



IBM Software Group

SAP integration workshop

WebSphere® Business Modeler V6 Introduction

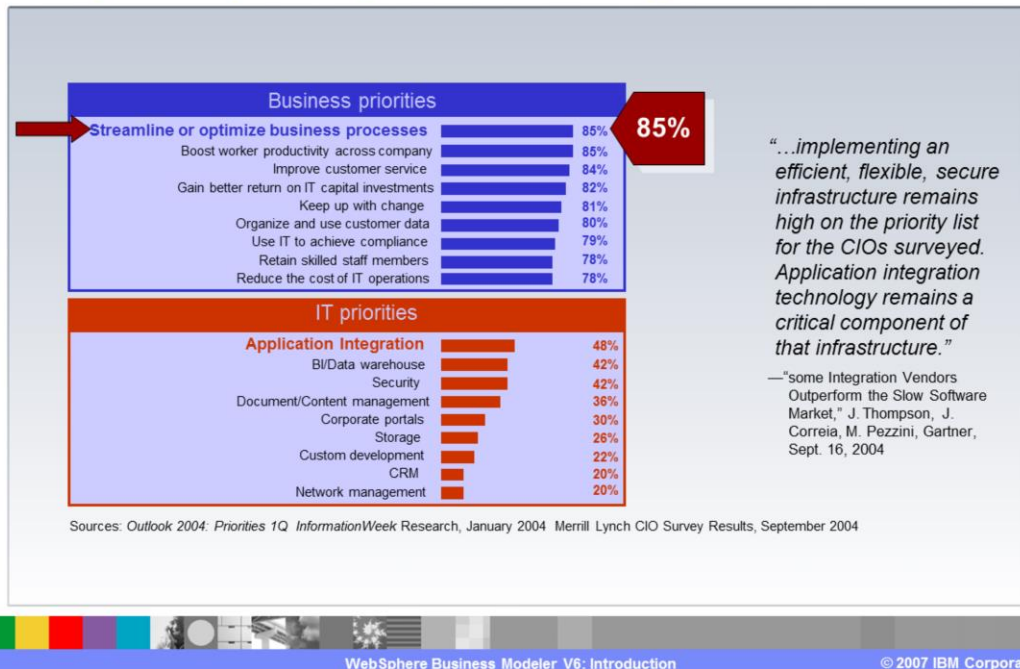


@business on demand.

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This IBM WebSphere Business Modeler presentation is part of the SAP integration workshop. This presentation will give you an introduction to the IBM product and to the modeler concept over all. The last part will discuss the SAP related option in cooperation with business models.

A top CIO priority: Streamline processes



"...implementing an efficient, flexible, secure infrastructure remains high on the priority list for the CIOs surveyed. Application integration technology remains a critical component of that infrastructure."

—"some Integration Vendors Outperform the Slow Software Market," J. Thompson, J. Correia, M. Pezzini, Gartner, Sept. 16, 2004

These two CIO studies reveal the very high level of priority being given to process improvement initiatives. Notice the blue box at the top reflects priorities of the business.

Also notice that several other of the highest priorities are areas where WebSphere Business Modeler and IBM's other tools can be very effective. With Modeler, businesses can gain better return on IT capital investments, keep up with change, and use IT to achieve compliance.

Modeling motivations...



▪ Modeling for compliance (documentation)

- ▶ Document processes for use by a business to understand the business process
- ▶ Output can be used 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 use

- ▶ Modeler can create artifacts from the business model. Use them to reduce the overall implementation time of new business processes.



Organizations have different objectives for modeling. WebSphere Business Modeler is well suited to each of these purposes.

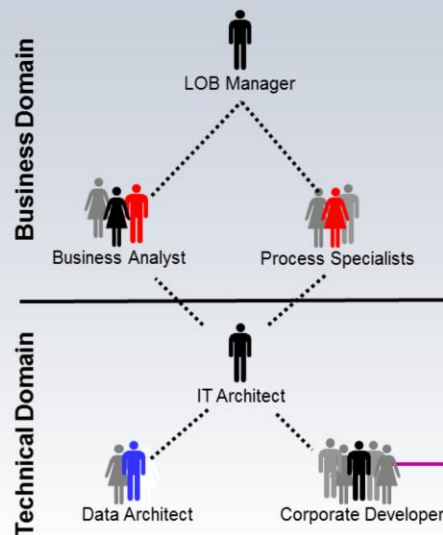
Some organizations have a tactical need to accurately document processes for legal, regulatory, training or other purposes. Modeler's ease of use, shared model element, document attachment and collaboration features make it very appealing for this need.

Many businesses are undertaking specific process improvement initiatives where process redesign is either already underway or inevitable. The analysis and reporting, simulation and process comparison capabilities in WebSphere Business Modeler make it a very powerful tool for this approach.

When the organization chooses to implement the new "To-Be" process, Modeler can provide artifacts from the business model suitable for use as the IT community begins to add the implementation details to the process model. This increases the accuracy of the transition from the business to the technology domain, and reduces implementation time.

Why businesses model

- **Model to bring business and IT together**
 - ▶ **Communicate fully with subject matter experts**
 - ▶ **Provide visibility into the enterprise**
 - ▶ **Created complete documentation of processes and procedures**
 - ▶ **Deliver complete requirements documentation to IT**
 - ▶ **Allow IT to understand the scope of the business issues and how to solve**



Both Business and IT organizations have described issues with understanding, documenting, implementing processes and sharing information regarding those processes. These issues highlight the need for business modeling and analysis.

One reason these issues exist, is the very natural and common gap that exists between these two domains. WebSphere Business Modeler is designed specifically as a tool for the business that can help bridge this gap and facilitate faster and more accurate communication between the business and technology domains.

WebSphere Business Modeler V6 offerings



The WebSphere Business Modeler is delivered in different editions. The difference between the various editions is the included functionality and the packaging with other products.

The Basic version is a lightweight process visualization tool to enable a broad range of people to create process definitions.

The Advanced version is for users who have to design, analyze, refine and simulate processes to make them ready for deployment.

The Publishing Server version is a bundle of the Advanced WebSphere Business Modeler and a Portal capability to reach a broader audience. Users can leverage a Web-based user interface to review processes, make comments and therefore enhance processes by giving valuable feedback.

The Publishing edition is a combination of multiple Advanced licenses and a Publishing Server license.

True business understanding requires multi-dimensional business models

- **The process model**
 - ▶ The graphical model provides the pictorial representation of the process model.
- **The resource model**
 - ▶ Allows you to define all of the different resource types and instances of those resources so that they can be associated to the model
- **The information model**
 - ▶ Provides a view of data and how data is used within a business process.
- **The organization model**
 - ▶ Provides the definition and structure of all of the organization units and their associated resources
- **The analysis model**
 - ▶ Definition of key process metrics and attributes are defined and then analyzed in both a static and dynamic manner.
- **The collaboration Model (new to V6)**
 - ▶ Allows for both model time and deployment time collaboration on a process model
- **The business measures (observation) model (new to V6)**
 - ▶ Definition of key performance indicators and metrics that represent the critical performance characteristics of how business performance is monitored



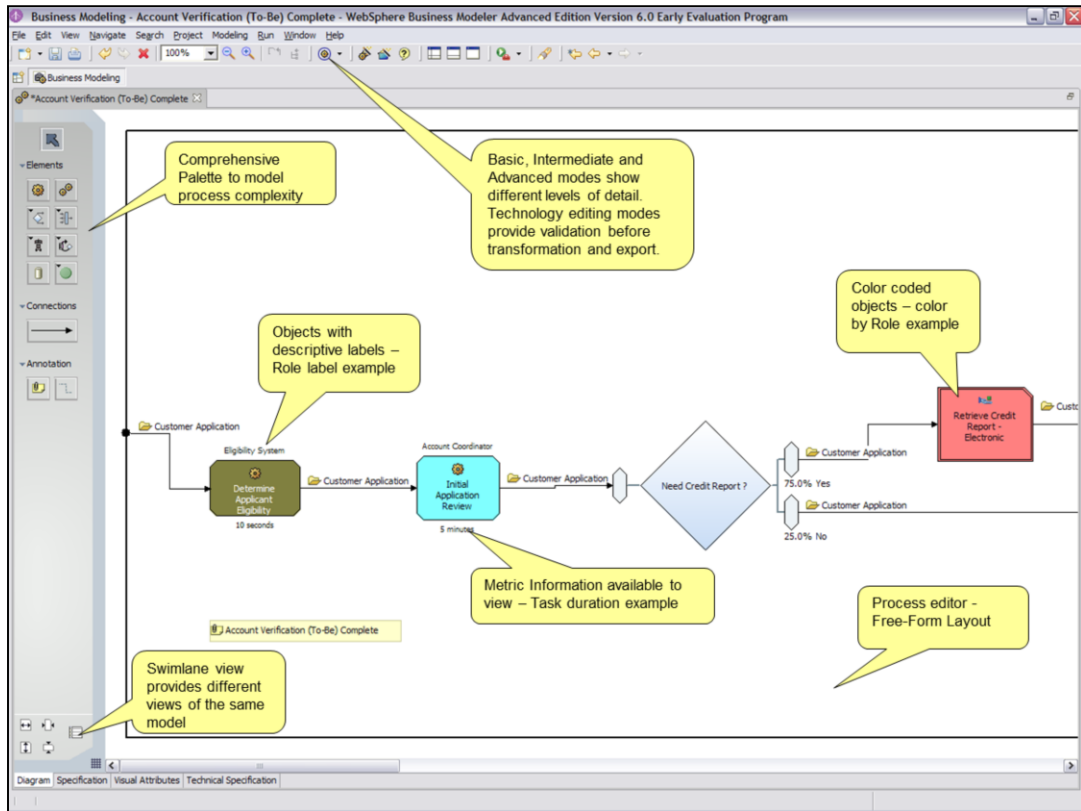
WebSphere Business Modeler gives you multiple views of the designed business process. This slide lists the core models included in the WebSphere Business Modeler. Depending on your specific role, a model might be more or less important.

The process model

- Flexible palette which can be used to express complex behaviors in business processes
- Use of colors, labels, and swimlane view aid in visual identification of hand-offs and the associated attributes of the model
- It is important that standards and best practices be applied when developing business process models as consistency when modeling ensures that consumers of the process models are interpreting them in a consistent way



The process model is the main model that visualizes core properties of the business process.



The process model is an Eclipse view that includes the elements shown in this slide.

<click>

The process editor has a free-form layout.

<click>

The palette holds components to model the process.

<click>

The view can be changed to meet the environment requirements.

<click>

All objects use description labels.

<click>

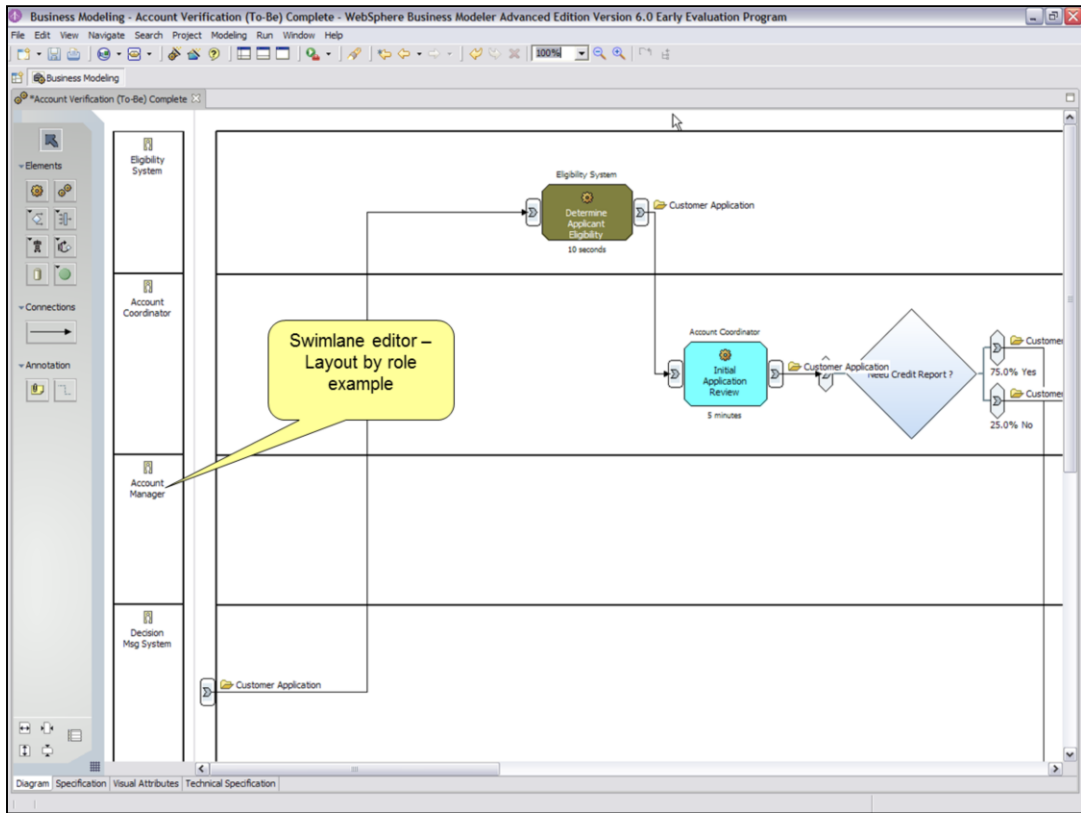
Colors are used for better understanding.

<click>

If metrics are used, they are displayed next to the component.

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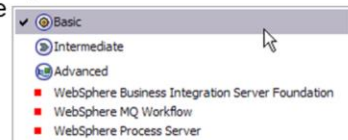
Different views like a swimlane perspective are also supported.



Here is a swimlane view of a business process. This example is role based.

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.



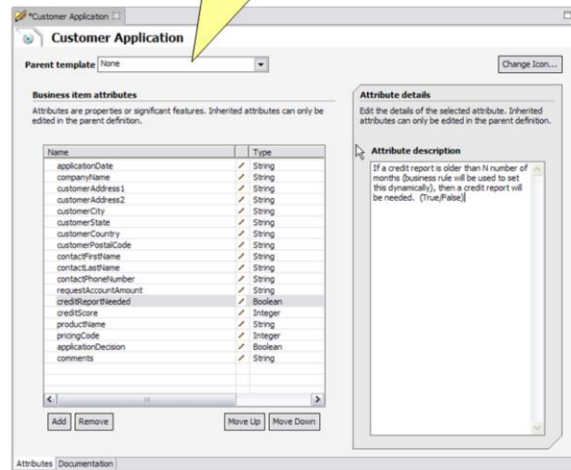
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If the target runtime component is known in the design phase of the business process, the editing modes capability can be used to avoid constructs that are not translatable into the target platform.

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 information model can be used to highlight the business objects that are used within the business process as templates. This model is also used to document business object definitions from a business perspective and to define rules on the business objects.

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

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

Specifying availability characteristics assists in simulating real scenarios of resource constraints

WebSphere Business Modeler V6: Introduction © 2007 IBM Corporation

The resource model gives you a view on the involved resources and all data related to its costs, availability or time 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

The screenshot displays the organization model in WebSphere Business Modeler V6. On the left, a hierarchical organization tree for 'ABC Ltd' is shown. The root node is 'ABC Ltd', which branches into 'Marketing and Sales', 'Customer Service Department', and 'Accounting'. 'Marketing and Sales' further branches into 'Marketing' and 'Shipping Dept'. 'Marketing' branches into 'Sales'. A yellow callout box points to the tree with the text: 'Organization structures shows relationships between organization units and locations'. A red arrow points from the 'Customer Service Department' node to the 'Organization attributes' table on the right.

On the right, the 'Organization attributes' table is displayed. A yellow callout box points to the table with the text: 'Attributes of the organization units can be either user defined or adhere to the definitions of a specific runtime'. The table has the following columns: Name, Type, Minimum, Maximum, and First value.

Name	Type	Minimum	Maximum	First value
organizationID	String	1	1	0A1
type	String	0	1	
industryType	String	0	1	
businessType	String	0	1	
geographicalLocation	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	
members	Staff template	1	0	
parentOrganization	Organization te...	0	1	

The organization model highlights the relationship of organizational units and locations defined in the business process.

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
 - ▶ Simulation on the analysis model ensures that decisions are based on metrics validated by business process experts

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

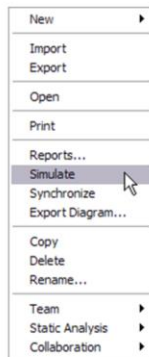
The screenshot displays the 'Business Modeling' application window with the 'Cost and Revenue' tab selected. The interface is organized into several sections for configuring financial attributes:

- Processing cost:** A section for 'The expense incurred every time the task runs.' It includes a 'Literal value' dropdown menu, a text input field containing '10', a currency dropdown set to 'USD', and a 'Clear' button.
- Startup cost:** A section for 'The initial expense incurred when this task starts.' It features a 'Literal value' dropdown, a text input field with '5', a 'USD' currency dropdown, and a 'Clear' button.
- Wait-time cost:** A section for 'The expense that increases over time while the task waits for a resource.' It has a dropdown menu set to 'Unspecified', a text input field, a 'USD' currency dropdown, and 'Unspecified' and 'Clear' buttons.
- Revenue:** A section for 'The money that is earned when this task is finished.' It includes a dropdown menu set to 'None', a text input field, a 'USD' currency dropdown, and 'Unspecified' and 'Clear' buttons.

The analysis model is the core model for all analysis and simulation activities. It lets you setup analysis scenarios and simulation snapshots that can be used to get a feeling for which quality a dedicated business process has.

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, and 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

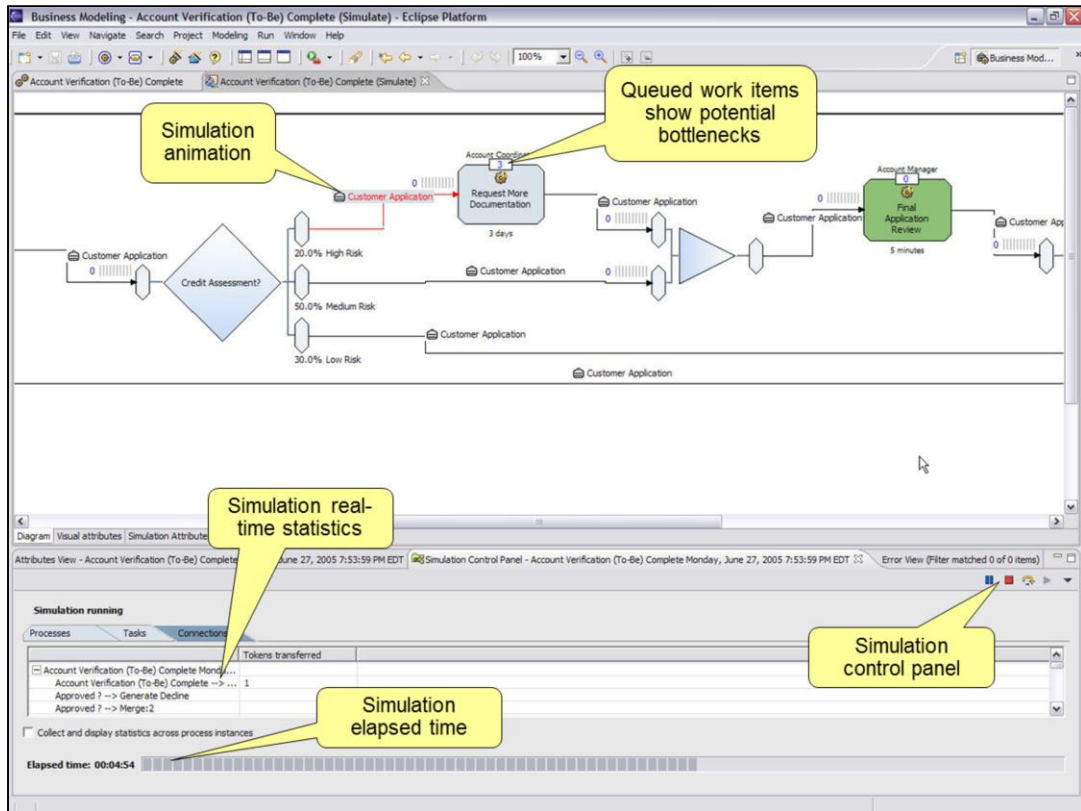
	Process start time	Process end time	Total revenue	Total cost	Total profit
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:25:14 P...	July 17, 2005 7:30:29 P...	0 USD	35 USD	-35 USD
Account Verification (To-Be) Complete Sunda...	July 17, 2005 7:26:14 P...	July 17, 2005 7:31:29 P...	0 USD	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	30.381 USD	-30.381 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

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Simulations can be run iteratively and compared with each other. It is also possible to adjust the input values slightly from one run to another to evaluate how the business process behaves in changing conditions.



A very strong feature is the animation capability during process simulation. It gives you a graphical representation of bottlenecks and other process relevant attributes while processes are running.

<click>

The simulation animation highlights the process flow.

<click>

Real time statistics and...

<click>

...the simulation elapsed time are shown as well.

<click>

From the simulation control panel, the simulation can be stopped and resumed to have more time to check the single situations.

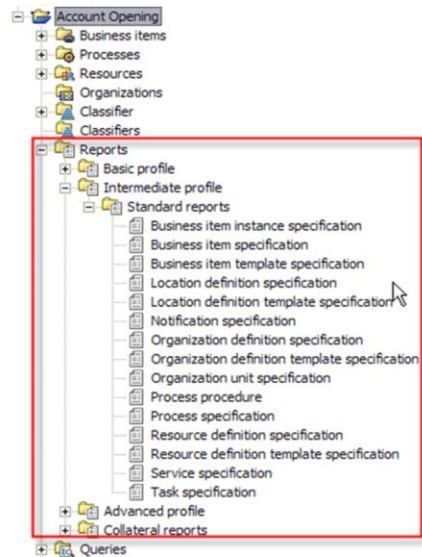
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Queued work items show potential bottlenecks.

<click>

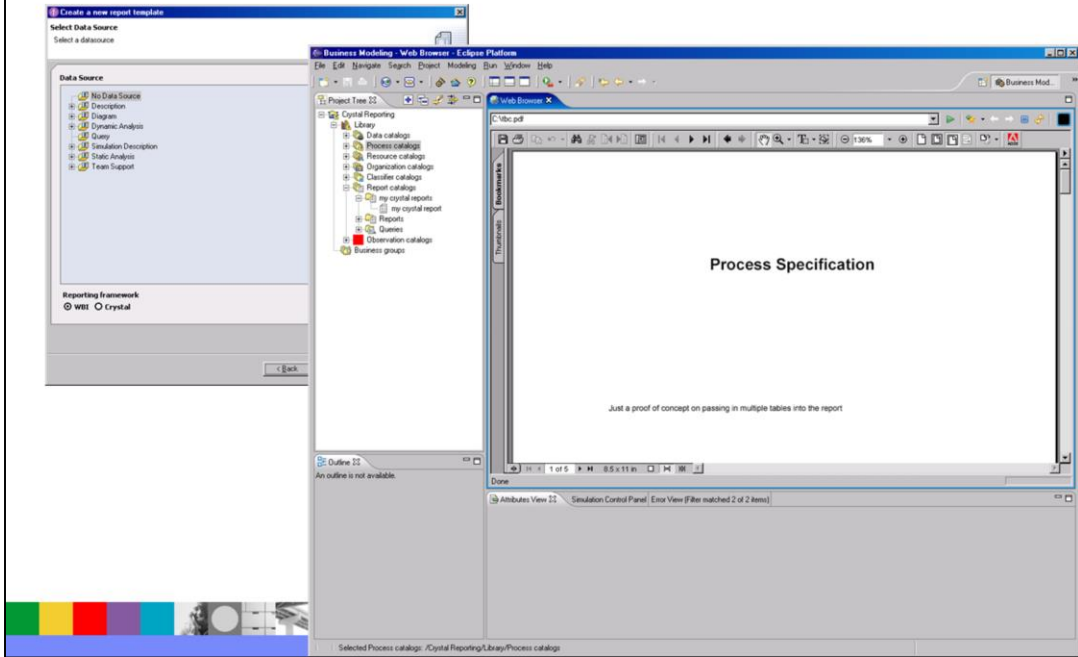
Reporting

- 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



By default WebSphere Business Modeler delivers a huge set of predefined reports which can be applied on a newly designed business process. A business user can also add reports to address specific needs of the project.

Reporting: Integrated Crystal Reports



The WebSphere Business Modeler reporting capability is tightly integrated into popular products from other vendors. Crystal Reports is one example.

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 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 is used in the publishing edition of the WebSphere Business Modeler . It is in fact a portal based interface which can be used by users who have no Eclipse component installed on their workstation.

The Collaboration Model

WebSphere Business Modeler Collaboration Edition

Welcome

Project Tree

- Account Opening
- Library
- resource catalogs
- data catalogs
- process catalogs
- Processes
- To-Be Process
- As-Is Process

Model Elements

Graphical process view (SVG)

Outline

Outline view of the process

Comments

Comments on Account Verification (As-Is) Complete

View all | Add comment | Add response

Status	Priority	Subject	Type	Author	Responses
Comment on the Account Verification	medium	Question	Question	ypsadmin	0

Association of Comments and Responses with the process or specific elements of the process

Attributes

Attributes and associated documents and URL's view

General Information

Name	Description
Account Verification (As-Is) Com	Account Verification (As-Is) - Cor

This screen capture shows the portal based user interface of the Publishing Server with various portlets that are available when you first install the product.

<click>

A graphical process view.

<click>

Comments and responses for the specific process.

<click>

Attributes and document links.

<click>

And finally the outline view of the process.

The business measures (observation) model

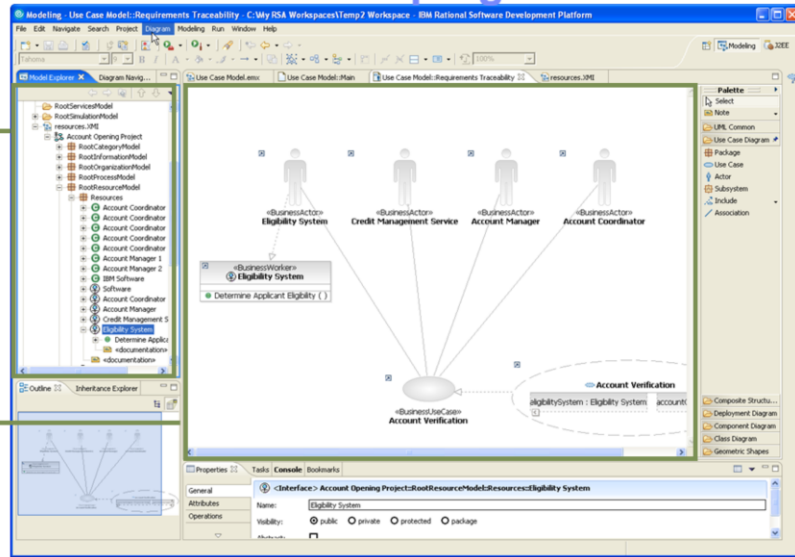
- Defines the contexts of what is monitored during the execution of the business process
- Key performance indicators (KPI's) and metrics are defined both at a business process and activity level of granularity
- Situation and situation outcomes can be defined in order to make KPI's and metrics actionable

The business measure view enables the business user to define already at this design stage meaningful KPIs to make a business process measurable. These KPI definitions can be used later on by the WebSphere Business Monitor development groups to design suitable measure models for this particular business process.

IBM Rational® Software Architect integration: WebSphere Business Modeler plug-in

In Rational Software Architect, use the business model from WebSphere Business Modeler as a UML2 Business Contract specification

Drag-and-drop modeling artifacts to create UML analysis diagrams



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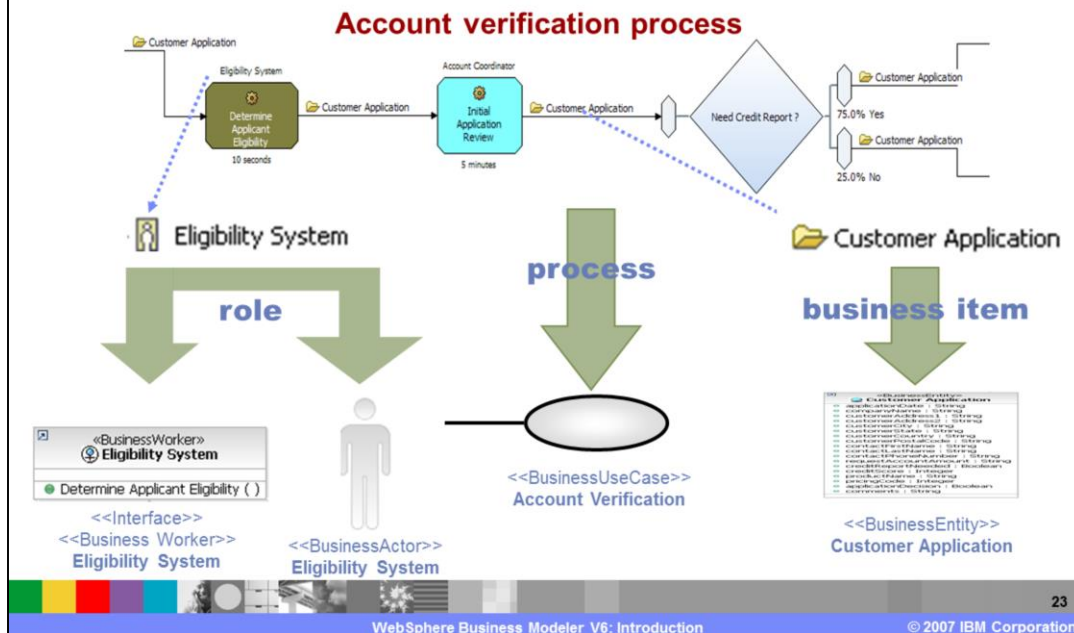
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WebSphere Business Modeler contains also very strong integration with the Rational product suite which enables business users to import UML diagrams into the WebSphere Business Modeler and supports drag-and-drop.

The business contract specification

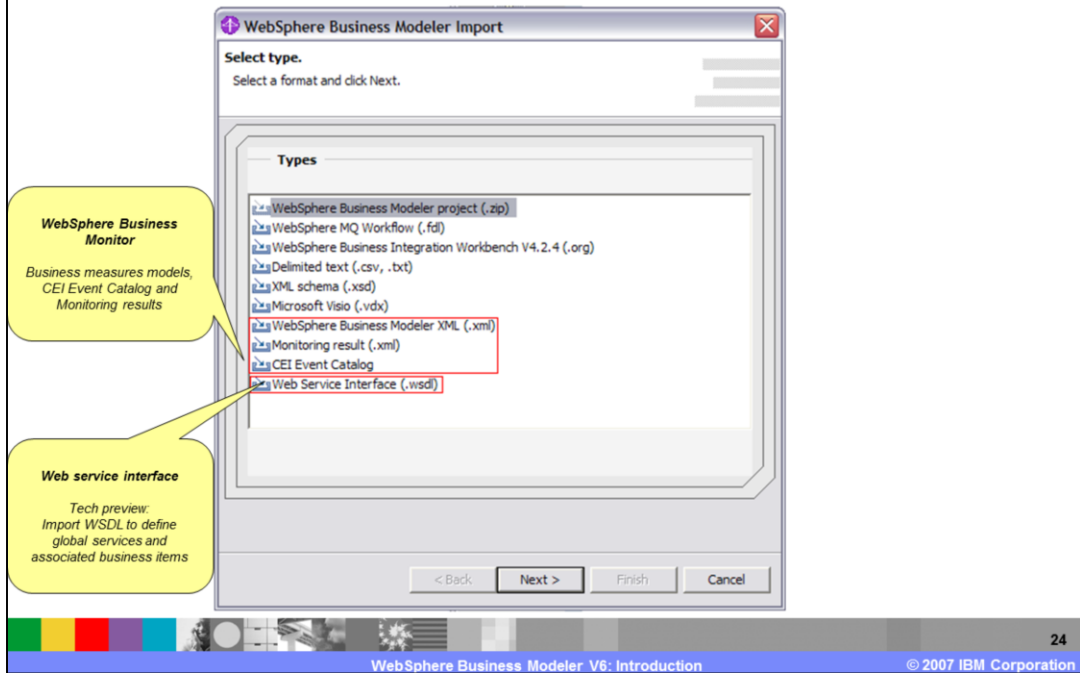
From WebSphere Business Modeler to Rational Software Architect



Between the WebSphere Business Modeler and the Rational products it is clearly defined which Rational artifact is translated into which WebSphere Business Modeler artifact.

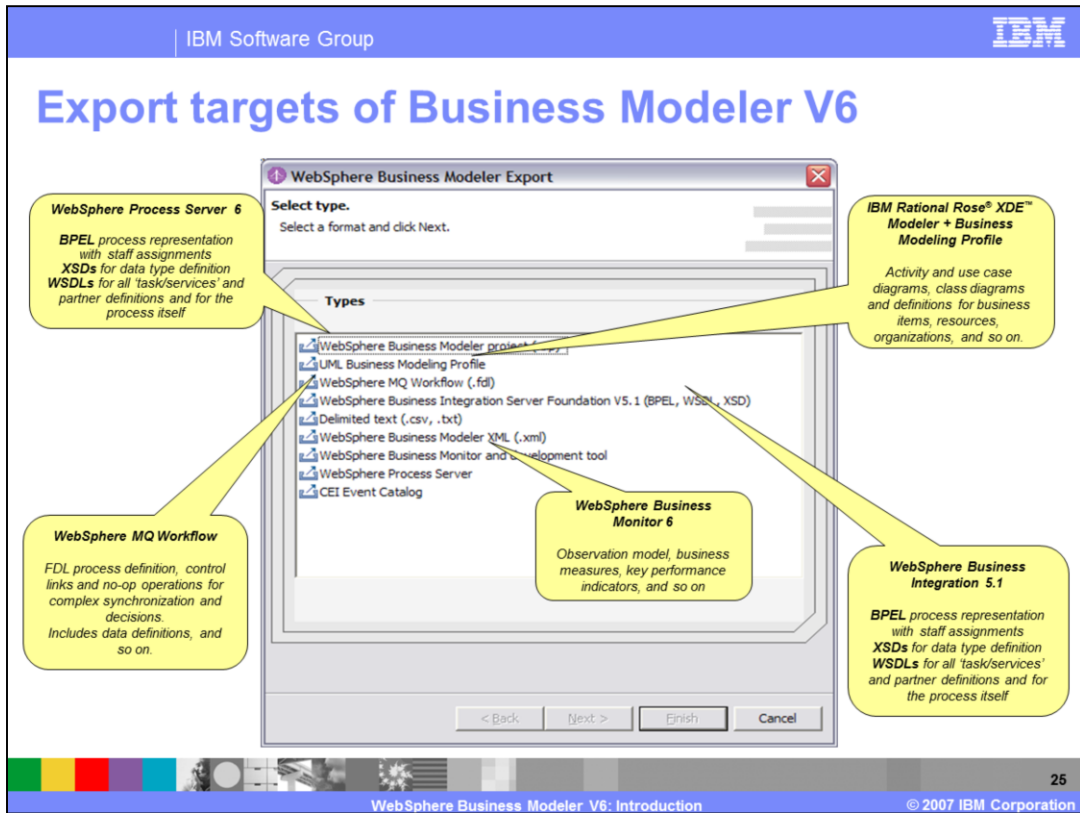
When the process is exported, the specific role in the system and the business items are known in both environments.

Import targets of WebSphere Business Modeler V6



WebSphere Business Modeler can be the starting point for the further business process modeling tools. It contains a huge set of import and export features like those listed in this slide.

There is an import for WebSphere Business Monitor files and Web service interfaces.



WebSphere Business Modeler can model processes for various runtimes – this is also reflected in the export capabilities.

<click>

No matter if WebSphere Process Server,

<click>

IBM Rational Rose XDE Modeler,

<click>

WebSphere Business Monitor,

<click>

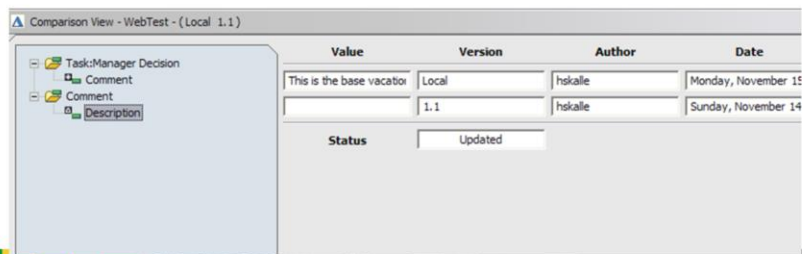
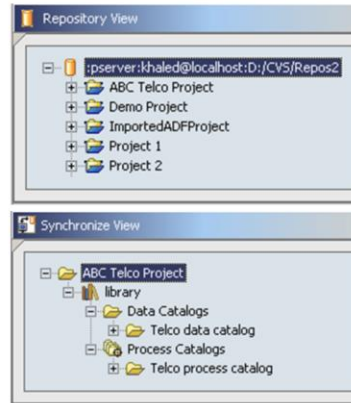
WebSphere MQ Workflow or even

<click>

WebSphere Business Integration 5.1

Team support

- Multi-User support for sharing projects and files using 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
- Ability to disconnect from the repository

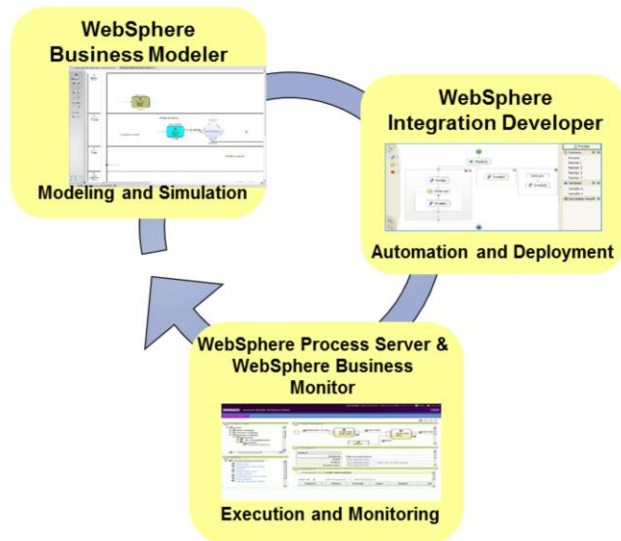


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Multi-User support for sharing WebSphere Business Modeler projects includes several views. The repository view is based on a CVS client to be shared on a CVS repository. The synchronize view allows users to update and commit elements between Modeler and the repository. The history view provides a list of all revisions of an element in the repository, while the version comparison view lets you see differences between two versions of the same element. Finally, the audit trail report shows changes done on a model element over multiple versions.

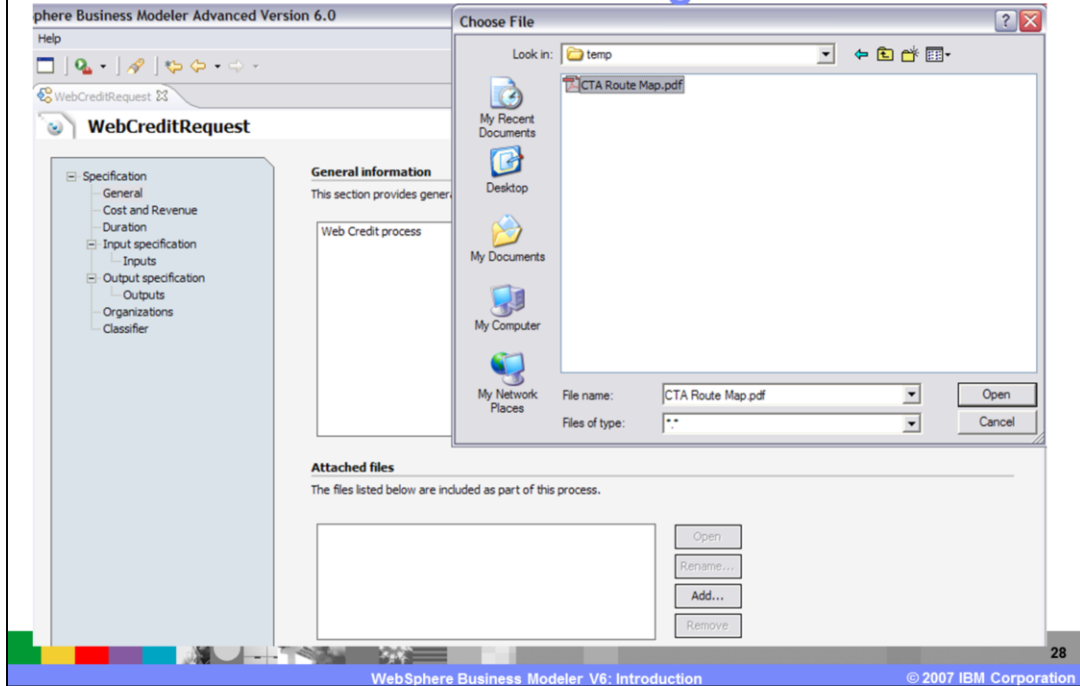
Feedback loop for continuous improvement

- 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



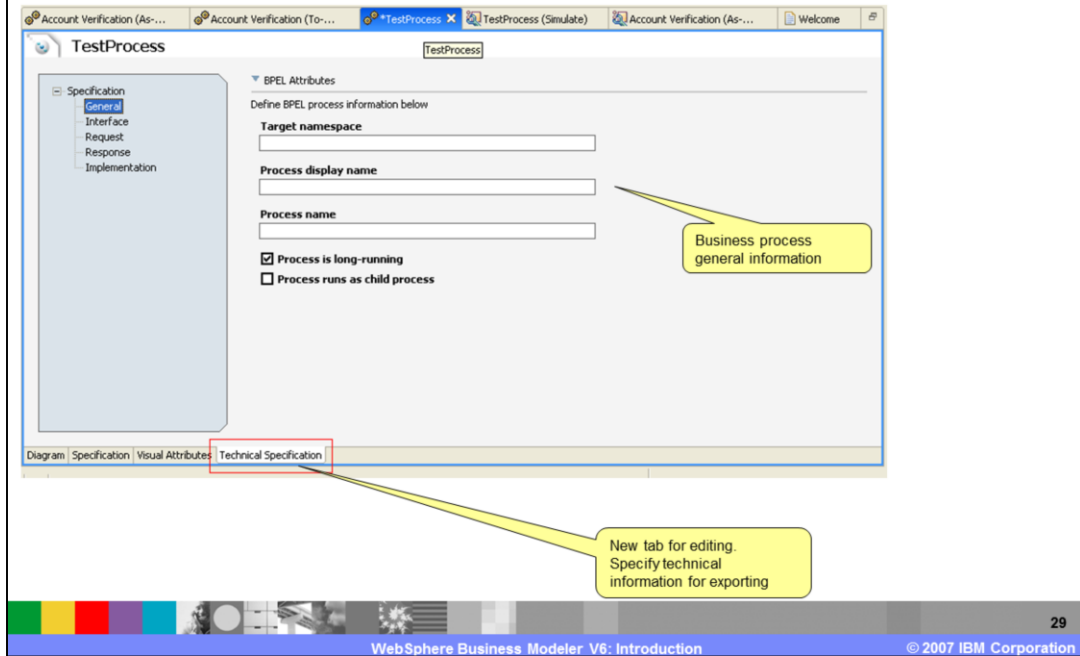
The integration with other business process management tools is not only in one direction. WebSphere Business Modeler is also able to leverage data that is collected by WebSphere Business Monitor to refine an existing business process and make it more efficient.

Attach documents to modeling elements



For business users, documentation is very important and many processes are already documented somehow using popular word processing tools. Therefore it is possible to just attach such documents to existing WebSphere Business Modeler modeling elements.

Technical specification tab - General



With Version 5, you had very little control over the names of the generated items when you exported the process to BPEL. This new tab lets you have detailed control over what gets generated now.

Technical specification tab - Interface

TestProcess

Specification

- General
- Interface
- Request
- Response
- Implementation

WSDL Interface Attributes

Define WSDL interface information below

Target namespace

PortType name

Callback PortType name

Callback PortType target namespace

Request and response message information and implementation

Information for the WSDL to be generated

Diagram | Specification | Visual Attributes | Technical Specification

Allows you to have control of the generated WSDL

The interface, request and reply tabs let you set information that will go into the generated WSDL.

Technical attributes view

WebSphere Process Server mode

Attributes - Initial Application Review | Simulation Control Panel | Errors (Filter matched 17 of 256 items) | Dynamic Analysis View | Query View | **Technical Attributes View 23**

Interface | Request | Response | **Implementation**

▼ Component Attributes
Define the component information that represents the target implementation

Component display name
Initial Application Review

Component name
InitialApplicationReview_01349599541

Component description

Implementation type
Human Task

▼ Implementation attribute
Define the implementation information

Implementation description

▼ Component Attributes
Define the component information that represents the target implementation

Component display name
Credit Assessment Business Rule

Component name
CreditAssessmentBusinessRule_1133678153

Component description

Implementation type
Rule Group

[none]
State Machine
Rule Group
Enterprise Access
Java

New tab becomes avail in WebSphere Process Server mode

You can set the Implementation type of an element when in WebSphere Process Server mode. For example, Rule Group

In this example, the implementation type of a task is set to "Human Task".

User* can set implementation attributes
*Likely Integration Developer vs. Business Analyst

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If you are in WebSphere Process Server mode, you can set things like the implementation type of the component for export. This way, you can have one task export as a human task, then next one a rule group, and so on. This means that what gets exported to WebSphere Process Server will be very useful!

Authoring and viewing comments

Comments
Comments on Process1

View comments on: ProcessDiagram: Process1 Add comment | Add response | Delete comment | Export comments

Subject	Status	Priority	Type	Author	Responses	Created	Modified
new comment1	Open	Medium	Problem	wpsadmin	0	Wed Aug 31 11:00:33 EEST 2005	Wed Aug 31 11:00:33 EEST 2005
have resource requirement ?	Open	Medium	Question	wpsadmin	1	Thu Sep 01 21:52:20 EEST 2005	Thu Sep 01 21:52:20 EEST 2005
Task Inputs	Open	Medium	Problem	wpsadmin	1	Thu Sep 01 22:03:03 EEST 2005	Thu Sep 01 22:03:47 EEST 2005

Comments

Subject: Task Inputs
 Author: wpsadmin
 Type: Problem
 Priority: Medium
 Status: Open
 Created: Thu Sep 01 22:03:03 EEST 2005
 Modified: Thu Sep 01 22:03:47 EEST 2005
 Element path: Process1/Process1
 Details: How are you managing the multiple inputs to the main task here ?

Edit comment Add response Return to the all comments view

Responses

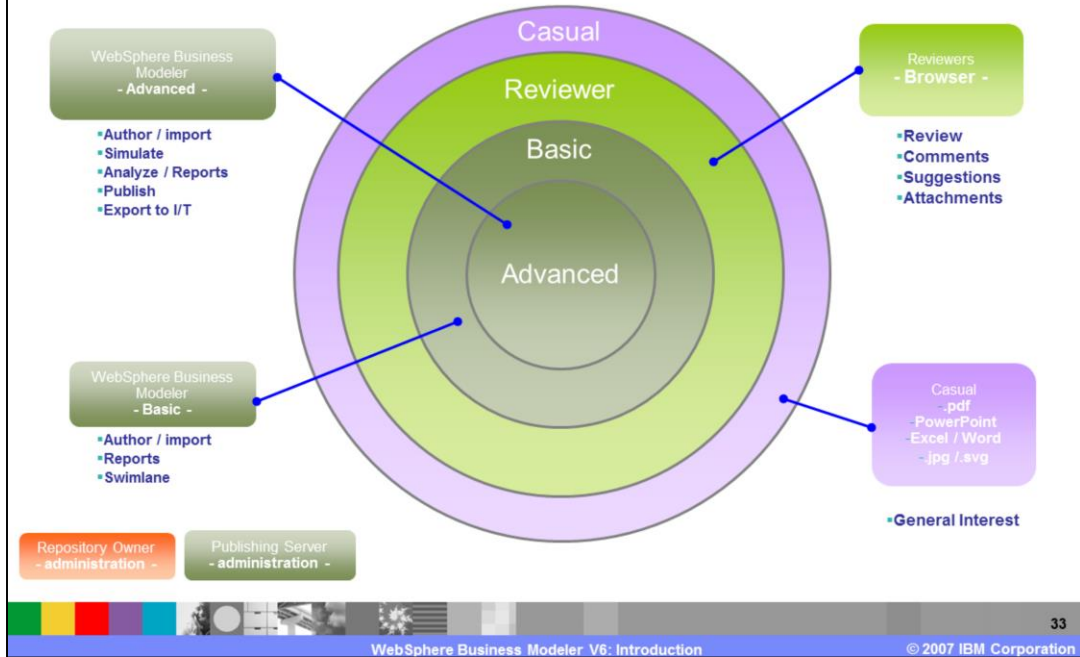
Subject	Status	Priority	Type	Author	Responses	Created	Modified
Re Task Inputs	N/A	N/A	Response	wpsadmin	0	Thu Sep 01 22:05:01 EEST 2005	Thu Sep 01 22:05:01 EEST 2005

Callouts:

- Comments can be made on the process, or elements within the process
- Comments may have one or more responses that appear as "children" of the original comment.
- Comments can be of type:
 - question
 - problem
 - suggestion
 - other
- Comments are given:
 - Time / Date stamps
 - Priority (L,M,H)
 - Status (open/closed)

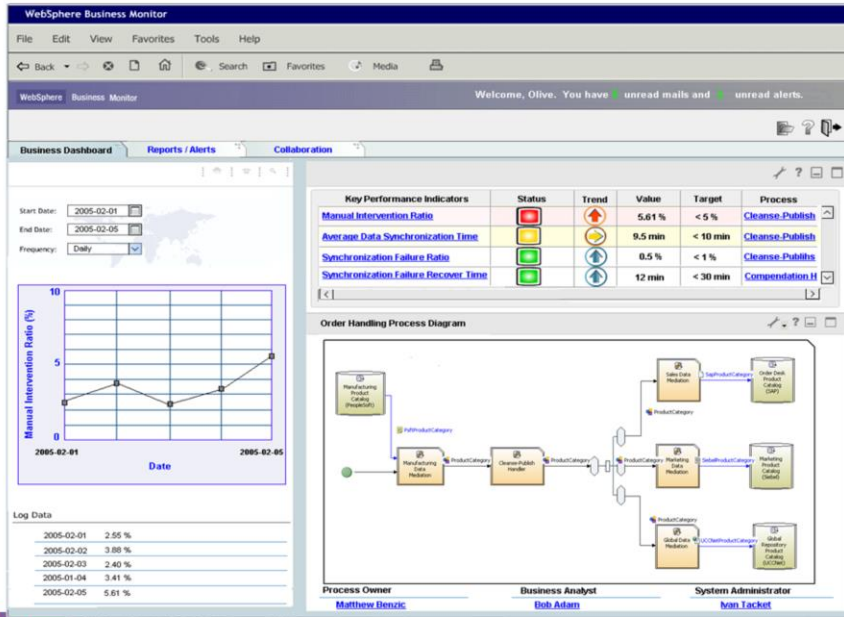
These screen captures show the steps for adding a comment, with some of the various options.

Modeling related roles



These circles indicate that the people who are using Modeler Advanced form a core team, utilizing the most sophisticated functions. From there outward, the level of involvement decreases. Boxes indicate the tool used and the role being fulfilled. Text below the boxes suggests the capabilities associated with each role.

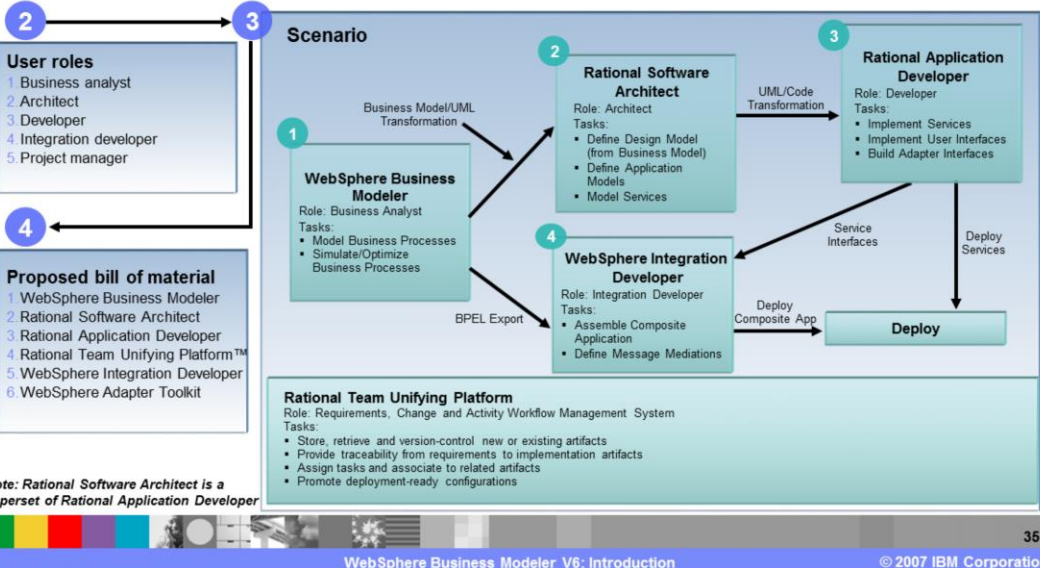
Sample dashboard in WebSphere Business Monitor



Once exported to WebSphere Business Monitor, this is what it might look like....

Core use case: Model and assemble

1 A business analyst analyzes a business process and specifies potential optimizations. IT will identify needed enterprise systems, identify new services, and implement the composite application.



This use case was built to illustrate how these products fit together. In this case, you start with a business model in WebSphere Business Modeler. You can export the model using BPEL into WebSphere Integration Developer and then assemble a composite application or define message mediations. Or you can take the model and transform it into a UML model that can be used in the Rational Software Architect tools. You then transform the code into Rational Application Developer where you implement the services and user interfaces, and connect to existing applications. You then send these existing or new services either into deployment or into WebSphere Integration Developer for further manipulation.

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