



Discovering the Value of SOA WebSphere Process Integration

WebSphere Business Modeler

Workshop

SOA on your terms and our expertise



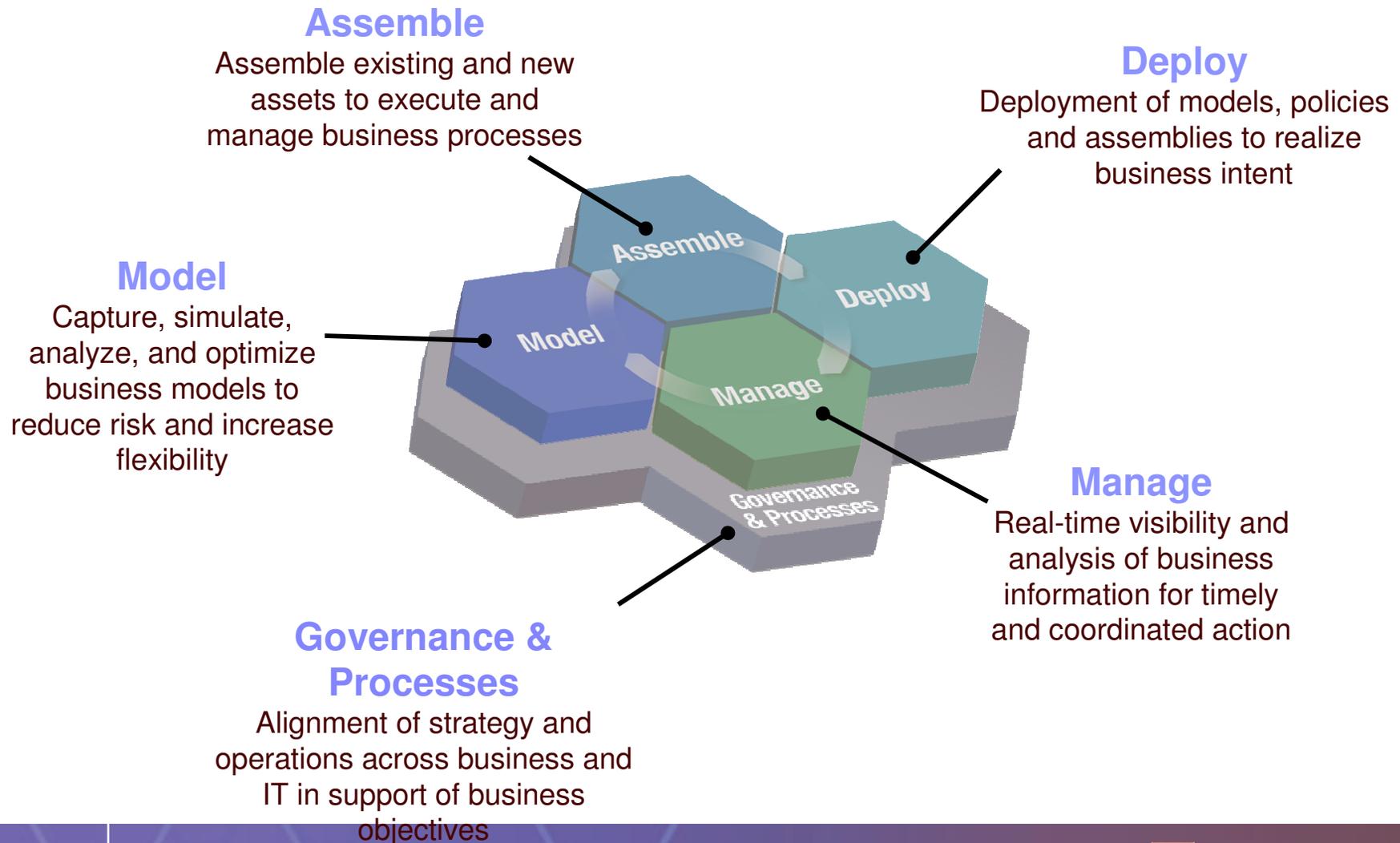
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Consulting Technical Sales Support
WebSphere – Process Integration
IBM Software Group

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Agenda

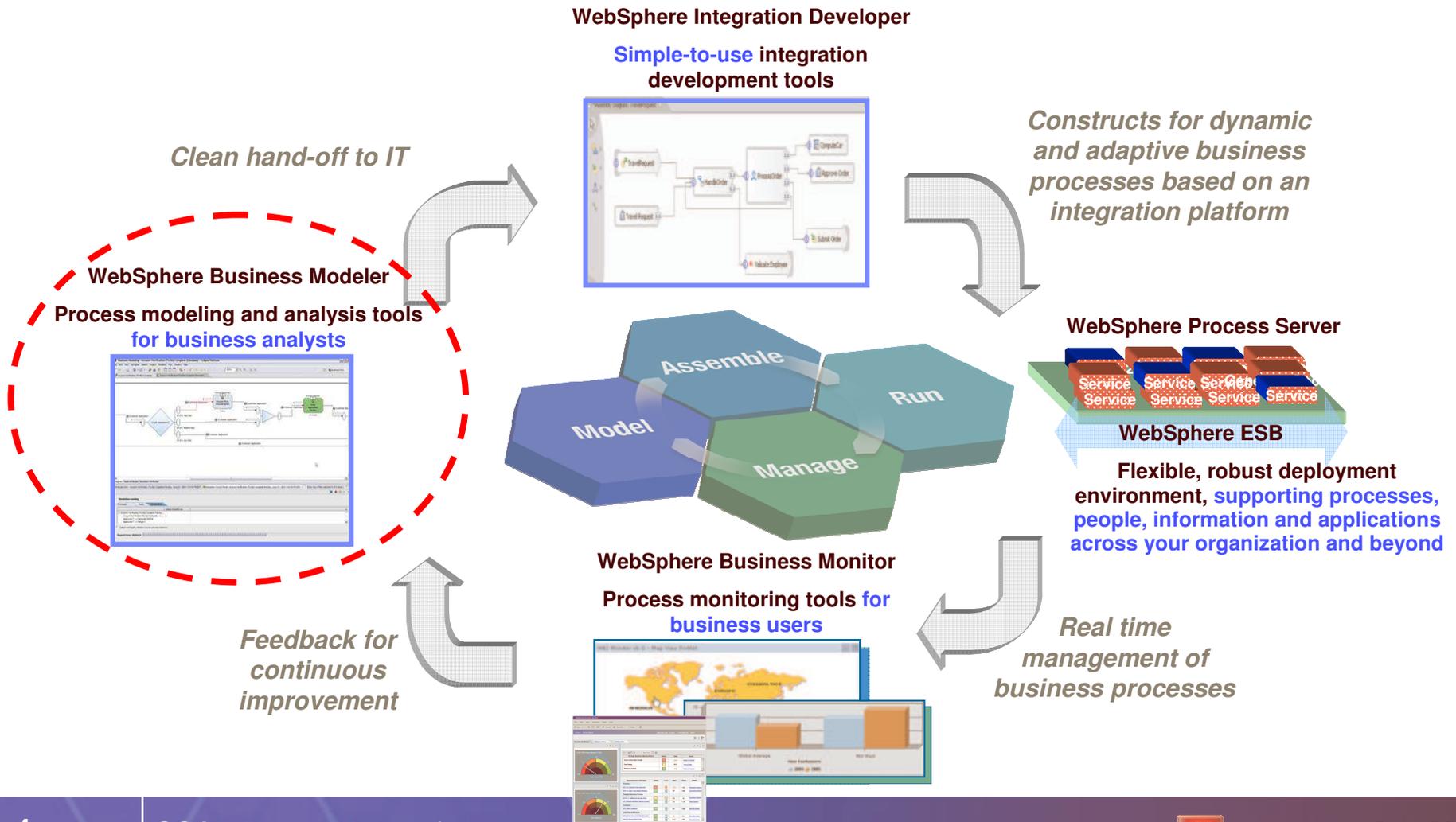
- Review
- Lab preview
- Errata
- Clean hand-off to IT - Assemble phase

Continuous business process improvement & SOA lifecycle



Managing your business processes with SOA

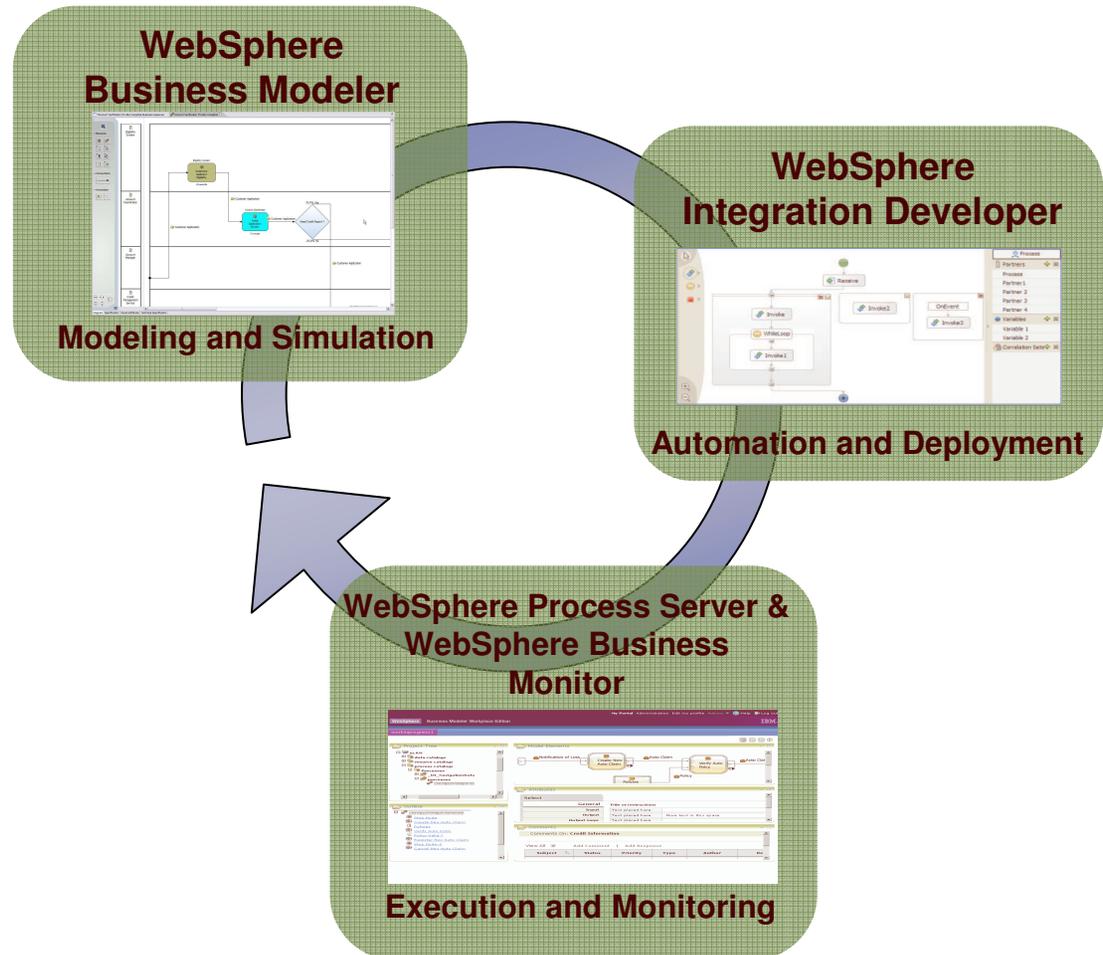
Enabling complete life cycle of business process



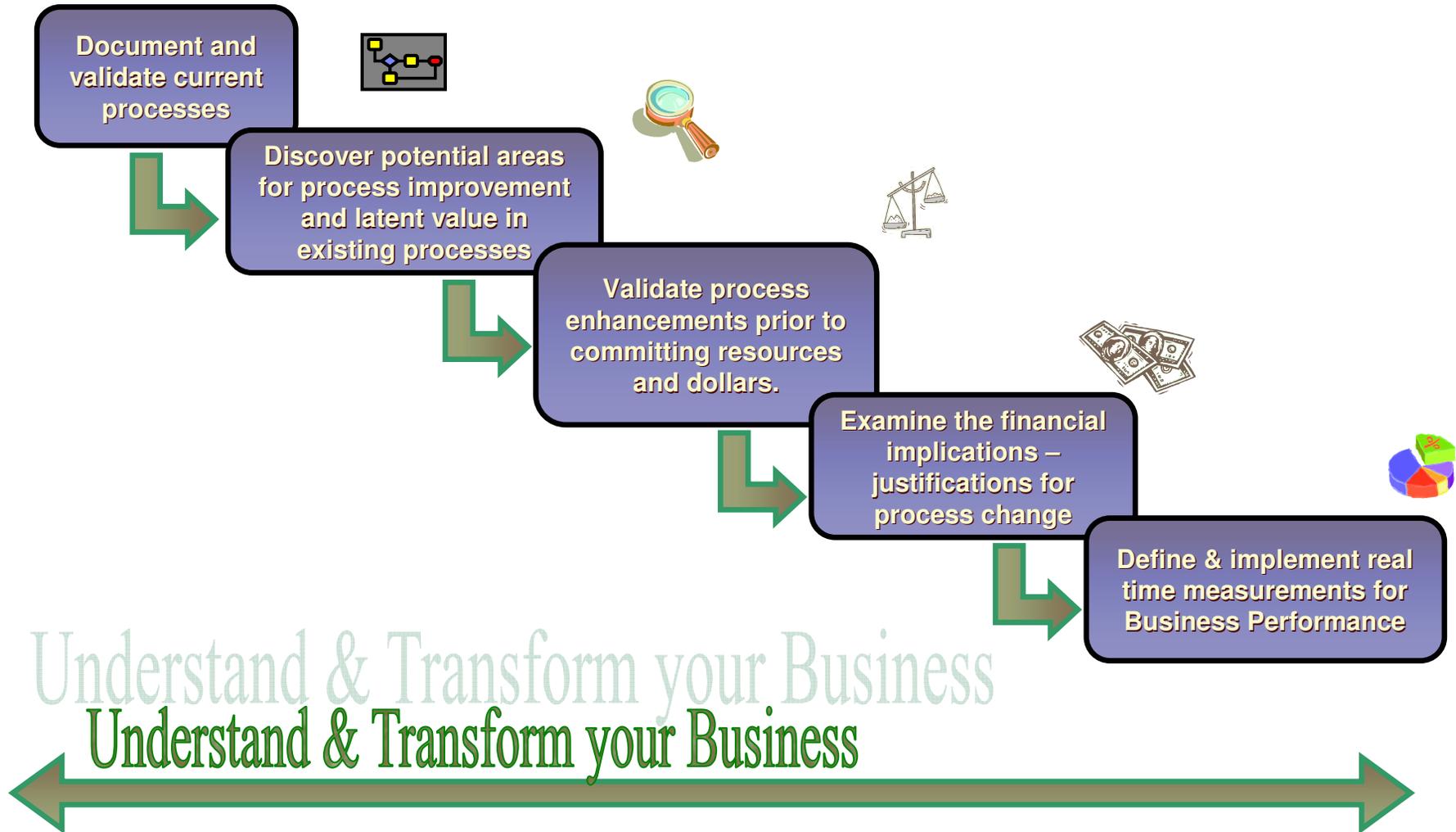
Feedback Loop For Continuous Improvement

- Leverage real information about your business
 - Better decisions, quicker
 - Core business facts from monitor are passed back into modeler for simulation, analysis, diagnosis, and action

- Improve your business
 - Business process improvement
 - Discover true process behaviors
 - Fact based simulation leading to improved process design for the next solution deployment



Benefits of Business Modeling and Analysis



Business Process Design

Drivers for Business Understanding....

■ **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

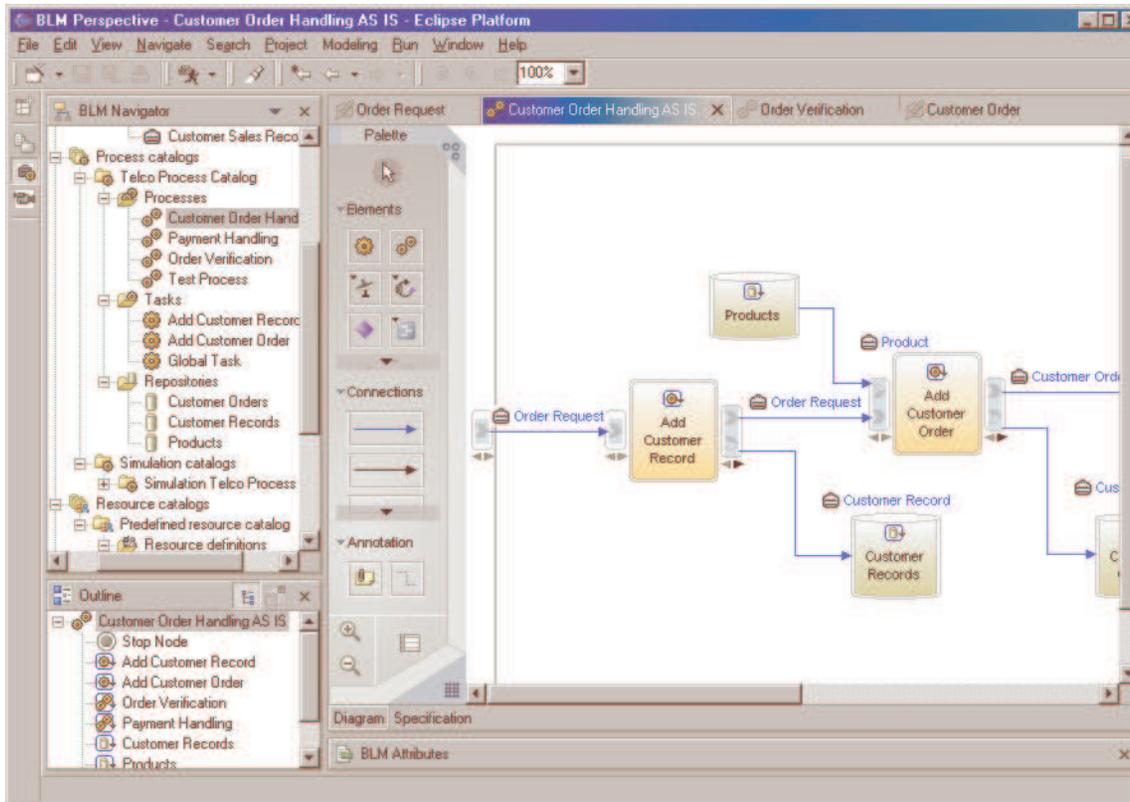
■ **Modeling For Redesign**

- 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**

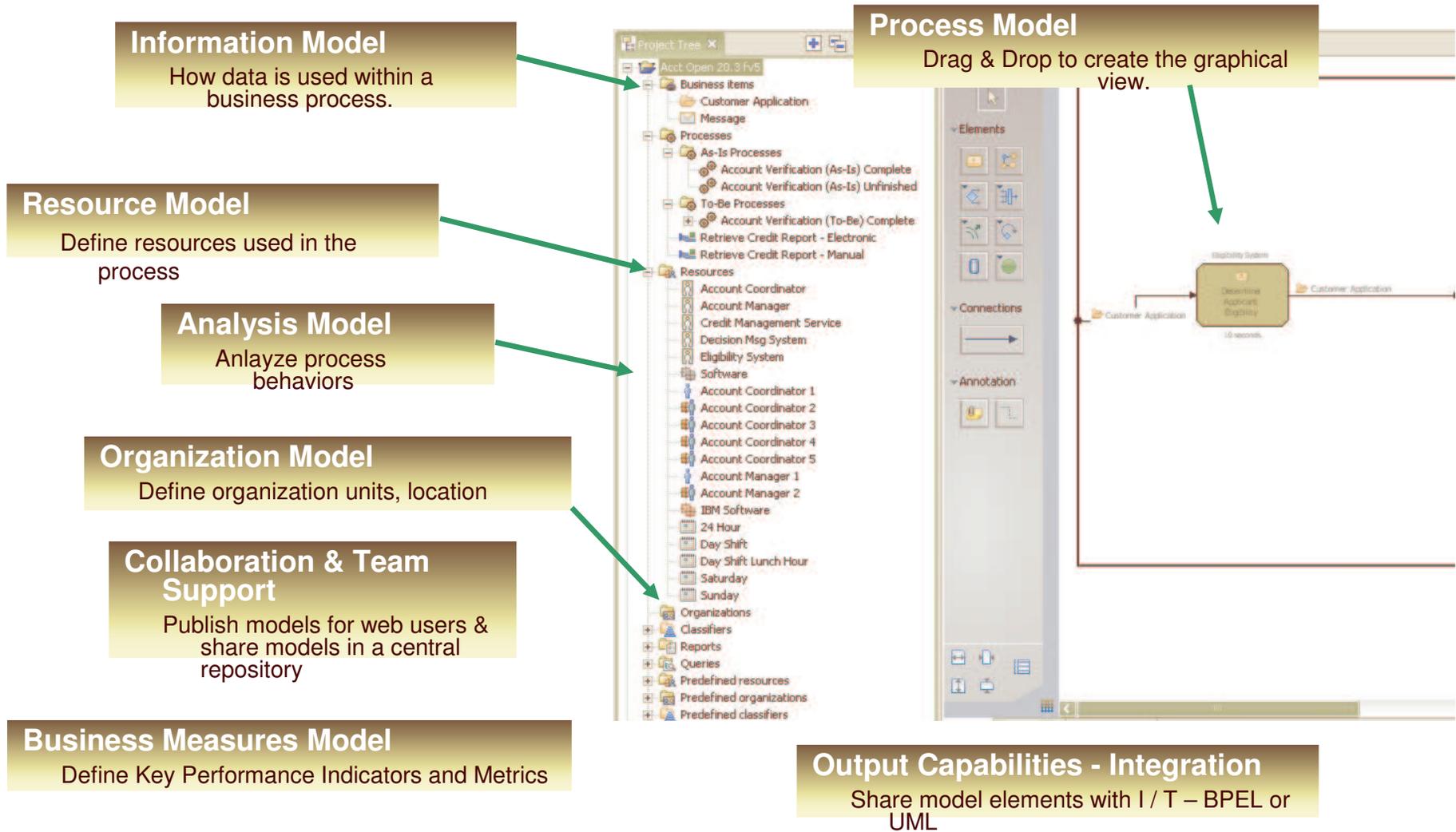
- Future state business process has runtime characteristics associated to it, so the model is passed to application, workflow and business process development tools.

WebSphere Business Modeler



- Design business processes quickly and graphically
- Model business processes to meet business requirements
- Simulate processes to project business benefits
- Share & Publish models
- Integrate with development tools to deploy

True Business Understanding Requires Multi-Dimensional Models



WB Modeler v6 Demo

Demo Preview

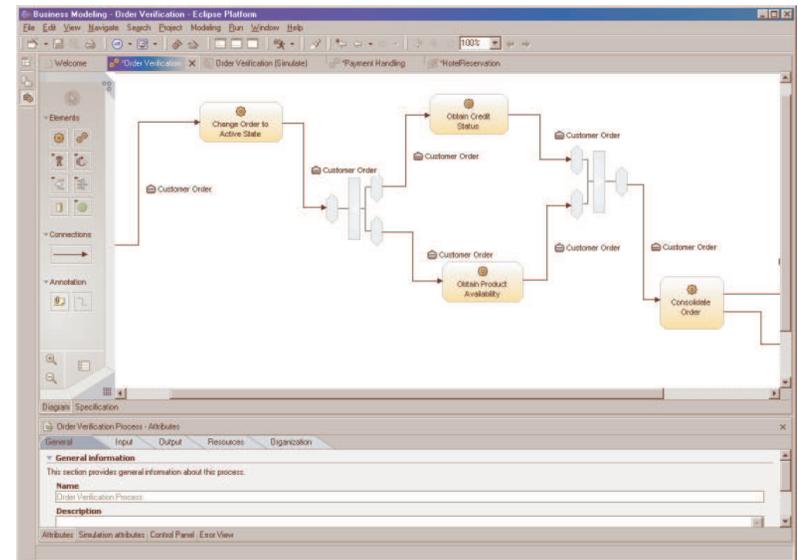
- Mapping a business process / Visio import
- Adding other dimensions: data, process, resource modeling
- Enhancing the diagram: color, top & bottom labels, swimlane
- Documentation
- Reports
- Analysis – Static and Dynamic
- Team support and collaboration
- Transformation capabilities

Demo Summary

- Mapping a business process / Visio import– enforce discipline and consistency
- Adding other dimensions: data, process, resource, classifier modeling - incrementally - reusable definitions, decomposition, search
- Enhancing the diagram: color, top & bottom labels, swimlane – rich presentation, adaptable to the audience. Export process diagram
- Documentation – inside/link to external documents/file attachment
- Reports – pre-defined / customized - use report options for specific artifact, or select the report from the report folder
- Analysis – Static and Dynamic
- Team support and collaboration
- Transformation

WebSphere Business Modeler – An Enterprise Tool

- Enforces discipline and consistency
 - ‘Rules’ on how to use - leading to consistency in representation – no assumptions about what symbols represent
- Facilitates standardization, consolidation, and reuse
 - Shared by every Business Analyst in the organization
 - Consolidation of process assets into a single repository
 - Reuse of process elements and models leading to increased efficiency
- Hierarchical decomposition of processes



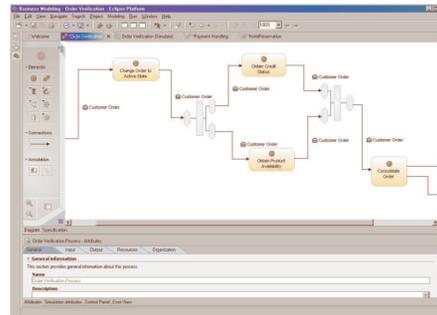
Reusable components reduce development & maintenance cost while providing consistency across the organization

How can WB Modeler help you?

Use WBI Modeler as a...

Documentation Tool

- ▶ Document and communicate process information quickly and easily
- ▶ Model “on-the-fly” in working sessions



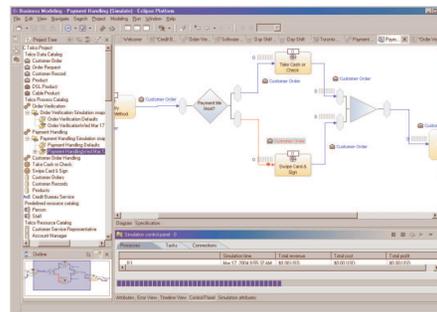
Reporting Tool

- ▶ Reduce presentation / documentation preparation by using standard reports

Activity	Average Revenue	Average Execution Cost	Average Idle Cost	Average Allocated B
Change Order to Active state	\$0.00	\$2.17	\$0.00	\$5.25
Consolidate Order	\$0.00	\$1.50	\$0.00	\$5.25
Credit Verification Service	\$0.00	\$1.50	\$0.00	\$0.00
Customer Order Fork	\$0.00	\$1.50	\$0.00	\$0.00
Customer Order Join	\$0.00	\$1.50	\$0.00	\$0.00
Obtain Product Availability	\$0.00	\$1.50	\$0.00	\$5.25
Order Verification	\$0.00	\$0.00	\$0.00	\$0.00

Analysis Tool

- ▶ Analyze and simulate process models to deliver detailed financial metrics (cost, time)



It can help you as a...

Knowledge Tool

- ▶ Defines process steps, responsibilities of individuals / systems and how departments interact

Discovery Tool

- ▶ Determines process weaknesses and strengths to understand where value is generated

Customer Service Tool

- ▶ Understand how and where customer touch-points occur and make changes to improve ‘experience’

Decision-Making Tool

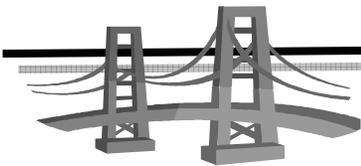
- ▶ Provides cost and ROI data to financial executives to justify projects

WB Modeler Bridges the Gap

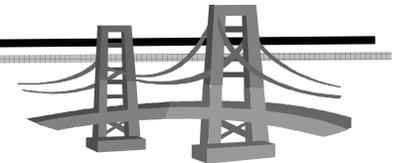
Business Modeling

Customers model processes for many purposes:

- Modeling For Compliance/Documentation
- Modeling For Redesign
- Modeling For Execution



Domain and Tooling Gap

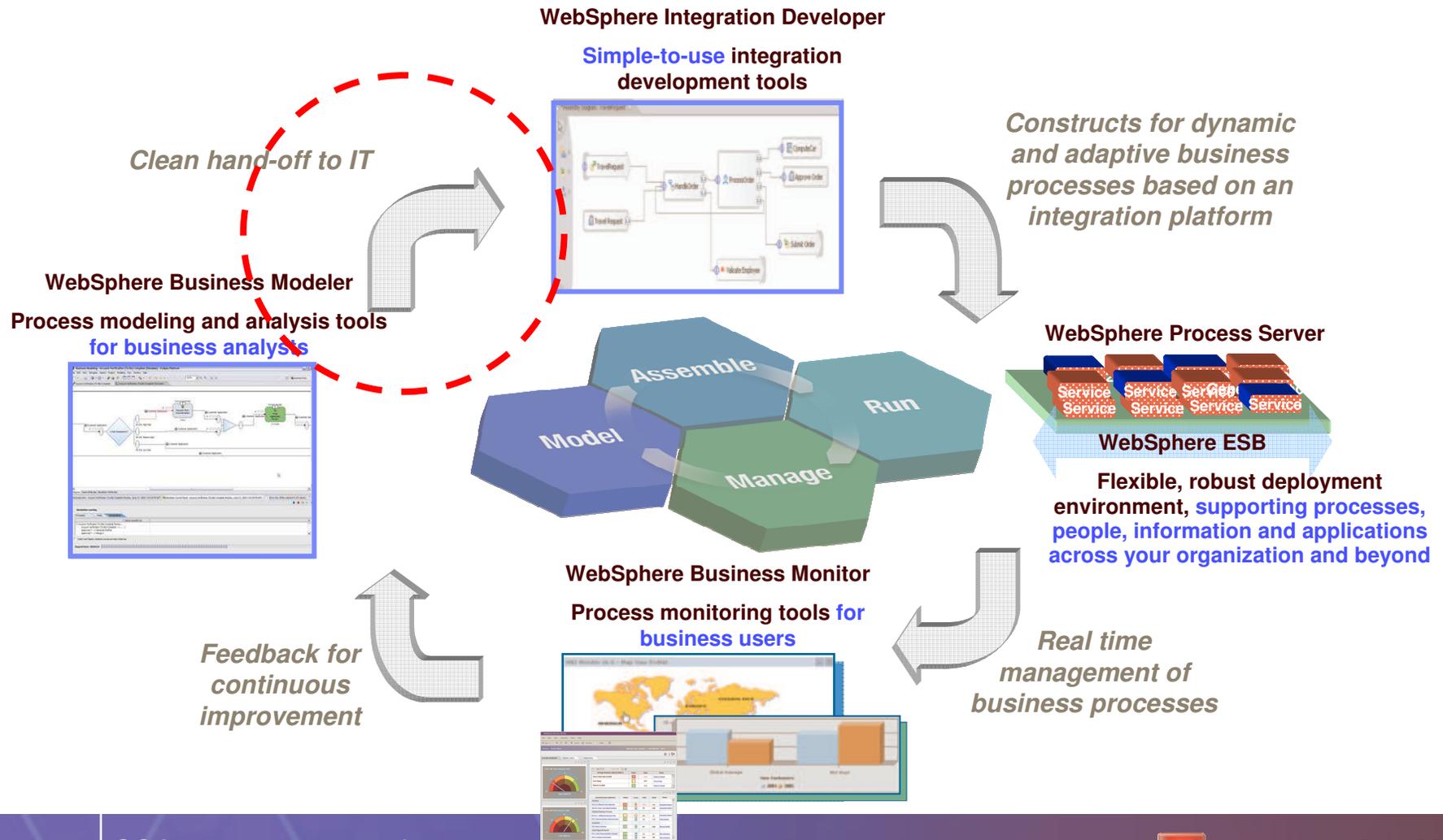


IT Development

- Application Development
- Service Implementations
- Process Choreography and Human Workflow

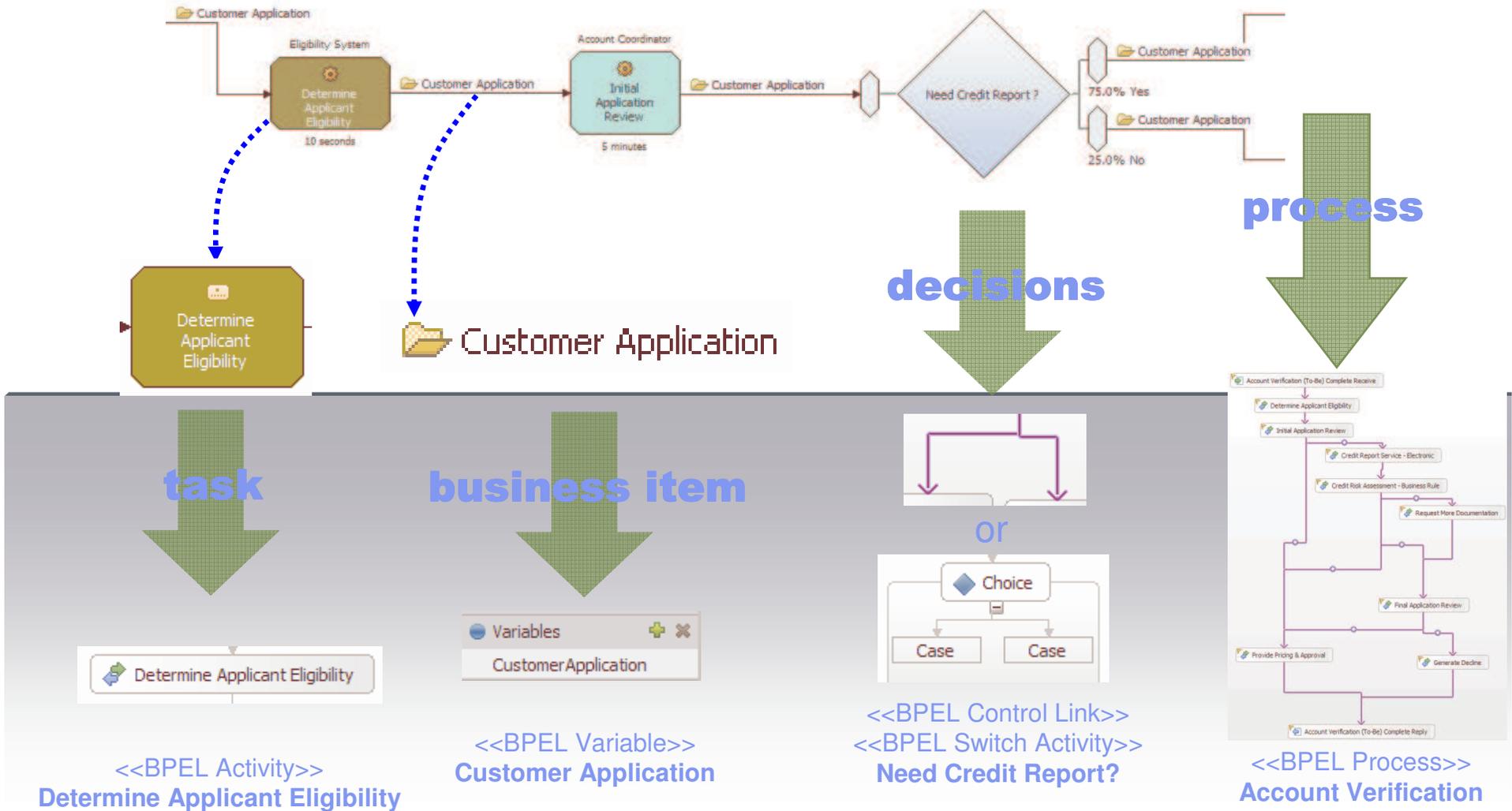
Managing your business processes with SOA

Enabling complete life cycle of business process



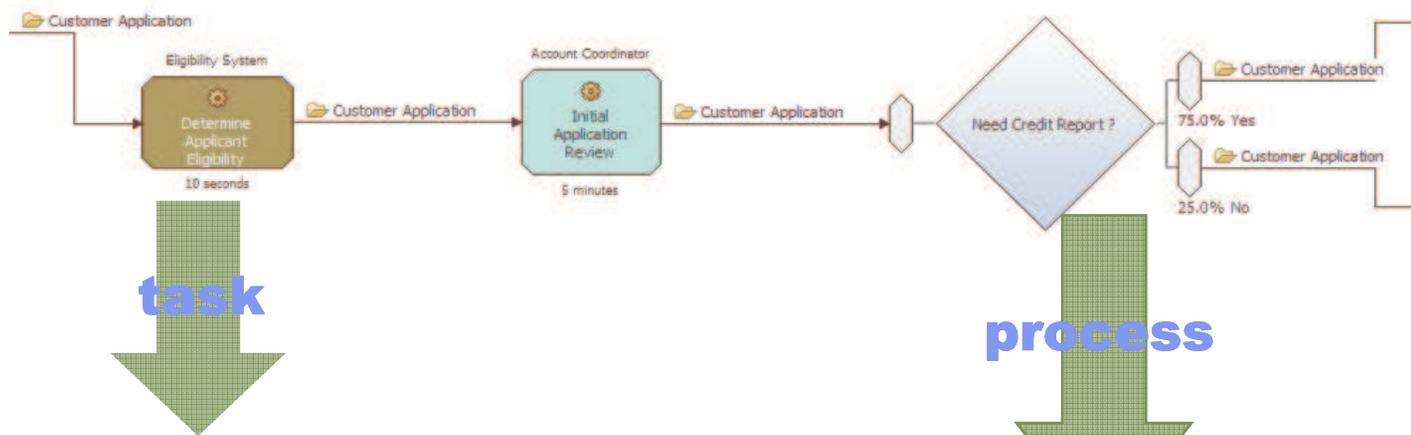
The Business Contract Specification: From WebSphere Business Modeler to WebSphere Integration Developer

Account Verification Process



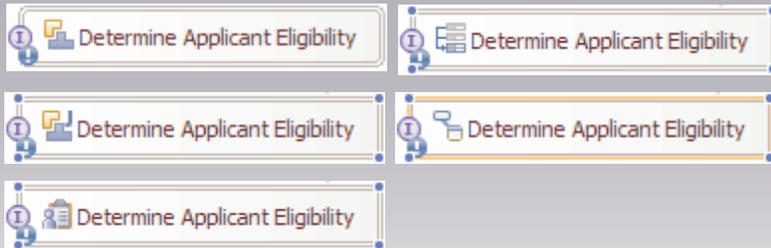
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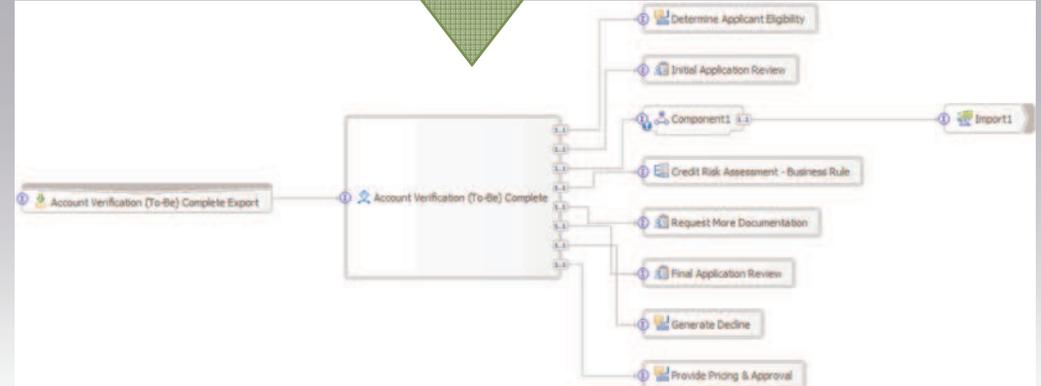


task

process



<<SCA Component>> OR
 <<SCA Java Component>> OR
 <<SCA Human Task Component>> OR
 <<SCA Rule Group Component>> OR
 <<SCA State Machine Component>>
Determine Applicant Eligibility

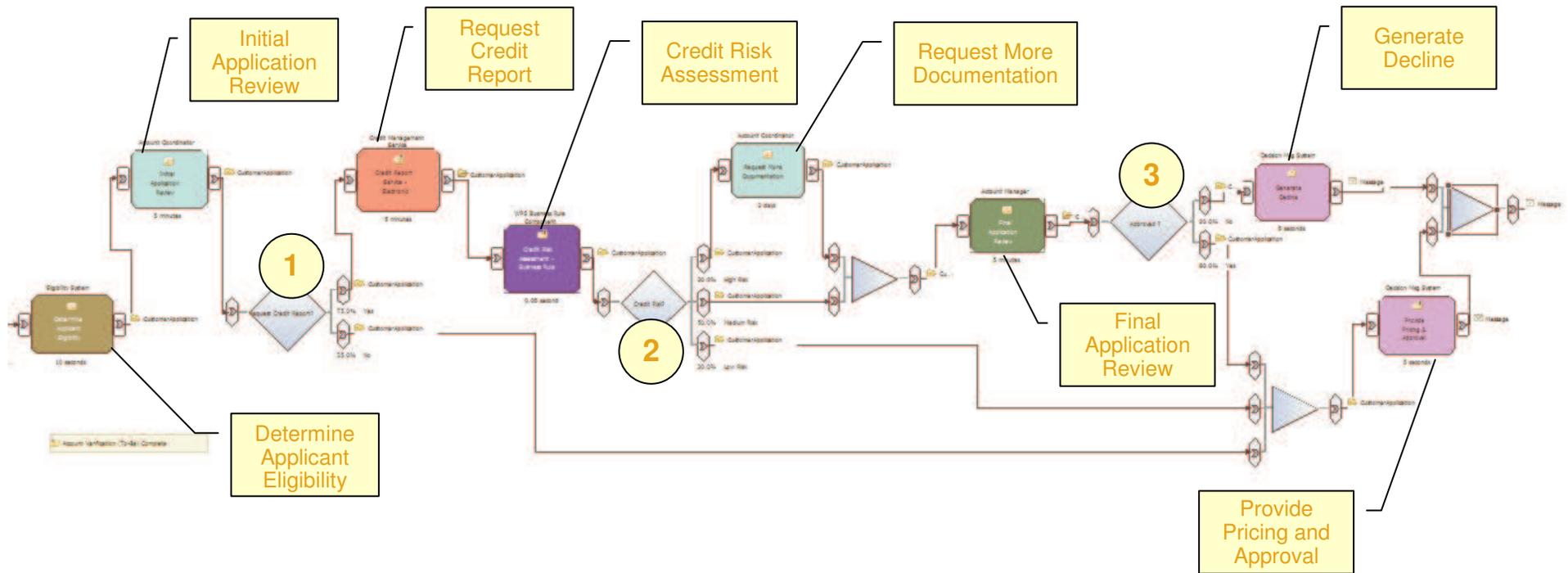


<<SCA Process Component>> AND
 <<Module Assembly Diagram>>
Account Verification

Lab Preview

- Lab #1 – Current State - As Is Process
 - Construction
 - Analysis
- Lab #2 – Future State - To Be Process
 - Modification
 - Analysis / Comparison / Results
 - Output / Report
 - Export to I/T

Lab Scenario



- Account Verification Process
 - Developed with WebSphere Business Modeler

- Key decision points:
 1. Is credit report needed?
 2. What is the credit risk
 3. Final application approval

Lab #1 – As Is Lab Overview

- **Part One:** Complete and then analyze the Account Verification (as-Is) Process
 - Review the Account Verification (As-Is) Process
 - Add New Objects to the Account Verification (As-Is) Process, use basic process editor as well as swimlane editor
 - Connect the Newly Created Objects and Associate Business Items
 - Assign Resources to the Newly Created Objects
 - Assign cost and revenue and duration data to the process model
 - Analyze the process model using static analysis
 - Simulate the Account Verification (As-Is) Process
 - Analyze the model using dynamic analysis
- **Appendix A:** Understand the key components of WebSphere Business Modeler (for Beginners)
 - Open WebSphere Business Modeler
 - Examine WebSphere Business Modeler (ABC Project, payment handling process)

Lab #2 – To Be Lab Overview

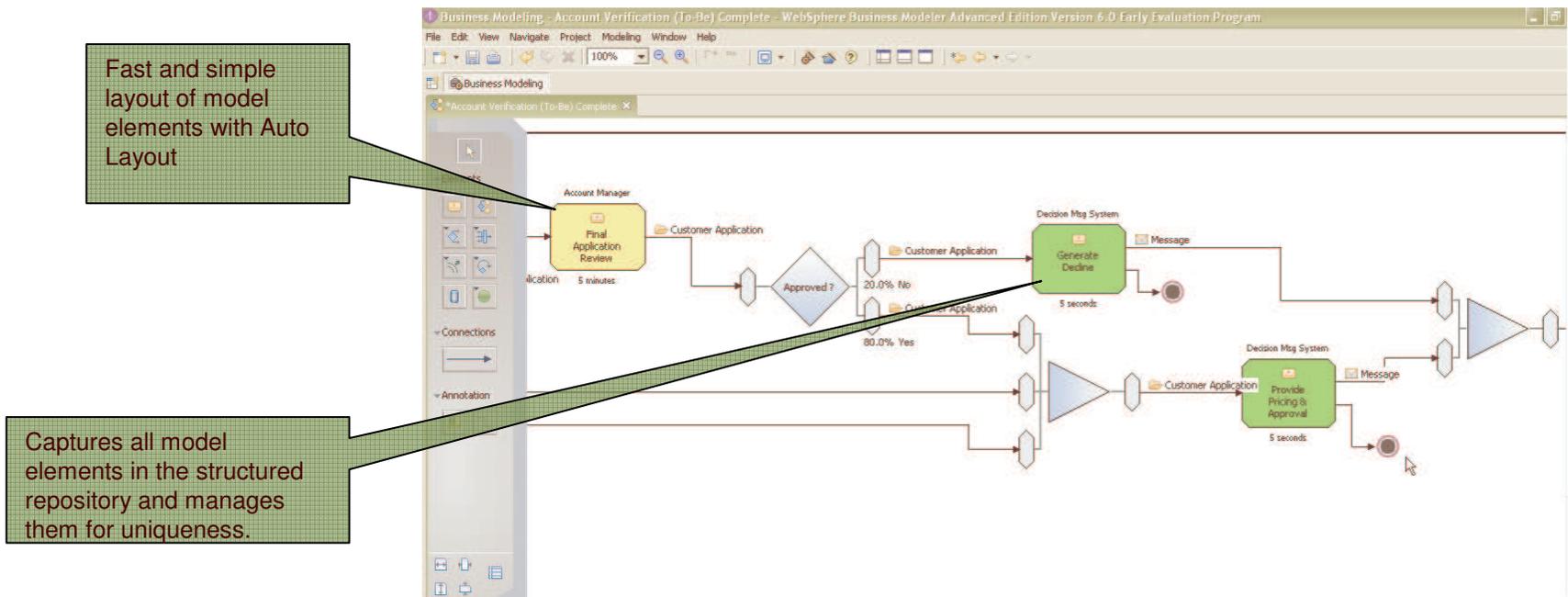
- **Part One:** Review the As-Is process & create the To-Be model
 - Review business goals
 - Review the areas of challenge with the As-Is process
 - Review Role assignments and Automation currently in the As-Is process
 - Use the As-Is process as the basis for the proposed To-Be
 - Add an automation task - a new service to impact the “Initial Application Review” task
 - Change the way the external “Retrieve Credit Report” is accessed to take advantage of lower price and faster turnaround
 - Create a Medium Risk path through the model, allowing a larger percentage of applications/requests to take a faster, less expensive route through the model.
 - Automate the final steps in the process with other software
- **Part Two:** Analyze the proposed To-Be process
 - Simulation
 - Dynamic Analysis
 - Conclusions
- **Part Three:** Report / Output Examples
 - Export to SVG
 - Export to PDF
 - Print diagrams
 - Other Report Options
- **Part Four:** Optional Exercises
 - Publishing Server setup
 - Export to WebSphere Integration Developer for WebSphere Process Server deployment

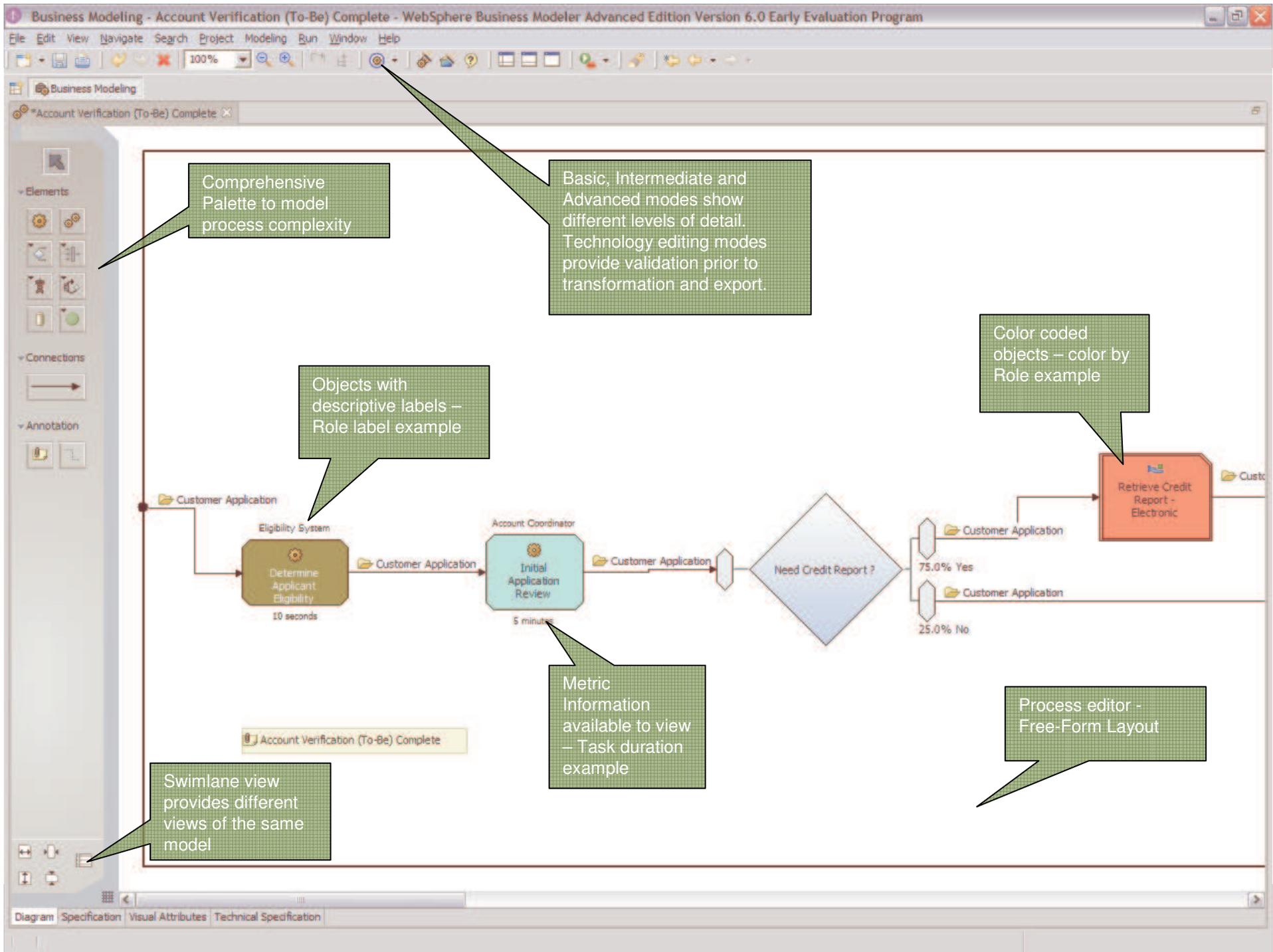
Thank you!

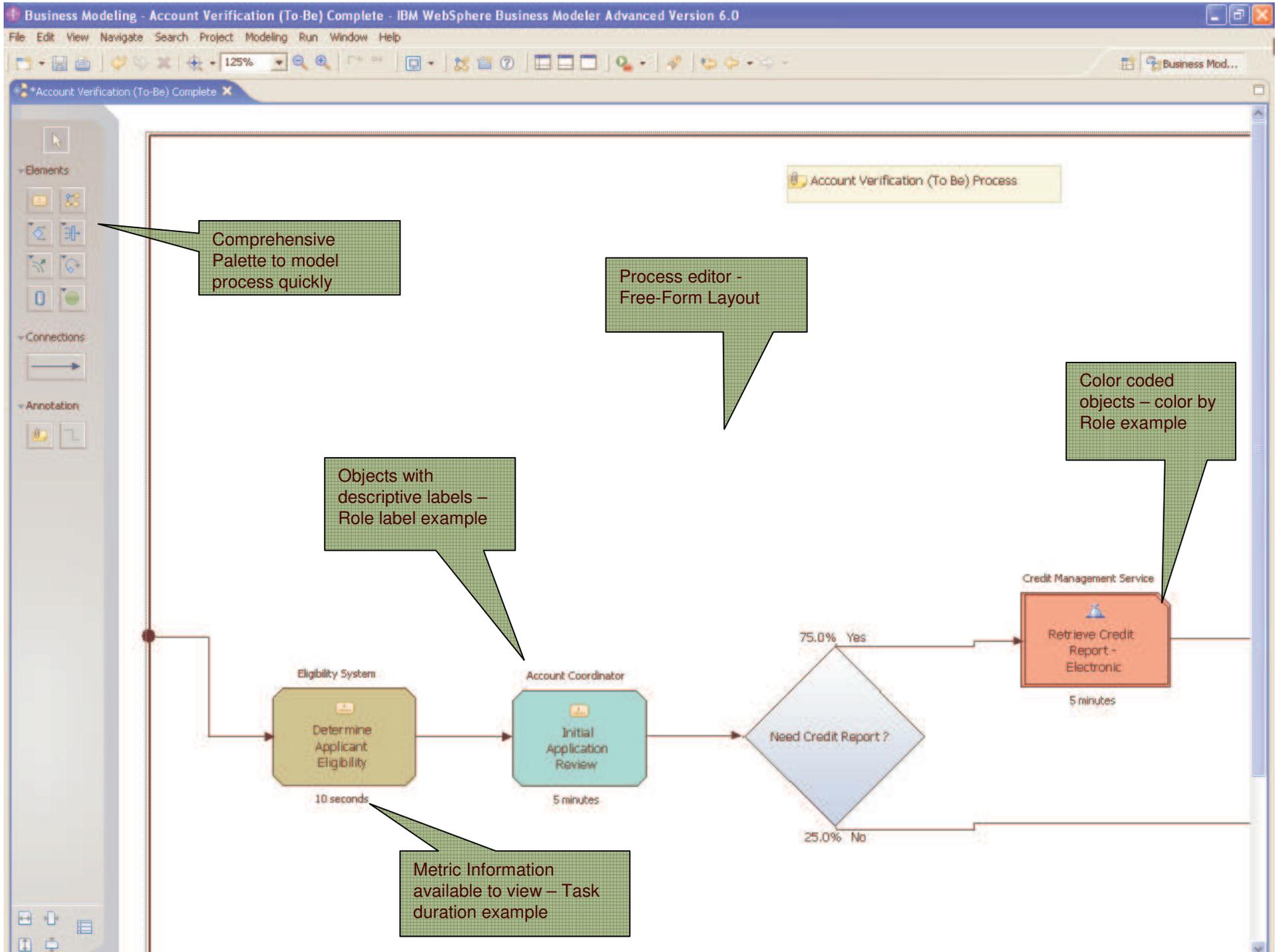
Appendix.... Business Process Modeling

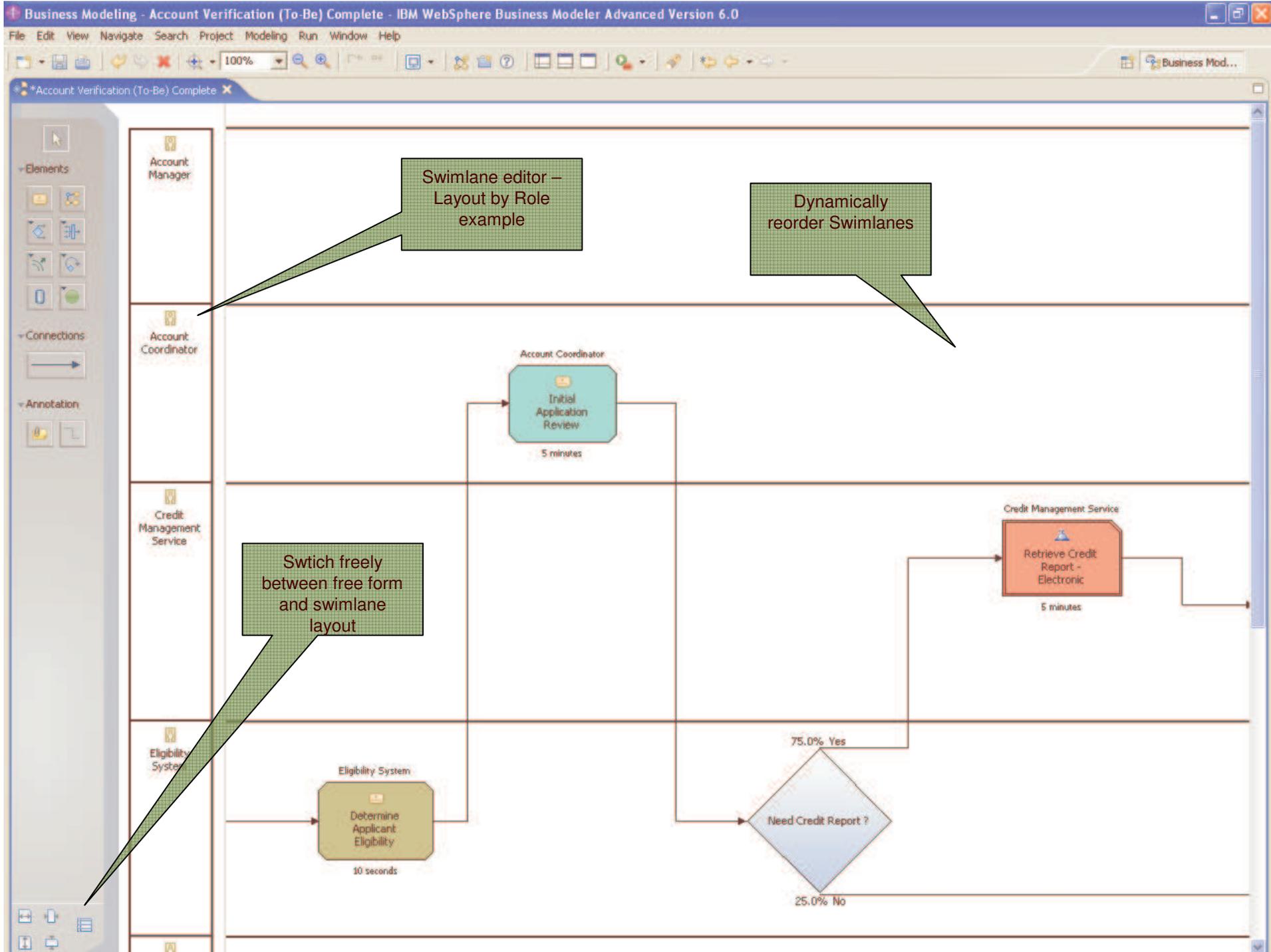
The Process Model

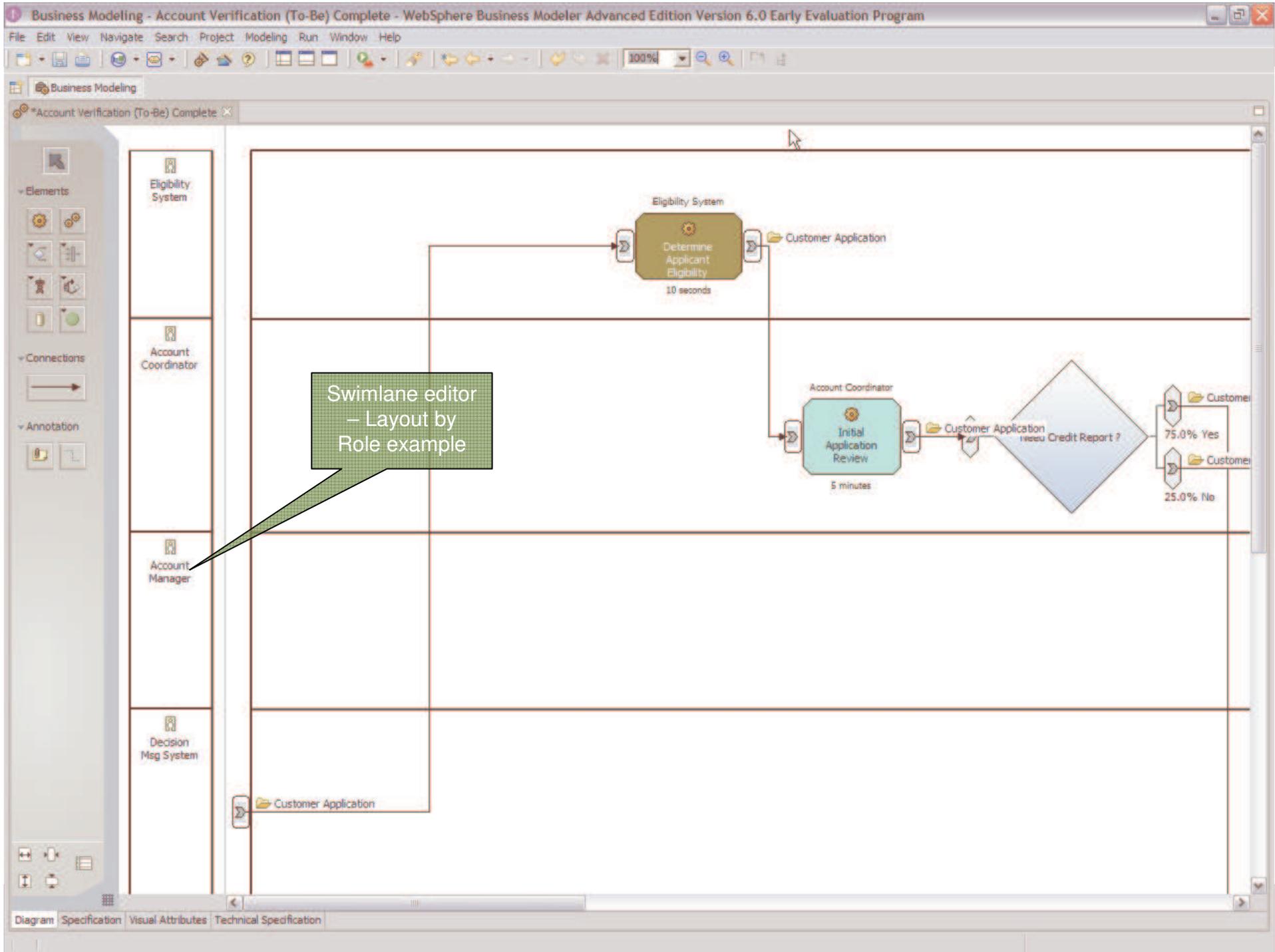
- Create models quickly, add details as needed.
- Draw models directly in the tool, or Import from Visio
- Use colors, labels, and swimlane view for excellent readability
- Use classifiers to highlight important characteristics
- Use standard process shapes based on BPMN, to ensure consistency











Working with the Process Model: Editing Modes

- User modes offer different view and model detail
 - **Basic:** For a business analyst to work at the high level business process model. Focuses on creating and displaying sequence flows, and does not display low level details of data modeling
 - **Intermediate:** More technically focused user to specify and view additional details of process and data models,
 - **Advanced:** Provides the most comprehensive level of detail for process models and data models -- used as the basis for software applications

- Three different technology modes are optimized for automation
 - **WebSphere Process Server:** Output in WS-BPEL, WSDL and XSD formats. Use in WebSphere Integration Developer to automate and deploy to WebSphere Process Server.
 - **WebSphere MQ Workflow:** Output in FDL format, which you can use in WebSphere MQ Workflow as the basis of an automated workflow solution.
 - **WebSphere Business Integration Server Foundation:** output in BPEL, WSDL and XSD formats. Use in WebSphere Studio Application Developer Integration Edition to automate and deploy to WebSphere Business Integration Server Foundation.



The Information Model

- This data can be imported in from existing sources or upon export be used to help develop or enhance systems.
- Ability to associate critical information required for the process execution and to support the logic behind how the process behaves
- Used in the analysis model for dynamic analysis of the process
- Exportable so that it can be leveraged by both the runtimes and the application developers (UML Classes)

Templates can be used to inherit information that was modeled previously or that are reusable across business items

The screenshot shows a web-based interface for defining a 'Customer Application'. At the top, there is a 'Parent template' dropdown menu set to 'None'. Below this is a table of 'Business item attributes' with columns for 'Name' and 'Type'. The table lists various attributes such as 'applicationDate', 'companyName', 'customerAddress1', etc., with their respective types like 'String', 'Boolean', or 'Integer'. To the right of the table is a panel for 'Attribute details', which includes an 'Attribute description' field containing a business rule: 'If a credit report is older than N number of months (business rule will be used to set this dynamically), then a credit report will be needed. (True/False)'. A green callout box points to this description with the text: 'Rules associated to business items can be evaluated during analysis'. At the bottom of the interface are buttons for 'Add', 'Remove', 'Move Up', and 'Move Down'.

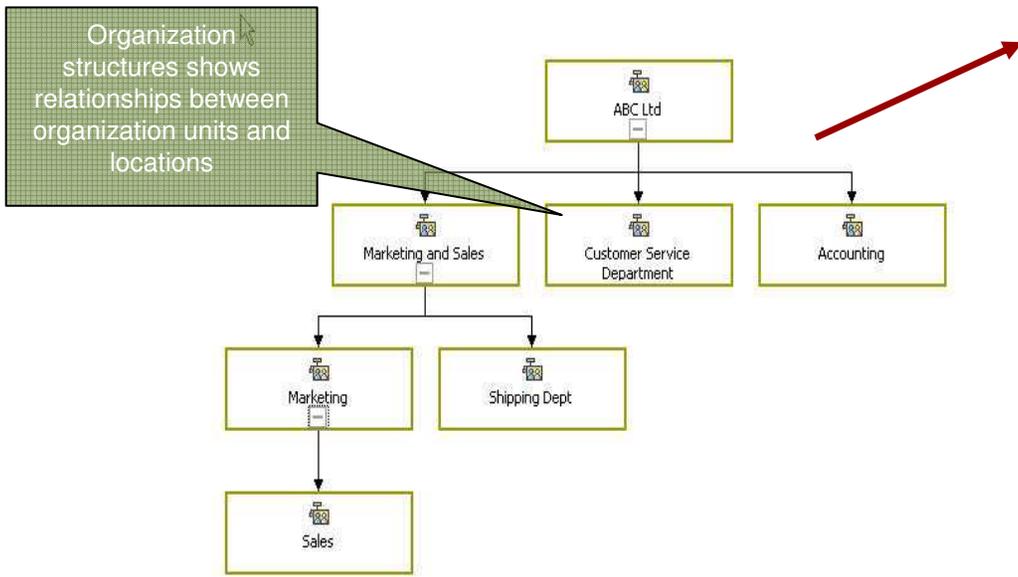
The Resource Model

- Defines all role, individual, and bulk resources that are used within the business process and their associated costs
- Complex resource behaviors can be modeled in order to accurately reflect those behaviors in the analysis model
 - Qualifications and attributes associated to resources help determine the right resource to be used under a given set of circumstances
 - Use of timetable definitions help to accurately reflect any resource schedules

The screenshot displays the IBM Business Modeling interface. On the left is a Project Tree with categories like Business items, Processes, and Resources. The main area shows the configuration for 'Account Coordinator' and its instance 'Account Coordinator 1'. The 'Account Coordinator' view includes sections for 'Scope dimension' (with 'Language Spoken' as a value type 'String') and 'Scope dimension details'. The 'Account Coordinator 1' view shows 'Instance of Staff', 'Resource attributes' (a table of attributes like personId, lastName, etc.), and 'Selected attribute values'. Three callout boxes provide context: 'Scope definition helps identify specialized resource skill required to complete the steps in a business process', 'Costs can be associated to resources and can be both per time unit and any one time start up costs', and 'Specifying availability characteristics assists in simulating real scenarios of resource constraints'.

The Organization Model

- Defines the structure of organization units and locations
- Graphical organization trees allow for visibility into what the relationship between the organizations and the resources are in order to view hand-offs



Attributes of the organization units can be either user defined or adhere to the definitions of a specific runtime

Instance of

Organization attributes

Attributes of the organization definition. If the organization definition is updated, refresh the table to synchronize the instance with the new values.

Name	Type	Minimum	Maximum	First value
organizationID	String	1	1	OA1
type	String	0	1	
industryType	String	0	1	
businessType	String	0	1	
geographicLocation	String	0	1	
affiliates	String	0	1	
displayName	String	0	1	
businessCategory	String	0	1	
secretary	Staff template	0	1	
assistant	Staff template	0	1	
manager	Staff template	0	1	
+ Sarah James				
members	Staff template	1	n	
parentOrganization	Organization te...	0	1	

The Analysis Model

- Critical to understanding how a business process behaves

- Used to perform Return on Investment (ROI) analysis to determine the differences between the current and future states of the business process

- Simulations against the analysis model provides the most comprehensive way to identify complex behaviors of both simple and complex business processes
 - Robust simulation on the analysis model ensures that decisions made against the business process are based on the metrics that are validated by the business process Subject Matter Experts (SME's)

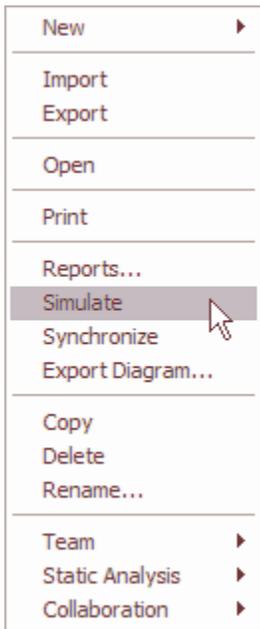
Cost, Revenue, Duration, Resource, and Classifiers are attributes used at modeling time to define analysis model

The screenshot shows the 'Business Modeling' application window with the 'Cost and Revenue' tab selected. The interface is divided into several sections for defining cost and revenue parameters:

- Processing cost:** Described as 'The expense incurred every time this task runs.' It features a 'Literal value' dropdown, an input field containing '10', a currency dropdown set to 'USD', and a 'Clear' button.
- Startup cost:** Described as 'The initial expense incurred when this task starts.' It features a 'Literal value' dropdown, an input field containing '5', a currency dropdown set to 'USD', and a 'Clear' button.
- Wait-time cost:** Described as 'The expense that increases over time while this task waits for a resource.' It features a dropdown set to 'Unspecified', an input field, a currency dropdown set to 'USD', a unit dropdown set to 'Second', and a 'Clear' button.
- Revenue:** Described as 'The money that is earned when this task is finished.' It features a dropdown set to 'None', an input field, a currency dropdown set to 'USD', and a 'Clear' button.

Using the Analysis Model: Simulation

- Weighted average analysis provides a static, long-term view of the process; process simulation captures the shorter-term view
- Ability to model "what if" scenarios and compare results and replay a simulation of a process with changes to the model
- Sophisticated modeling and distribution for resources (individual and bulk), resource skills, resource allocations, cost, revenue and processing time
- Define multiple resources in one step or individually
- Simulation output provides detailed information regarding resource utilization levels, as well as cost and cycle time calculations
- Powerful simulation engine supports conditional branching, steady-state model, run persistence, and multi-process concurrent simulation
- Supports multiple possible input distributions: Lognormal, Exponential, Gamma, Normal, Poisson, Uniform, Weighted List and Random List



Simulation Control Panel - Account Verification (To-Be) Complete Sunday, July 17, 2005 6:25:07 PM CDT

Simulation complete

Processes Tasks Connections

	Process start time	Process end time	Total revenue	Total cost	Total profit
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:25:14 P...	July 17, 2005 7:30:29 P...	0 USD	35 USD	-35 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:26:14 P...	July 17, 2005 7:31:29 P...	0 USD	35.381 USD	-35.381 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:27:14 P...	July 17, 2005 7:37:29 P...	0 USD	50.381 USD	-50.381 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:28:14 P...	July 17, 2005 7:43:29 P...	0 USD	65.618 USD	-65.618 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:29:14 P...	July 21, 2005 9:05:05 A...	0 USD	414.385 USD	-414.385 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:30:14 P...	July 21, 2005 9:05:05 A...	0 USD	85.999 USD	-85.999 USD

Collect and display statistics across process instances

Elapsed time: 00:00:13

Business Modeling - Account Verification (To-Be) Complete (Simulate) - Eclipse Platform

File Edit View Navigate Search Project Modeling Run Window Help

Account Verification (To-Be) Complete Account Verification (To-Be) Complete (Simulate)

Simulation animation

Queued work items show potential bottlenecks

Simulation real-time statistics

Simulation control panel

Simulation elapsed time

The diagram illustrates the account verification process flow:

- Starts with a **Customer Application** entering a **Credit Assessment?** decision diamond.
- The decision branches into three risk levels: **20.0% High Risk**, **50.0% Medium Risk**, and **30.0% Low Risk**.
- The **High Risk** path leads to a **Request More Documentation** task (Account Coordinator, 3 days), which has a queue of 3 items.
- The **Medium Risk** path leads to a **Customer Application** task (Account Coordinator, 0 items).
- The **Low Risk** path leads to a **Customer Application** task (Account Manager, 0 items).
- Both the **Request More Documentation** and **Medium Risk** paths merge into a single **Customer Application** task (Account Manager, 0 items).
- This merged path then enters a **Final Application Review** task (Account Manager, 5 minutes), which has a queue of 0 items.
- The process ends with a final **Customer Application** task (Account Manager, 0 items).

Simulation running

Process	Task	Connections	Tokens transferred
Account Verification (To-Be) Complete Monday, June 27, 2005 7:53:59 PM EDT	Account Verification (To-Be) Complete --> ...		1
	Approved ? --> Generate Decline		
	Approved ? --> Merge:2		

Elapsed time: 00:04:54

Using the Analysis Model: Static Analysis

- Summarized information from the 'raw data' entered in the models
 - **Resource Analysis:** extract information on resource models. For example, display a list of resources and shows their associated roles
 - **Organization Analysis:** Understand the organization model. For example, display all the occurrences of a specified organization definition
 - **General Analysis:** Display the types and instances in the project. For example, instance matching analysis to display a 'type' that you specify, such as an location definition or a business item

Static Analysis Functions

■ Resource Analysis

- Resource roles
- Qualified Resources for Role
- Resource Availability
- Resource Availability for Duration
- Qualified Resource Availability
- Qualified Resources Availability for Duration
- Role Availability
- Role Availability for Duration
- Resource Cost
- Resources Costs Summary
- Qualified Resource Cost
- Qualified Resources Costs Summary
- Role Cost
- Roles Costs Summary

■ Organization Analysis

- Type Structure
- Entity Structure

■ General Analysis

- Type Instance Matching Analysis
- Type Instance Matching Matrix Analysis
- Matrix Analysis

Using the Analysis Model: Dynamic Analysis

- Information calculated from the simulation of a modeled process:
 - **Aggregated Analysis:** Based on execution of tasks. For example, perform task cost analysis that displays the average costs for the task instances for each task (average revenue, execution cost, idle cost, allocated resource cost, total cost, and profit)
 - **Process Cases Analysis:** Processes that contain branches and decisions have multiple possible execution paths, also known as cases. Based on all the process instances aggregated by their execution paths
 - **Process Instances Analysis:** Based on individual process instances. For example, perform a process instance resource analysis that displays the task instances involved in a specific process instance (resources allocated per task instance, allocation duration, shortage, and cost)
 - **Process Comparison Analysis:** Compare the weighted average analysis results for two simulated processes. For example, perform a cost comparison analysis that displays the weighted average costs for two processes (weighted average revenue, execution cost, idle cost, allocated resource cost, total cost, and profit)

Dynamic Analysis Functions

- Aggregated Analysis Functions
 - Activity Duration
 - Activity Cost
 - Activity Cost Per Time Unit
 - Activity Statistics
 - Activity Resource Allocation
 - Resource Usage
 - Classifier Cost and Duration

- Process Cases Analysis Function
 - Process Cases Summary
 - Process Duration
 - Process Activities Total Time
 - Process Cost
 - Process NPV / IRR (Process Net Present Value / Internal Rate of Return)
 - Process Break Even
 - Process Resource Allocation
 - Process Resource

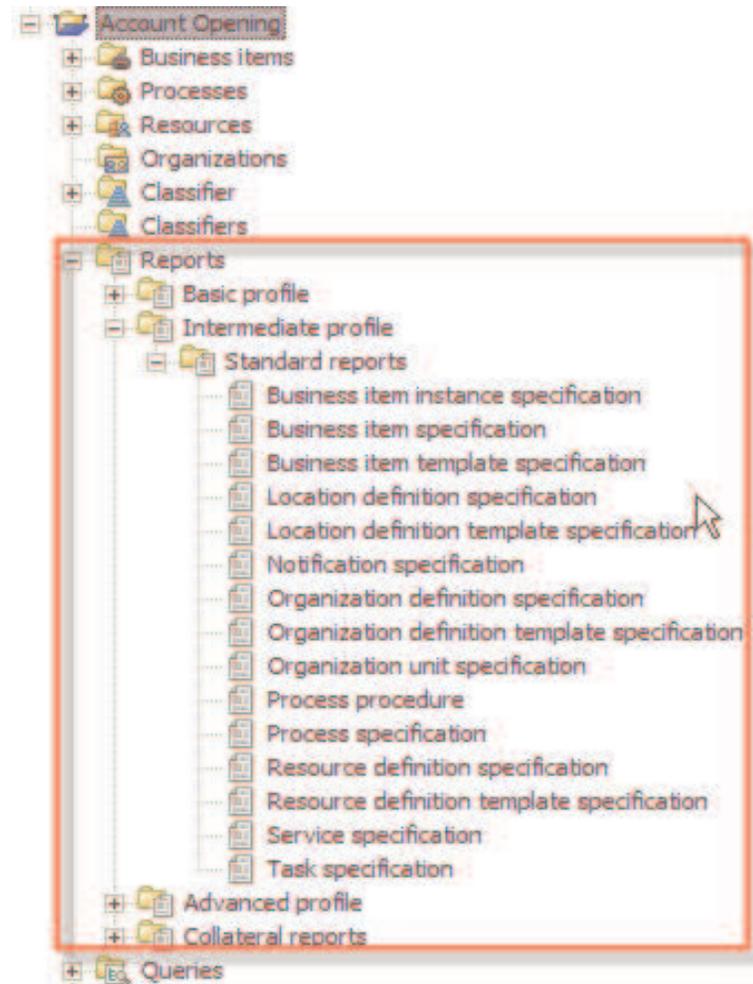
Dynamic Analysis Functions

- Process Instances Analysis Function
 - Process Instances Summary

- Processes Comparison Analysis Functions
 - Process Duration Comparison
 - Process Activities Total Time Comparison
 - Process Cost Comparison
 - Process NPV / IRR Comparison
 - Process Break Even Comparison
 - Process Resources Time Comparison
 - Process Resources Cost Comparison

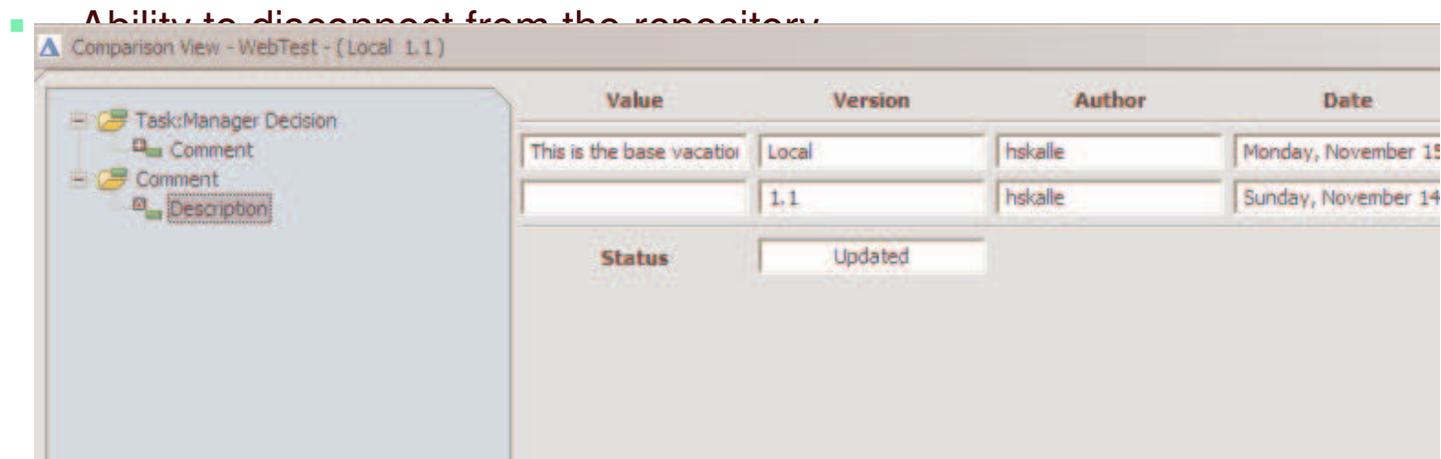
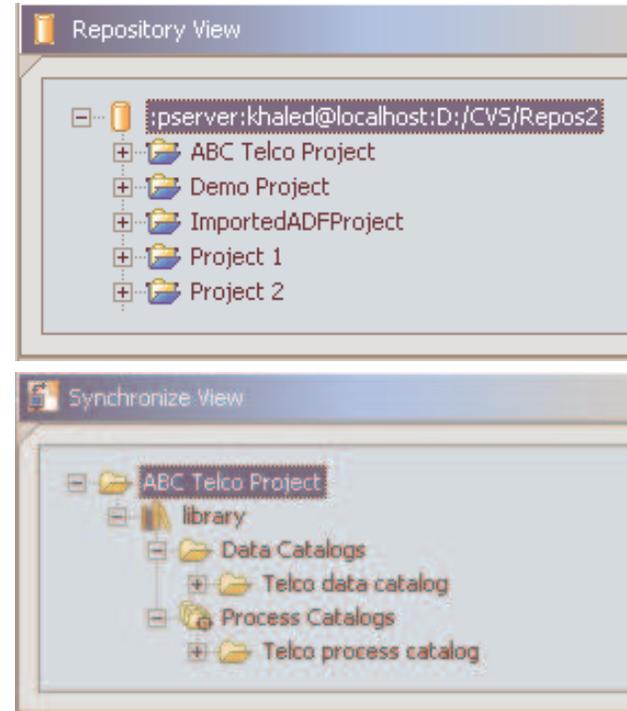
Reporting

- Generate reports that summarize different aspects of your business processes, using a variety of predefined report templates:
 - Standard reports based on templates
 - User defined reports (Report Designer)
 - Integrated Crystal Reports
- Reporting functions automatically create written, numerical and graphical information
- Reports provides valuable guidance in process analysis and redesign:
 - Process Summary Report
 - Process Comparison Report
 - Process Redesign Report
 - Procedure Report
- Provides return on investment (ROI) comparisons of As-Is and To-Be models

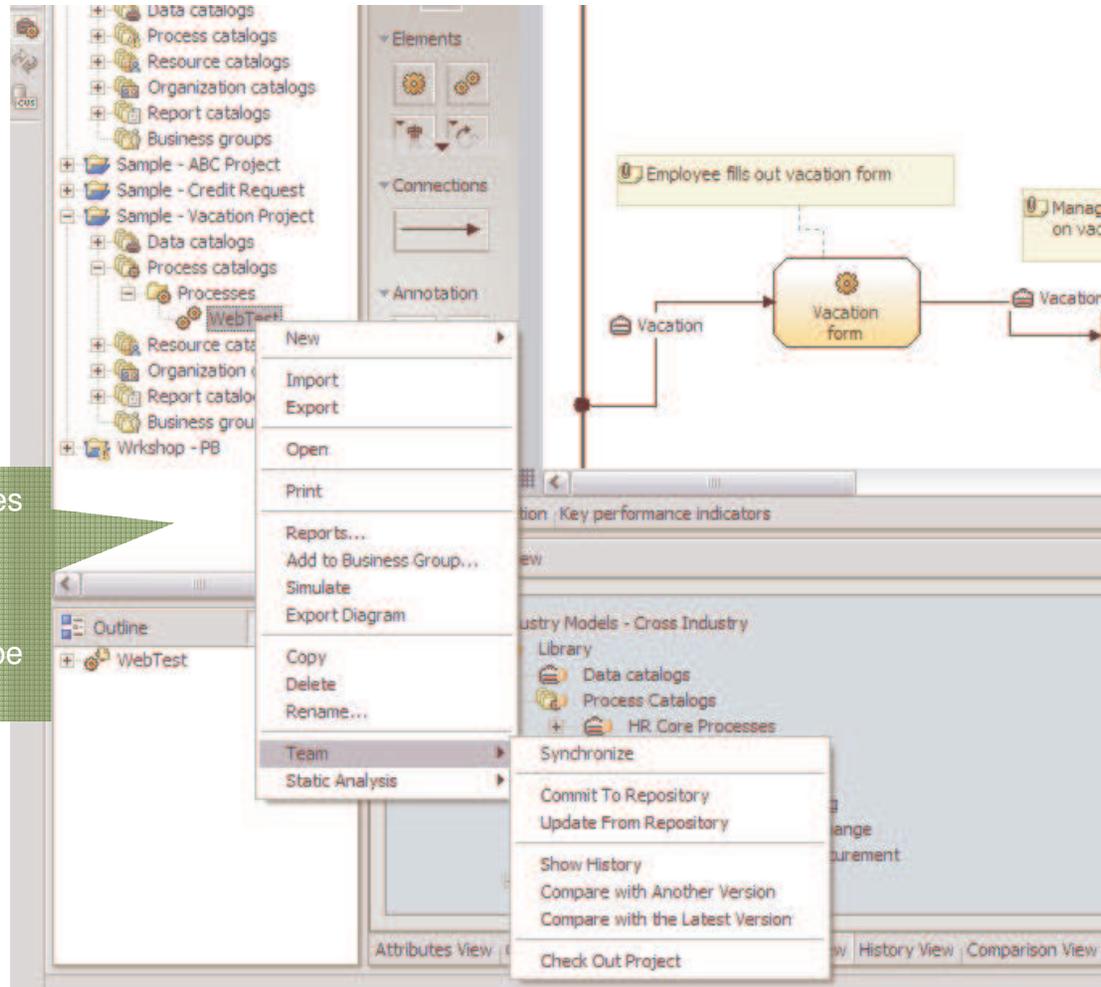


Team Support

- Multi-User support for sharing projects/files via a repository (CVS or ClearCase)
- Comparison view showing differences between two versions a same process
- Audit trail report showing changes done on an element over multiple versions (history)
- View a list of all revisions of an element in the repository features such as Share, Update, Commit, Synchronization



Work is secured, synchronized and changes tracked



Reusable base templates may be stored and managed through the repository. Individual simulation results may be shared across teams.

The Collaboration Model

- Portal based view of the business process and all associated information
- Association of comments, responses, and documents to the model create a complete view of the business process and all relevant information
- Allows for design time reviews by associating comments and provide responses to reviewers of the business process model
- Published to end users for training and reference purposes with any necessary associated documents or URL's
- Uses Domino database to store models, documents, and model comments/responses
- Bundles Domino database and Portal

The Collaboration Model

The screenshot displays the IBM Business Modeler Collaboration Edition interface. At the top, it shows 'WebSphere Business Modeler Collaboration Edition' and 'My Portal Administration' with options for 'Edit my profile', 'Actions', 'Help', and 'Log out'. The main workspace is divided into several panels:

- Project Tree:** A hierarchical view of project components including 'Account Opening', 'Library', 'resource catalogs', 'data catalogs', 'process catalogs', and 'Processes'.
- Model Elements:** A graphical process view (SVG) showing a flowchart with nodes like 'Initial Application', 'Need Credit Report?', 'Retrieve Credit Report', and 'Credit Assessment?'. A callout points to this view with the text 'Graphical process view (SVG)'.
- Outline:** A list of process steps such as 'Stop Node', 'Initial Application Review', 'Request More Documental', 'Final Application Review', 'Generate Decline', and 'Provide Pricing & Approval'. A callout points to this view with the text 'Outline view of the process'.
- Comments:** A section titled 'Comments on Account Verification (As-Is) Complete' containing a table of comments and responses. A callout points to this section with the text 'Association of Comments and Responses with the process or specific elements of the process'.
- Attributes:** A panel for 'General information' with fields for 'Name' and 'Description'. A callout points to this panel with the text 'Attributes and associated documents and URL's view'.