



WebSphere Software

Modelling and Assembling SOA Components for a Mainframe

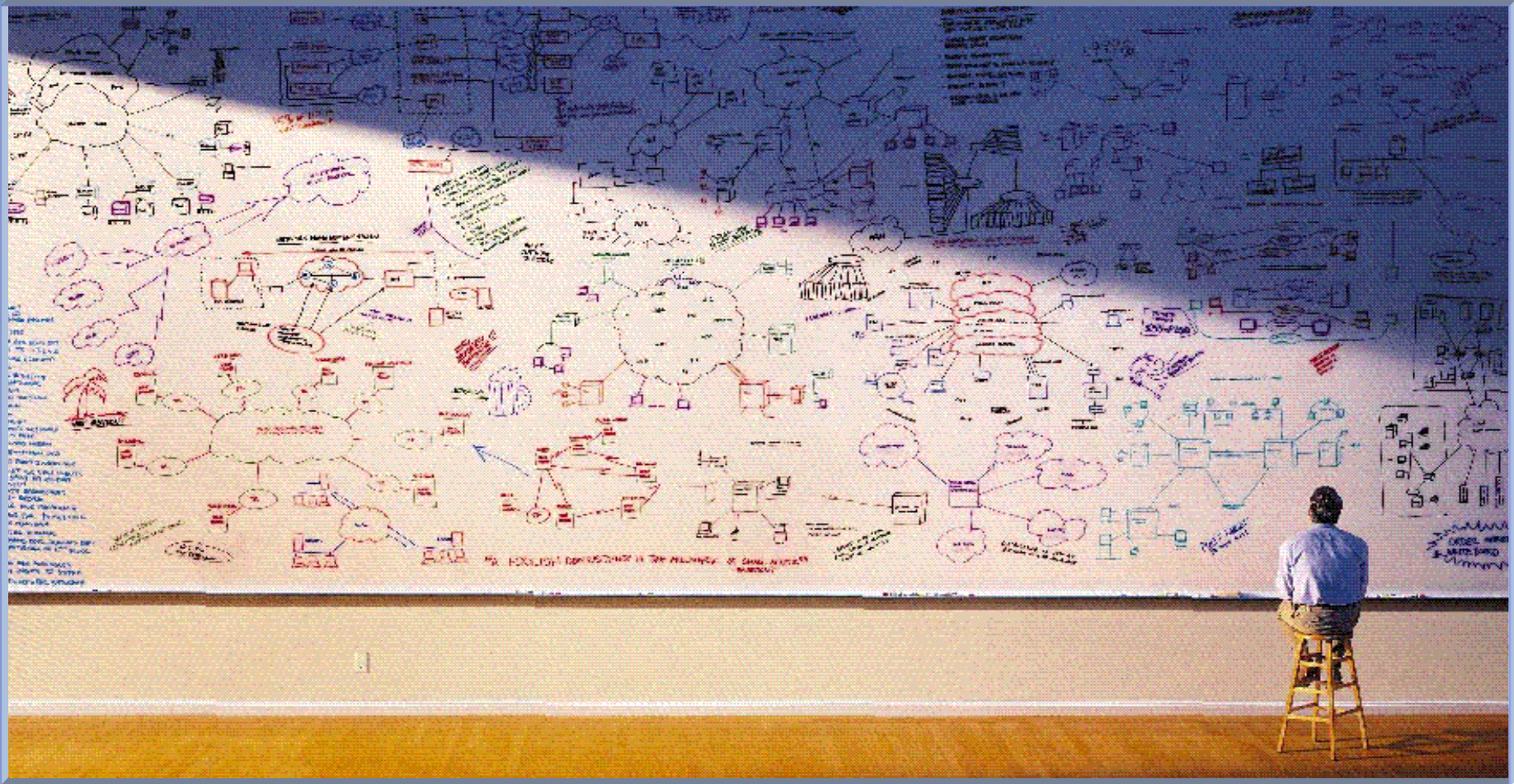
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ON DEMAND BUSINESS™

Agenda

- Introduction to business processes and the SOA lifecycle
- Modelling business processes for SOA applications
- Constructing and Assembling composite applications
- Summary

Most Businesses are a Long Way from the Goal



The Goal: Flexible, Responsive, Optimized Business

Business Processes Help

- **Understand your business**
- **Standardize and comply**
- **Improve your business**
- **Communicate**
- **Deploy solutions**
- **Establish and make measurements**
- **Make change happen fast**

Business Haven't Fully Leveraged "Process" Yet

- ✓ Businesses want to understand and change their operational processes quickly...
...but their processes are: misunderstood, inconsistent, hard-wired, or inflexible
- ✓ Businesses want to deploy automated processes fast
...but most do not have a way to do this
- ✓ Businesses want a real time view of operations and the ability to intervene...
...but there is typically no way to achieve this without a massive effort, yielding inflexible solutions
- ✓ Businesses want to see results and value fast...
...but they cannot invoke change without expensive, risky projects with long payback periods

Companies Want Change At The Speed Of Business

What is Business Driven Development?

Business Driven Development

An integrated approach to software development that aligns line-of-business, development and operations teams to improve business performance



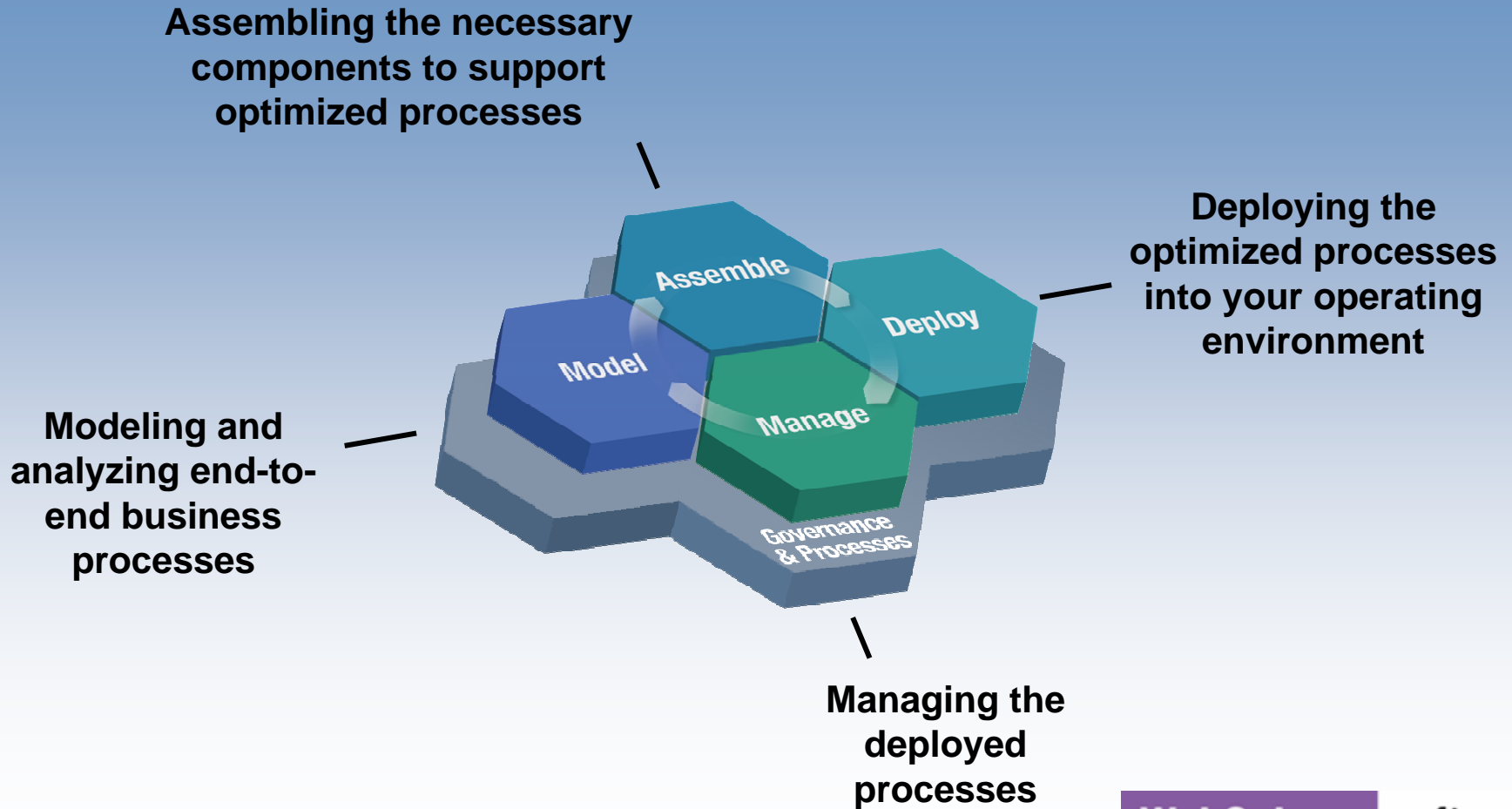
Development as a business process

- Align Technology and Business priorities
- Improve efficiency and responsiveness
- Create innovative products

- Higher productivity - 50% + increase in developer productivity
- Improved quality - 80% fewer bugs
- Greater predictability

Software development becomes a driver of competitive advantage

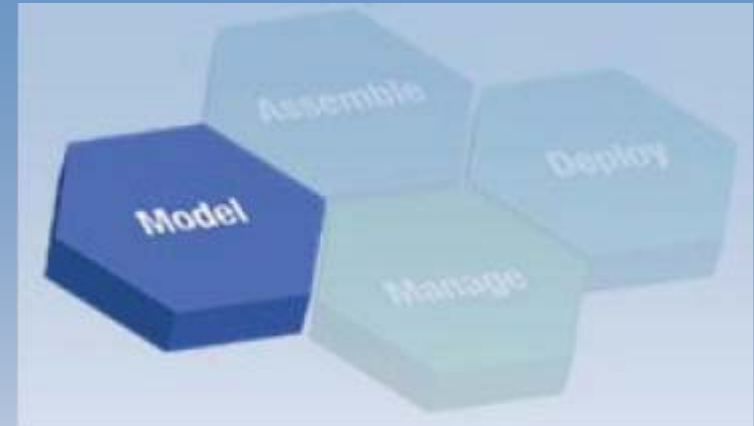
Phases of the SOA Lifecycle



WebSphere software

Model – What Differentiates IBM?

- Achieve regulatory compliance with less time and expense through well documented, auditable processes
- Simulate process changes, and assess impacts on costs, resource utilization, and cycle times prior to deployment
- Reduce risk by simulating market changes against current process models
- Improve the company's scorecard by defining Key Performance Indicators
- More effectively deploy valuable skills to the areas where they're best utilized



Financial customer:

53% faster post closing mortgage processing time
34% increase in efficiency,
estimated annual savings \$4M

WebSphere Business Modeler

WebSphere Business Modeler: Business Modeling and Business Simulation

- Business analyst designs, tests, and simulates business process
 - As is and to be modeling
 - Business service identification
- Business-level simulation including Process Duration, Costing, ROI, etc.
- Transform models to UML or BPEL

Customer Benefit:

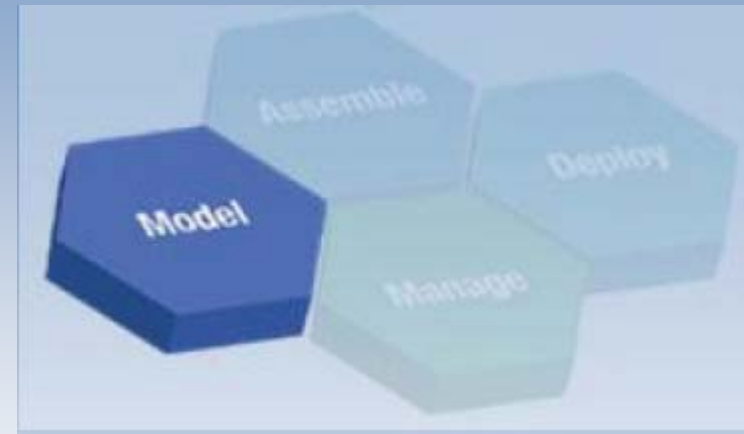
- Business-level tools for modeling and simulation
- Describe business-level services in context of business improvement

The screenshot displays the WebSphere Business Modeler interface. The main window shows a business process flow diagram for 'Payment Handling'. The process starts with 'Customer Order' entering a 'Payment Method' decision diamond. From there, it branches into 'Take Cash or Check' and 'Swipe Card & Sign'. Both paths lead to 'Customer Order' and then to a final 'Customer' output. The interface includes a Project Tree on the left, a Simulation Control Panel at the bottom, and an Activity Cost chart on the right.

Activity	Cost (U.S. Dollar)
Gather Inventory Information	0.83
Calculate Order Quantities	2.50
Enter Supply Order Data	5.83
Print Supply Order Request	1.66
Submit & Fax Supply Order Request	1.66
Add New Order To Inventory System	1.66
Update Supplier To "Receivable"	0.83
Place Supply Order Into Receivable	0.66
Print "Receivable" Order	0.83
Send Order Notice To Shipping	0.83
Receive Order	3.33
Total =	20.00

Model – What Makes WebSphere Unique?

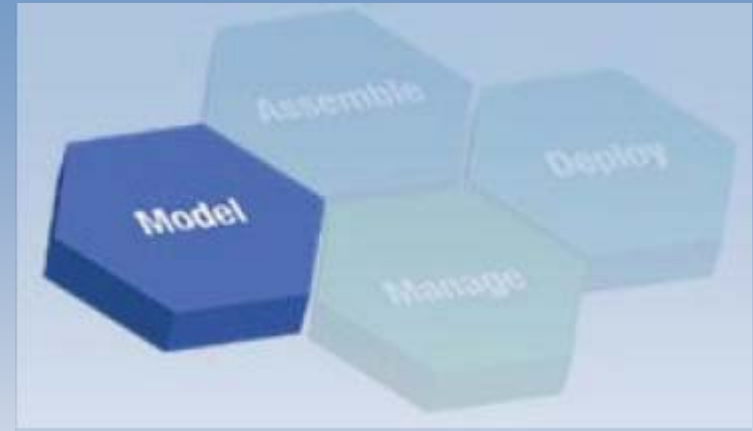
- Graphically Model Processes
 - Simple but Comprehensive Modeling
 - A business tool for business users
 - Model everything you need to design and "sand-box" your business process – Costs, Times, Resources
- Simulate And Analyze
 - Simulated execution of the business process with detailed statistical analysis tools
- Collaborate and Web Publish
 - Tools to allow multiple people to work as a team on business process work
 - Tools to publish business process work across the business
- Hand Off To IT
 - Export business and data models for use in IT deployment
- Visio import
 - Import existing process pictures done in Visio as a starting point for true business modeling



IBM WebSphere Business Modeler

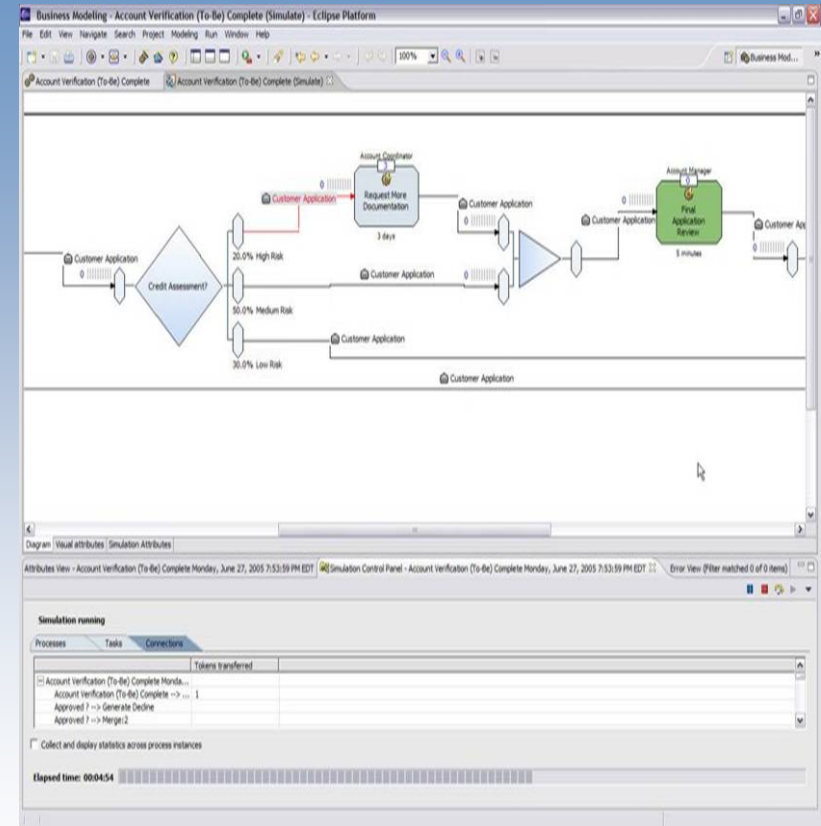
Graphically Model Processes – Ease Of Use

- Simple to use, business tools for business users
 - Easy to learn and use
- Different modes for different users
 - Only work with the things which matter for the work in hand
- Precise modeling of the things which matter
 - Model the things which affect performance
 - Processes, tasks, costs, times, resources, information, organizational structure
 - Model the things which measure performance
 - Model and define the business metrics to be used in Manage



Simulate And Analyze – Understand And Predict

- Predict your business operation outcomes by running "what if" scenarios
- Help determine and justify projects that will generate the greatest returns on investments, and help build your business case
- Generate comprehensive information around cost, time, and resource savings
- Optimize by looking at bottlenecks and workload imbalances before moving any changes into production



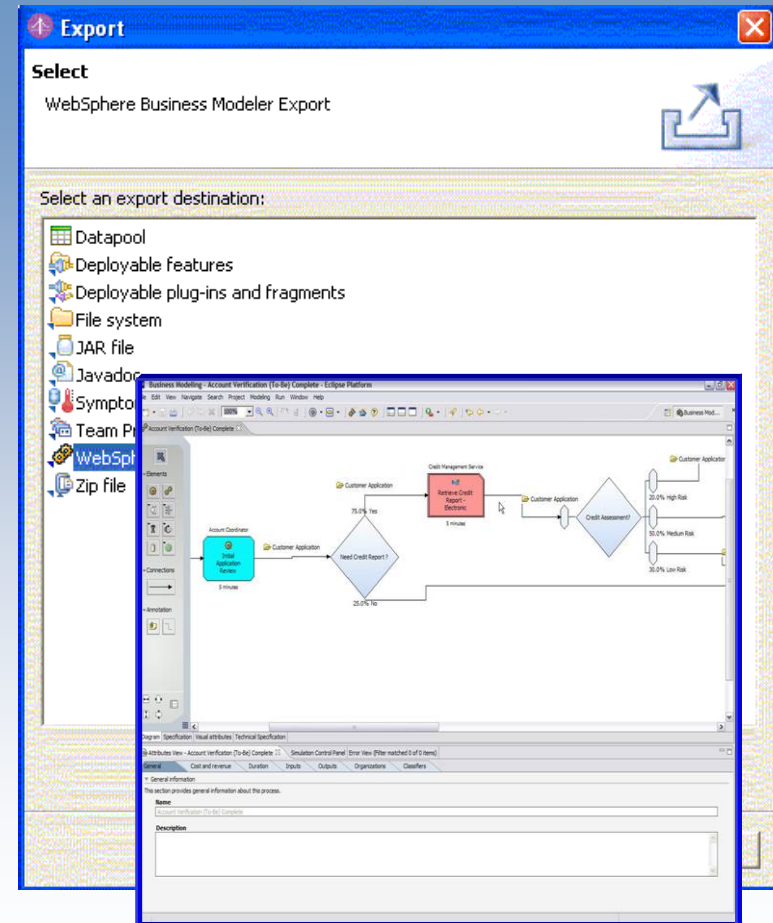
Collaborate and Web Publish – Efficiency and Compliance

- Collaborative Modeling
 - Version controlled models for team modeling
- Collaborative Reviews
 - Browser based model review
 - Easy access for all stakeholders
- Web Publishing
 - Publish final model information
 - For user training and reference
 - For compliance documentation



Hand-Off To IT – Precise Business Requirements

- Direct export of models to IT
 - BPEL for execution
 - XSD for data definitions
 - WSDL for services interfacing
 - UML for Rational Software Architect
- Precise business requirements
 - For Assemble
 - For Deploy
 - For Manage



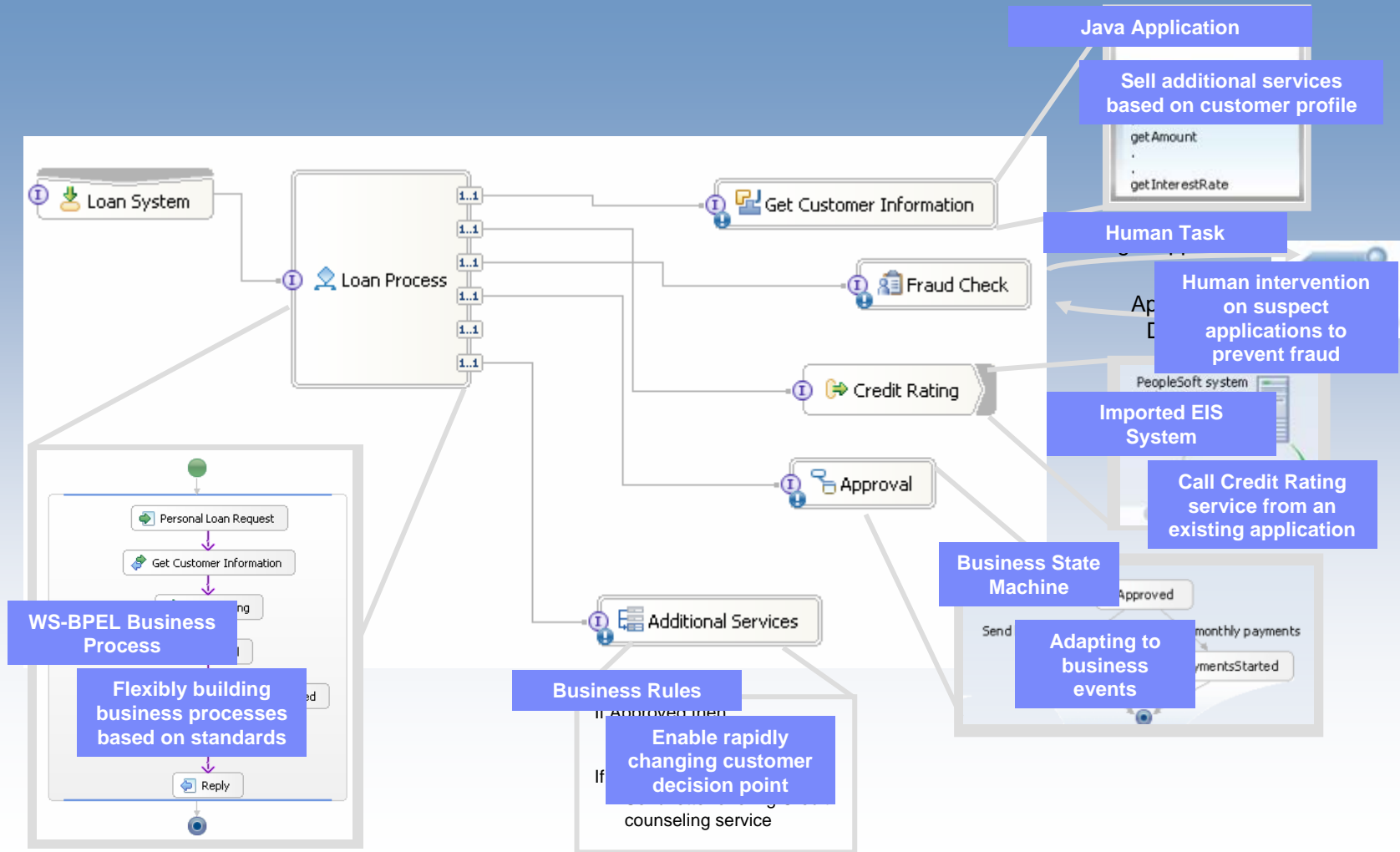
Assemble – What Differentiates WebSphere?

- Simplified hand-offs between business and IT that let developers get started quickly
- Easy to use tools that minimize skill requirements
- Streamlined development with the reuse of existing resources
- Dynamic process assembly



WebSphere Integration Developer

Assembling The Components



Assemble - What Makes WebSphere Unique?

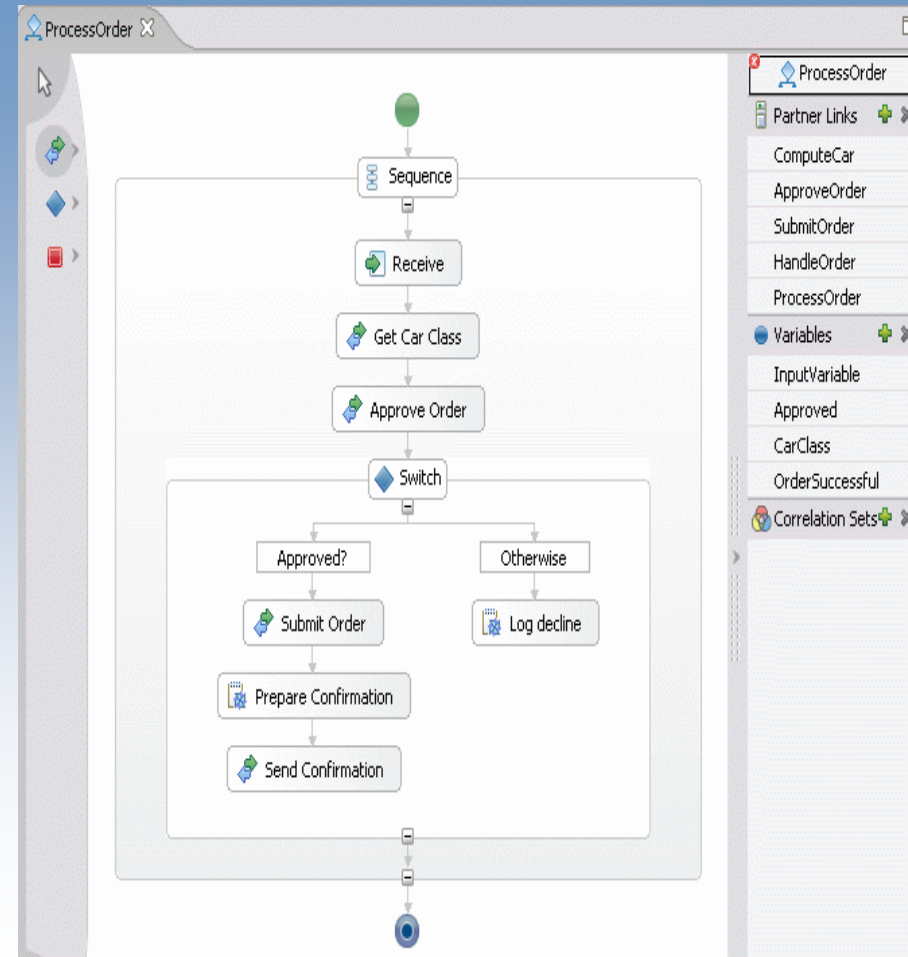
- BPEL Without Coding
 - Standards based process support
- Full Workflow Support
 - Built-in human task support
- State Machines
 - For complex transactions
- Dynamic processes and assembly
 - For flexibility and responsiveness
 - Business rules to determine the process flow
 - Selectors to determine which components are in the flow
- Assembly with WebSphere Integration Developer
 - Tooling and architecture for composite applications



IBM WebSphere Integration Developer
IBM WebSphere Process Server

BPEL Without Coding – Standards Based Process Support

- **Import models from WebSphere Business Modeler**
- **Develop Executable Process**
 - WS-BPEL-based business processes
 - WS-BPEL with or without IBM Extensions
- **Intuitive drag-and-drop tools**
 - visually define the sequence and flow of business processes
- **A visual business process debugger**
 - step through and debug business processes
- **Integrated fault handling**
 - provide an easy and integrated means of performing in-flow exception handling
- **Compensation support**
 - provide a logical “undo” capability



Workflow – Built-in Human Task Support

- **Many business processes involve human tasks**
 - Even automated tasks may require human intervention to manage exceptions
- **Human tasks require special treatment**
 - We provide specialized process constructs to support human tasks
 - Escalation Support to manage task execution time
 - Integration with existing staff repositories like LDAP
- **Human tasks need to be managed outside of the process**
 - Runtime workflow management
 - Full Integration with WebSphere Portal
 - Powerful staff assignment rules



Dynamic Processes for Flexibility and Responsiveness

Business Rules & Decision Tables dynamically determine process flow

- Expose process decision points as business parameters
 - e.g. Credit rating level based on net worth
- Allow non-disruptive, real-time business change
 - e.g. New lending policies allow changing the credit rating criteria without redeploying the loan application process
- Ensure consistency across the business
 - e.g. Every loan application process executes the same rule group

Selectors dynamically determine which components are used

▼ Rules

Name	Rule2
Template	Template 1
Presentation	If the assets are greater than <input type="text" value="2000000"/> and the liabilities are less than <input type="text" value="500000"/> , then the rating is <input type="text" value="A"/> .

Name	Rule1
Template	Template 1
Presentation	If the assets are greater than <input type="text" value="2000000"/> and the liabilities are less than <input type="text" value="1000000"/> , then the rating is <input type="text" value="B"/> .

▼ Templates

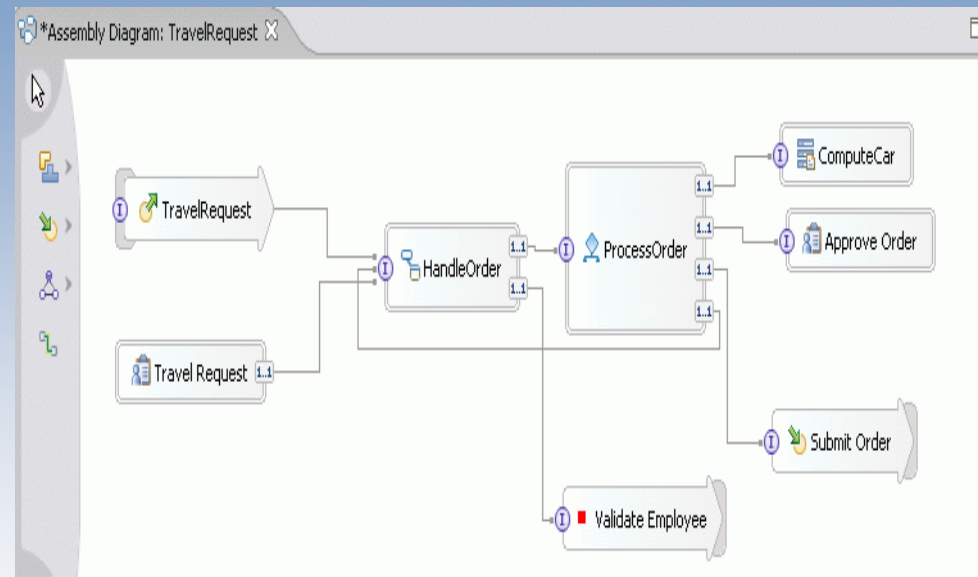
Name	Template 1																
Presentation	If the assets are greater than <input type="text" value="{0}"/> and the liabilities are less than <input type="text" value="{1}"/> , then the rating is <input type="text" value="{2}"/> .																
Parameters	<table border="1"> <thead> <tr><th>Index</th><th>Name</th><th>Type</th><th>Constraint</th></tr> </thead> <tbody> <tr><td>{0}</td><td>var1</td><td>double</td><td>None</td></tr> <tr><td>{1}</td><td>var2</td><td>double</td><td>None</td></tr> <tr><td>{2}</td><td>var3</td><td>string</td><td>None</td></tr> </tbody> </table>	Index	Name	Type	Constraint	{0}	var1	double	None	{1}	var2	double	None	{2}	var3	string	None
Index	Name	Type	Constraint														
{0}	var1	double	None														
{1}	var2	double	None														
{2}	var3	string	None														
If	all of the following are true <ul style="list-style-type: none"> • info.assets > var1 • info.liabilities < var2 																
Then	rating = var3																

▼ Decision Table

info.assets	> 500000		<= 500000	
info.liabilities	< 10000	>= 10000	< 10000	>= 10000
rating	"A"	"B"	"C"	"D"

Assembly With WebSphere Integration Developer

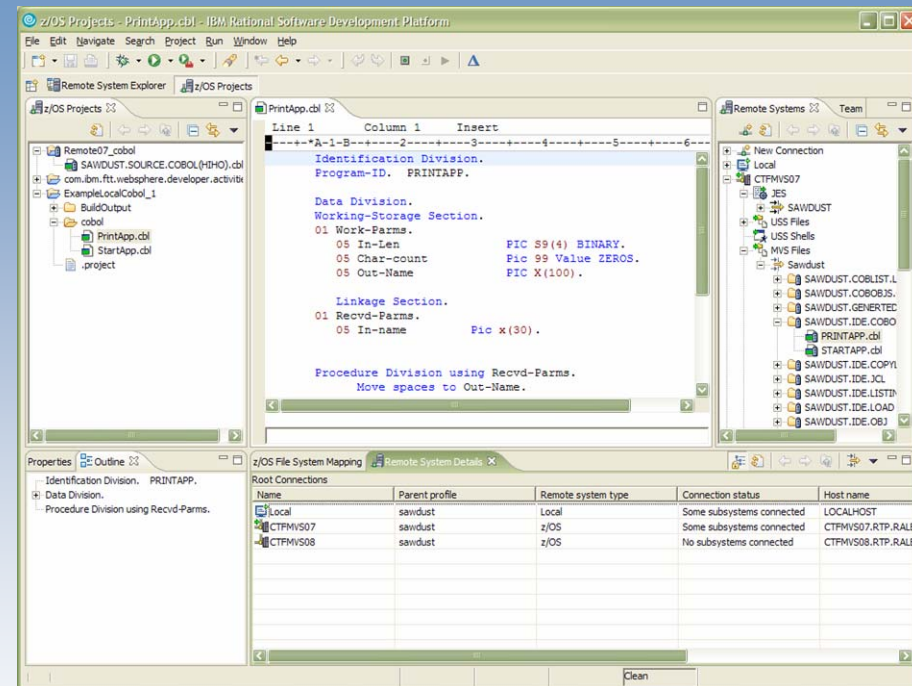
- **Complete toolbox for composite application building**
 - An Assembly Editor for overall solution assembly
 - All the tools you need for building solution components (Editors for BPEL, Business Rules....)
 - One, easy to learn and user interface based on Eclipse
- **Architected for reuse and flexibility**
 - Simplified component interfaces
 - Plug-and-play solution components



WebSphere Developer for zSeries (WDz)

Eclipse-based integrated development environment for developing enterprise-level, multi-tier applications (composite applications)

- Builds core stack zOS applications
 - COBOL, PLI, HLASM
 - TSO/Batch, CICS, IMS, DB2
 - DB2 Stored Procedures – COBOL, PLI, Java, SQL
- Creates COBOL/CICS/JSF/Java/J2EE Multi-tier apps
 - Built on Rational Application Developer
 - Includes all of the J2EE web development tools
 - Generate JSF/EGL/J2EE web front ends
 - COBOL backends running on zSeries
- Enables CICS and IMS applications for Web services and SOA
 - Provides tooling to make it easy to integrate existing applications into an SOA
- Supports the full application lifecycle
 - Model, Architect, Develop, Test, Deploy, and Manage



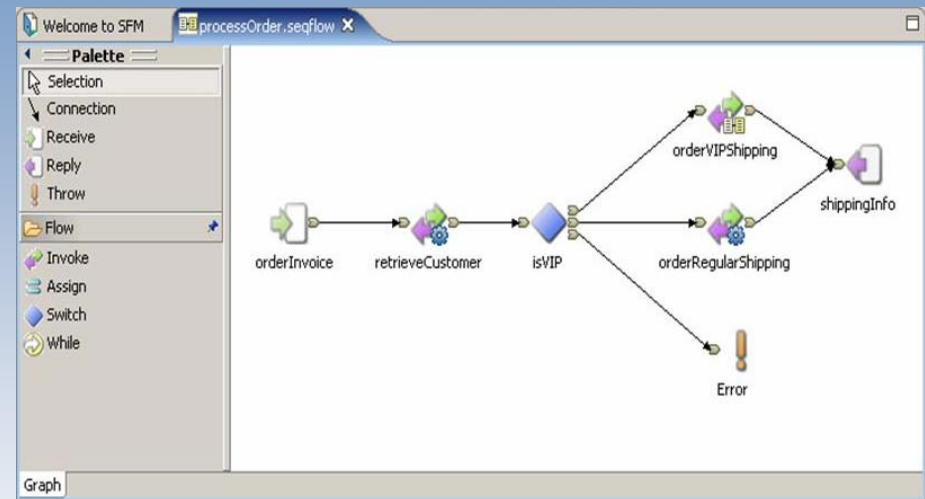
WDz SOA Development Tools

- Enable Web Services and XML access to existing CICS and IMS Transactions
 - XML Services for the Enterprise (XSE)
 - Quickly maps existing COBOL interfaces to XML and Web Services.
 - No code changes for the COBOL application
 - Supports IMS, CICS BMS (terminal-based) & CICS commarea applications
- Model and deploy complex CICS processes to support SOA
 - Service Flow Modeler (SFM)
 - Aggregate CICS transactions into high-level business processes through visual (drag n drop) modeling
 - Highly optimized CICS COBOL runtime to increase overall throughput
 - Supports COBOL commarea-based applications and terminal-based applications

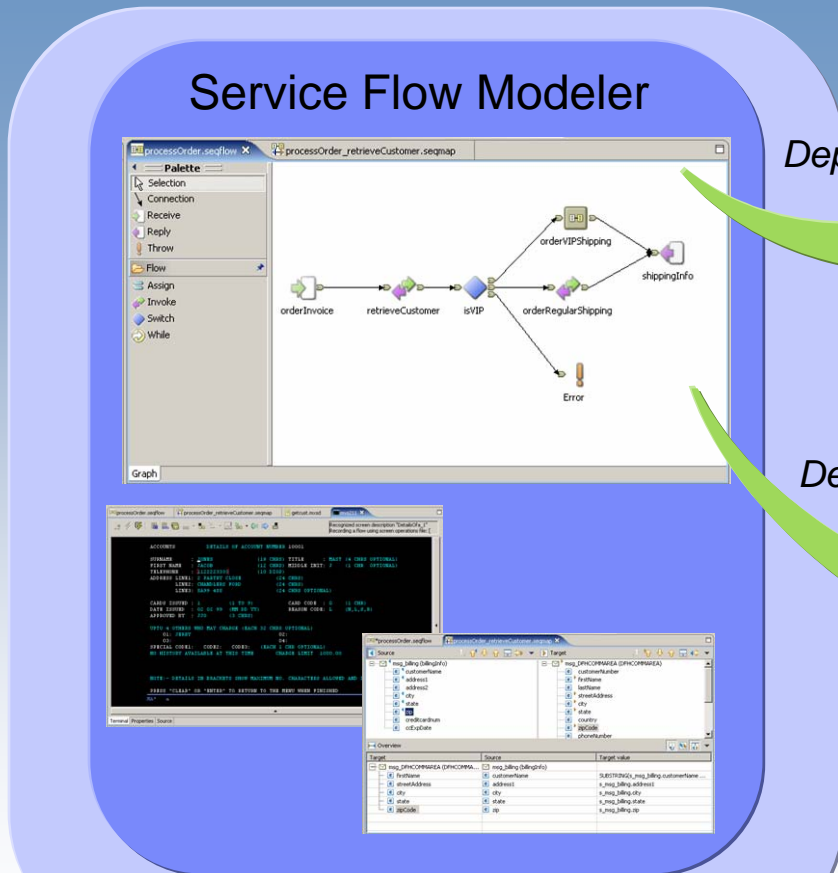
What is Service Flow Modeler?

Service Flow Modeler in WebSphere Developer for zSeries

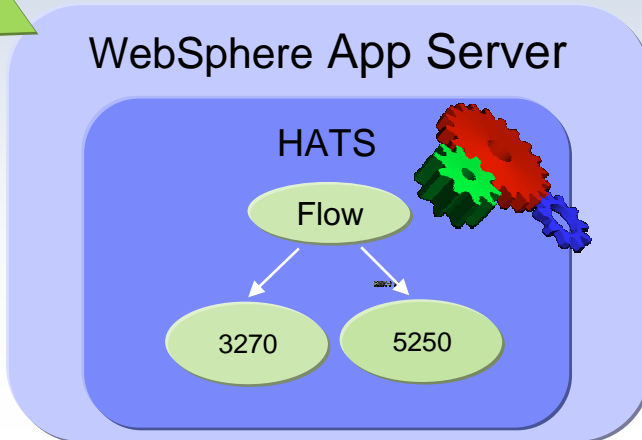
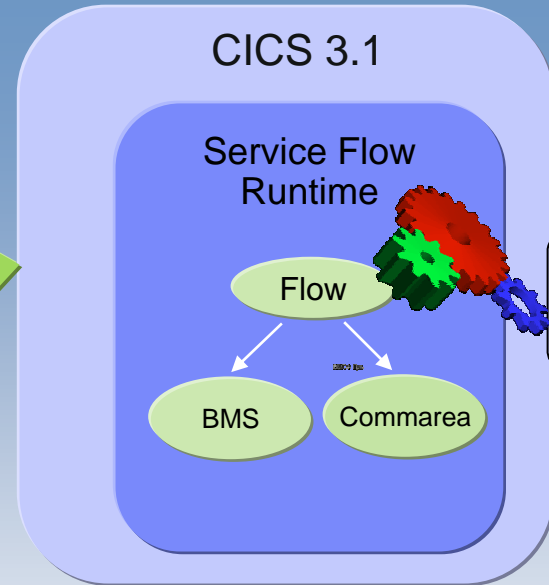
- Builds Web services from existing CICS applications
 - Aggregates multiple CICS transactions into high-level business processes through visual modeling
 - Supports CICS BMS (terminal-based) applications & CICS commarea applications
 - Highly optimized CICS runtime supporting Web services and XML interfaces



WDz's Service Flow Modeler Deployment Options

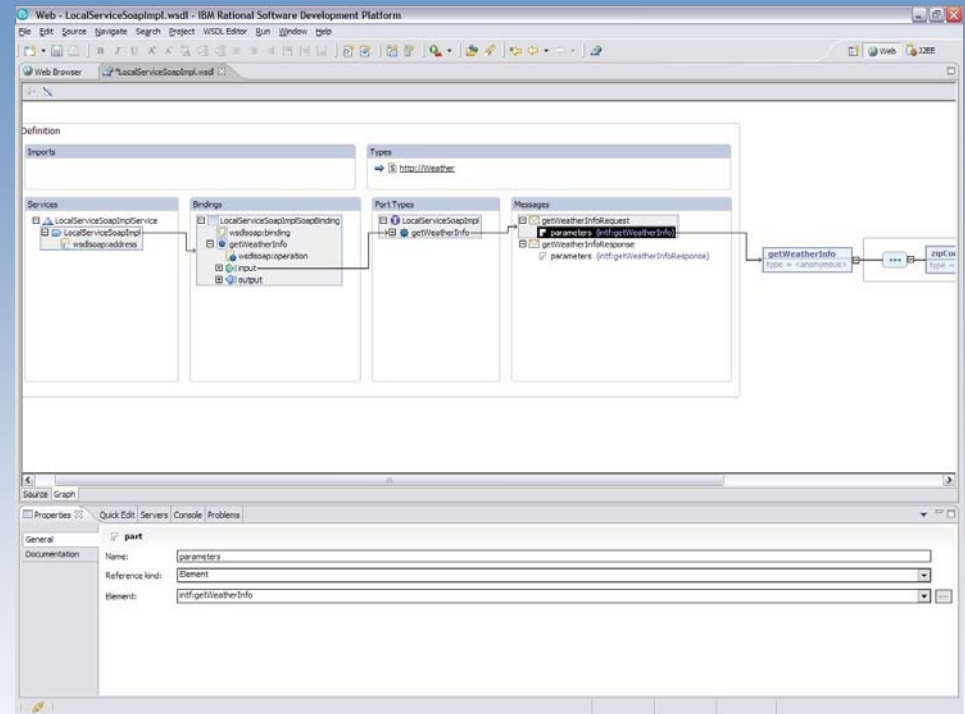


WebSphere Developer for zSeries



WebSphere Developer for zSeries: Discover, Create and Consume Web Services

- Comprehensive Web services tools to discover, create, build, test, deploy and publish Web services
- Build new Web services from scratch or enable existing applications for WS-I compliance
- Discover and consume existing Web services
- Customer Benefit:
 - Little to no coding required to enable existing assets
 - Low learning curve
 - High productivity



WSDL Editor

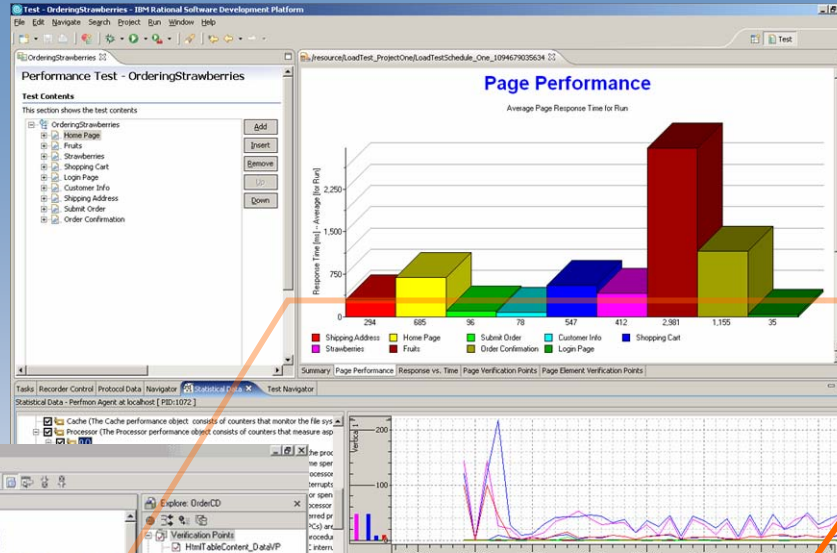
Test the Individual Services & Composite Application

Rational Functional & Performance Tester

Test



Tester



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

```

// Browser: MS Internet Explorer: Classics Home Page
Image_bigbutton_catalog().click();
// Browser: MS Internet Explorer: Classics Catalog Page
Image_putinshoppingcart().click();
// Browser: MS Internet Explorer: Classics Catalog Page
Image_putinshoppingcart2().click();
// Browser: MS Internet Explorer: Classics Catalog Page
Image_but_cashier().click();
// Browser: MS Internet Explorer: Classics Login Page
Text_customerID().click();
CCustomerIDEntry().inputKeys("jmoore");
Html_password().click();
CCustomerIDEntry().inputKeys("*****");
CheckBox_ChkRememberON().click();
Button_Loginsubmit().click();
// Browser: MS Internet Explorer:
HtmlTableContent_DataVP().page
@ click(MouseModifiers.Point) void - GuiTestObject
@ click(Point) void - GuiTestObject
@ click(Object - Object) void - GuiTestObject
@ doubleClick(MouseModifiers) void - GuiTestObject
    
```

The Value of Business Driven Development?



Improve business alignment of applications and their compliance to market and regulatory requirements



Reduce costs through increased productivity and reuse



Increase differentiation of products and improve customer service

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