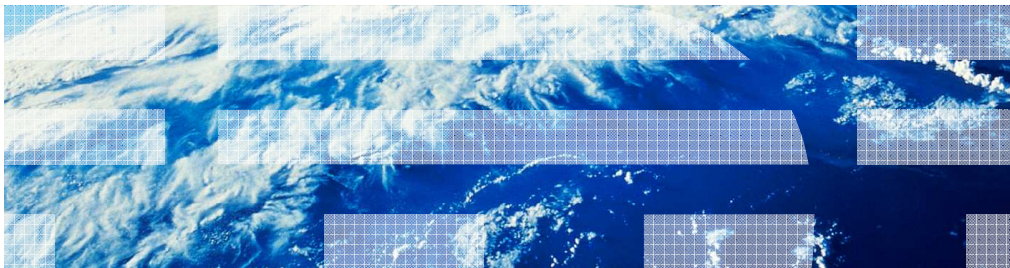# WebSphere Business Modeler V7.0

BPMN-2 modeling
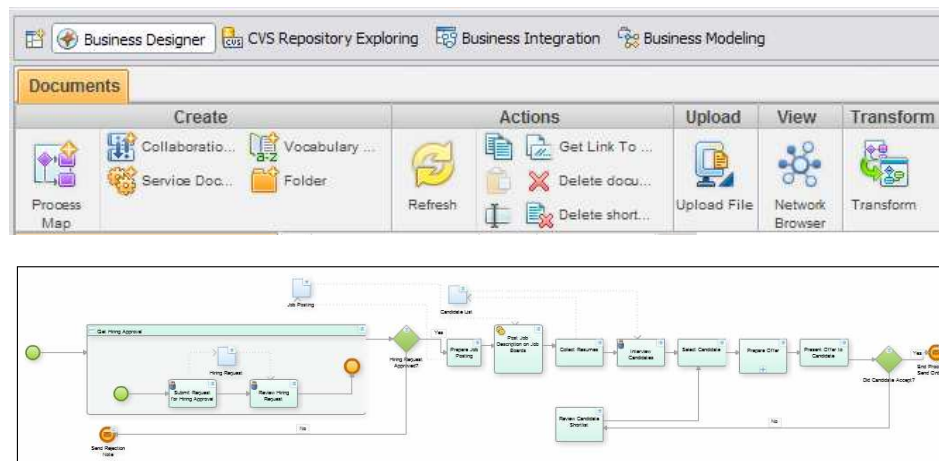
This presentation will familiarize you with the new features in WebSphere® Business Modeler that support BPMN-2 business process modeling.

The goal of this presentation is to provide you with the information needed to do descriptive process modeling using standard BPMN-2 notation and the Business Designer perspective of WebSphere Business Modeler.
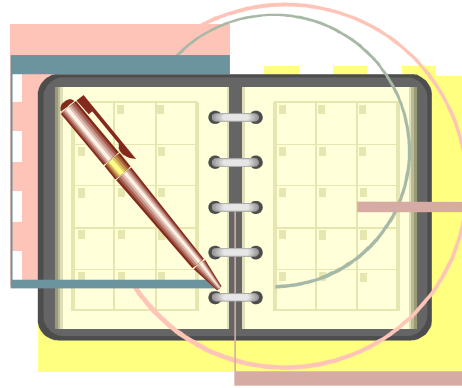
Agenda

- The Business Designer perspective
- Introduction to the document types
- Working with documents
  - Actions, upload, view and transform
  - Exporting
- Creating a business process model

BPMN-2 modeling   © 2010 IBM Corporation

The first thing to consider is how do you get to the BPMN-2 modeling features. This is accomplished through a new eclipse base perspective called the Business Designer.

Next you are introduced to the different kinds of documents and tools you can work with.

Then you are taken through the steps for creating a simple business process model, and transforming it into a traditional WebSphere Business Modeler modeling project.
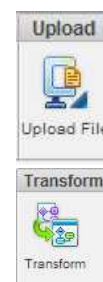
Business Designer perspective
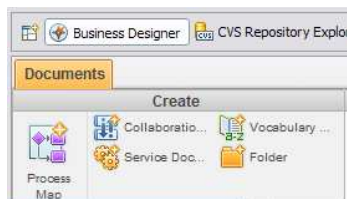
The full Compass palette

- Provides a single user environment
  – a sub-set of what is available with WebSphere Business Compass
  – focused on business process modeling
  – models shared using import and export
  – models can be transformed to traditional Business Modeler models
    • But not the other way around
- A business space is created
  – using a local Derby database

WebSphere Business Compass is the Web based business design tool for business process modeling in a collaborative environment. It uses the WebSphere Business space framework to provide a BPMN-2 process modeling editor along with other tools for capturing strategic and organizational information related to your business.

WebSphere Business Modeler is a single user business modeling design tool that uses a different modeling notation and style. To bring BPMN-2 modeling to WebSphere Business Modeler a new eclipse perspective, called the Business Designer, is used. The Business Designer perspective provides a subset of the features that are available with WebSphere Business Compass. The features available in the Business Designer perspective are those needed for process modeling, that is, the process map, the vocabulary, the collaborations and the service documents.

Models can be imported from WebSphere Business Compass and IBM BPM BlueWorks using the upload function. Only those documents that are shown in the palette on the left can be edited after being imported. You can also export your model that you create in the Business Designer perspective and import it to WebSphere Business Compass or IBM BPM BlueWorks.

Once you've created your BPMN-2 descriptive business model, you might want to run some simulations or turn it into an executable business model. To do this you will use the transform button on the palette. This will take your BPMN-2 documents and transform them into modeling projects that you can work with in the Business Modeling perspective.

The modeling artifacts and relationships that are created in the Business Designer perspective are stored in a local Derby database. This is completely transparent to the end-user.
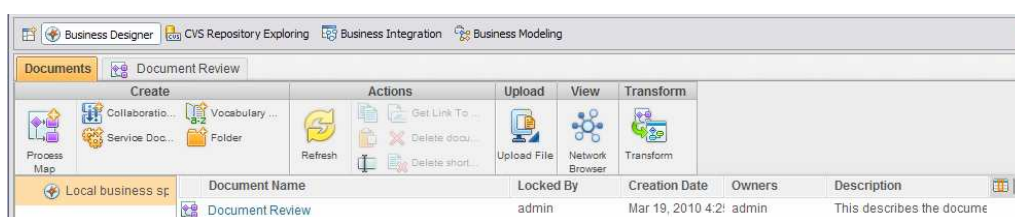
When creating a business process model in the Business Designer perspective, you can start wherever you want and specify only as much information as you need.

You might want to start with the process flow and then define the data elements in the vocabulary or perhaps you already have business service definitions and business items that were created in WebSphere Integration Developer. In that case you might want to import them into your vocabulary.

Listed here are the document types you have to work with when creating a business model using the Business Designer perspective.

The process map is used to represent the business process flow.

The business vocabulary is a place where you can capture and share definitions.

A business service is a way to represent a call to some function that is outside your process or organization

And collaborations provide a graphical representation of the interactions or message flows between processes.

The next few slides will discuss these document types in a little more detail.

Process map

- Process maps are visual representations of business processes
  - Processes are composed of activities and decisions that dictate when the activities occur.
  - You can use process maps to document your current business processes, or to plan future business processes
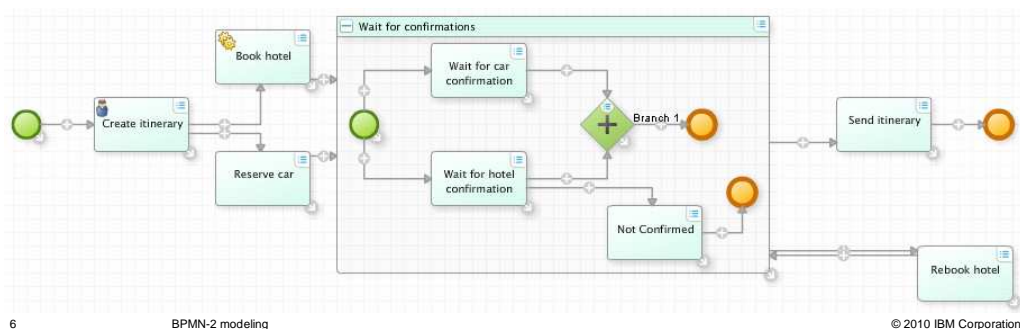
The business process map describes how the work gets done.

Shown here is the simple travel booking application that uses a sub-process and parallel gateways.

The notation used here is BPMN 2.0.
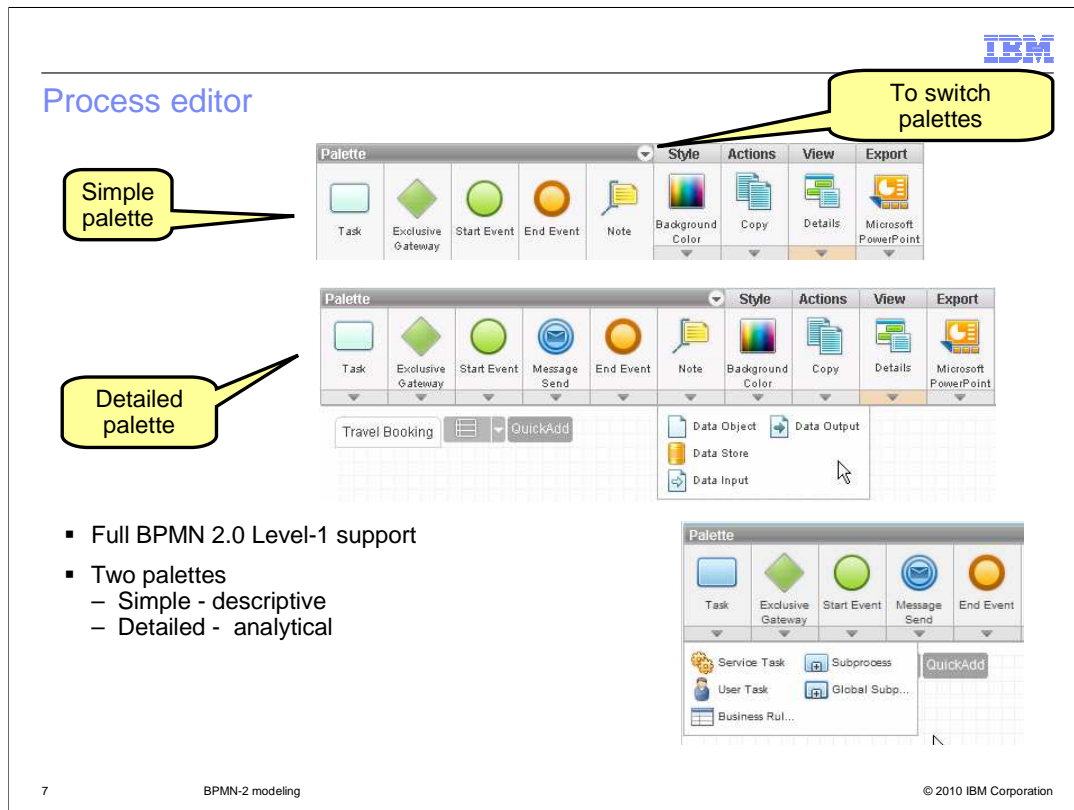
The business process editor fully supports BPMN 2.0 Level-1 modeling. Level-1 has been identified as simple descriptive process flow charting. The basics are what you see with the simple palette. The elements are start, end, task, decision, and note. The style, actions, view and export menu options, provide functions common to both palettes. Selecting the dropdown arrow will expose additional functions.

The detailed palette expands the modeling capability and provides some of the features supporting BPMN 2.0 Level-2, analytical BPMN.

Selecting the drop down arrow beneath the element exposes the advanced elements that are available.

Under the notes, you can see the data objects and related elements and under tasks you can see all the different kinds of tasks that can be used. Service task, user task, business rule task, subprocess, and global subprocess.

To see the complete set of elements, inspect the drop down menus for each of the elements.

Process editor: history, walk-through, and advisor

- History
  - Historical record of changes
  - Can revert back to previous changes
- Walk-through
  - Step through a specific path in the business process
  - Displays value stream information
  - Displays forms associated with user tasks
- Advisor
  - Check the business process and make suggestions based on the kind of advice requested
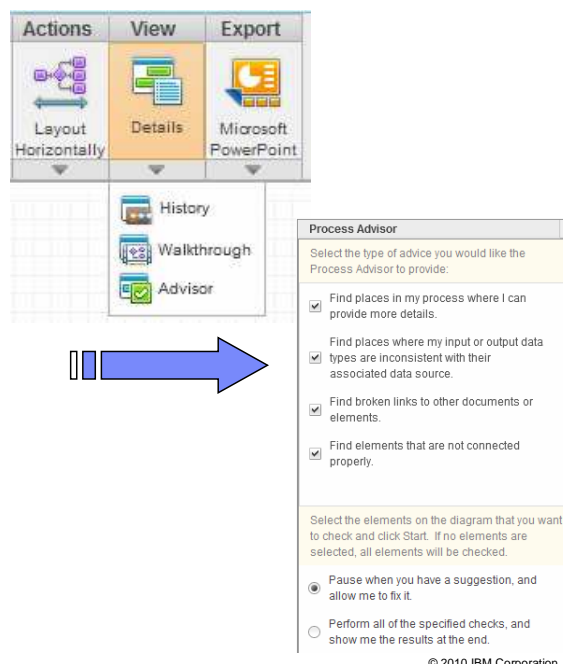
The history, walk-through, and advisor are three very powerful features of the process editor.

With the history feature you can visually see the time line of the changes and easily revert back to a previous version.

The scenario walkthrough feature lets you select a path through the business process and then replay the scenario in presentation mode, one step at a time.

Value stream information captures the time and cost of a task.

If the task has 'value stream' information associated with it, then the value stream information is shown during the walkthrough and the summary is updated at each step. Forms associated with user tasks can also be displayed during the walkthrough.

The process advisor has a check list of possible problems that it can check for. You select the things you want it to check for and whether you want to stop at the first suggestion or run through the entire process marking each area in question. If there are no suggestions then the task or element is marked with a green check mark.

Vocabulary document

- A place to capture terms and definitions for a specific domain
- Can have multiple vocabulary documents
- Elements are used by other document types
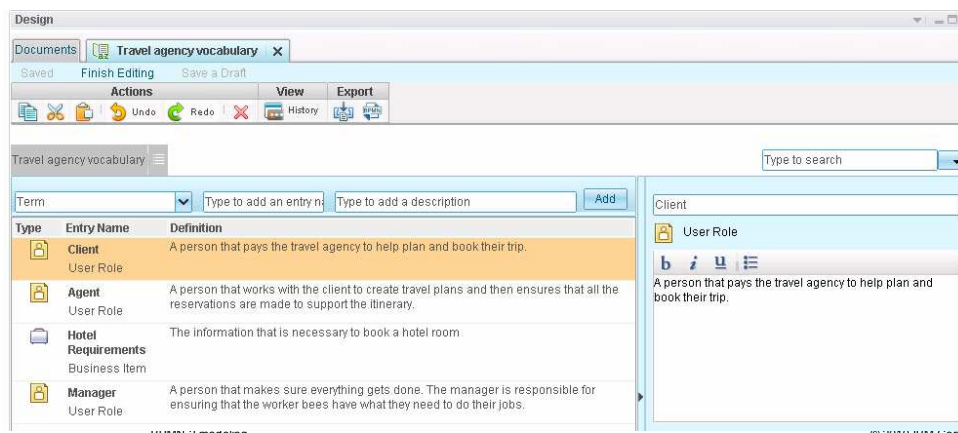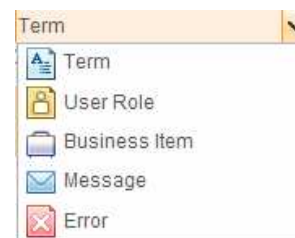
A business vocabulary holds all of the terms, business item definitions, messages, errors, and roles that are used in your business documents.

Each vocabulary entry is associated with an approved definition that is available where ever an entry is used within a business document.

For example, you can associate a role from a business vocabulary with an activity in a process map.

This creates a link to the role definition allowing you to view it when reading and editing the process map.

By standardizing these common terms and business objects in a business vocabulary and reusing them in different business documents, you can ensure consistency and coherence in your business document set.

Service document

- Represents a business service
- Provides the interface specification for the service
- Associated with the *service task*

Service documents describe the business services that are available for use within your business processes.

You can create new business service documents in your Business Design space, or you can reuse WSDL documents that have been authored in WebSphere Integration Developer and imported to the Business Designer perspective.

Service documents work with service tasks. To use a Service in your business process, you create a service task, and then in the details of the service task, associate the service document.

Collaboration diagrams are used to visualize the interactions between processes and external systems.

Pools are used to represent the different organizational units.

In the example shown here, the Travel More agency is using an external service called BookIT, to make the actual reservation. A message is sent from the Travel More agency using the Book Hotel service and a message is returned.

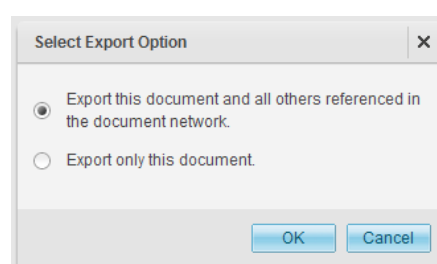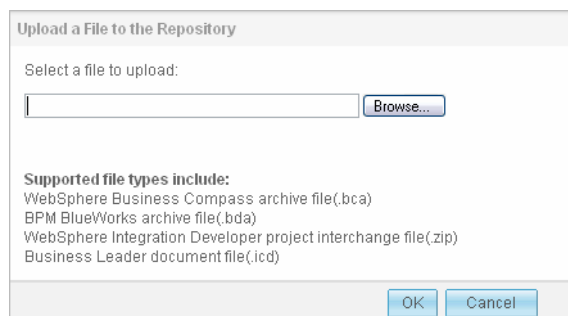With this kind of diagram it is very easy to see where the boundaries and dependencies are in your business processes.

When working with documents in the Business Designer perspective it is important to remember that this is a single user system. You can share your documents with colleagues using the import and export features but you don't have a shared repository as you do in the WebSphere Business Compass product.

You can import documents from several different sources, WebSphere Business Compass, IBM BPM BlueWorks, WebSphere Integration Developer, and the Business Leader documents.

When importing from WebSphere Integration Developer, you are importing a project interchange file with business services and a business vocabulary.

When importing from the other environments you'll have an opportunity to import document types such as strategy maps, capability maps, organization documents and forms. When you import these other document types, you'll be able to edit the descriptions and links but you won't be able to add the basics elements that they're composed of. You will only be able to edit the documents that are available on the process map editor palette.

There is only one option when exporting documents. It is the business compass archive format. These files can be uploaded to other modeler business design spaces or to WebSphere Business Compass business design spaces.

You can export a single document or the document plus all of the other documents that it is linked to. This is a very handy feature if your model is well linked. If this is the case, then you can export your whole project in a single export. Often the strategy document is the top level focal point. The strategy document links to the process maps, the organization charts and capability maps, which in turn link to the vocabulary, services and forms. When using this option, the entire document network is gathered up and exported in a single operation.

Switching gears

- The process editor
- The palettes
  - Simple
  - detailed
- Creating a business process
  - Simple
  - Adding data flow
  - Transforming to a modeling project
- Additional tools
  - Advisor

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The discussion up to this point has been about the business designer perspective, the documents you can use and what they mean.

It is time to switch gears slightly and talk about how to use the process editor to create a simple business process flow.

You will then see how to transform the BPMN-2 model to a modeling project.

The model will then be extended to show the data flow.

But before doing the transformation to a modeling project, the process advisor tool is run to check for completeness.

The process editor for the Business Designer has two levels for specifying a business process. To capture the process flow quickly without getting bogged down with the details, use the Simple Palette. This facilitates collaborative brainstorming sessions. You'll be able to complete the details at a later date, using the detailed palette.

To switch between palettes, use the drop down menu highlighted in this screen capture.

The style, actions, view and export buttons provide the additional tools for editing your documents, validating your flows and managing changes.

After familiarizing yourself with the features of the process editor, a simple business process is developed using both palettes. It will start with the simple palette and then evolve the business process to include more detailed information about the tasks.

The simple palette

- Start by selecting the *Process Map* from the palette in the *Documents* view.
  - This will open the process editor in edit mode, with the simple palette.
- With the simple palette there are only four modeling elements to work with, plus the note element.
- To help you get started, a basic one-task flow is created.
  - It uses all the basic element except the exclusive gateway

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To get started, select the process map icon in the toolbar of the documents page. After providing a name and a brief description, the process editor will open with your new business process. There you are presented with a basic one-task flow to help you get started. This starting business process uses all of the elements in the simple palette with the exception of the exclusive gateway and the note.

Tour of the process editor
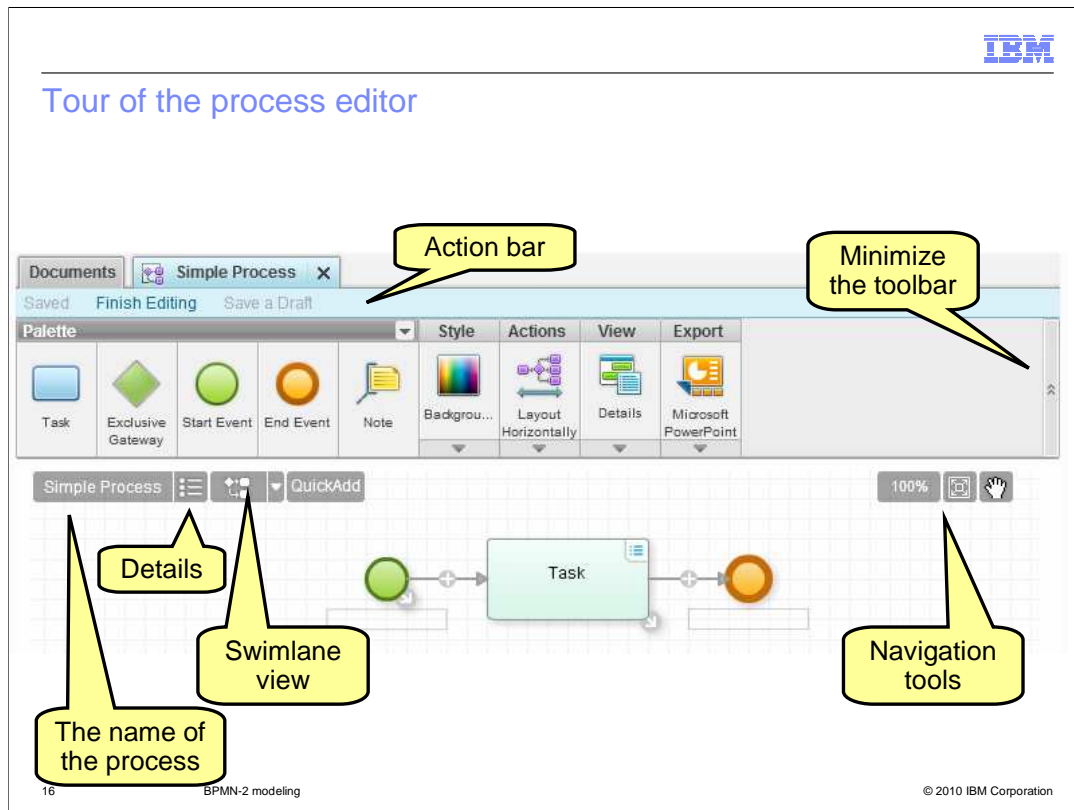
First notice that the action bar indicates that the current diagram is in edit mode. There are several visual clues on the page but the fact that the finish editing action is enabled is the biggest clue. You can also see that you can save the document or save it as a draft. These options become available as soon as you begin making changes to the process flow.

Next is the toolbar, which comes in two parts. The palette on the left, for which there are two versions, simple and detailed. The simple palette is shown here. Then on the right part of the toolbar are the editing, layout, viewing and exporting tools that are common to both palettes. Notice the drop down arrows at the bottom of each icon. Selecting the drop down arrow will expand the menu for the tool. These are shown in more detail in subsequent slides. Also notice the minimize toolbar button on the far right edge. Once you're familiar with the toolbar this is a very nice way to increase the working space on your canvas.

The next level down, is the top of the canvas where there are a few more tools for editing and navigating around the diagram. Moving from left to right, you see the name of the process is displayed. The next item over is a toggle button to show the document details as a sidebar on the right of the diagram. You'll learn more about the document details later. The next button over is used to switch between views, swimlane and free-form. Free-form layout is the default view.

The quick add button is a way you can quickly add a series of sequential tasks by typing in their name and hitting enter. When you hit enter, the new task is automatically inserted into the process flow at the current cursor location.

The navigation tools on the far right are zoom, fit-to-view and pan.

WBPMv70_Modeler_BPMN2.ppt
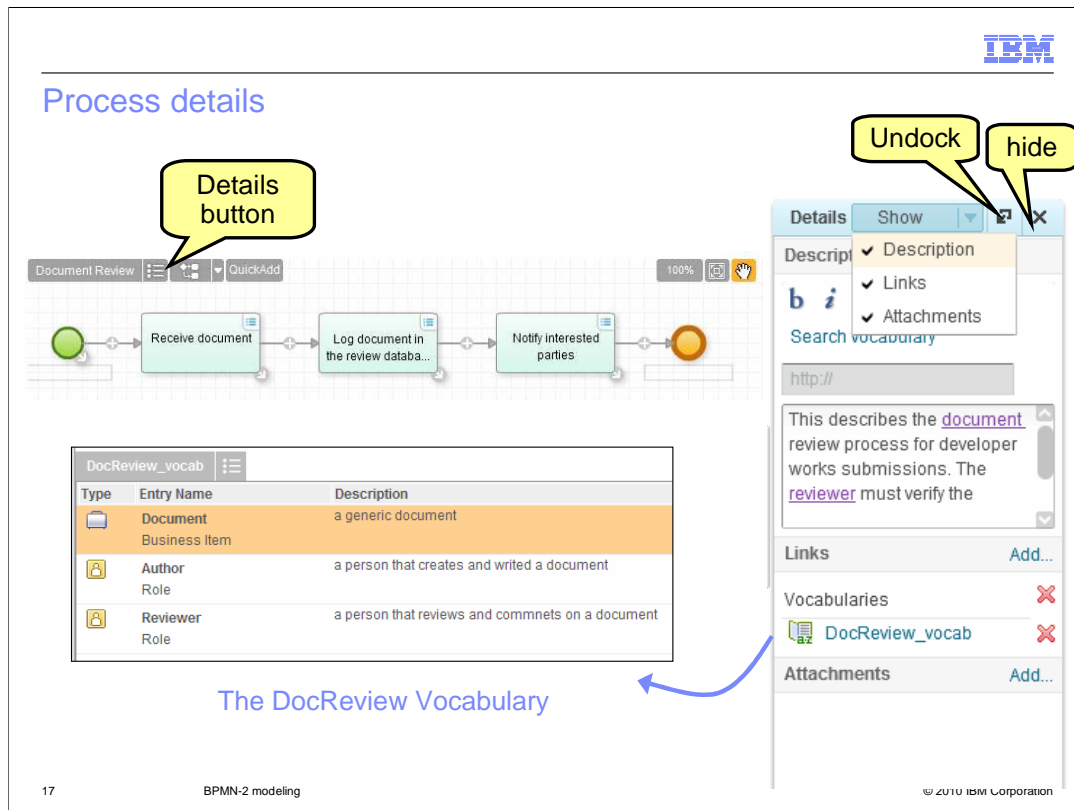
Process details

The details pane is a common way of capturing and displaying details that are relevant to a specific object. In this case the object is the process diagram. The details pane provides a way to filter out information that is not needed. By default only the description is shown. To see the other sections use the show button in the title bar of the details pane and select the section you want to see.

The various sections of the details pane provide a way to link to other elements in the Compass repository that are relevant to this process. The elements or information might already exist in the repository, or if you realize that you need to add something new, you can do this while adding the element.

In the example here the description uses the words 'document' and 'reviewer'. To ensure that everyone uses the same definitions, the document and reviewer have been defined in a business vocabulary and linked into the description. Selecting the document or reviewer link will display the definition in a popup. To create a link to a specific word, highlight the word and then select the 'search vocabulary link. This will invoke a vocabulary search dialog which will let you locate and link to an existing definition or create a new definition one does not already exist.

The links section provides a link to the entire vocabulary.

As you create links you can organize them using folders and shown here with "Vocabularies" title.

Attachments let you take any document and upload it to the repository and create an association with the process being described. Selecting an attached document will let you download it to your workstation where you can view it with the appropriate viewer.

If you want to keep the details pane visible but need to move it, you can undock it and then use the title bar to move it around. To hide it, use the X.
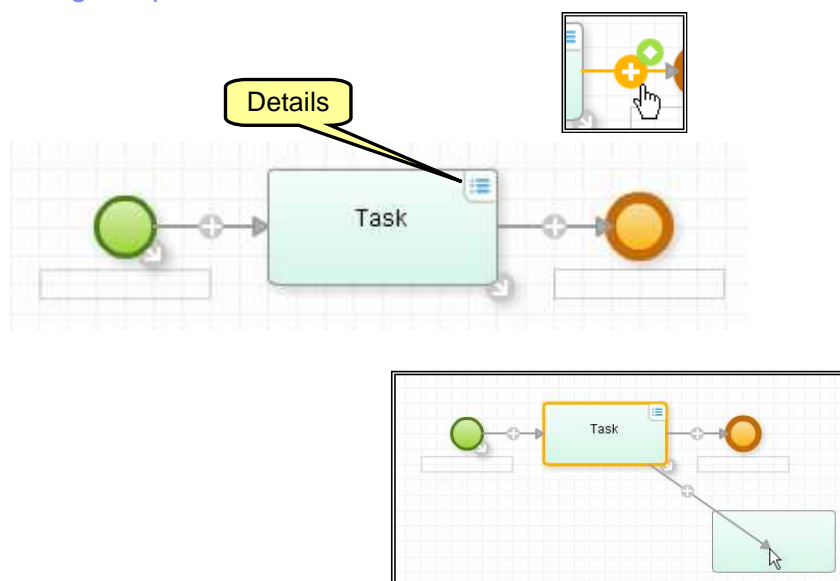
There are several editing aids directly on the canvas that help you to create your business process without having to go back to the toolbar. These aids are only visible in edit mode and are not displayed otherwise.

First, is the little arrow at the lower right of each element. This is for making connections and adding new tasks. As shown in the lower inset, when the handle is grabbed in a drag-and-drop operation, a new task can be created and automatically linked when the mouse button is released. If the target of the drop operation is an existing element then only a link is created.

The plus sign on the link is a way to insert a new task or a gateway. Shown in the upper inset is the plus sign when it is activated by the mouse. Selecting the orange plus will insert a task and selecting the green, with the diamond, will insert a gateway.

The icon in the upper right of the task is the toggle to show and hide the details associated with the task.

The name of the task can be changed by directly editing the text. The rectangles below the start and stop nodes indicate that you can also provide text there as well. Just select the rectangle and type.

Task details

BPMN-2 modeling
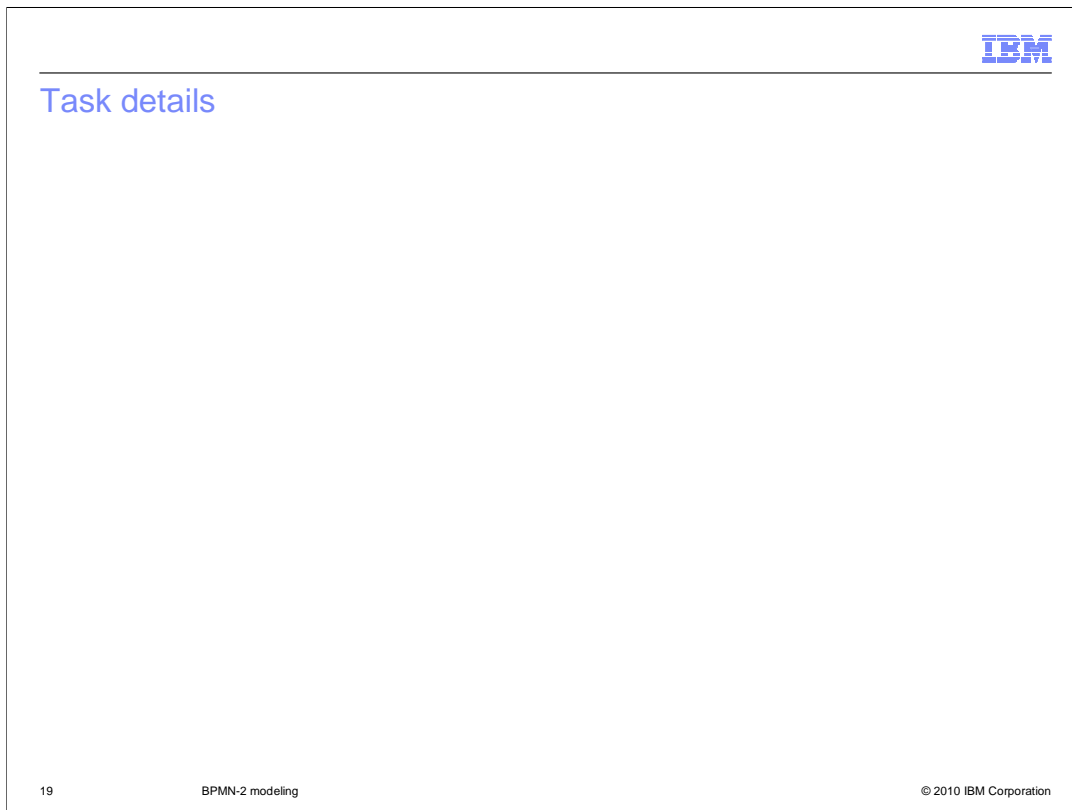
The task details provide a few more sections that are specific to a process task.

The performers, the inputs and the outputs all link back to elements defined in the business vocabulary.

The performers actually map to roles and not individuals. If this is a manual task performed by a specific group of employees or 'actors' then you can specify this here.

For instance, the task to stock the shelves in a retail store outlet is done by the 'clerk'. If the role of the clerk is not yet defined in the business vocabulary, you can do this as you add the association from the details pane.

The inputs and outputs define the data that flow into and out of the task. You can add the associations here or you can do it when creating the links to the data objects in the process diagram. Again, if they don't exist yet, you can use the add button to create new ones. This is a common theme in all of the details throughout Compass and the Business Designer.

The value stream mapping lets you specify a total duration for the task and additionally define how much of that goes toward adding value to the business and how much of that time does not add value. It is completely subjective. You decide. If you chose to provide this information the values are accumulated for each task that has this information and is displayed for you when you run a scenario walkthrough.

The URL field lets you create a custom hyperlink. When you highlight text in the description the URL field becomes enabled. Type in the URL and the highlighted text becomes a hyperlink. To change it or to remove the hyperlink you need to highlight the text again.
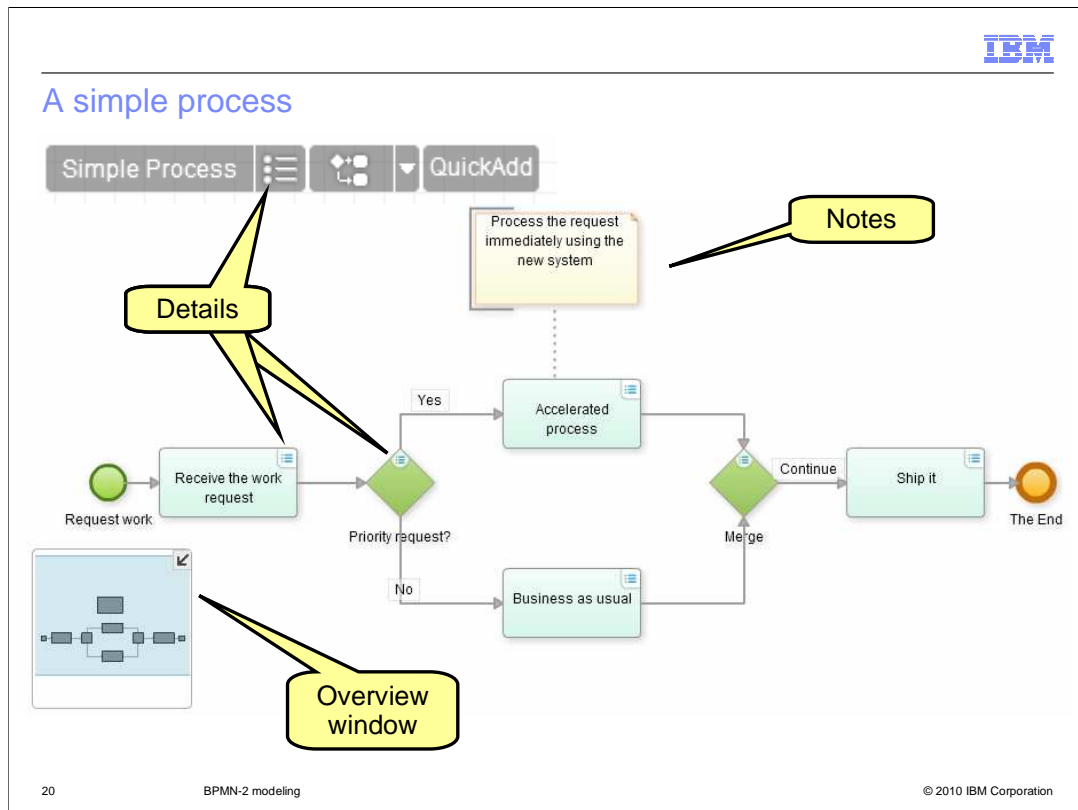
A simple process

This simple process uses all of the elements available with the simple palette. The process diagram shown here is not in edit mode. You can tell by the absence of the link handles.

A few things to note.

The overview window is an alternate way to navigate around large documents. The blue area represents the viewing area of the browser window. In this case the diagram is fully displayed in the browser window. For larger business processes you can quickly navigate to the area that is not in the viewing area by holding the right mouse button down over the blue area and moving it with the mouse.

There is only one symbol for the gateway, it doubles as both the decision and a merge.

The details are also available for viewing. If you open the details from the menu bar, the details pane will stay open and the contents will change as you select different elements, providing a convenient way to review the business process.

Transforming to a modeling project

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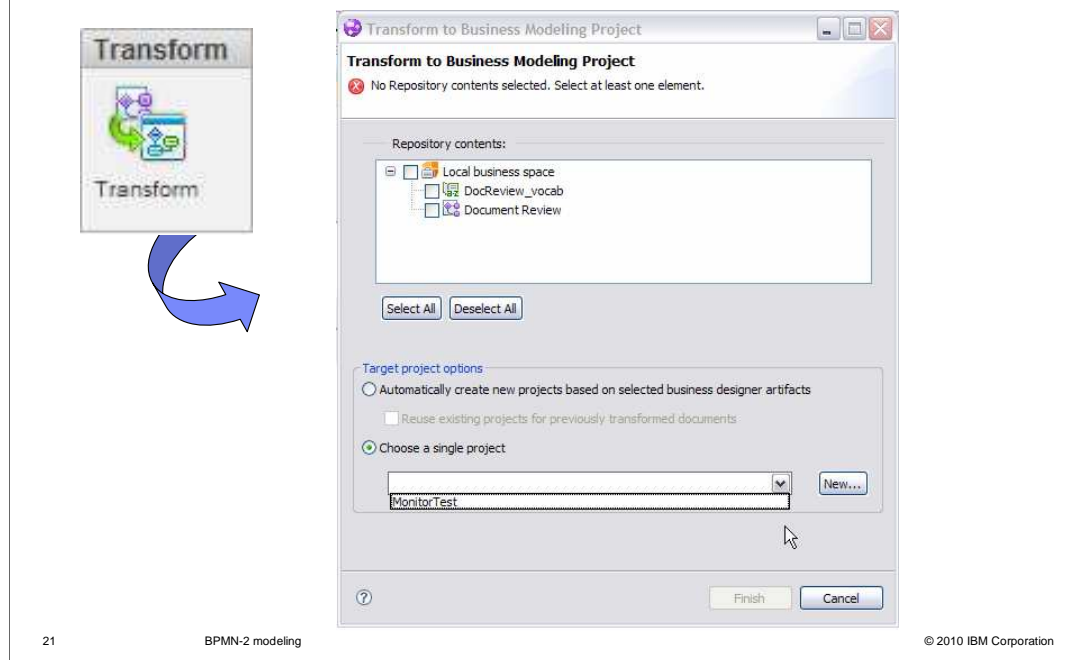
If at some point you want to move to the next step and automate all or part of a business process, you can transform it into a modeling project. Even though this discussion is primarily about BPMN-2 and the Business Designer perspective, it is useful to understand how the model is transformed into a modeling project.

You begin by selecting the transform button from the menu bar. You are then presented with the transformation dialog, where you can select the documents you want to transform. You can let the transformation engine create new projects based on your business designer artifacts, create a new project, or merge your model into an existing project.

A simple process imported to WebSphere Business Modeler
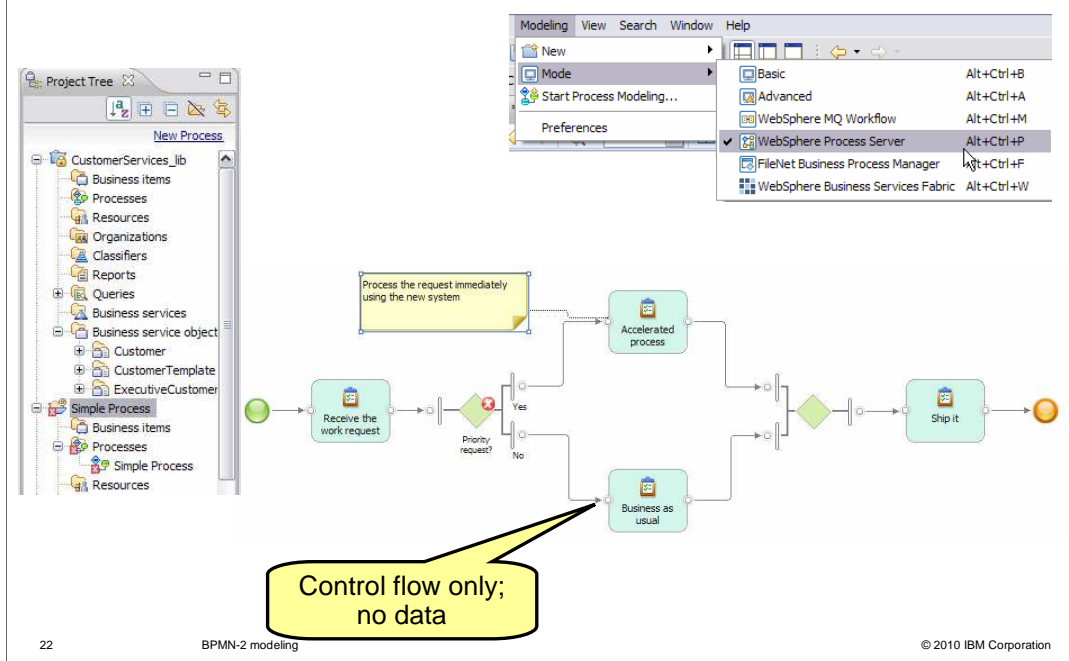
Here you see the simple business process as it is represented in the business modeling project.

The error indicator on the decision is a visual cue that there is further work needed to implement the logic of the decision. The error is displayed because the modeling mode is set to WebSphere Process Server, anticipating modeling for implementation.

Inspecting the imported business process, you'll notice that there is no data flow represented, only the control flow. This is indicated by the open circles at the end of the links.

This highlights one of the key differences between BPMN 2.0 and WebSphere Business Modeler. The next few slides will illustrate how data are represented in BPMN 2.0 and are transformed when importing to WebSphere Business Modeler.

Adding data to the business process
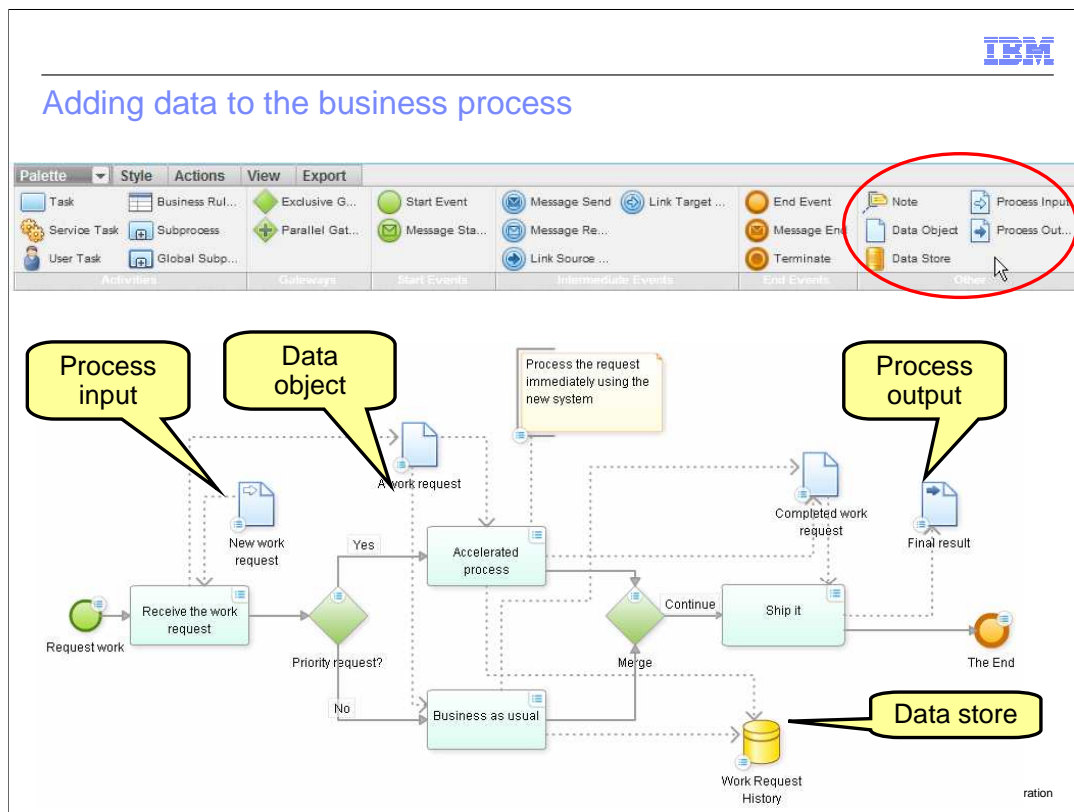
Returning back to the business designer process editor and

switching to the detailed palette, you'll be able to work with inputs, outputs and data objects. They are available from the drop down menu of the notes button or you can get the view shown here by selecting the word 'palette' in the menu title. This will expand or collapse the menu bar horizontally.

The focus here is on the data that will flow through the business process. There are data objects, data stores and then the input and output to the process. The data object is like a variable and the data store is a persistent store. The process inputs and outputs allow the data to flow into and out of the business process. You use the details pane to set the data type for the all of these data modeling elements.

Associate the data type to the data objects before making connection. When you do this the inputs and outputs of the tasks are automatically populated with the data type when the links are made between the data object and the task.

After you have made all of your links, use the 'advisor' to make sure that you haven't missed something.
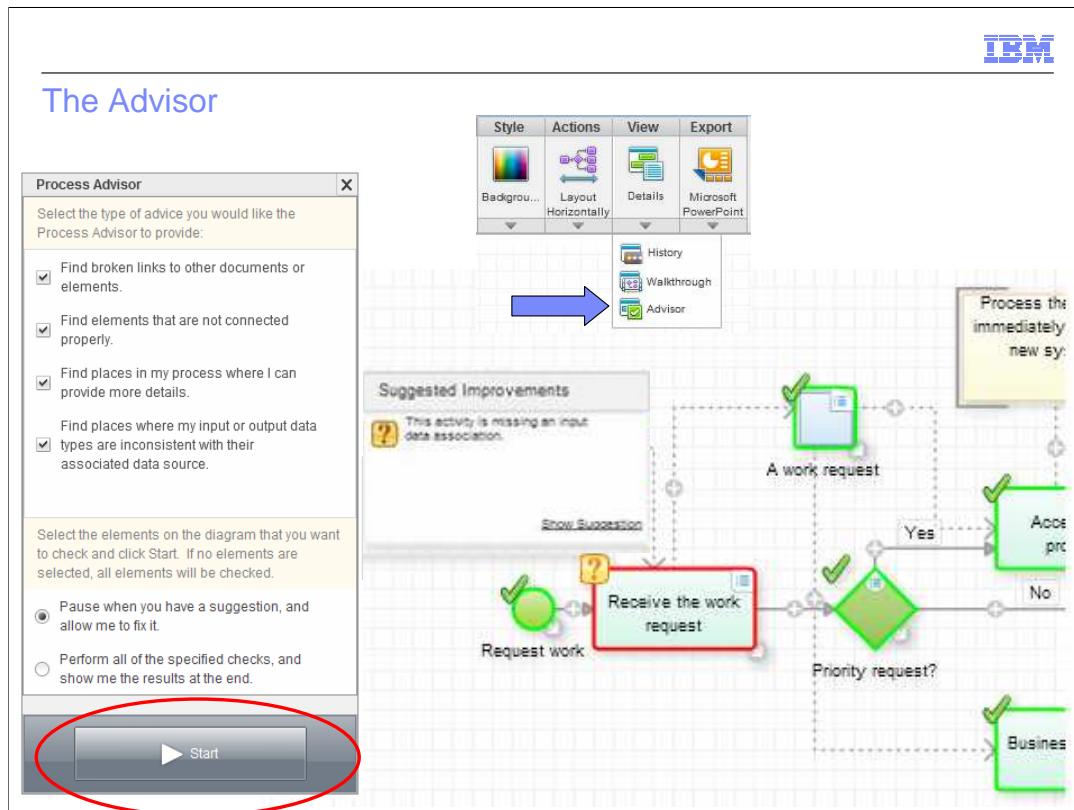
The Advisor

It is easy to miss a detail or two. Running the process advisor will find some of the details that slipped by. Running the advisor is extremely important if you are planning on transforming your model to a modeling project. A missed detail in the Business Designer shows up in the modeling project as extraneous elements and sometimes broken links. Running the process advisor will save time by preventing rework.

Selecting the advisor from the view toolbar will invoke the process advisor dialog shown on the left. In the process advisor dialog you can select the things you'd like to check for, you can….

-Find broken links to other documents or elements

-Find elements that are not connected properly

-Find places in the process where you can provide more detail

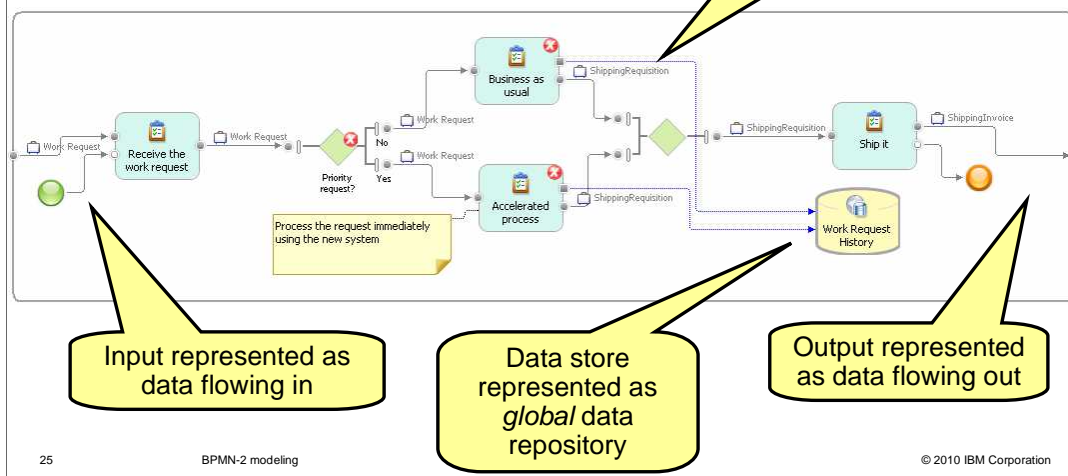-Find places where the input or output data types are inconsistent with their associated data source.

Once the selections have been made, you can choose to pause at the first error or run through the entire business process, flagging each error.

Pressing the start button will initiate the verification and give you an indication of success or failure. In the case shown here, the input to the 'receive the work request' task was not specified. All of the other elements in the business process are ok, as indicated by the green check mark.

The WebSphere Business Modeler representation

- Data optimizations
  - When types are the same on both sides of the link
    - Data are combined with the control flow
 - Otherwise
    - Local repositories are used

Data objects have been moved into the flow

Input represented as data flowing in

Data store represented as *global* data repository

Output represented as data flowing out
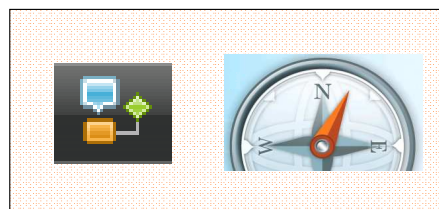
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Switching back to the modeling project you can now see how the data flow for the simple business process is transformed. The data flowing into the business process is represented as data on a data flow link. The data objects have been moved into the flow and the data store has been transformed into a global repository. The data flowing out of the business process is represented as a data flow leaving the business process.

Again the errors are displayed because the modeling mode is set to WebSphere Process Server. The errors on the 'business as usual' and 'accelerate process' tasks indicate that the global repository cannot be used with the WebSphere Process Server. The global repository will need to be converted to either a local task, a global task or a global service. The error on the decision node indicates that there is logic to be completed if this process is to be run in WebSphere Process Server.

The BPMN-2 modeling style explicitly displays the data objects in the diagram. WebSphere Business Modeler allows this style with the use of local repositories, but this is not the norm in business modeler. Therefore there are some optimizations that are made during the transformation. If the data types are the same on both ends of the link, or on all the inputs and outputs of the decision, the data objects are not displayed. Instead, they are incorporated into the control flow as is the norm for WebSphere Business Modeler.

Summary

- The Business Designer perspective
- Introduction to the document types
- Working with documents
  - Actions, upload, view and transform
  - Exporting
- Creating a business process model
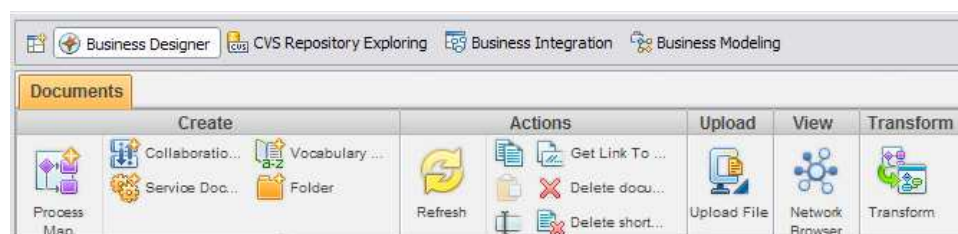
After being introduced to the new Business Designer perspective of WebSphere Business Modeler and reviewing the available document types and tools, you learned how to create a simple BPMN-2 business process model.

The Business Designer perspective in WebSphere Business Modeler, provides a subset of the WebSphere Business Compass features. The features provided are focused on developing a BPMN-2 business process model in a single user environment.

The process editor has two palettes, a simple and advanced, to allow you to work at the level you need to work at, depending on the task at hand.

There are additional tools in the Business Designer perspective for documenting, validating and managing changes over time. These are the advisor, history and walkthrough tools which are built into the process editor.

After completing your BPMN-2 process model, you can transform it into a traditional WebSphere Business Modeler modeling project where you can run simulations and extend the model as needed to create an implementable model. When developing your process models iteratively, you can use the compare-merge feature to merge in changes to your WebSphere Business Modeler modeling projects.

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