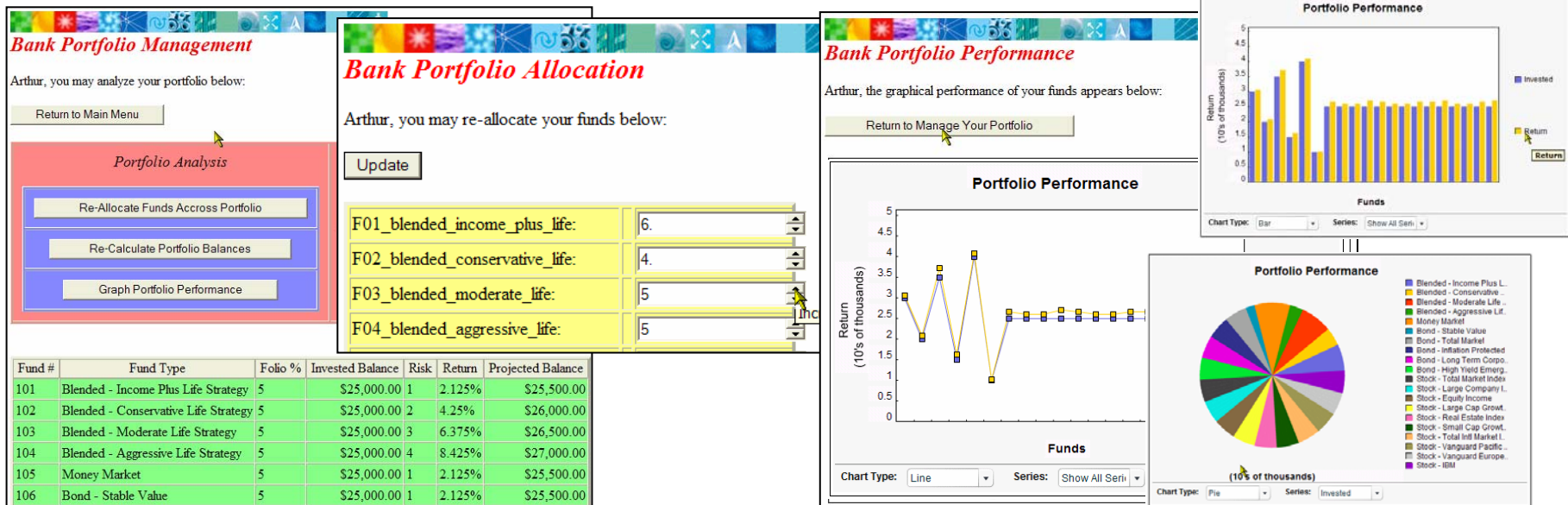
[Web Services from a known URL](#)
Search for Web services using a URL to a document.

[Web Services from your workspace](#)
Search for Web services deployed and running in my current workspace.



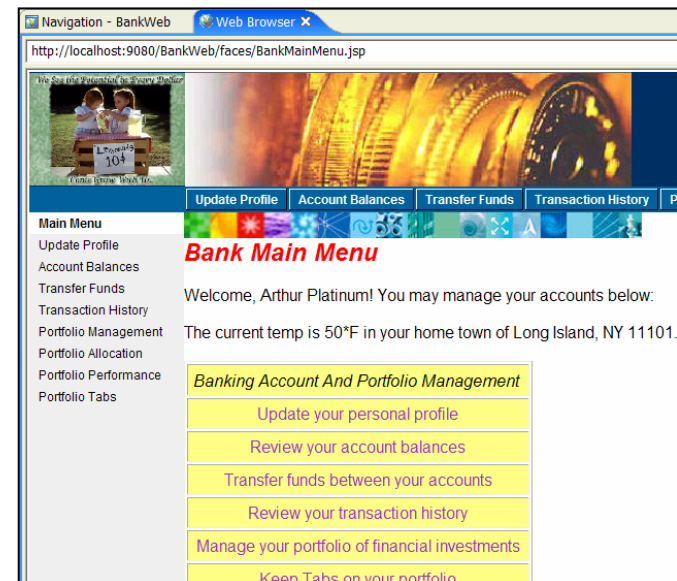
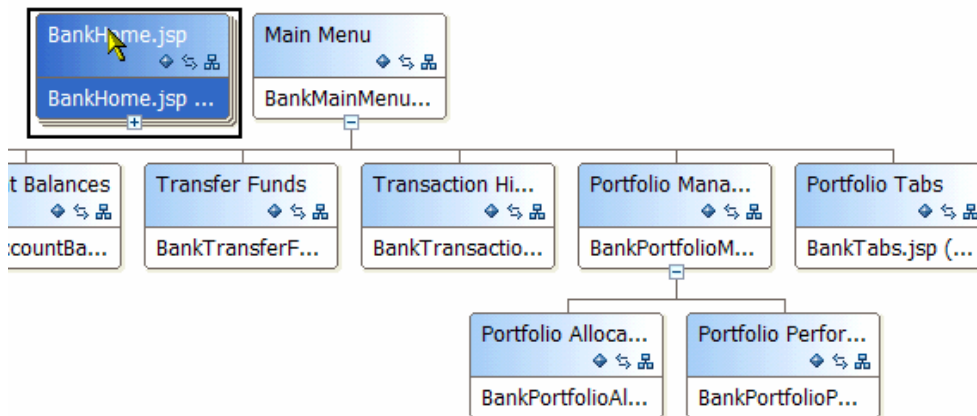
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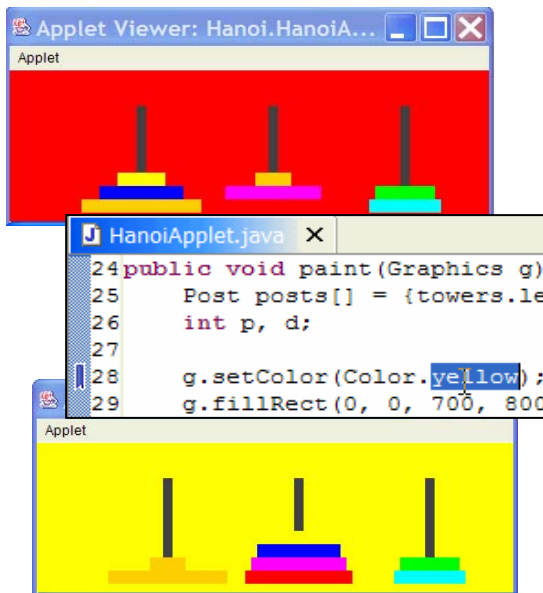
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Bank Transfer Funds

Arthur, you may transfer funds between your accounts below:

Account Balances Return to Main Menu

Source Account # Checking

Target Account # Savings

Amount \$ 1,000

Transfer Funds

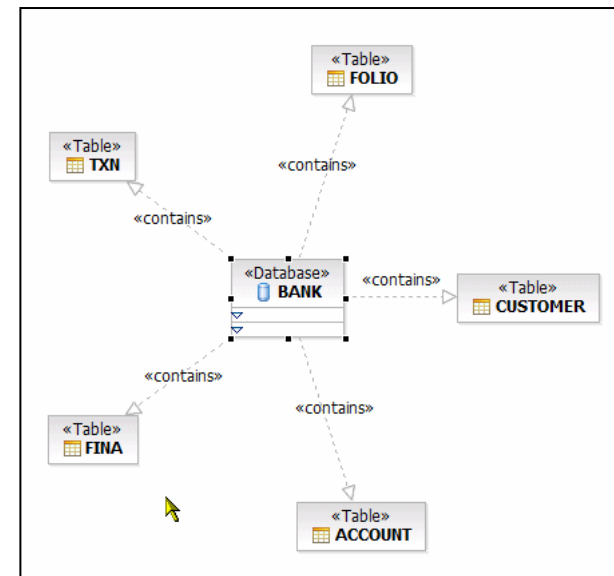
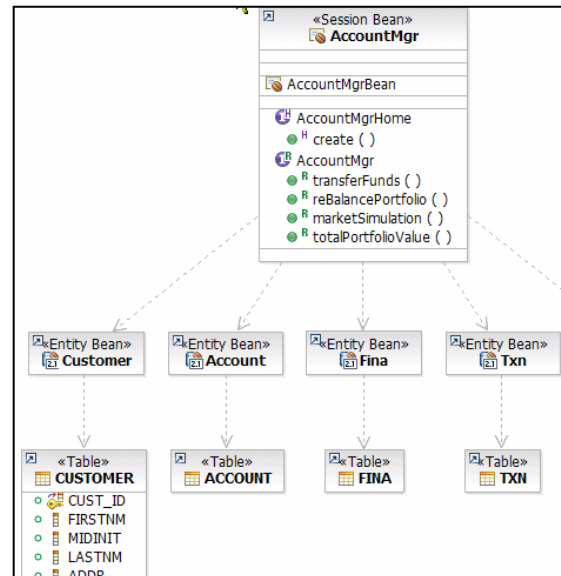
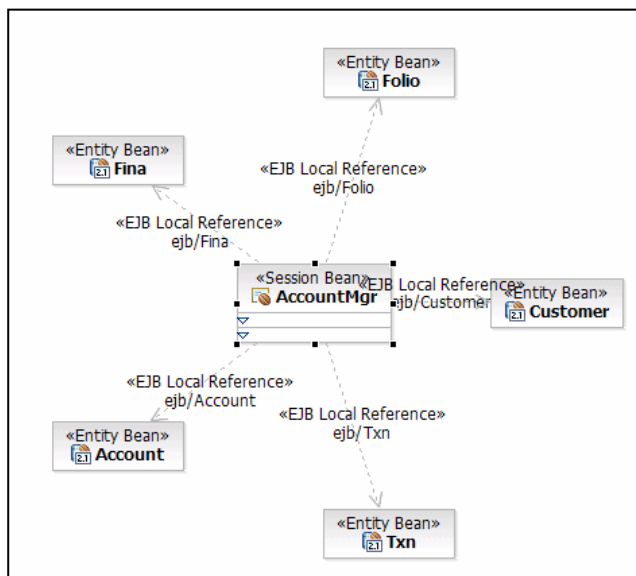
Transfer Details: [From/To Acct Bal: \$10000.00 / \$106000.00]

Transfer Funds

Transfer Details: [From/To Acct Bal: \$9000.00 / \$105000.00]

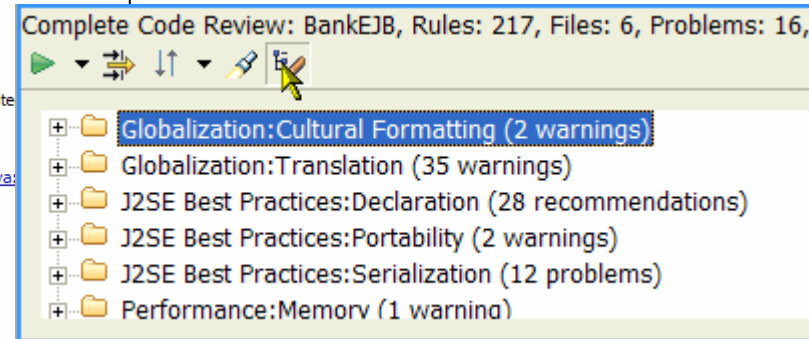
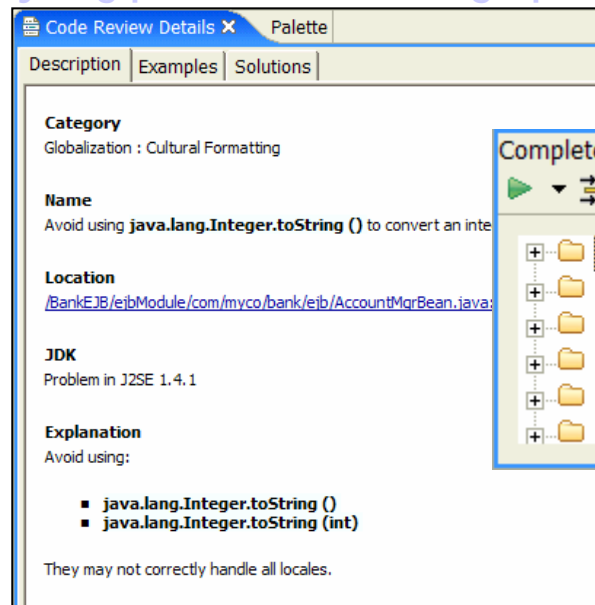
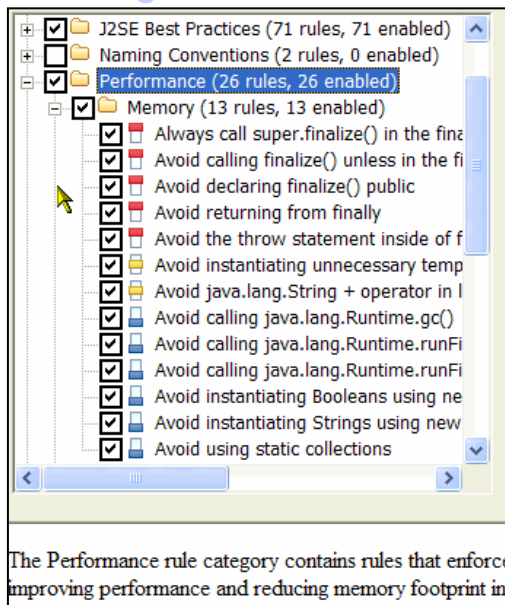
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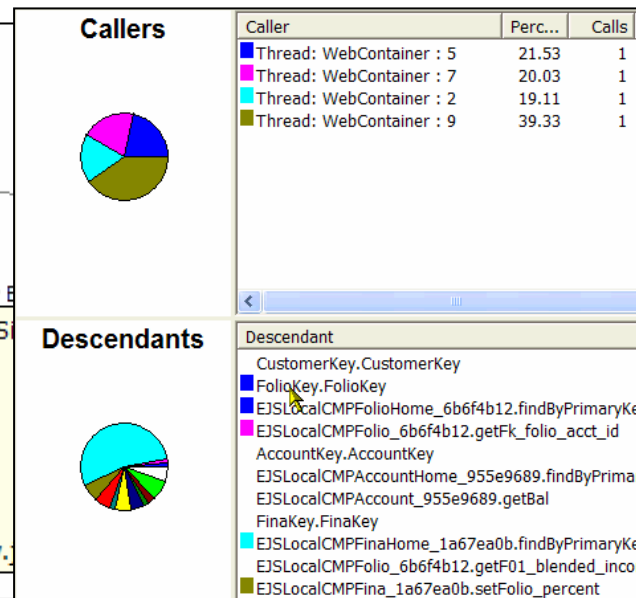
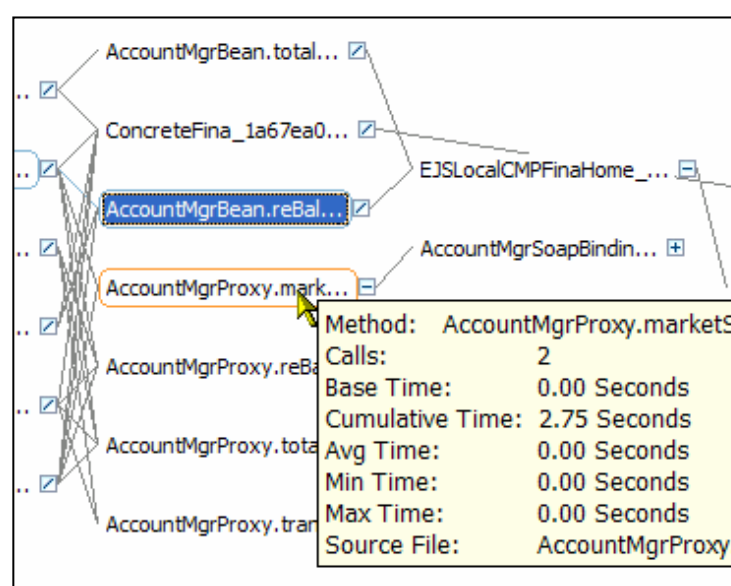
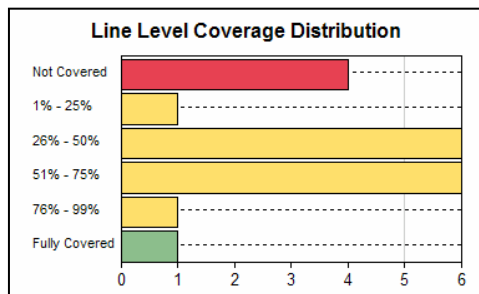
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Financial Advisor Dashboard – Portlets and Portal Design

My Portal Administration Edit my profile ? Log out
New Page Edit Page Assign Permissions

Banking Finance
Financial Advisor Dashboard
Loans

BankCustomers portlet

Financial Advisor's Dashboard

Customers Portfolios Dashboard

Cust #	First Name	Last Name	City	State	Zip	Work Phone	\$ Invested	\$ Projected	% Rate of Return
1	Arthur	Platinum	Long Island	NY	11101	773-123-1111	\$500,000.00	\$527,751.15	5.55%
2	Betsy	Golden	Arlington	VA	22202	773-123-2222	\$500,000.00	\$527,568.75	5.514%
3	Charlie	Silver	Fort Lauderdale	FL	33303	773-123-3333	\$500,000.00	\$526,688.75	5.338%
4	Denise	Copper	Burghill	OH	44404	773-123-4444	\$500,000.00	\$510,625.00	2.125%

Customer Portfolios Performance

BankPortfolios portlet

Banking > Finance > Portfolio Management

Customer #

Analyze Customer Portfolio

Portfolio details for **Arthur Platinum** appear below:

Invested: \$500,000.00 Projected: \$527,751.15 Rate of return: 5.55%

Portfolio Allocation Graphics Market Simulation

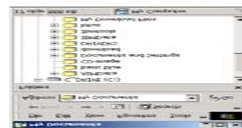
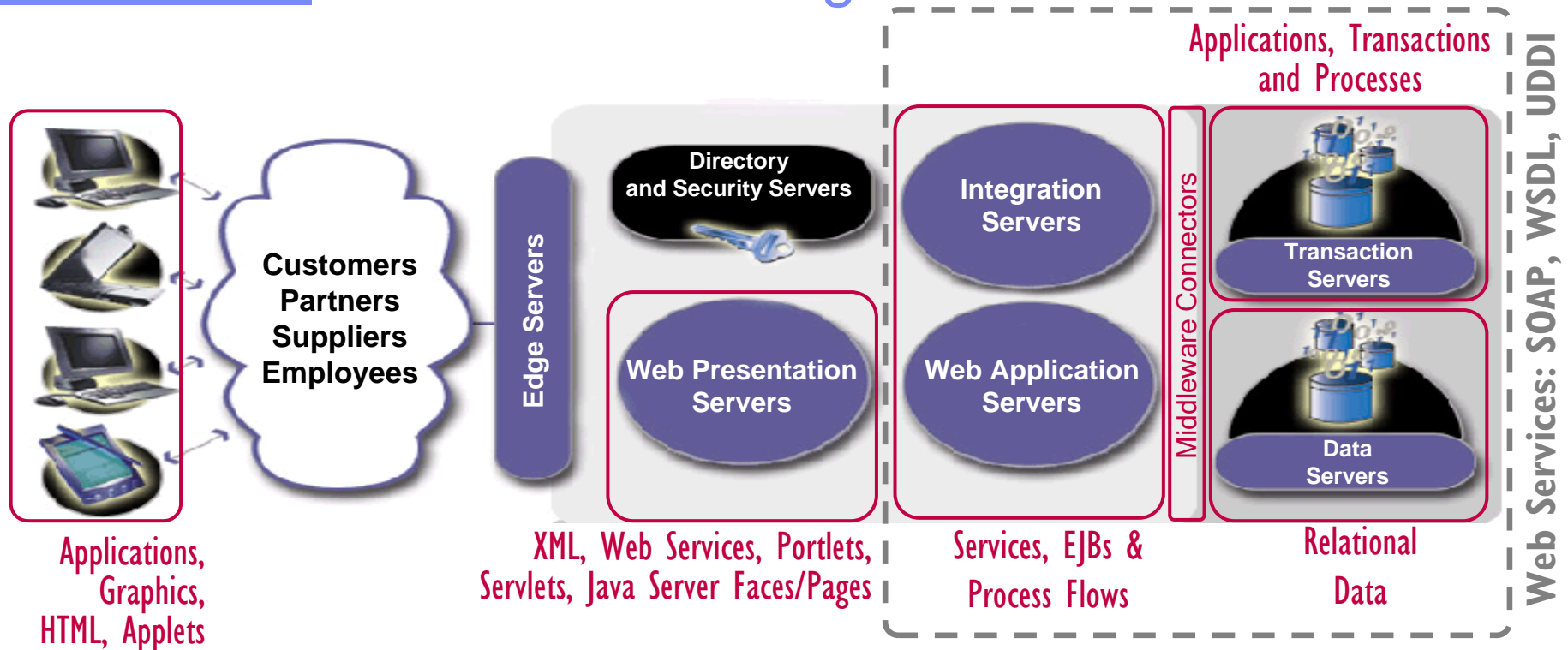
Fund Acct #	Fund Name	% of Folio	\$ Invested	Risk	% Return	\$ Projected
101	Blended - Income Plus Life Strategy	5%	\$25,000.00	1	2.124%	\$25,531.00
102	Blended - Conservative Life Strategy	4%	\$20,000.00	2	4.249%	\$20,849.80
103	Blended - Moderate Life Strategy	6%	\$30,000.00	3	6.374%	\$31,912.20
104	Blended - Aggressive Life Strategy	7%	\$35,000.00	4	8.424%	\$37,948.40
105	Money Market	5%	\$25,000.00	1	2.124%	\$25,531.00
106	Bond - Stable Value	3%	\$15,000.00	1	2.125%	\$15,318.75
107	Bond - Total Market	5%	\$25,000.00	2	6.375%	\$26,593.75

Financial Advisor Dashboard – Portlets and Portal Design

- Tabbed Panel Portlets – Bank Customers and Portfolio Management Portlets
- Click-2-Action – Bank Customer and Portfolio SDOs and C2A inter-portlet communication
- Portfolio Summary – Display portfolio summary information using SDOs
- Bank DB CMP EJBs Mapping – Generate CMP EJBs from BANK database tables
- Account Manager Session EJB – Portfolio Management and Dashboard logic
- Portfolio Management – Asset allocation, performance graphs and market simulation
- Dashboard – SDO display of tabular and graphical dashboard components
- Portal Site Design – Themes, Skins and page configuration of portal site design



Build Tools - End-2-End Design & Construction



Development Roles

Application Modeling



Java/J2EE Development



Web/Portal Development



XML Web Services Development



Database App Development



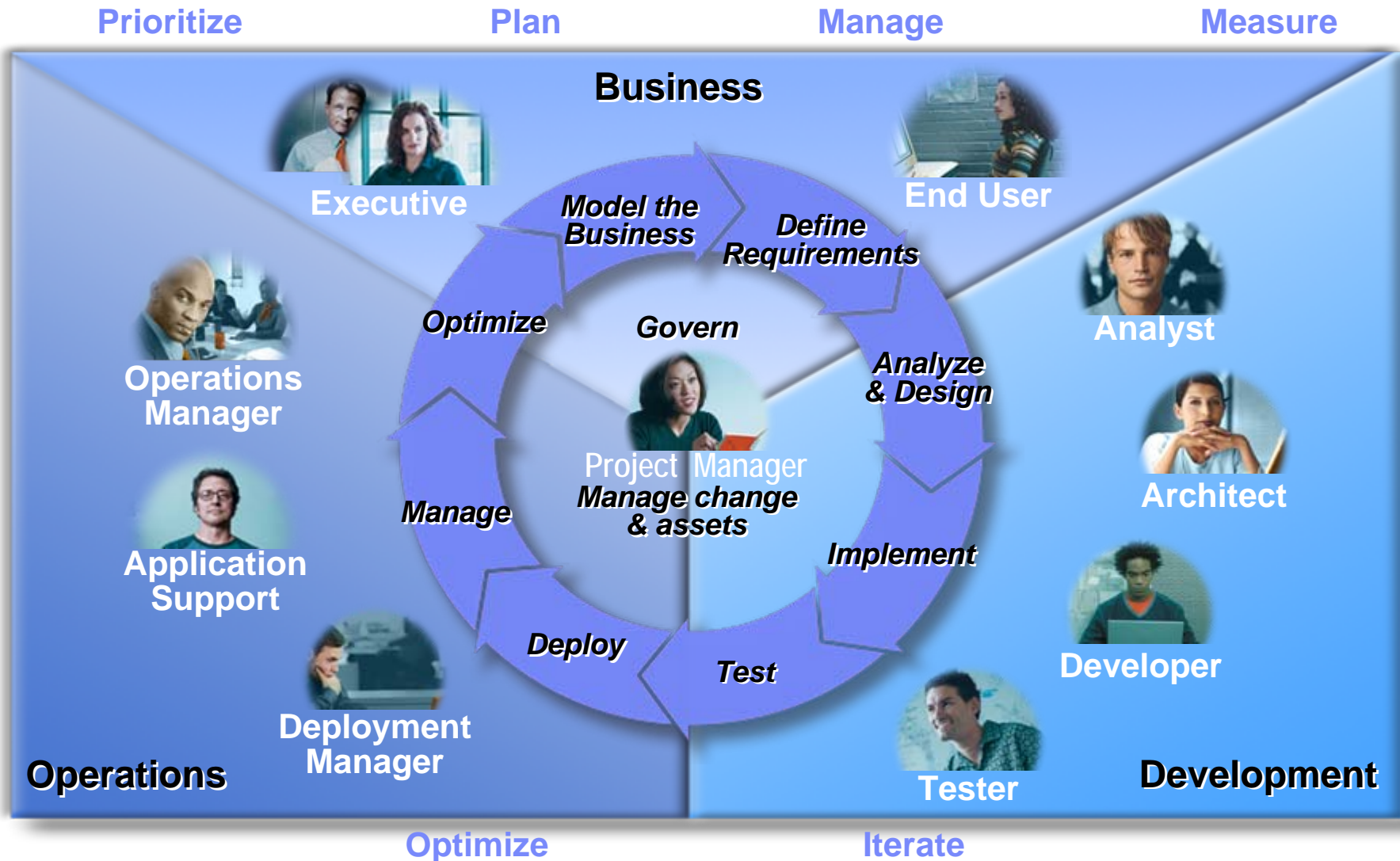
Business Process SOA Integration



Cobol, CICS/IMS, 4GL Development



The Business-Driven Development Lifecycle



Resources

- <http://ibm.com/developer>
(IBM developerWorks for technologies and products)
 - ibm.com/developer/websphere
(WebSphere Developers Domain)
 - ibm.com/developer/rational
(WebSphere Developers Domain)
 - ibm.com/developer/ibm
(All other product developer domains)
- <http://www.redbooks.ibm.com>
(How To Books)
- <http://ibm.com/software/ad>
(IBM App Dev Tools Homepage)
- <http://ibm.com/websphere>
(WebSphere Family Homepage)
- <http://JavaDevTools.com> (a.k.a. RationalCentral.com and WebSphereCentral.com)
(Presentations, references, tutorials, white papers, articles, links, etc.)



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 This demonstration showcases RAD in action and concisely explains the breadth and depth of RAD V6. Executives, managers, architects and developers can use this overview and the referenced resources to quickly learn about the power and value of RAD V6.

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WebSphereCentral.com
 RationalCentral.com
 JavaDevTools.com

o [RAD V6 Tutorial Demo Series has arrived!](#) (Getting Started Guide, Introduction and Tour)

Four scenarios with > 75 demos

- 1) End-2-End (Soup-to-nuts J2EE Build Scenarios)
- 2) Quick Success (Short Ad-hoc Build Scenarios, < 10 min each)
- 3) Banking and Finance (Web App/Site Scenario)
- 4) Financial Advisor Dashboard (Portal/Portlet Scenario)