



IBM SOA PoT

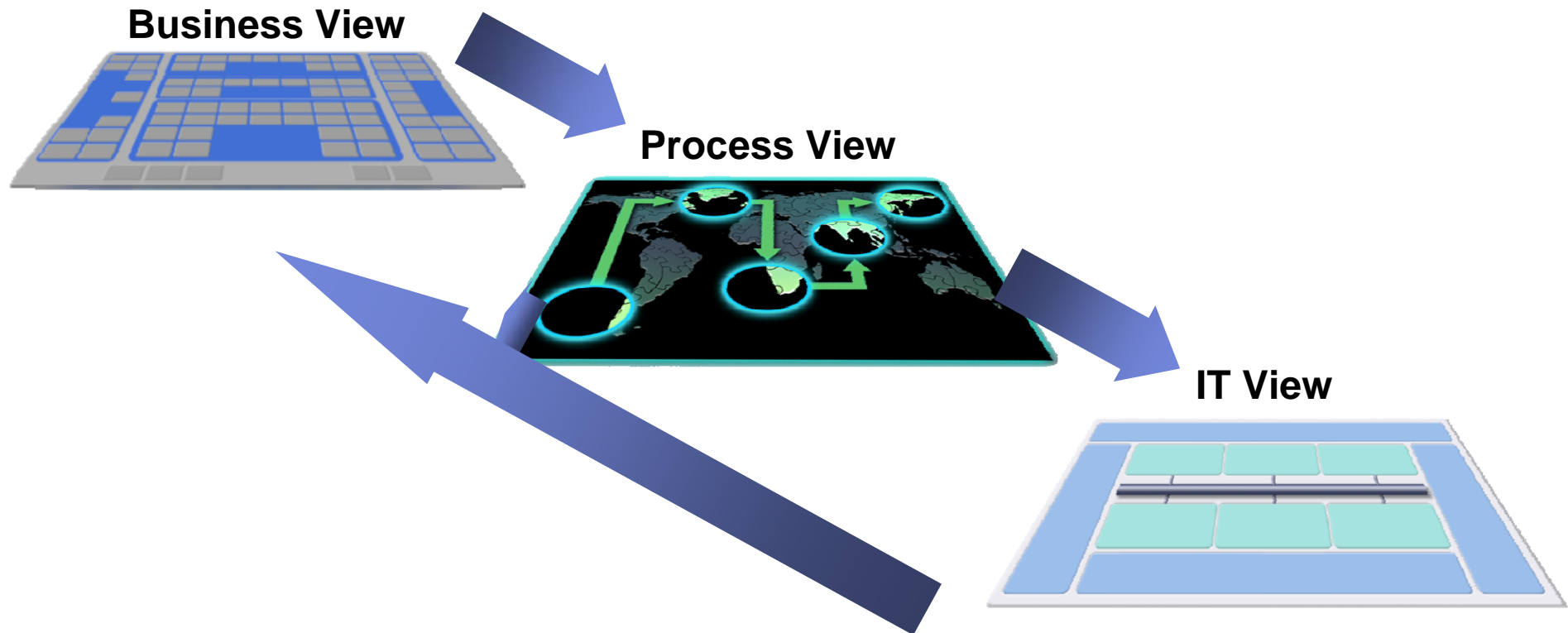
## Business Modelling

## Technical Overview



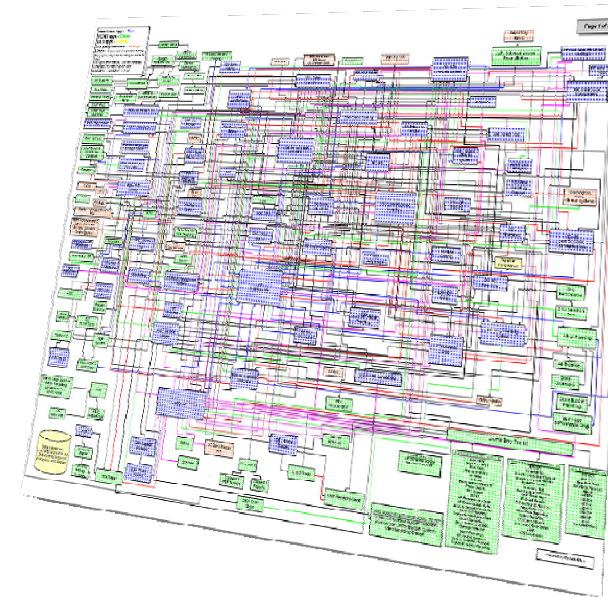
# BPM—holistic approach to innovation and optimization

*Globally aligning your strategy with business and IT execution*



## The Need for Business Process Modeling

- **Model for documentation (at the project and enterprise level)**
  - Document to fully understand the business process
  - Use output for training, collaboration, documentation requirements for compliance regulations
- **Model for analysis**
  - Document both the current state and future state business process
  - Complete Return on Investment and Break Even analysis by comparing processes
- **Model for execution – Model Driven Development**
  - Modeler creates artifacts which integrate with technology development tools, reducing the overall implementation time

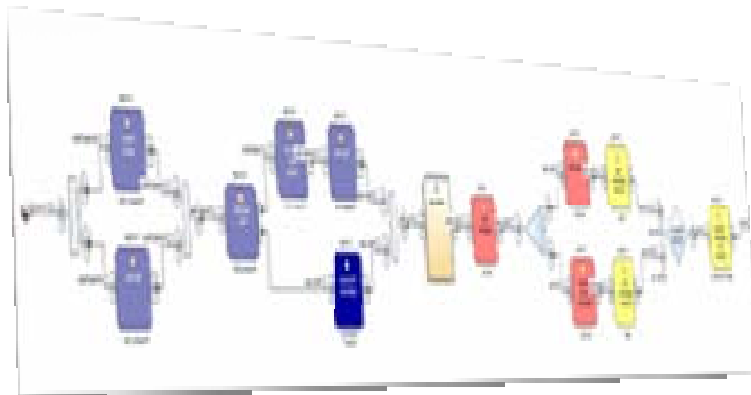


## Relevant Standards Associated with Process Modeling

- **Modeling Standards**
  - **XML Process Definition Language (XPDL) - Current release - XPDL version 2.0**
    - XML file format that can be used to interchange process models between tools (from WFMC)
  - **Business Process Modeling Notation (BPMN)**
    - Graphical notation to facilitate human communication between business and technical users, of complex business processes.
- **Compliance Standards**
  - **Six Sigma**
  - **Supply-Chain Operations Reference-model (SCOR)**
- **Industry Standards**
  - **Telecommunications: Enhanced Telecom Operations Map (eTOM)**
  - **Insurance: Agent-Company Organization for Research and Development (ACORD)**
  - **And many others e.g. CFPR, Pharma standards, Manufacturing standards**

## Business Process Design

*Understanding your business processes*



### IBM WebSphere Business Modeler

- Helps you understand and transform your business
- See complex behaviors in simple processes
- Discover areas for process improvement and latent value in existing processes
- Validate enhancements prior to committing resource & implementing technical solutions
- Examine the financial implications and justification for process change
- Establish initial targets for process performance
- Define a business measurement structure with rigor and repeatability

# Modeler Layout

Eclipse 3.2 Framework  
Standard layout for IBM  
development tools

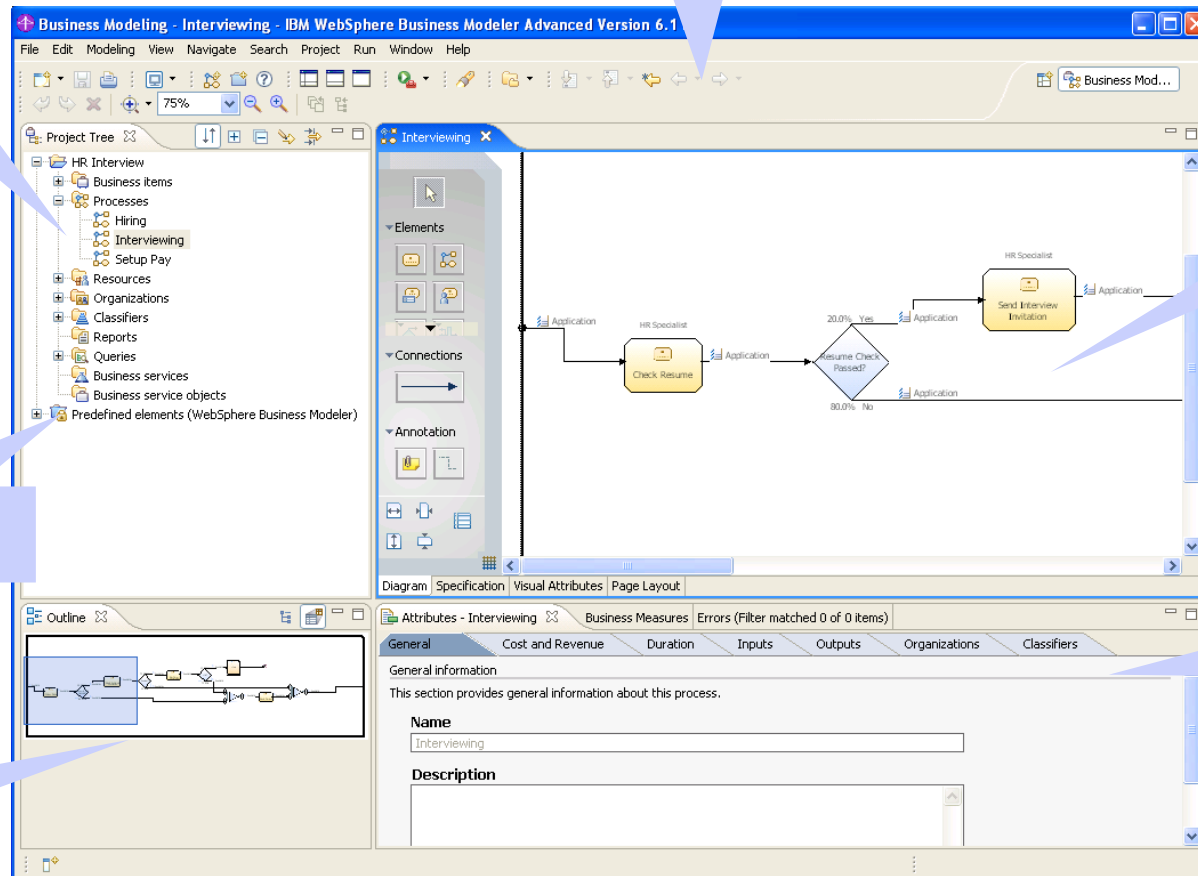
**Project Tree**  
Navigate through a  
structured view of  
models and related  
elements

**Process Editor**  
Compose process  
models and edit  
other reusable  
elements

**Predefined Elements**  
Help you get started

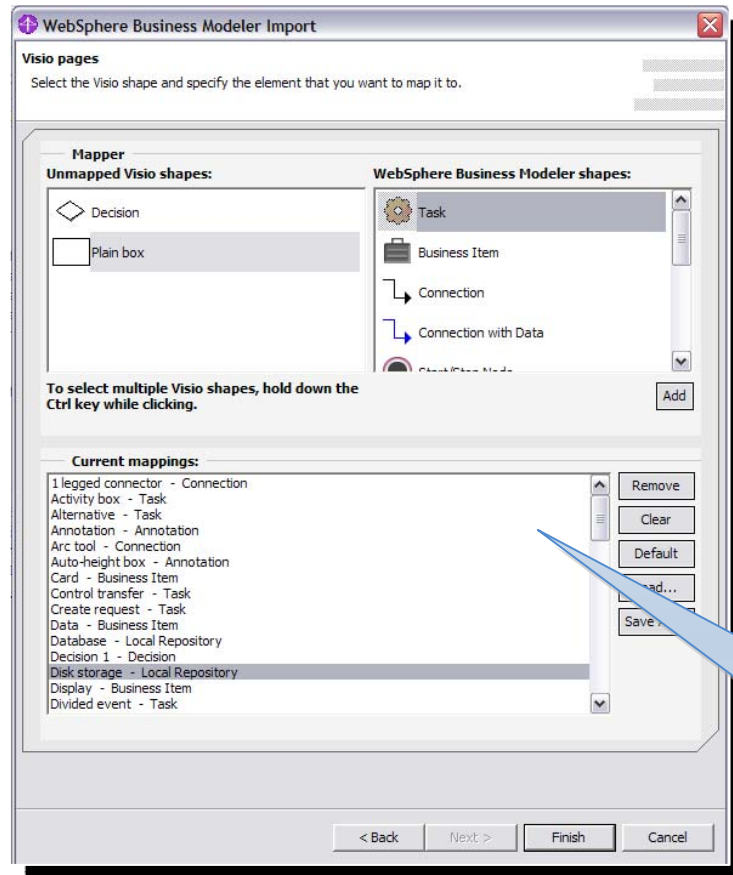
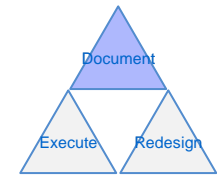
**Outline View**  
Navigate the open  
process model

**Attributes View**  
Access detailed  
information about the  
open process model





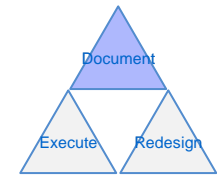
## Visio Import



- Start modeling effort by reusing existing process work, if available
- Common Visio elements are pre-mapped to their Modeler counterparts
  - Custom element mapping capabilities available

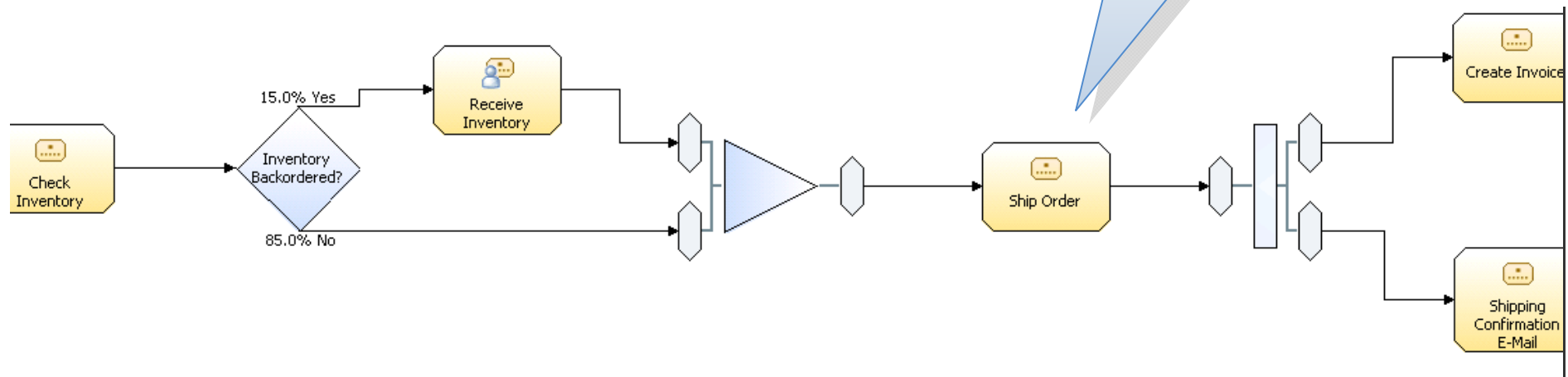
Reduce rework, protect investments, ease transition to new tooling

## Document Process Flow

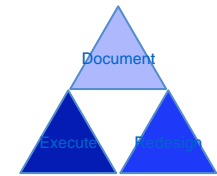


- Simple drag-and-drop interface
- Process diagrams are easy to read and interpret
- Capture process activities and decision logic
  - Use existing process collateral, interview involved parties and key stakeholders

Common understanding of processes throughout the organization, compliance is well documented







## Add Detailed Process Information

- Through additional investigations and interviews, begin to identify detailed attributes

- |                  |                 |
|------------------|-----------------|
| ✓ Business Items | ✓ Costs         |
| ✓ Roles          | ✓ Descriptions  |
| ✓ Resources      | ✓ Classifiers   |
| ✓ Durations      | ✓ Organizations |

The screenshot displays the IBM SOA PoT interface. At the top, a process diagram shows a task named 'Shipping Confirmation E-Mail' highlighted with a red box. Below the diagram, a red dashed arrow points from the task to a detailed attribute view. The attribute view is titled 'Attributes - Shipping Confirmation E-Mail' and includes tabs for 'General', 'Cost and Revenue', 'Duration', 'Inputs', 'Outputs', 'Input Logic', 'Output Logic', 'Resources', 'Organizations', 'Classifiers', 'Advanced Input Logic', and 'Advanced Output Logic'. The 'General' tab is selected, showing the following information:

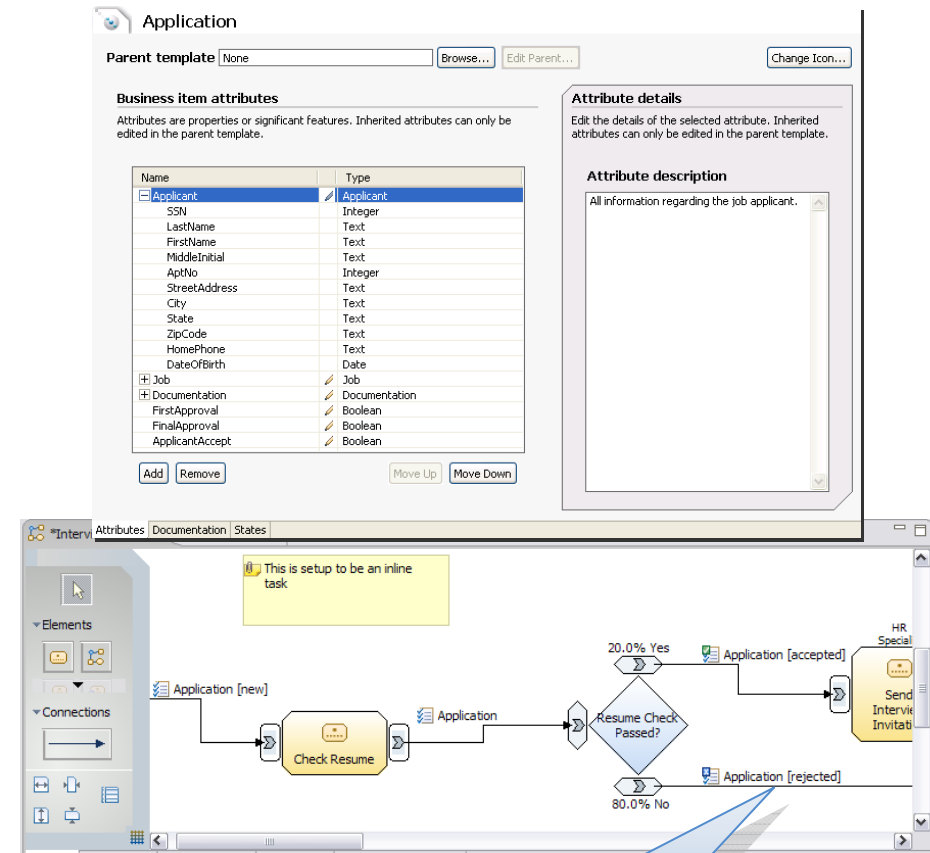
General information  
This section provides general information about this task.

**Name**  
Shipping Confirmation E-Mail

**Description**  
Send e-mail confirming order shipment to customer.

## Business Items

- **Objects that are passed through the process, being consumed or transformed by various activities**
  - Could be business documents, work products, commodities
- **Build in data structures and descriptions**
  - Structures can be imported from XSD files, delimited text
- **Represent the various states that business items are in as they are transformed throughout the process**
- **Templates available for common patterns**



## 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

The screenshot displays the IBM SOA PoT software interface. On the left, a 'Project Tree' window shows a hierarchical view of resources under 'NBL', including 'Business items', 'Processes', 'ExternalEntitiesModel', 'Resources', and 'Individual Resources'. Under 'Individual Resources', 'Agent A' is selected. The main window, titled 'Agent A (individual)', shows the configuration for this resource. It includes a 'Costs' section with a table listing time-dependent costs, a 'Cost details' section for the selected cost, and a 'When cost is applicable' section for defining timetables.

Cost type	Value	Currency
Cost per time unit	25.00	USD

**Cost details**  
Details of the selected cost. The content differs depending on the type of the selected cost.

**This resource costs 25.00 USD**  
for every




**When cost is applicable**  
The selected cost is only applicable to the periods defined in the following timetables:

Costs Availability Roles Attributes Documentation

## Classifiers

- **Group or categorize related activities and/or processes**
  - May assign multiple classifiers to a single process element
- **Highlight important aspects of a process**
- **Free-form data fields that can be applied to process elements**
- **Assist in process understanding, issue prioritization, and decision making**
- **Expose to viewer through swimlanes, labels, color-coding**

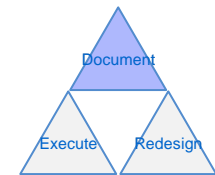
Classifiers and classifier values  
This section shows the associated classifiers and classifier values for .

	Classifiers	Classifier value
	/O2C/Classifiers/Automation	Manual
	/O2C/Classifiers/System	WPS
	/O2C/Classifiers/Potential Improvement	No Improvement
	/Predefined elements (WebSphere Business Modeler)/Predefined classifiers/Quality ...	Quality control

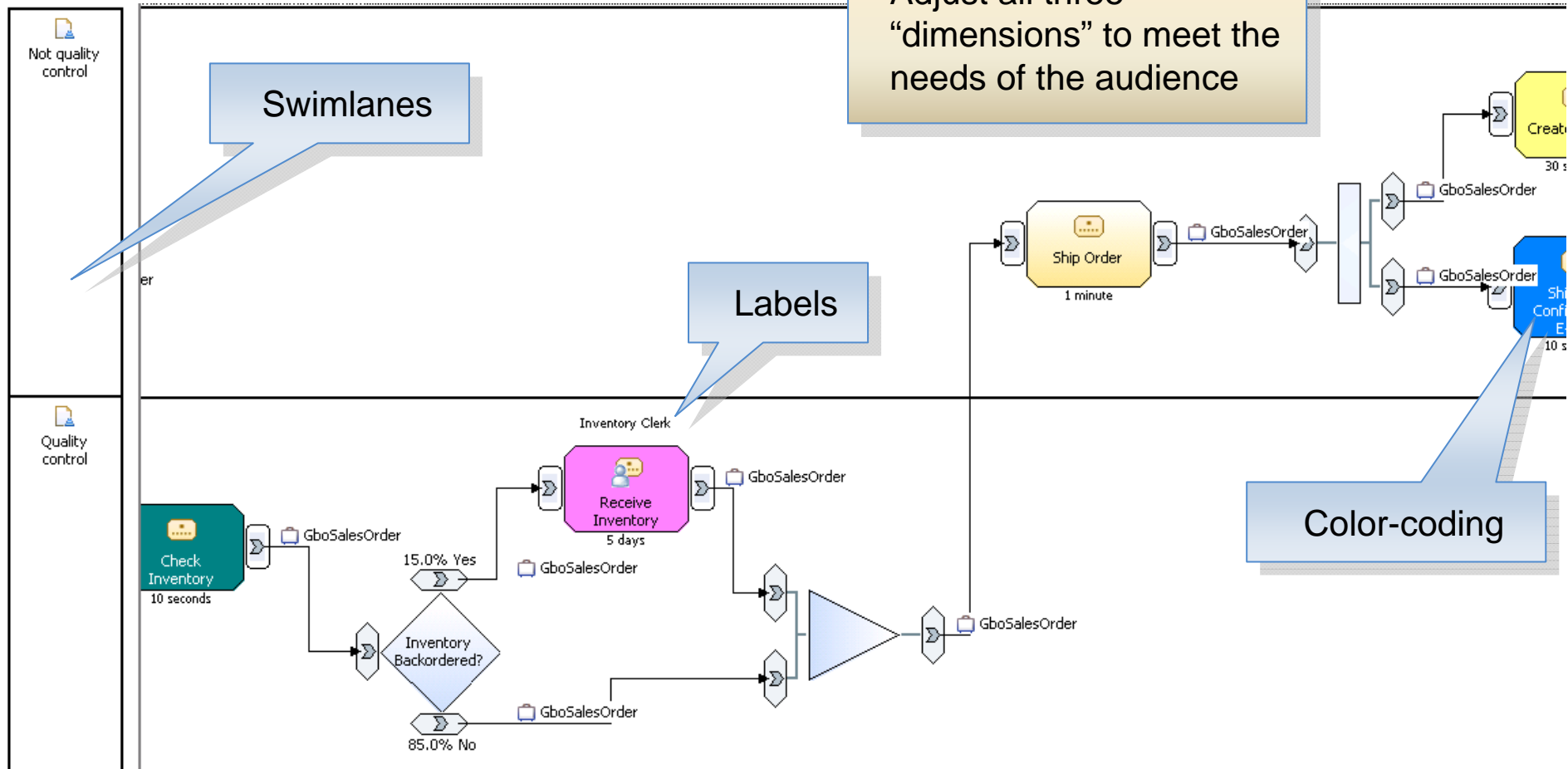
Inventory Clerk



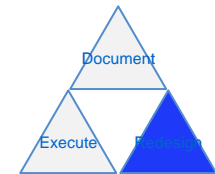
# View the Model in “Three Dimensions”



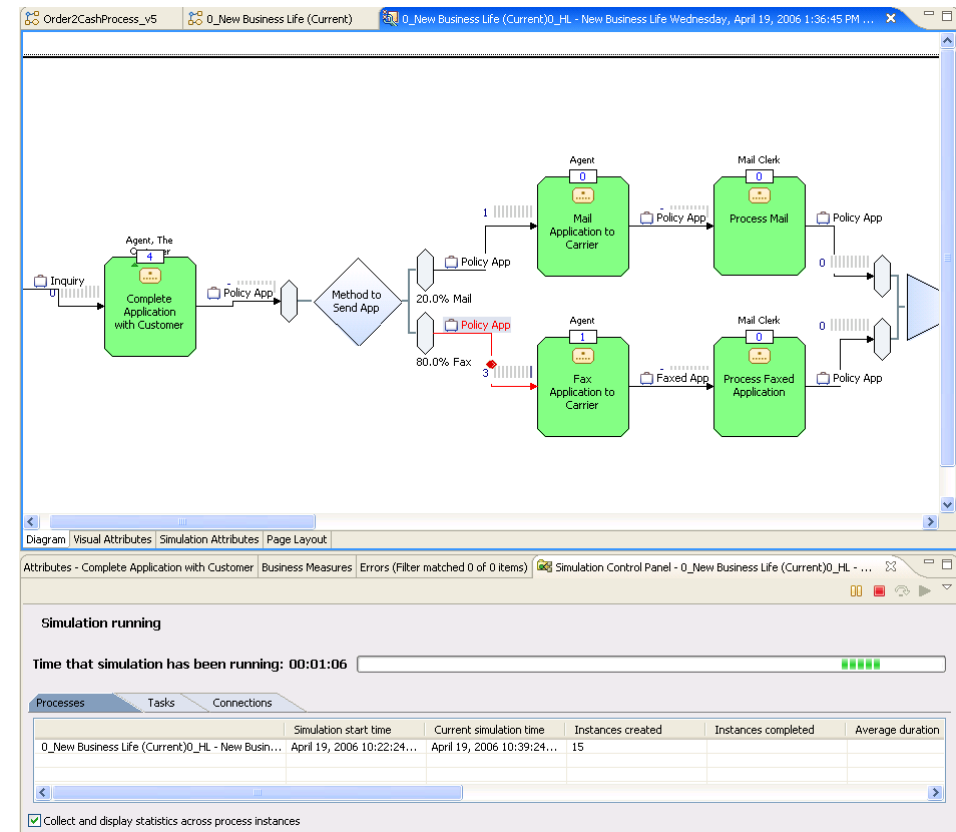
Adjust all three “dimensions” to meet the needs of the audience



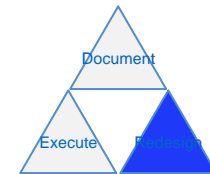
## Process Simulation



- 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 Poly	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 items / 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

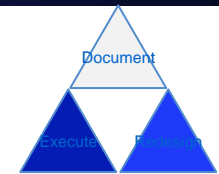
Current State – Times & Costs  
Case Analysis with Unlimited Resources

Probability	Average Process Time (min:sec)	Average Cost	Case	Case Description	Probability	Average Process Time (min:sec)	Average Cost
32.91%	10:11	\$6.40	1	Paper & Mail, Complex	35.57%	8:16	\$4.38
32.10%	3:11	\$1.67	2	Paper & Mail, Simple	33.03%	1:51	\$0.96
15.01%	14:11	\$7.56	3	Printed Phone Calls (Complex)	13.51%	7:51	\$4.16
5.20%	3:21	\$1.77	4	Paper & Mail, Work not Complete, Simple	4.50%	1:54	\$0.96
5.20%	11:11	\$6.93	5	Email, Complex	3.93%	8:16	\$4.38
4.85%	4:11	\$2.20	6	Email, Simple	4.85%	1:51	\$0.96
3.58%	10:21	\$6.50	7	Paper & Mail, Work not Complete, Complex	3.70%	8:19	\$4.38
0.81%	11:21	\$6.03	8	Email, Work not Complete, Complex	0.69%	8:19	\$4.38
0.23%	4:21	\$2.30	9	Email, Work not Complete, Simple	0.23%	1:54	\$0.96

Future State – Times & Costs  
Case Analysis with Unlimited Resources

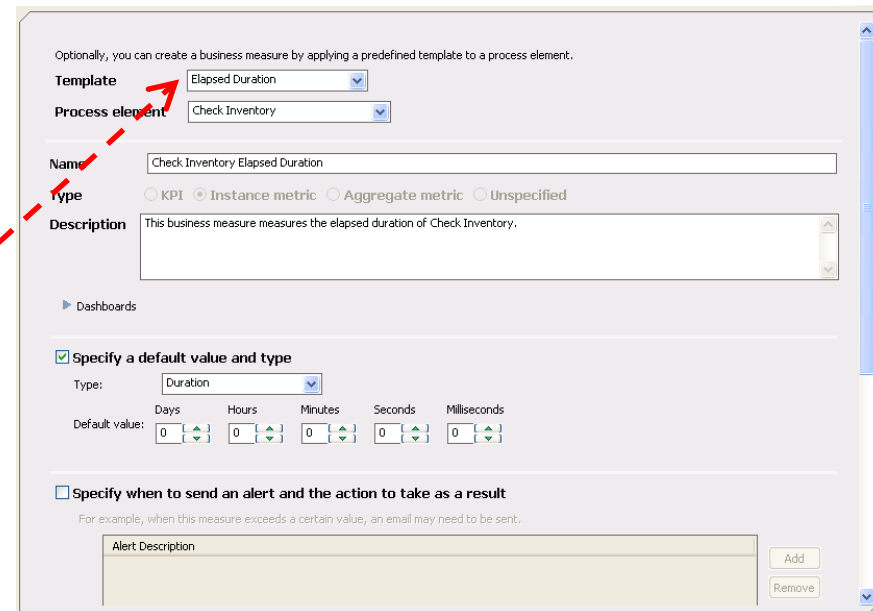
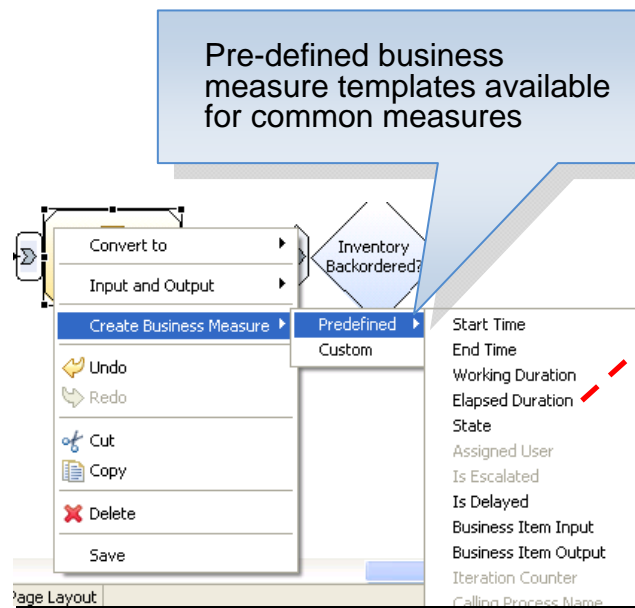
Simulation Results – Weighted Average Analysis

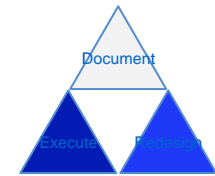
Current Process Results				Future Process Results			
Resources	Items per hour	Elapsed Duration	Average Cost	Resources	Items per hour	Elapsed Duration	Average Cost
Unlimited Resources	7.55	7.68	\$4.20	Unlimited Resources	10.95	5:28	\$2.89
Current Resources	3.41	17.33	\$4.02	Current Resources	.80	1:15:19	\$2.59
Re-allocating resources balance costs with productivity				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 WebSphere Integration Developer or Rational Application Developer)**
  - **Modeler exports a skeleton Monitor Model (.mm) file**

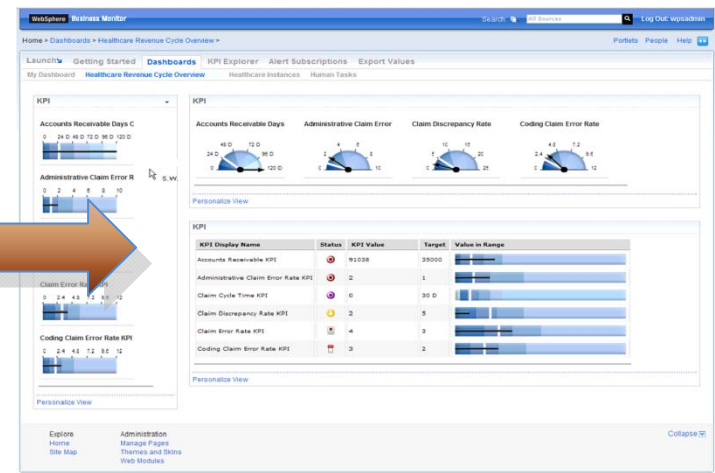
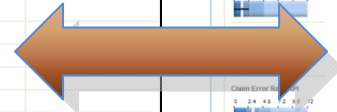




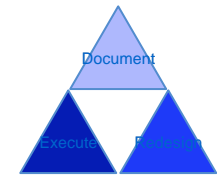
## Monitored Values Import

- Refine process models by feeding live monitored business data back into models
  - Update activity durations and costs, decision percentages
- Perform simulations with updated data to gain a more accurate understanding of the process
  - Modifications to the process may be suggested as a result of this further investigation and analysis

Process Element	Processing Time	Processing Cost	Startup Cost	Revenue	% Per Branch
Billing Confirmation E-Mail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check Credit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check Inventory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create Invoice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create Order	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E-Mail Rejection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inventory Backordered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Order2CashProcess_v5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rejected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require Approval?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ship Order	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Confirmation E-Mail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

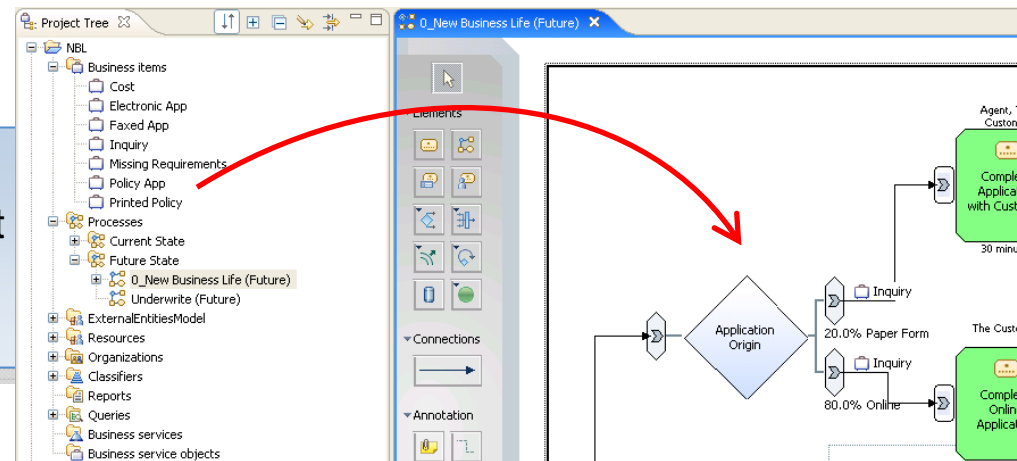


## Reusable Process Elements

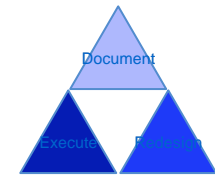


- **Build a library of standard supporting artifacts**
  - Business items, roles/resources, classifiers, organizations, etc.
- **Identify common business processes or tasks, make them available for re-use**
  - Streamline business operations, reduce duplication of effort
- **All elements available in the Modeler project tree are “global”, and thus can be reused**
- **Share global elements between projects within the same Modeler workspace**

Drag and drop global elements from Project Tree onto Process Editor canvas



## Web Portal – Publishing Server



- **Browser-based interface to published process models**
- **Share models with employees across multiple geographic locations without requiring them to have Modeler installed on their desktop**
  - Includes access to detailed process attributes and any attachments
- **Users with proper permissions can view and make comments on the process or individual process elements**
  - Gain feedback on live processes implementations or proposed future states
- **Based on WebSphere Portal**
  - Underlying functionality includes WebSphere Application Server, DB2, and LDAP (all applications ship as part of Publishing Server)

# Publishing Server Layout

The screenshot displays the IBM SOA PoT Publishing Server interface. The main window shows a process diagram for 'Customer Order Handling'. The diagram includes nodes for 'Determine Requester Status', 'Search for Pre-submission Order', 'Is Customer?', 'Input Customer Information', and 'Add Customer Record'. There are also decision diamonds and data stores. The interface includes a 'Draft Project Tree' on the left, an 'Outline View' at the bottom left, a 'Comments' section at the bottom, and an 'Attributes View' at the bottom right.

**Process Editor**  
Compose process models and edit other reusable elements

**Comments View**  
View and add comments relating to the selected process element

**Attributes View**  
Access detailed information about the open process model

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

**Outline View**  
Navigate the open process model



# Questions





IBM SOA PoT

## Introduction to Labs 1, 2 and 3

**Setup Governance, Model the process  
and Govern the new process**



## What are we going to do in these Labs?

- **Promote Standards and Initiate Governance**
  - Using the Registry and Repository
  - Define a new business process to the Registry
  - Apply a Governance cycle to it
- **Model the Business Process**
  - Using WebSphere Business Modeller
  - Define a simple Business Model
  - Export it ready for the Assembly phase
- **Apply Governance to the new Business Process**
  - Use the Registry to transition the model to the Assemble state

## Lab 1 - Objectives

- Ensure success of SOA projects
  - Initiate lifecycle governance
  - Reuse assets and promote standards
- Align business with IT
  - Define classifications

Roles: Enterprise Architect, Administrator

# WebSphere Registry and Repository

Simple browser based interface

No client code to install

Designed for Administrators

The screenshot shows the WebSphere Service Registry and Repository console in Mozilla Firefox. The browser address bar shows `http://localhost:9080/ServiceRegistry/`. The console interface includes a search bar, navigation tabs for Business Metadata, Governance Lifecycle View, Queries, and My Service Registry. The main content area displays a welcome message and several sections: Business Objects (listing Application, Contract, EnterpriseApplication, etc.), Service Documents (listing Document Groups, WSDL Documents, etc.), Service Metadata (listing WSDL Messages, WSDL Operations, etc.), and Load Documents (with a form for Path to the Document). The right sidebar contains sections for Browse by Classification (Credit Report Services, Default Lifecycle, etc.), Help (with links to WebSphere Service Registry and Repository on IBM.com and Online Information Center), and About your Service Registry and Repository (providing version and license information).

# Lab 1

## 10 to 15 Minutes



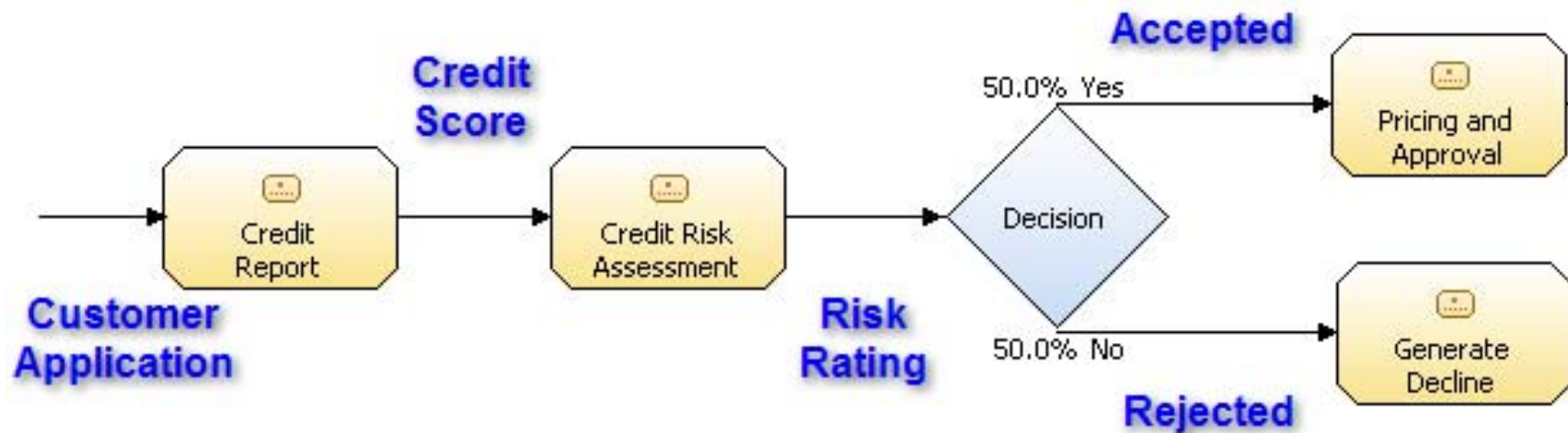
## Lab 2 - Objectives

- Align IT to business processes
  - Initiate business-driven development
  - IT organized as business tasks and services
- Capture more precise business models
- Lower business costs
  - Run simulations before allocating time and resources

Role: Business Analyst

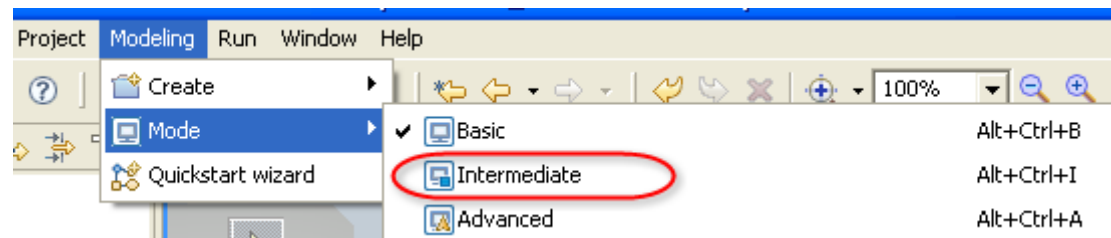
## Simple Model to start with .....

### Simple Account Verification Model



## The tool we will use is WebSphere Business Modeller

- **Eclipse based tooling**
- **Similar look and feel to all other Eclipse based tooling**
- **Different modes allow us to show/hide more advanced functionality until needed**
- **We start in Basic mode and move to Intermediate mode later**



## Steps

- Define the Model –**simply drag and drop items onto the blank canvas and “join up the dots”**
- Attach pre-built business items **to the Model (data layout items) – from the Repository**
  - **We will search the repository and pull the business items into the model**
- Add the business items to the flow **in the model to indicate the paths the data will take**
- Set some conditions **on the Decision element**
- Save the model and export it as a BPEL process **for the assembly step**

# Lab 2

## 30 to 45 Minutes

## Move the Governance process forward

To ensure success through lifecycle governance

- Transition from model phase to assemble phase
- Again we use WSRR to do this



# Lab 3

## 5 to 10 Minutes