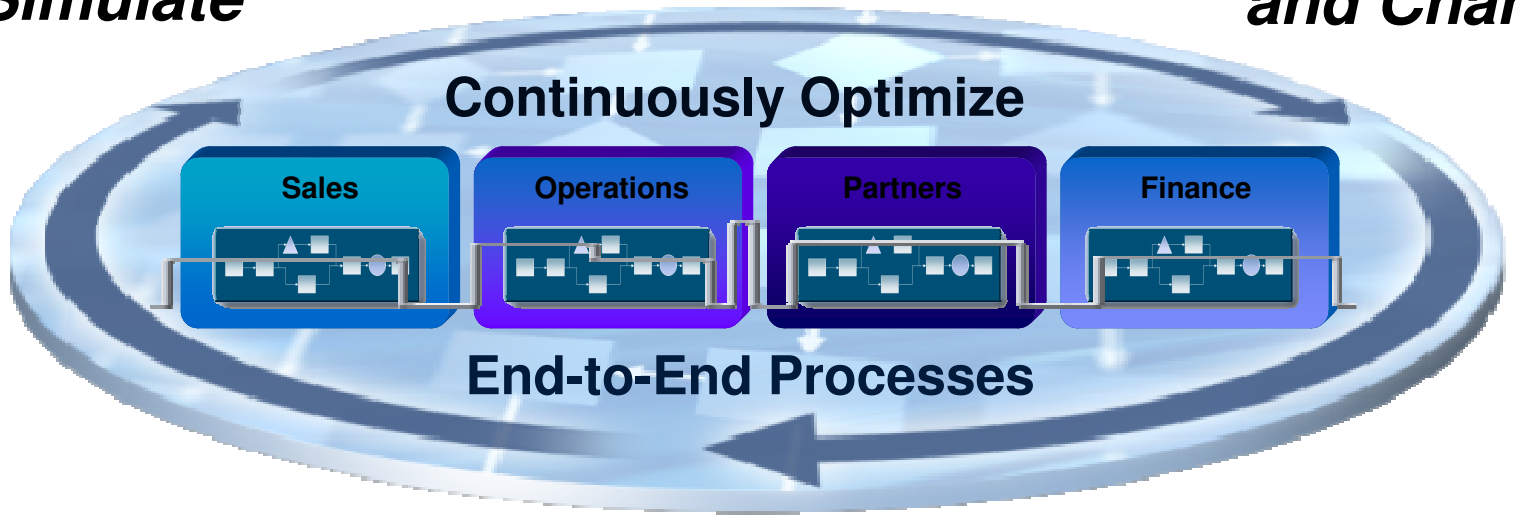
Take Back Control – Integrating and Automating Your Core Processes

IBM Software Group

BPM from IBM Empowers You To Embrace Change and Continuously Optimize Your Business

Model and Simulate

Rapidly Deploy and Change

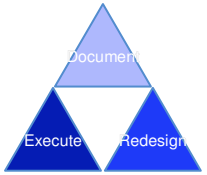


Monitor, Predict and Act

Three Critical Success Factors

Manage Change by modeling and analyzing existing or new processes.	Design	e.g. Reduce the inherent time and cost of processes
Respond Quickly with processes based on a flexible infrastructure.	Automate	e.g. Move compliant processes into production fast
Enhance Efficiency by analyzing activity to ensure processes meet objectives.	Optimize	e.g. View and understand real time business facts for rapid decision making

Why Model Your Business Processes



Modeling For Compliance/Documentation

- Document processes for use by a business to understand the business process
- Customers use output for training, collaboration, documentation requirements for compliance regulations (Sarbanes-Oxley and Basel II)
- Linkage to real-time monitoring provides a feedback mechanism for reporting requirements needed for compliance

Modeling For Simulation and Redesign

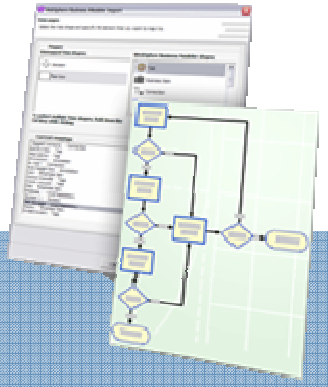
- Document both the current state and future state business process and the comparison to determine Return on Investment (ROI) analysis
- Six Sigma and Process Improvement are common methodologies

Modeling For Execution

- Modeler can create artifacts from the business model and make them available in technology development tools to reduce the overall implementation time of new business processes

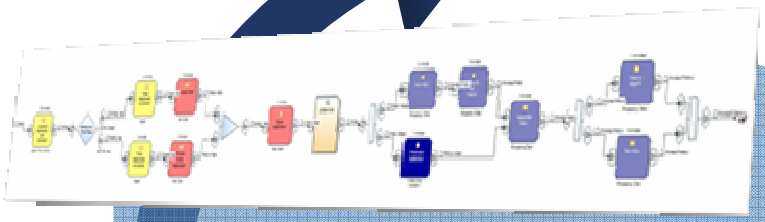
WebSphere Business Modeler

Business Level Modeling And Simulation



Business User Empowerment

- Leverage existing definitions (e.g., Visio)
- Model processes, business rules, metrics, KPIs, human tasks (e.g., escalation logic)
- Define Forms to be used for process Input/Output
- Support of a true business-driven and iterative development lifecycle through artifact traceability



Process Optimization

- Optimize all aspects of your business, set KPIs and metrics
- Dynamic analysis to identify process bottlenecks
- Optimize use of scarce resource (e.g., time, people, capital)
- Use real-time data to improve efficiency

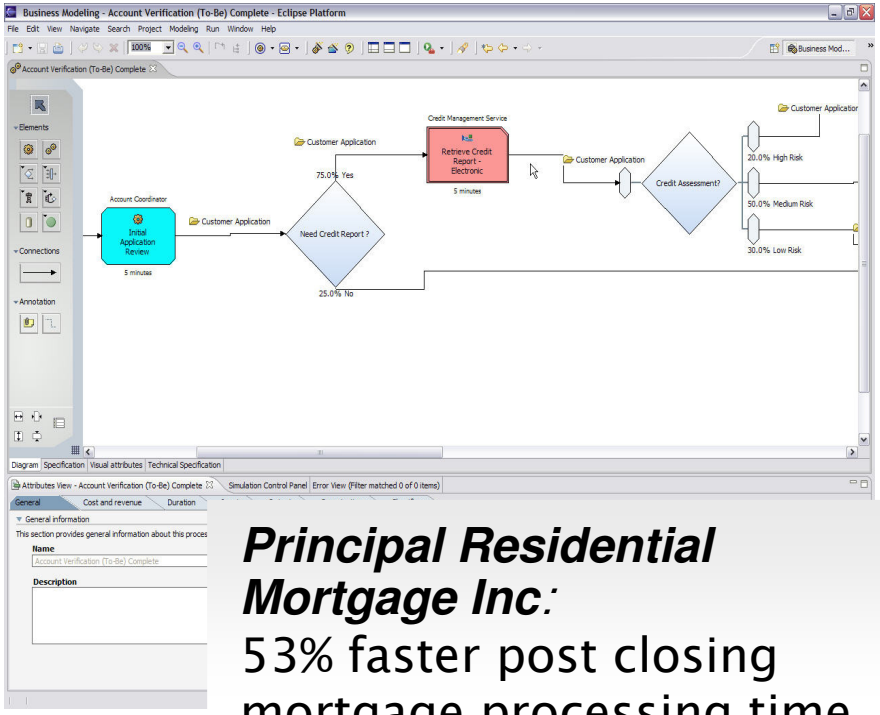
Role based

- Business driven collaboration for iterative process design
- Design time collaboration through web publishing
- Traceability improves Business ⇔ IT collaboration

Iterative and continuous improvement

Best In Class Business Modeling And Simulation

- **Graphically Model Processes**
  - 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
- **Interoperability with:**
  - Visio Diagrams
  - Lotus Forms
  - FileNet P8 BPM
  - MS-Word
  - Rational Data Architect



Principal Residential Mortgage Inc:
53% faster post closing mortgage processing time
34% increase in efficiency, estimated annual savings $4M

WebSphere Business Modeler

Modeler Layout

Eclipse 3.2 Framework
Standard layout for IBM development tools

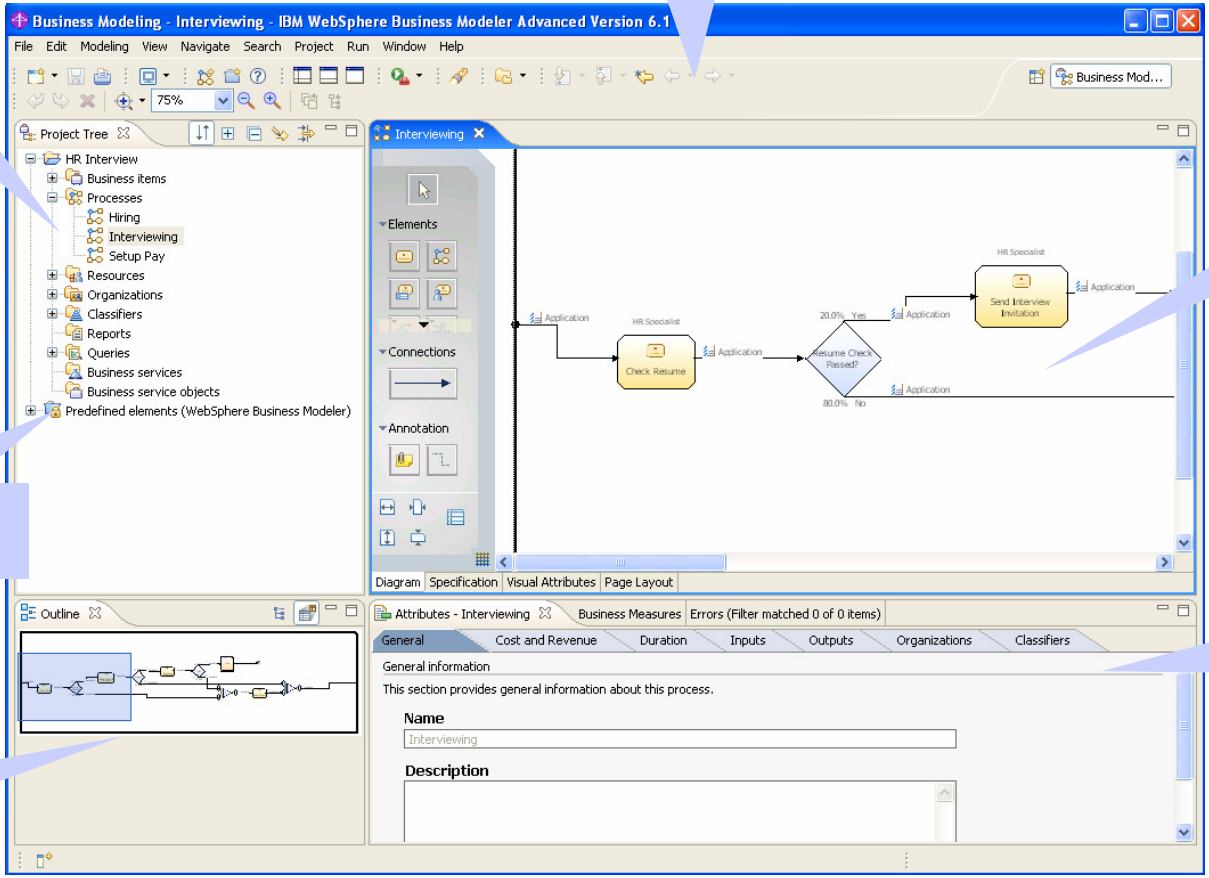
Project Tree
Navigate through a structured view of models and related elements

Predefined Elements
Help you get started

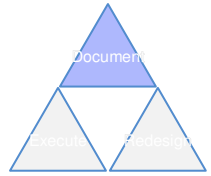
Outline View
Navigate the open process model

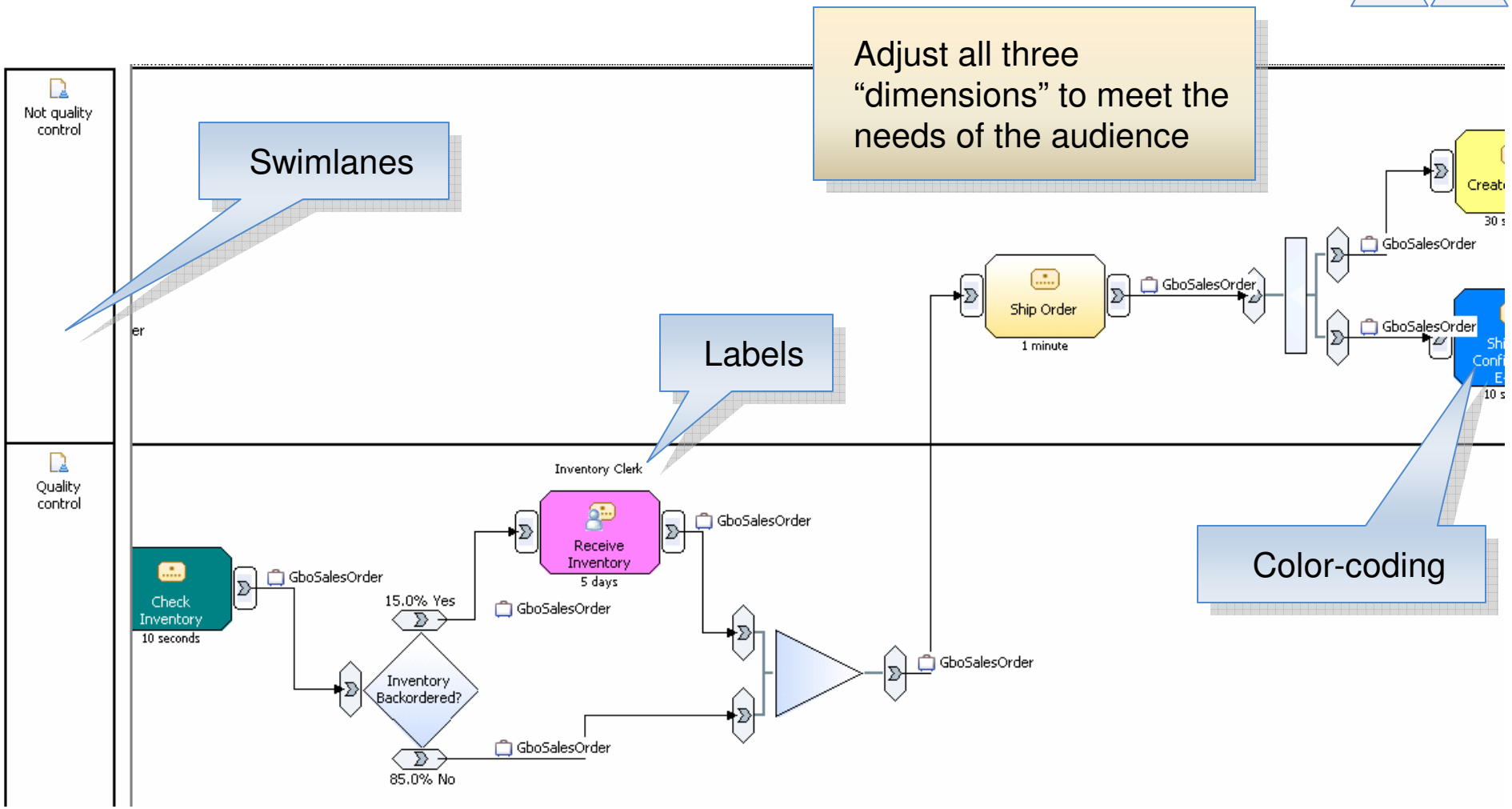
Process Editor
Compose process models and edit other reusable elements

Attributes View
Access detailed information about the open process model

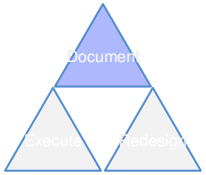


View the Model in "Three Dimensions"



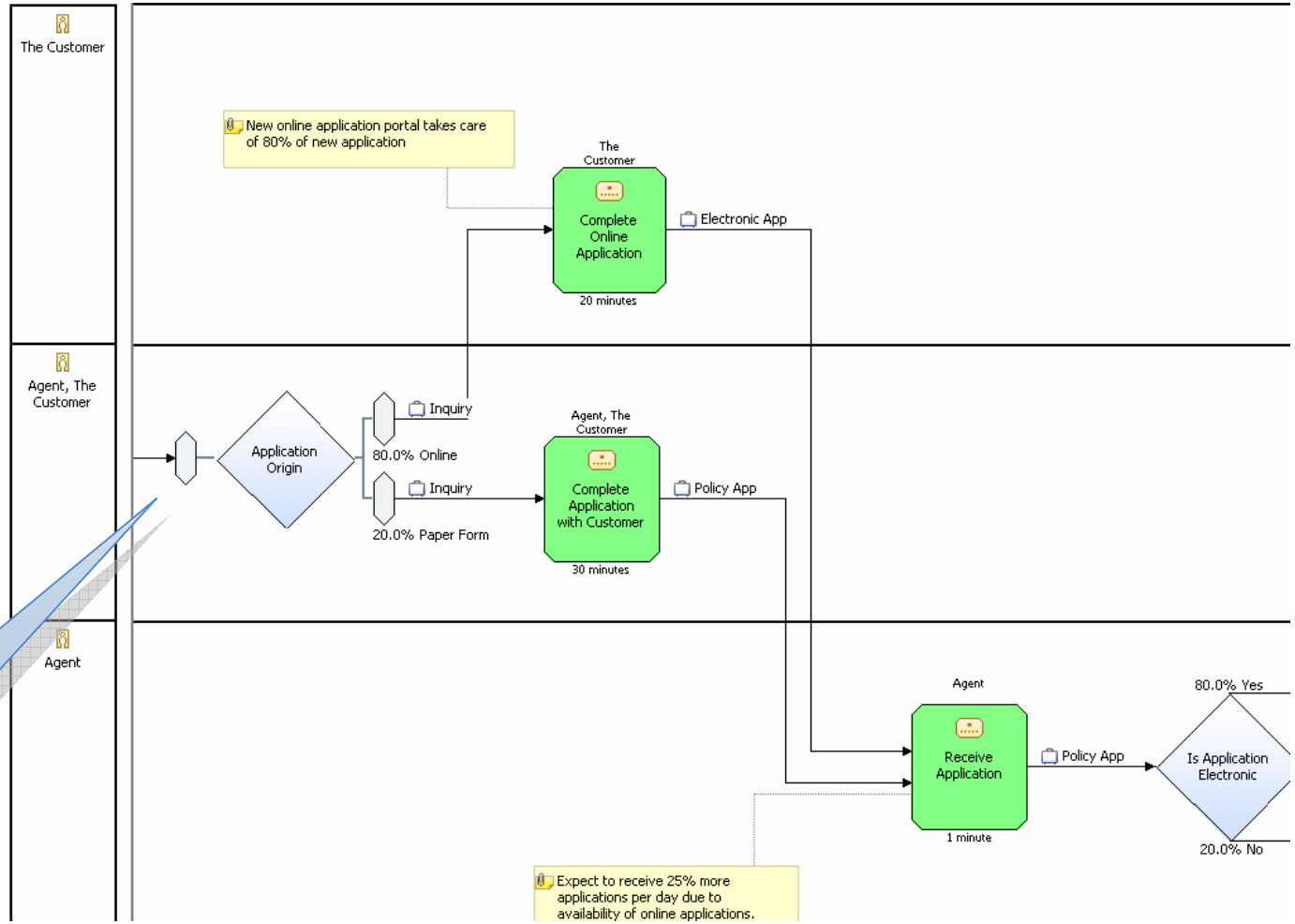


Swimlanes



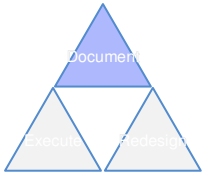
Swimlane based on:

- Roles
- Classifier Values
- Organization Units
- Locations
- Individual Resource Definitions
- Bulk Resource Definitions

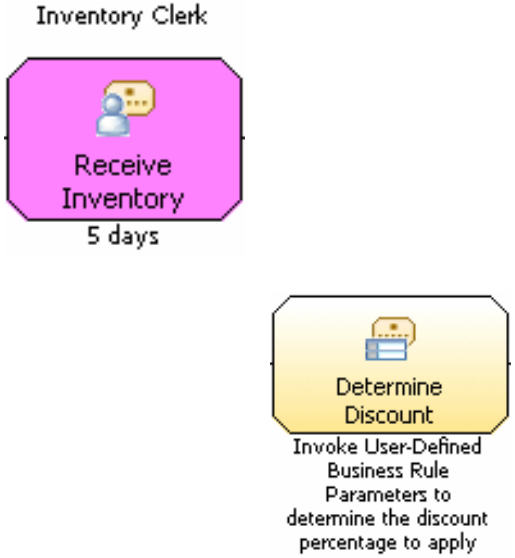


Identify bottlenecks and complex patterns

Labels

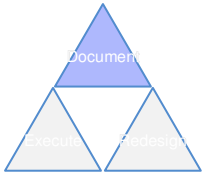


- Place above and/or below process elements
- Choose from many options of information to place in labels
- Associate different labeling specifications with different types of process elements



Process element	Top label	Bottom label
Local task	Roles	Processing time
Local business rules task	Roles	Processing time
Local human task	Roles	<hide label>
Global business rules task	Roles	<hide label>
Global human task	Roles	Processing time
Global task	Roles	Processing time
Global service	<hide label>	Processing cost
Global service operation	<hide label>	Processing cost
Local process	<hide label>	<hide label>
Global process	<hide label>	<hide label>
Notification broadcaster	<hide label>	Description
Notification receiver	<hide label>	<hide label>
Observer	<hide label>	<hide label>
Timer	<hide label>	<hide label>
Map	<hide label>	<hide label>
While loop	<hide label>	<hide label>
Do-while loop	<hide label>	<hide label>
For loop	<hide label>	<hide label>
Local repository	<hide label>	<hide label>
Global repository	<hide label>	<hide label>

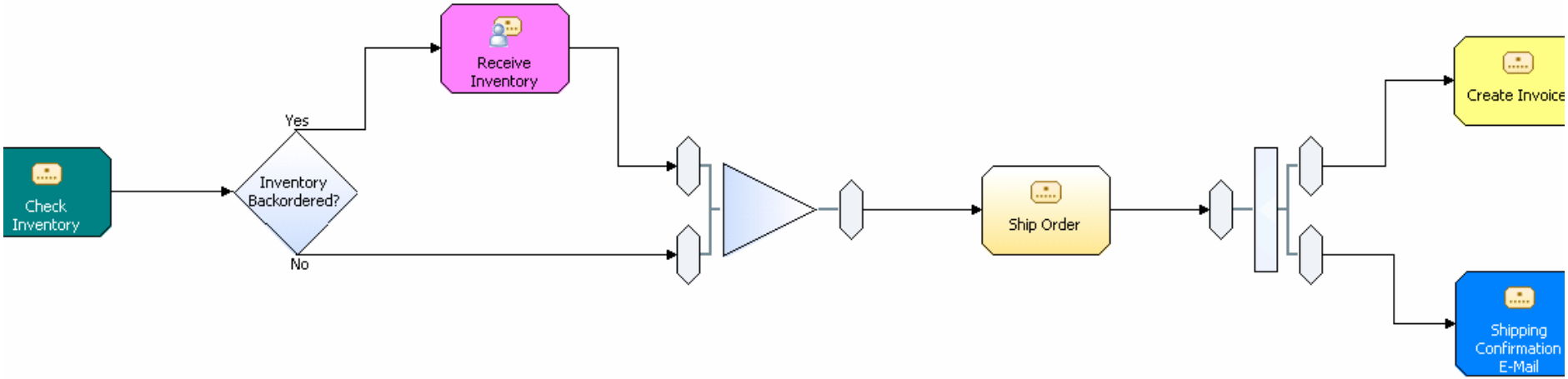
Color-coding



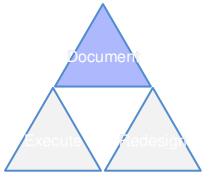
Color Code based on:

- Roles
- Classifier Values
- Organization Units
- Locations
- Individual Resource Definitions
- Bulk Resource Definitions

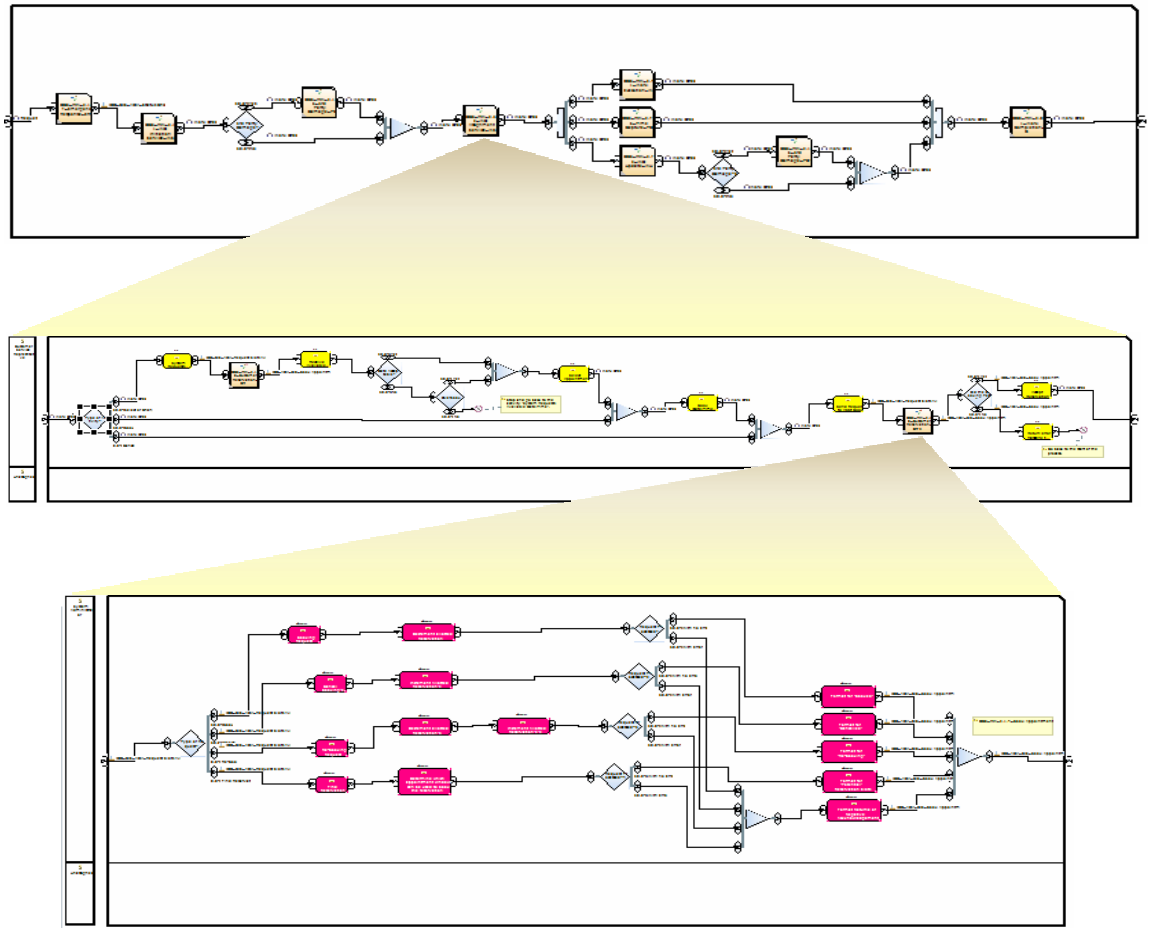
- Color process activities
- Use color schemes to call out specific issues or concepts, expose process variability



Build Process Hierarchies

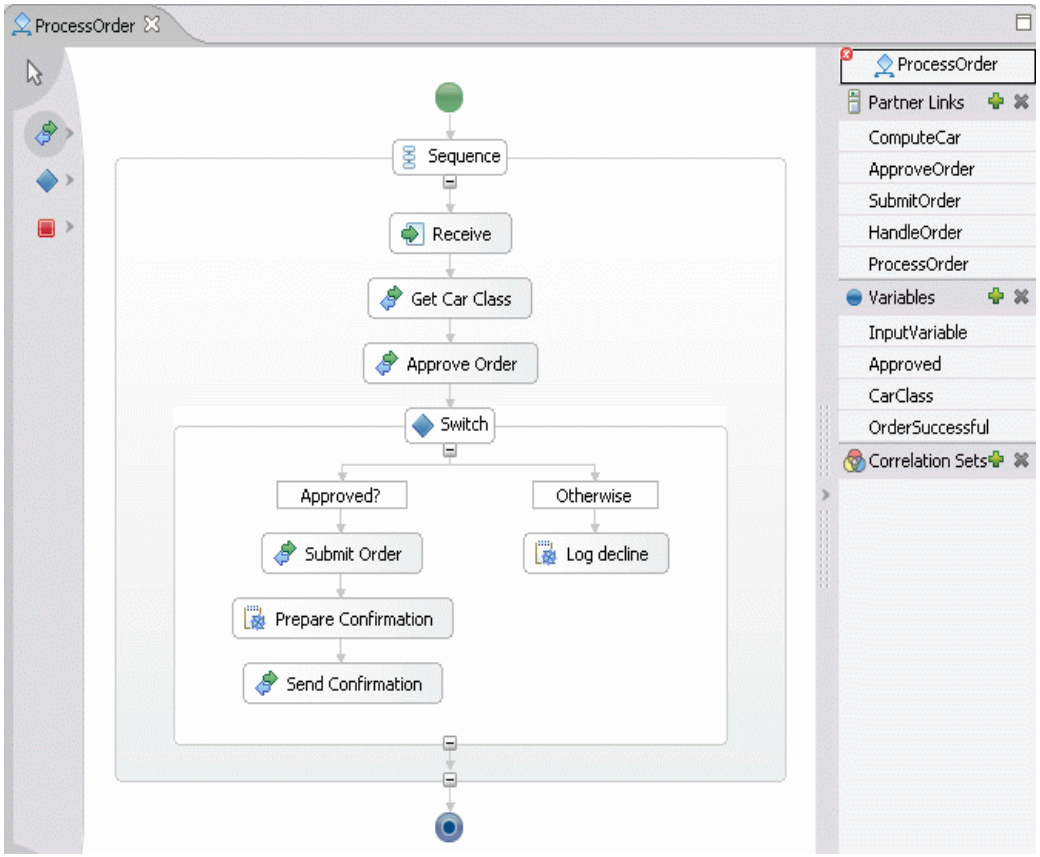


- Decompose processes into manageable sets of closely related activities
- Identify re-usable sections of process flow



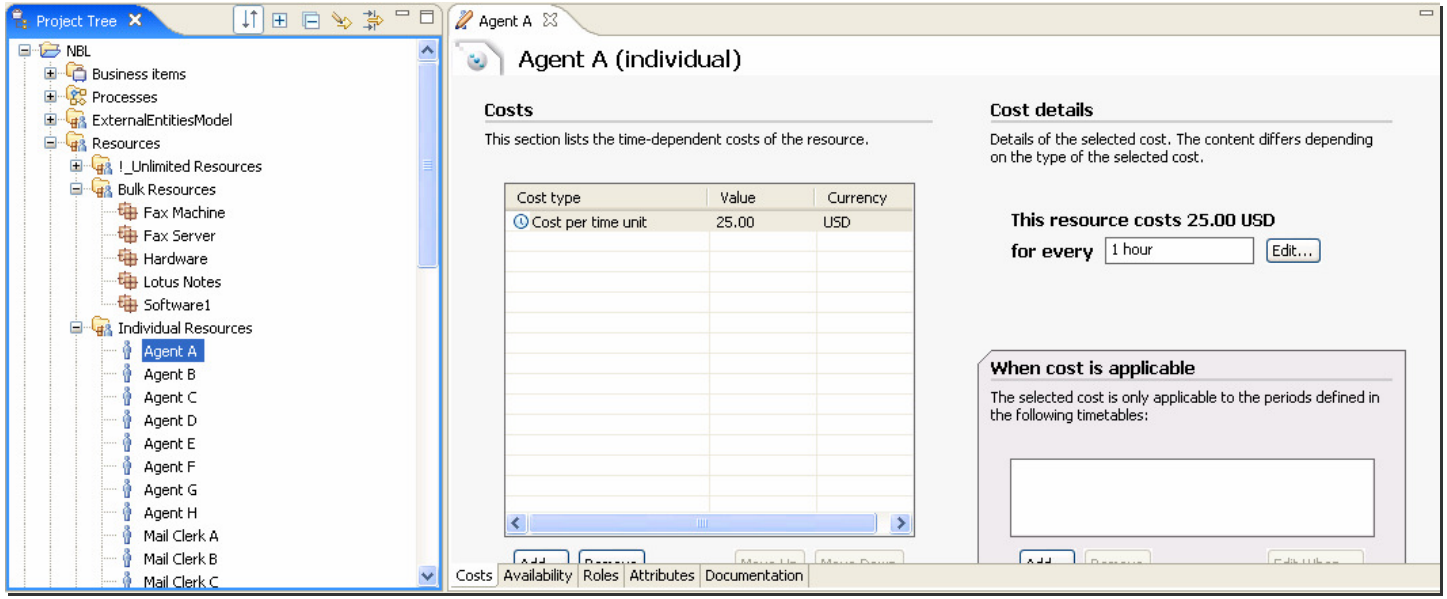
Business Process Definitions based on Open Standards

- BPEL compliant business process engine
  - Based on V2.0 specification
- Simple drag-n-drop Process Editor
  - Operations / Parameters
  - Service implementation details stay hidden
- Transactions / Compensation
- Event handling



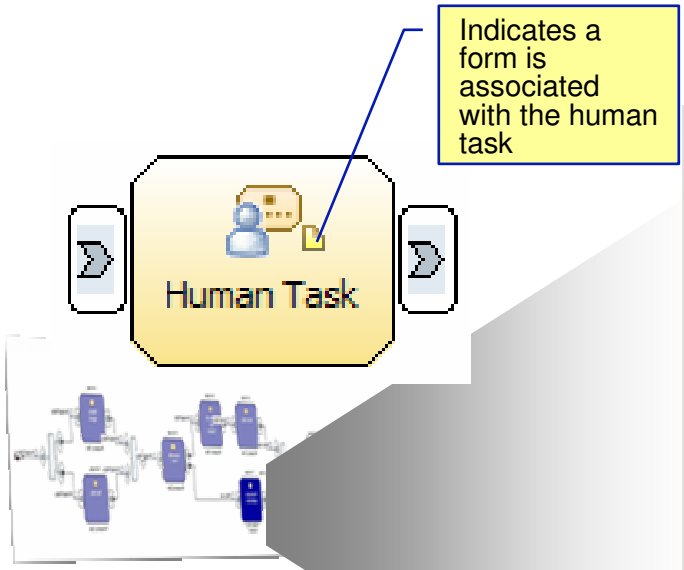
Roles and Resources

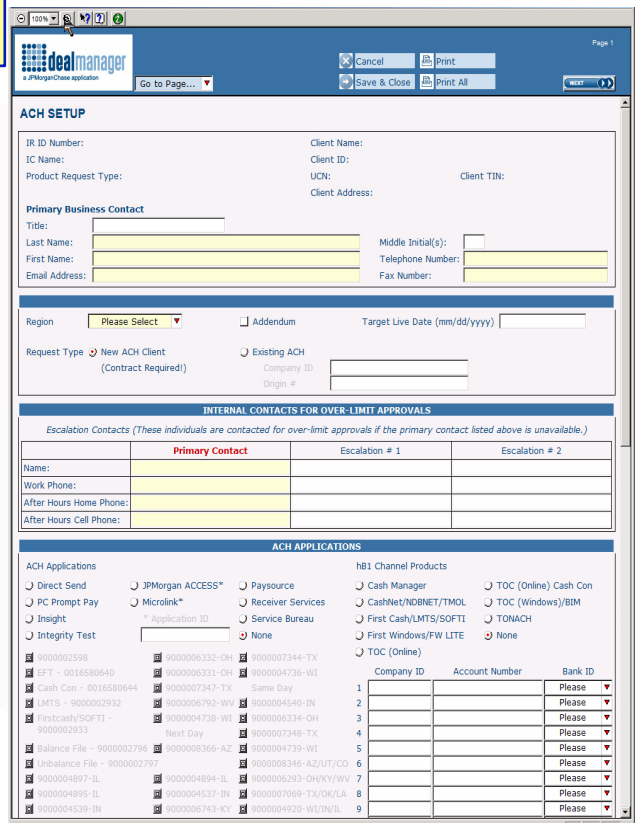
- Resources represent people, equipment, or materials
  - Bulk and individual resources available
- Roles are job functions, many resources may be used to fulfill a role
- Assign complex cost and scheduling parameters
- Accurate role and resource requirements are critical for detailed simulation and analysis



Human Tasks as Service Components

Rapidly define interfaces for human tasks as you model

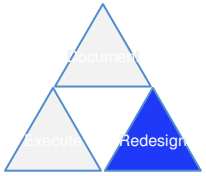




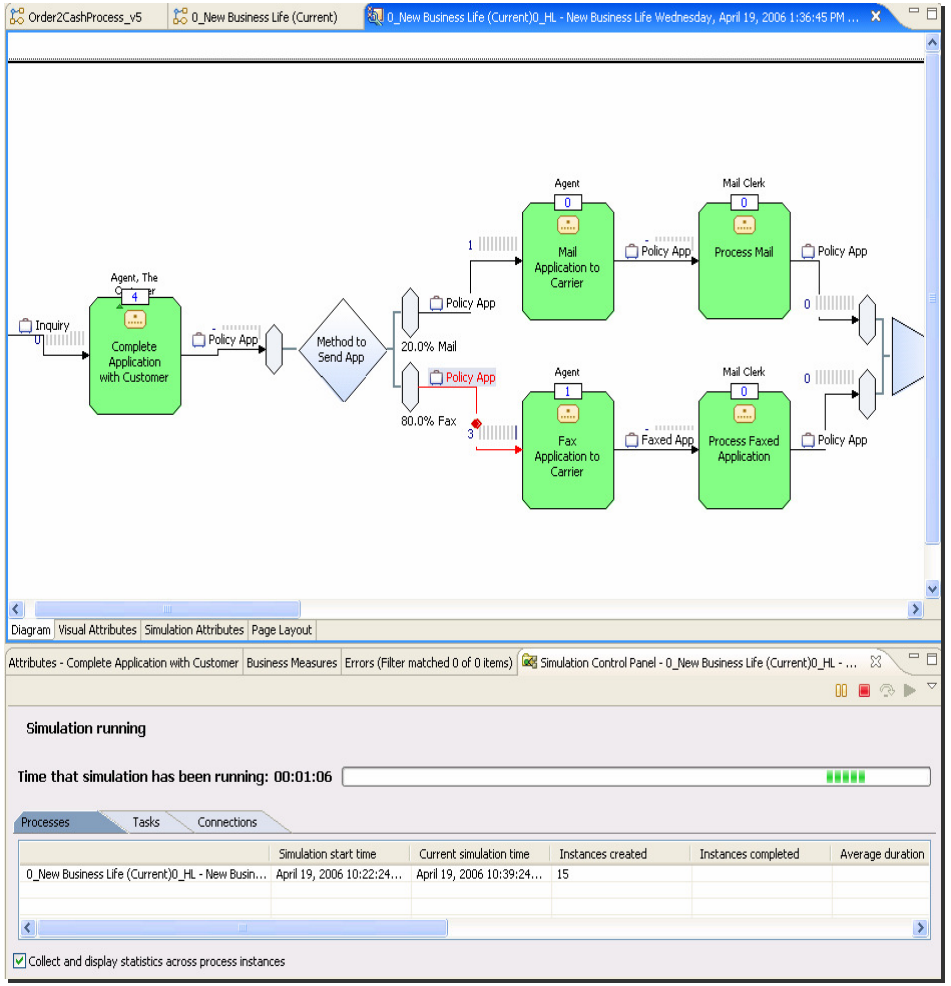
IBM is positioned in the leaders quadrant: *Gartner, Inc., "Magic Quadrant for Forms"*

Lotus Forms embedded in WebSphere Business Modeler

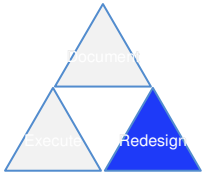
Process Simulation



- Based on metrics provided by subject matter experts
- Powerful simulation engine allows for detailed, statistically relevant investigations
- Specify input volumes, time constraints
- Visualize simulated behavior
- Improve understanding of process behavior



Process Analysis



- Analyze simulation results or static process models
- Identify root cause of problems in current state processes
- Perform what-if analysis and calculate ROI on potential future states
- Holistic business view of processes, including costs, cycle time, etc.
- Investigate various utilization patterns for people and other resources

Activity Name	Average Elapsed Duration	Average Delay Duration	Average Throughput
0_HL - New Business Life	23 hours 30 minutes 13.75 seconds	1 day 6 hours 16.875 seconds	0.04 work item / hour
Assemble Policy	5 hours 4 minutes 13.5 seconds	4 hours 59 minutes 13.5 seconds	0.20 work item / hour
Complete Application with Customer	8 minutes 23.625 seconds	7 minutes 23.625 seconds	7.15 work items / hour
Fax Application to Carrier	3 minutes 36.27 seconds	1 minute 36.27 seconds	16.65 work items / hour
File Poliy	6 hours 50 minutes 47.625 seconds	6 hours 47 minutes 47.625 seconds	0.15 work item / hour
Fork	0 seconds	0 seconds	undefined
Fork:2	0 seconds	0 seconds	undefined
Join	0 seconds	0 seconds	undefined
Mail Application to Carrier	3 minutes 54.666 seconds	54.666 seconds	15.34 work item / hour
Mail to Agent	6 hours 49 minutes 4.875 seconds	6 hours 47 minutes 4.875 seconds	0.15 work item / hour
Merge	0 seconds	0 seconds	undefined
Method to Send App	0 seconds	0 seconds	undefined
Photocopy Application	5 minutes 39.75 seconds	3 minutes 39.75 seconds	10.60 work items / hour
Pickup & Sort Policies	9 hours 39 minutes 58.875 seconds	9 hours 34 minutes 58.875 seconds	0.10 work item / hour
Print Policy	1 hour 15 minutes 29.925 seconds	1 hour 14 minutes 29.925 seconds	0.79 work item / hour
Process Faxed Application	14 minutes 28.15 seconds	12 minutes 28.15 seconds	4.15 work items / hour
Process Mail	15 minutes 24 seconds	10 minutes 24 seconds	3.90 work items / hour
Route Application	13 minutes 2.25 seconds	12 minutes 2.25 seconds	4.60 work items / hour
Underwrite	1 second	0 seconds	3,600.00 work items / hour

Current State – Times & Costs
Case Analysis with Unlimited Resources

Probability	Average Process Time (min:sec)	Average Cost	Case	Case Description
32.91%	10:11	$5.40	1	Paper & Mail, Complex
32.10%	3:11	$1.67	2	Paper & Mail, Simple
15.01%	14:11	$7.56	3	Printed Phone Calls (Complex)
5.20%	3:21	$1.77	4	Paper & Mail, Work not Complete, Simple
5.20%	11:11	$5.93	5	Email, Complex
4.85%	4:11	$2.20	6	Email, Simple
3.58%	10:21	$5.50	7	Paper & Mail, Work not Complete, Complex
0.81%	11:21	$6.03	8	Email, Work not Complete, Complex
0.36%	4:21	$2.30	9	Email, Work not Complete, Simple

Future State – Times & Costs
Case Analysis with Unlimited Resources

Probability	Average Process Time (min:sec)	Average Cost
35.57%	8:16	$4.38
33.03%	1:51	$0.96
13.51%	7:51	$4.16
4.50%	1:54	$0.96
3.93%	8:16	$4.38
4.85%	1:51	$0.96
3.70%	8:19	$4.38
0.69%	8:19	$4.38
0.23%	1:54	$0.96

Simulation Results – Weighted Average Analysis

Current Process Results

Resources	Items per hour	Elapsed Duration	Average Cost
Unlimited Resources	7.55	7.56	$4.20
Current Resources	3.41	17.33	$4.02

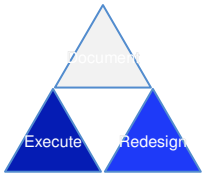
Unlimited Resources show the limitations of the process itself

Re-allocating resources balance costs with productivity

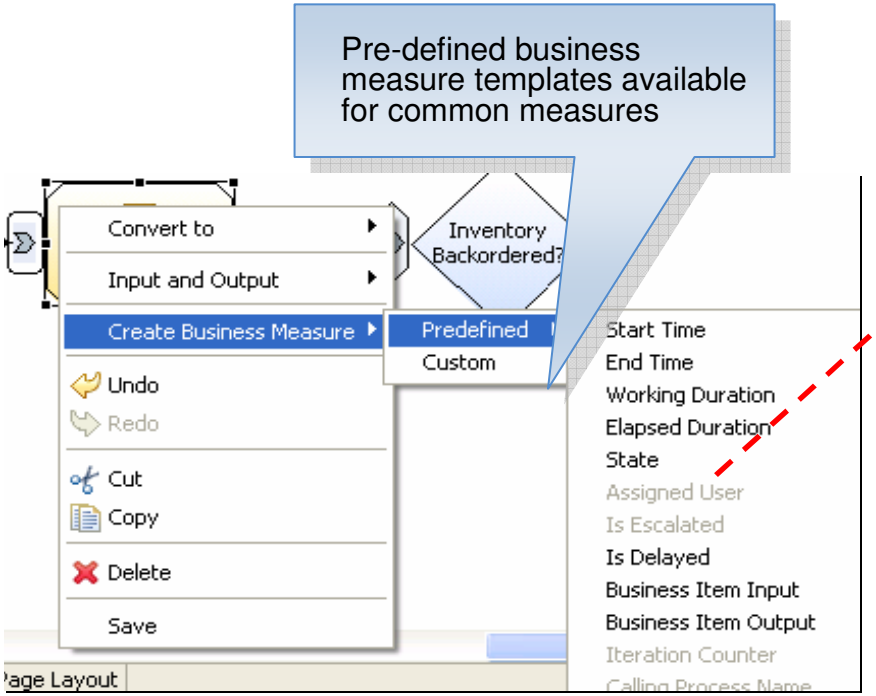
Future Process Results

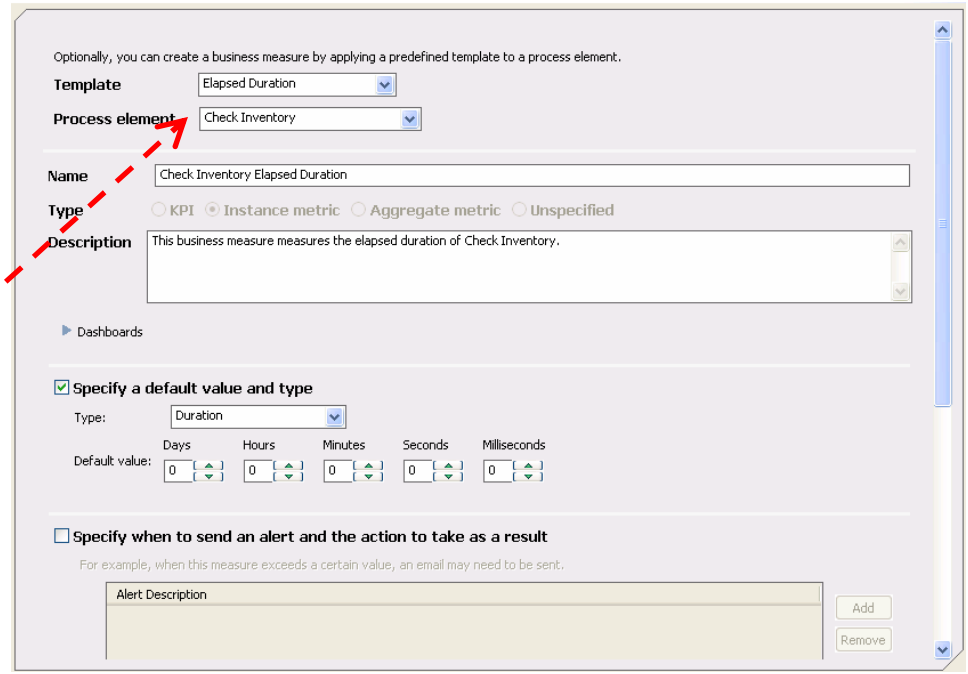
Resources	Items per hour	Elapsed Duration	Average Cost
Unlimited Resources	10.95	5:28	$2.89
Current Resources	.80	1:15:19	$2.59
Balanced	2.45	24:28	$2.75

Business Measures Definition

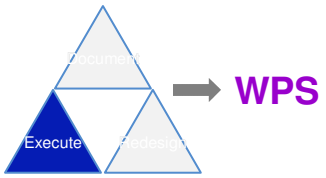


- Business users identify their Key Performance Indicators and other business measures, relate them to the process or individual process activities
- Information on what is to be measured is defined in Modeler, details on how to perform the measurements are defined in the Monitor Development Toolkit (plug-in to WID or RAD)
  - Modeler exports a skeleton Monitor Model (.mm) file

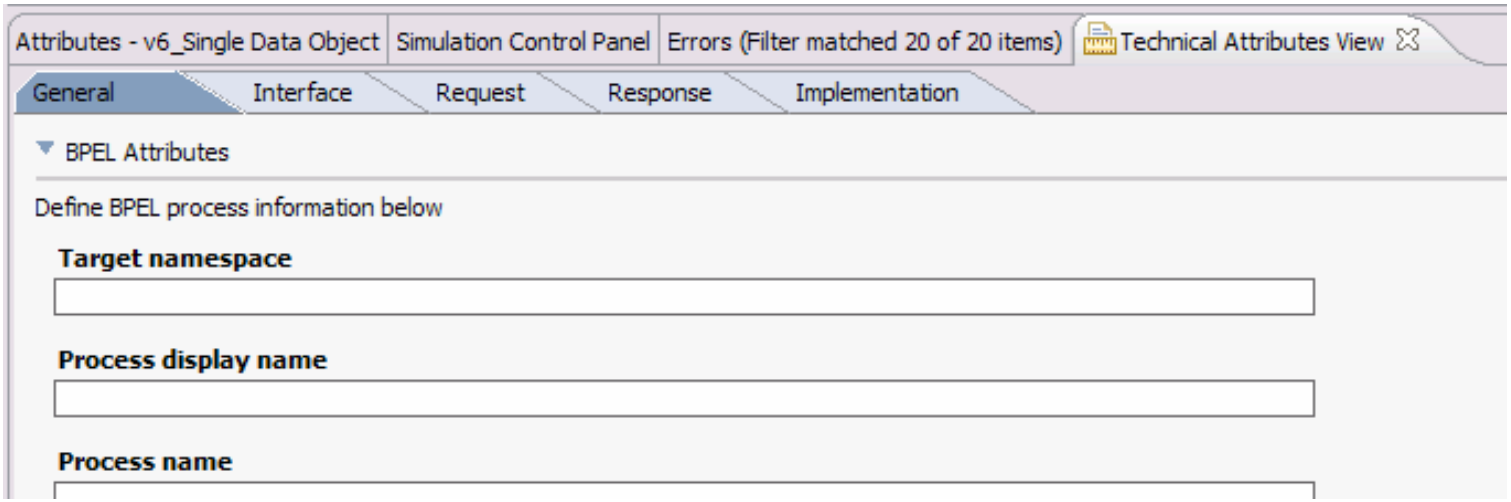




Technical Attributes View

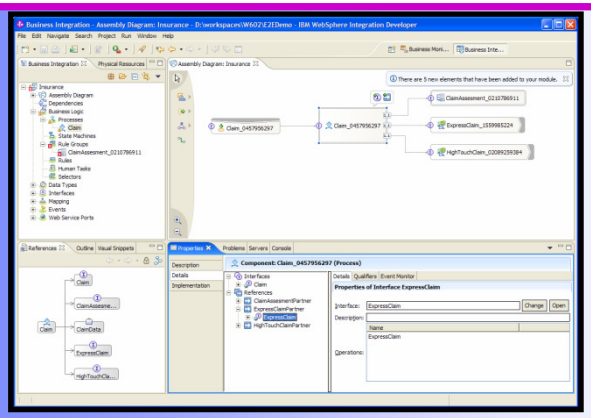


- Add technical details to processes just before exporting process definition to WebSphere Integration Developer
  - Provide information on BPEL and WSDL Names, Namespaces, Descriptions, Port Types, etc.
  - Select Long- or Short-Running process implementations.
  - Choose between Request/Response or One-Way operations.
  - Allow Decisions to be represented in BPEL as Switch activities if desired.
  - Define SCA Implementation Types, Names, Descriptions, etc.



Bridging the Chasm Between Business and IT

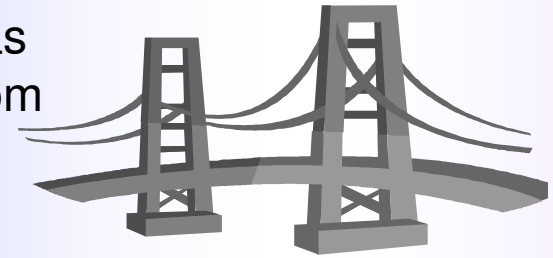
WebSphere Integration Developer and Modeler Tools Enable Business Driven Development

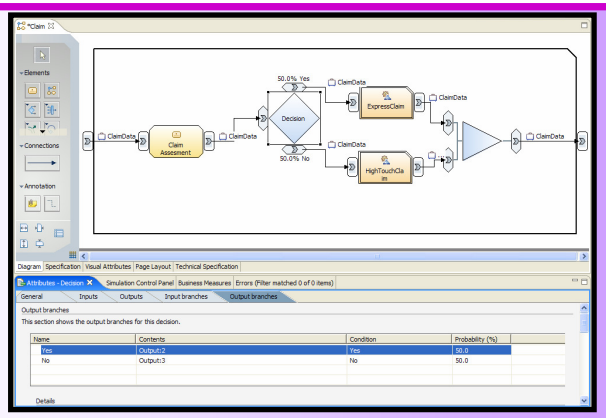


WebSphere Integration Developer

- Implementing Business Models and Metrics
- Implementing activities as software components from a model
- Continually refine application performance through runtime monitoring

Developer **Business User**



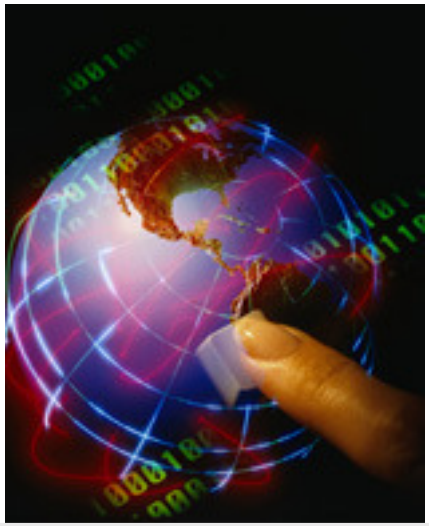


WebSphere Business Modeler

- Defining Business Models and Metrics
- Orchestrating activities within a business process
- Continually refine Business Processes through runtime monitoring

Simplified Integration – Tooling That's Easy To Learn And Use

- Simplified hand-offs between business and IT that let developers get started quickly
- Easy to use tools that minimize skill requirements
  - Role-based tooling on Eclipse standard
  - Integrated tooling for all aspects of process design leveraging BPEL, human workflow, business rules, etc.
- Streamlined development with the reuse of existing resources
- Dynamic process assembly



"Our development cost data proves that on each successive project the cost per interface dropped. It was because of the reuse"
– Lead Architect
Dow Chemical

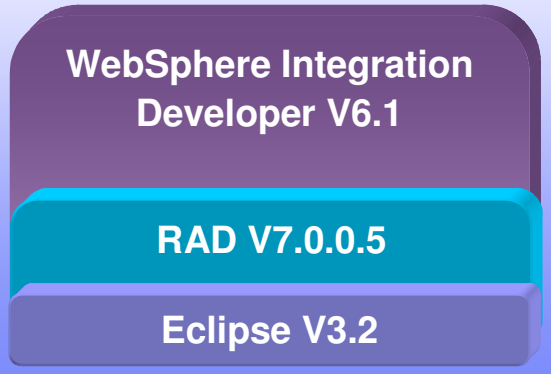
WebSphere Integration Developer

What is WebSphere Integration Developer?

- An integrated development environment for building applications based on service-oriented architecture (SOA).
- It is the authoring tool for WebSphere Process Server and WebSphere ESB v6.1
- WID is built on top of IBM Rational Application Developer and Eclipse

Integrated Development Environment

Target Runtime



Deploy Test Debug

Value of WID for LOB and IT - Overview

Line of Business

1. Model for LOB to IT Handoff
2. Runtime Business Flexibility
3. Faster Time to Deployment

4. Componentization
5. Common Data Representation
6. Runtime Dynamicity
7. Service Discovery
8. Access to Services in WSRR
9. Expose/Consume Services
10. Connect Mismatching Services
11. Component Assembly
12. Generate User Interface
13. Component Testing
14. Component Debug
15. Iterative Development

1 → Model → 2 3 → Run

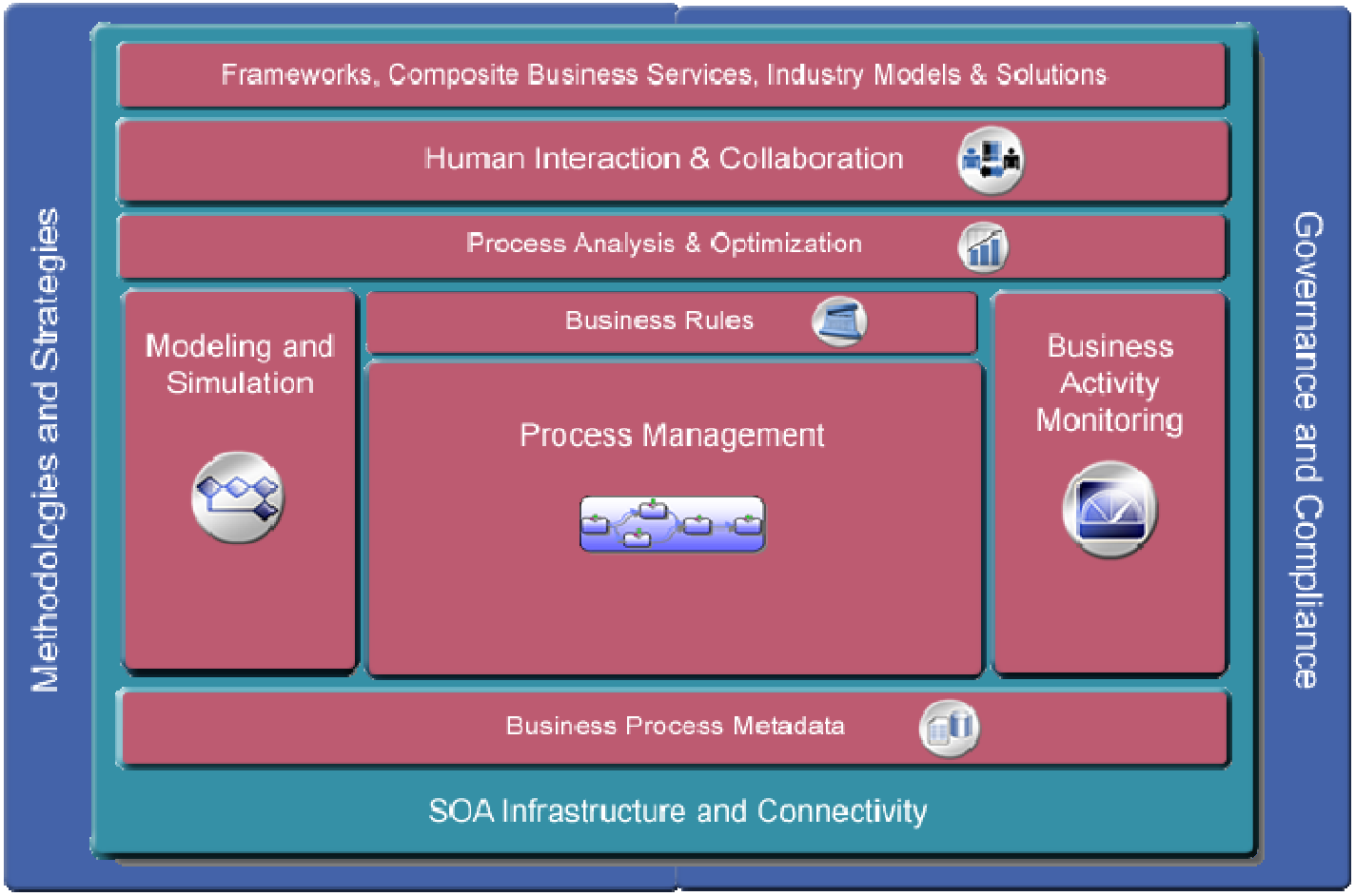
15 Iterative Development

4 5 6 Top Down Components → 7 8 9 Bottom Up Components → 10 11 Component Assembly → 12 Generate User Interface → 13 14 Test Debug

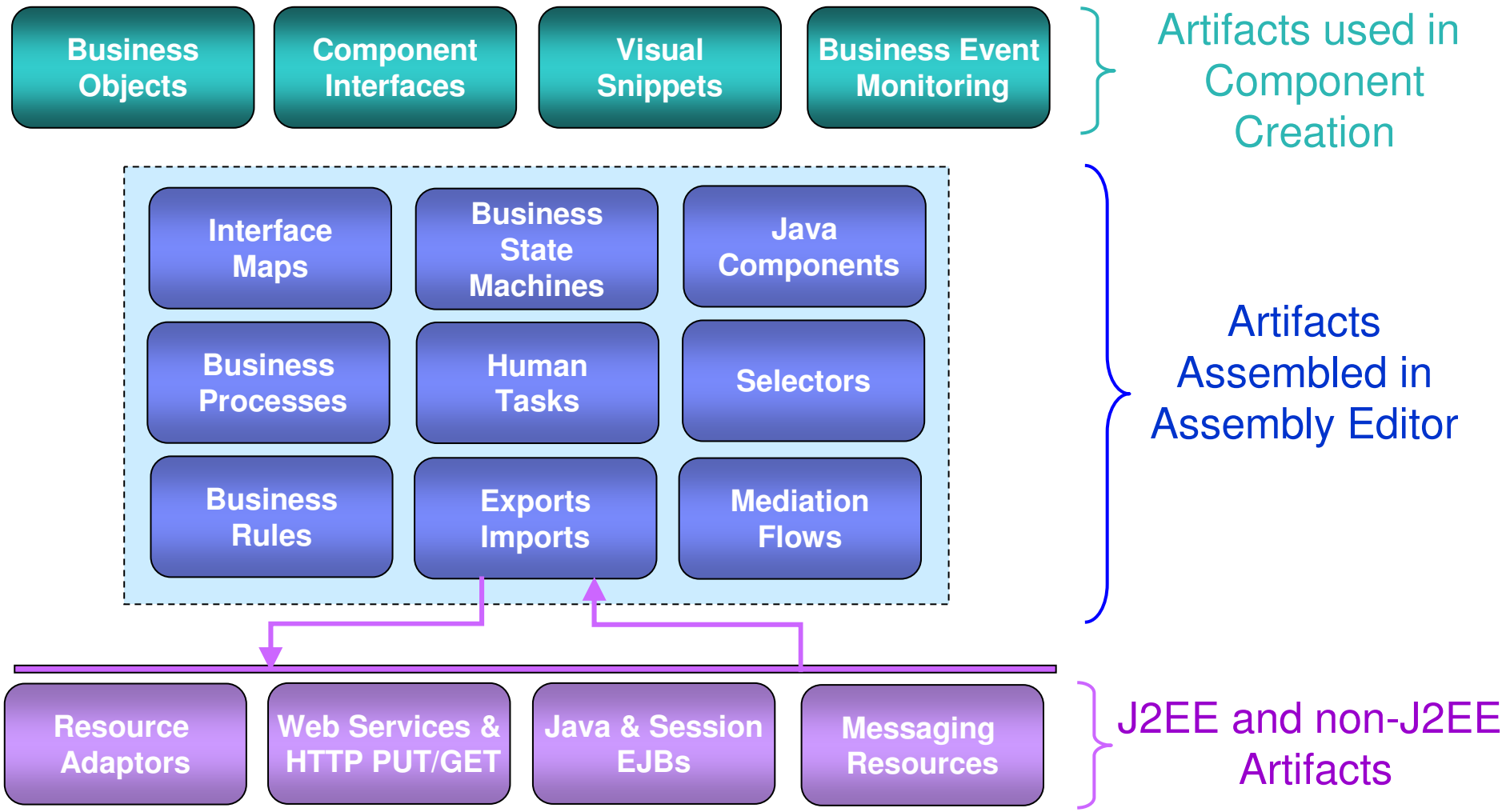
IT Development

BPM Enabled by SOA Capabilities

WebSphere Integration Developer
One tool, One set of skills: SOA End to End Business Integration

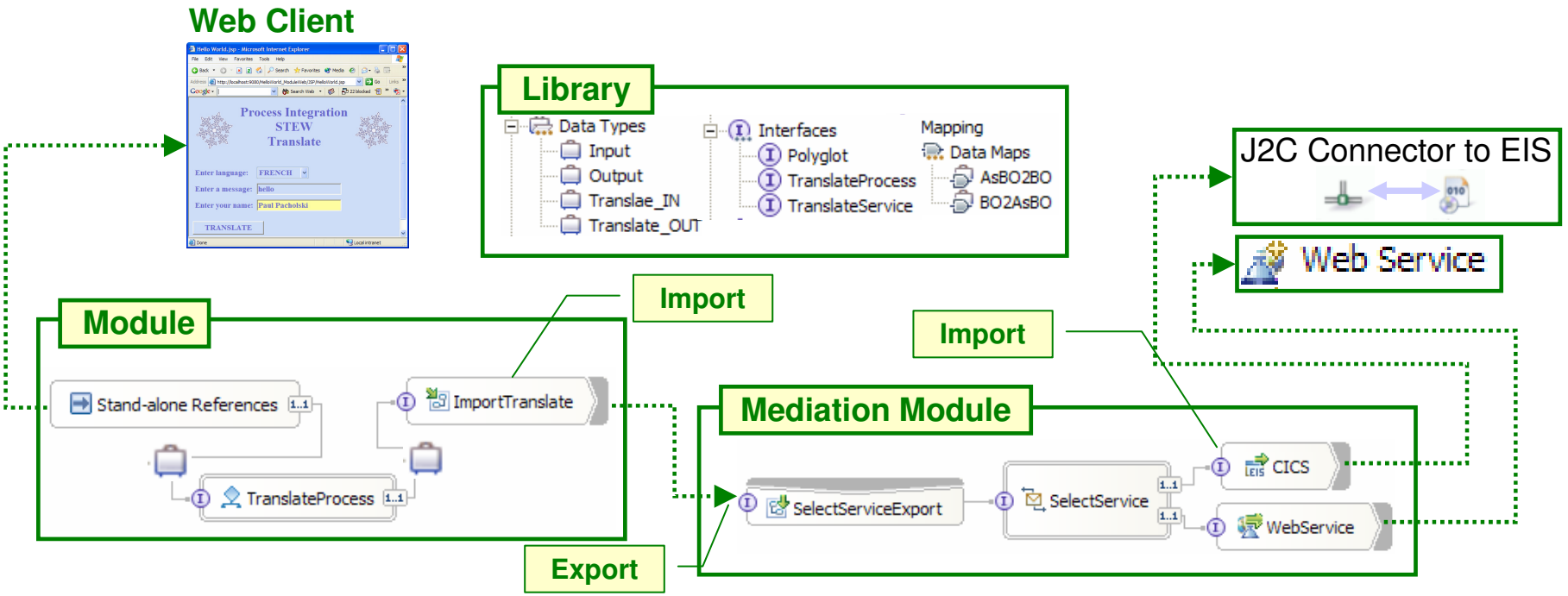


WebSphere Integration Developer – Key Features



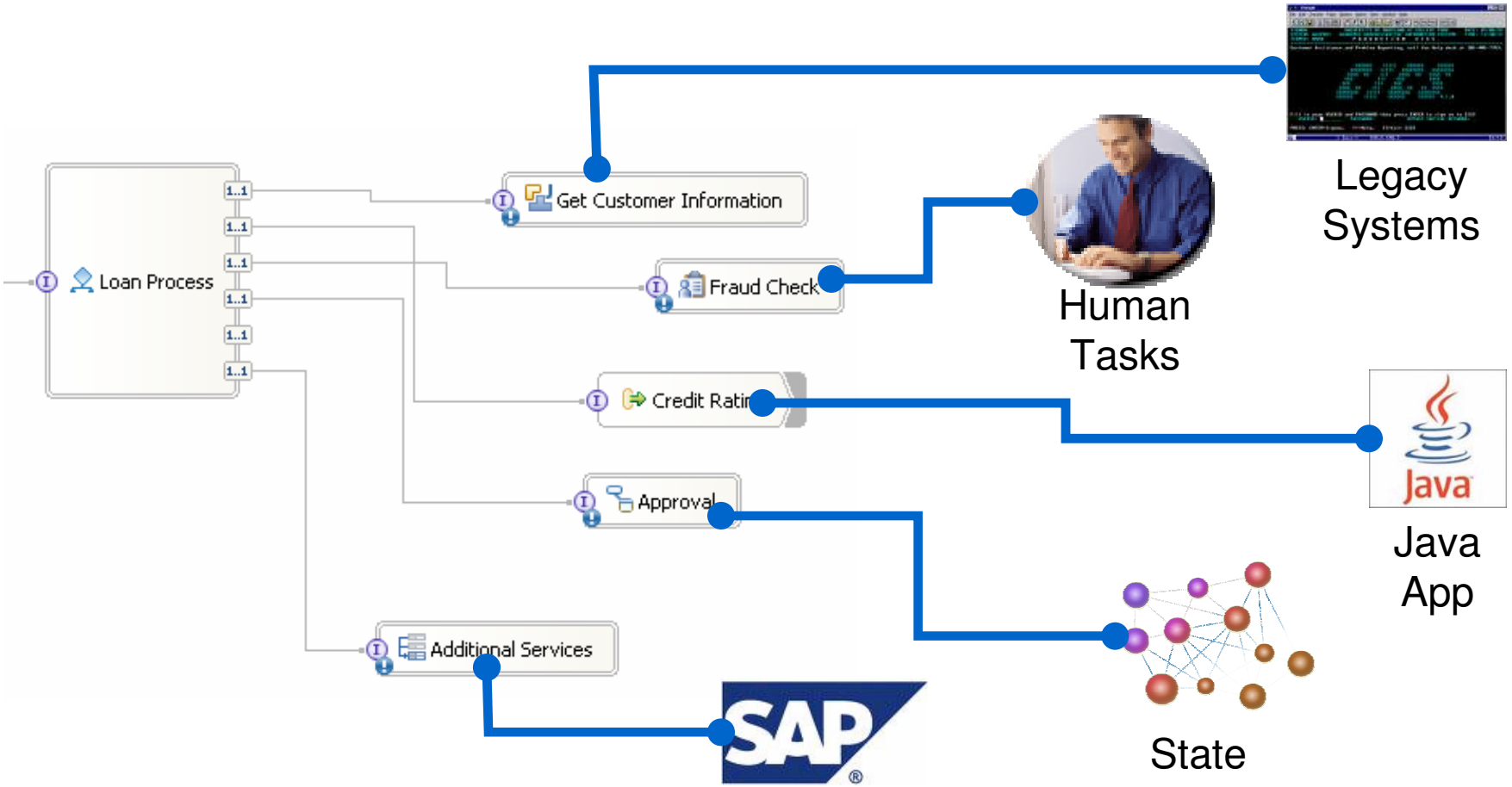
WebSphere Process Server Programming Model

- Service Components are assembled into **Modules**
- Reusable assets reside in **Libraries**
- **Imports** – make external SCA Interfaces and non-SCA artifacts visible inside a Module
- **Exports** – make internal (to the Module) Interfaces visible outside the Module
- Service Components use Business Objects for data
- Integration Solution is a collections of Modules and Libraries



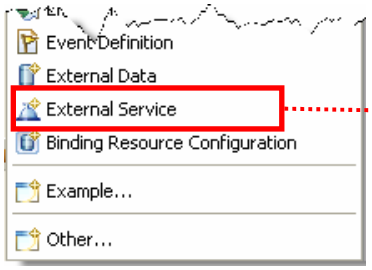
Simple deployment of processes without coding

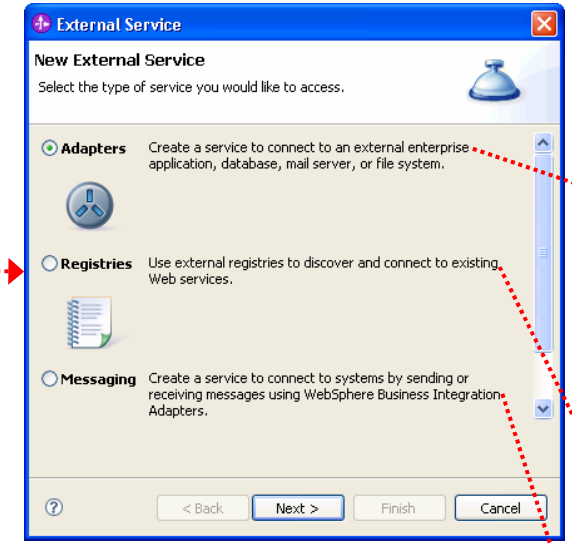
With SOA, leverage existing assets and achieve greater flexibility

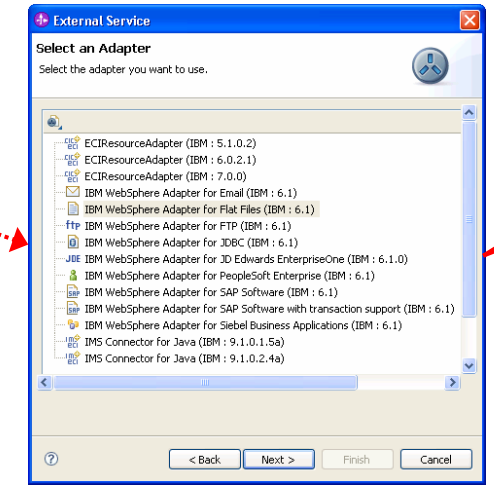


WebSphere Integration Developer

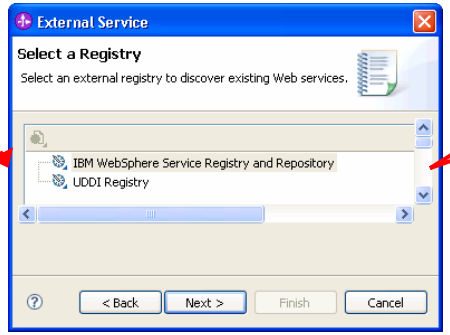
Bottom-up Development: J2C, Registries, Legacy Adapters



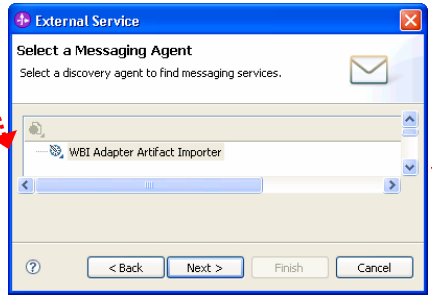




J2C Adapters



Registries

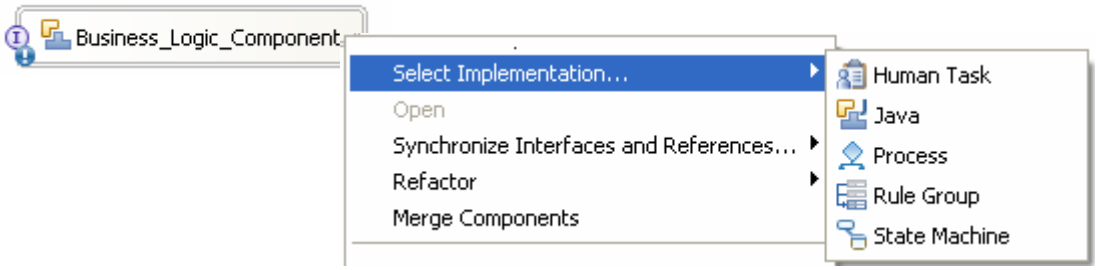


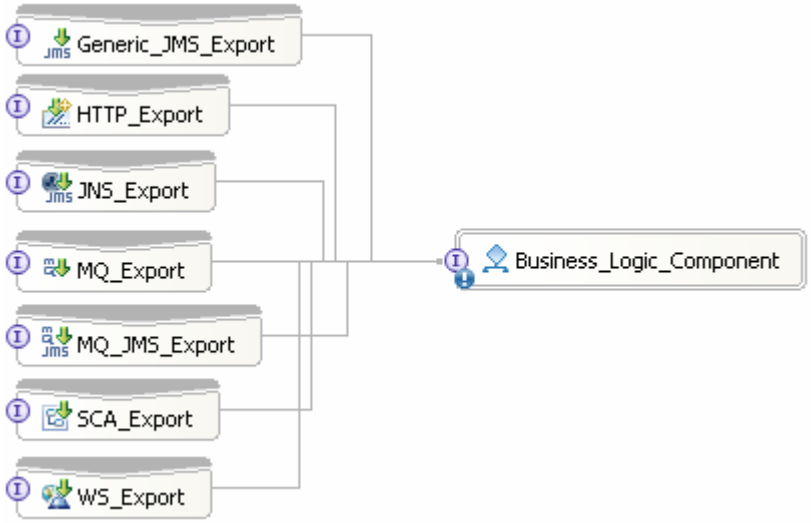
Legacy Adapters

- J2C Adapters
  - Enterprise Service Discovery Wizard creates J2C imports and Exports to connect via J2C Adapters
- Registries
  - UDDI and WSRR
- Messaging Agents
  - Legacy (messaging based) adapters

Top-Down Development

- A Choice of several implementation types:
  - Process Component
  - State Machine
  - Business Rule
  - Human Task
  - Java
  - Web Services Fabric (if WSF toolkit is installed)
- A choice of several invocation bindings
  - Web Services
  - Messaging
    - MQ, JMS, MQ-JMS, Generic-JMS
  - HTTP
  - SCA
    - Used for WID component to WID component interactions



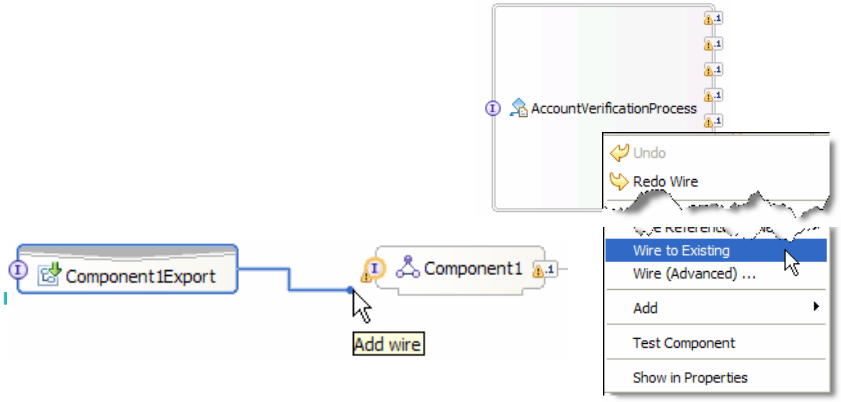


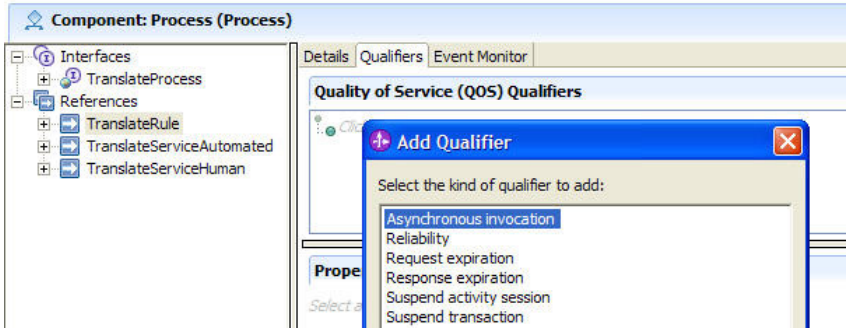
Component Assembly

- Add Exports
  - For inbound J2C or Messaging
  - To expose Components outside of a Module

- Add Imports
  - Web Services
  - J2C Adapters
  - To access Components in external Modules

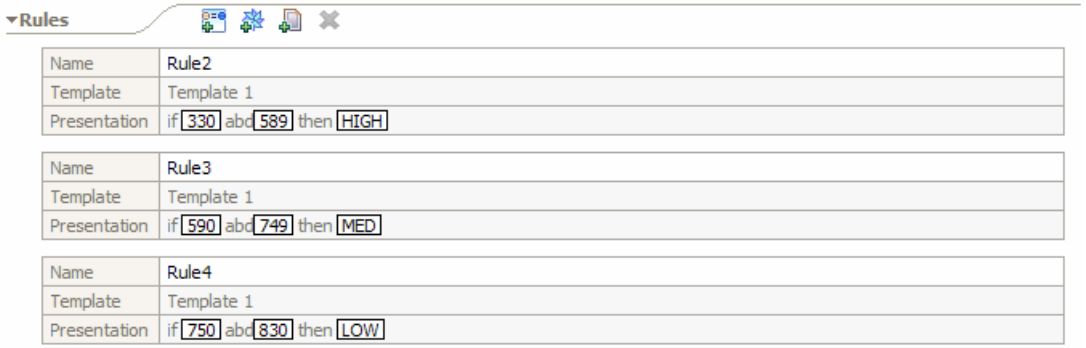
- Wire Components
  - Use Wire to Existing (automatically connects matching References to Interfaces)
  - Wire manually





Dynamicity with Business Rules

Business Rule Group

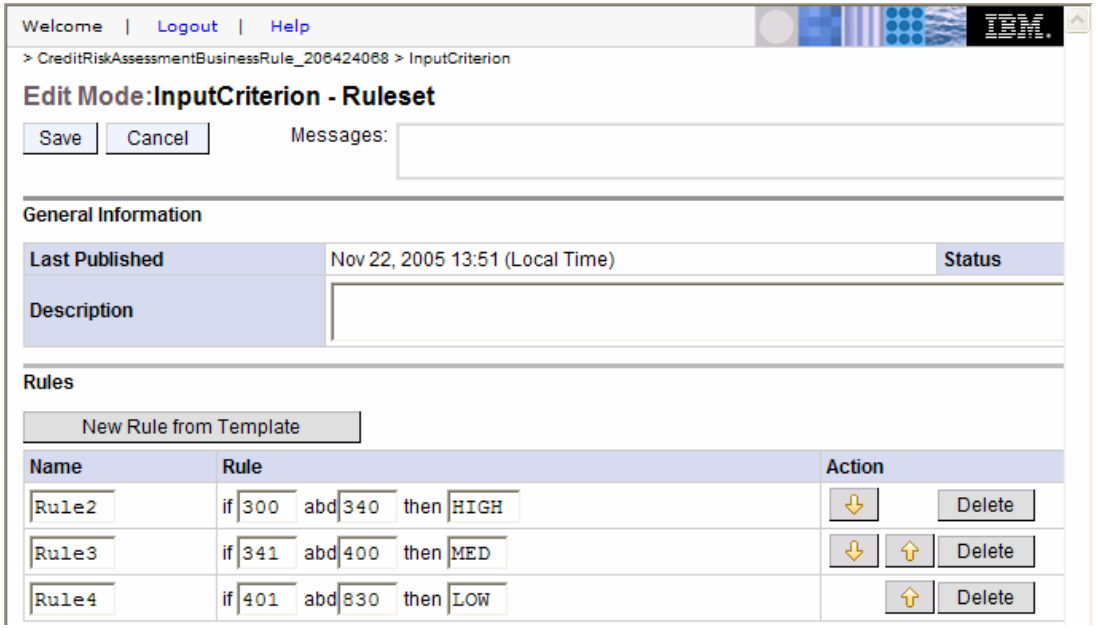


- Programmer defines rules from templates
- This exposes the rule parameters to ***Business Rules Manager***

Tools
WebSphere Integration Developer

Runtime
WebSphere Process Server

- Using ***Business Rules Manager***, the Business Analyst changes rules at runtime
- No need to restart the application
- Users are authenticated using standard WAS authentication / security
- Changes may be exported back to WID



Test and Debug – Deploy

- Modules and the associated files are called “Projects”
  - In fact “Projects” are implemented as EARs
- Add all “Projects” associated with the Integration Solution to an instance of the WPS v6.1 server
  - This action will also start the server and publish all EARs