

# WebSphere Business Events

## *Designing events and actions*



@business on demand.

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In this presentation you will build on the concepts described in the Overview presentation on Events, Actions and Intermediate Objects. You will then take these a step further to allow you to understand how to design and create events and actions.

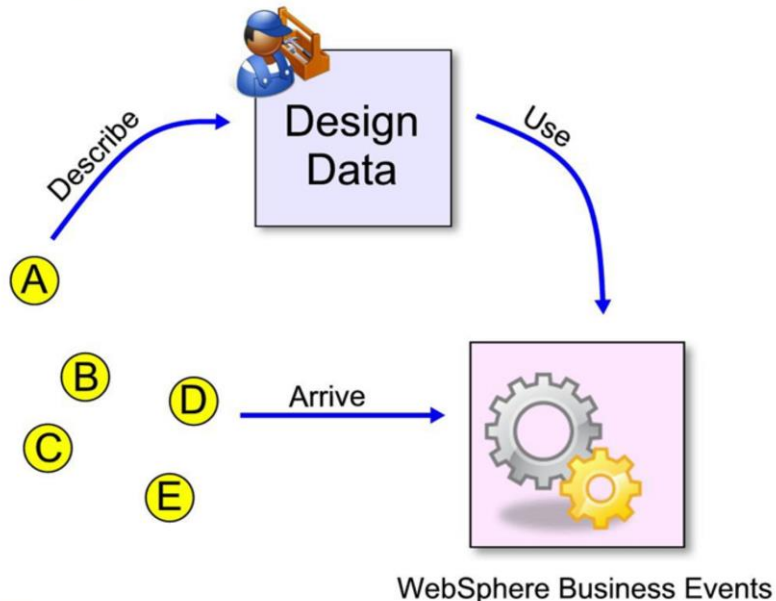
## Agenda

- Designing events
- Designing actions



This presentation will provide you with the information and skills necessary to enable you to design and implement the descriptions of events arriving at the server and actions originating from the server.

## Choosing the events

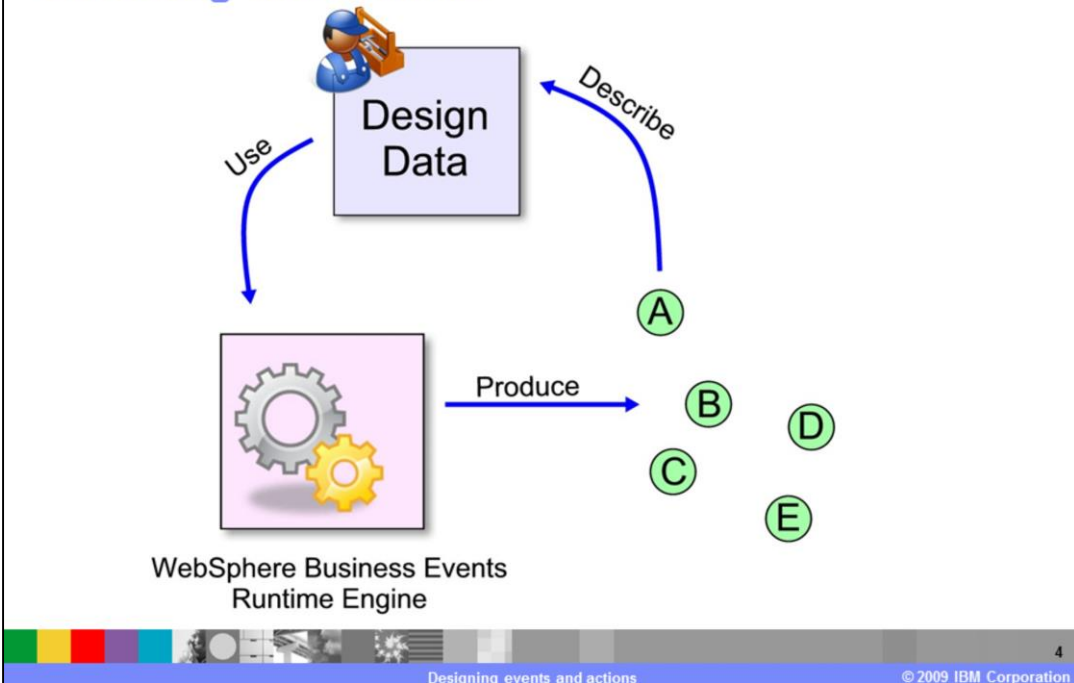


The purpose of describing events to the WebSphere® Business Events product is to allow the runtime engine to recognize them and ultimately have interaction sets processed against them. If the events are **not** defined to the runtime then if they occur the runtime will ignore them as being unknown. With this in mind, the events that you then want to define are the events that will actually be used during the pattern matching. There is no need to define events that are not used during this processing, but this will do no harm. Alternatively, if events are not defined to the runtime, then no interaction sets can be created that are triggered by their potential arrival.

The selection of which events should be defined is achieved as a result of a collaboration between the IT developer and the business user. The IT developer is responsible for sourcing the real event data. The business user is responsible for authoring the interaction sets that work against the events.

The events are described by the IT developer within the Design Data tool and those descriptions are eventually used by the runtime when actual events arrive at the server. The diagram shows the IT Developer having described the events using the Design Data tool which are then used by the runtime engine to interpret actual instances of such events when they arrive at the engine for processing.

## Choosing the actions

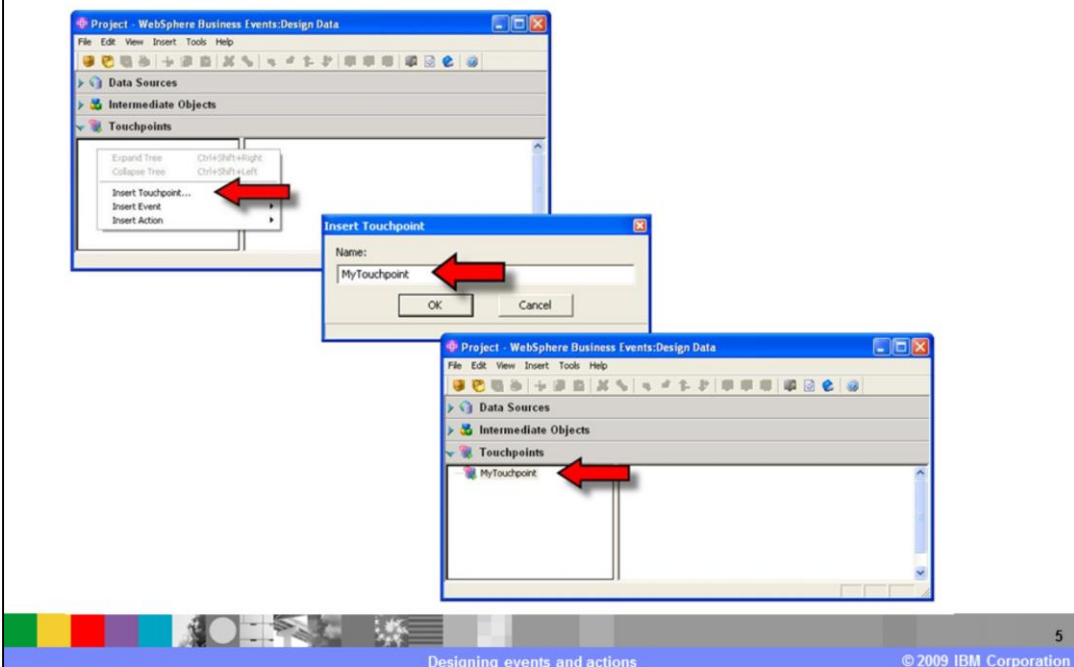


Similar to the selection criteria used to determine which events should be defined is the selection of which actions should also be defined. Remember that an action is a description to the runtime of a request for an external system to be notified to perform some task. The notion of which actions need be defined is likely to be driven by the business patterns captured by the business user. Although the business user might not know how an external system is to be invoked, the business user knows that he wants something to happen when rules are triggered. This *something* is described by an action. By being given a list of *things* that need to be invoked, the IT developer can build a list of actions that can then be used in the WebSphere Business Events interaction sets.

The IT developer will use the Design Data tool to describe the actions that can be produced from the runtime and these definitions are used by the runtime when the actions are sent.

The diagram shows the IT developer describing the actions using the Design Data tool. Those definitions are then being used by WebSphere Business Events to produce instances of the actions when instructed to do so by the execution of the interaction sets.

# Touchpoints



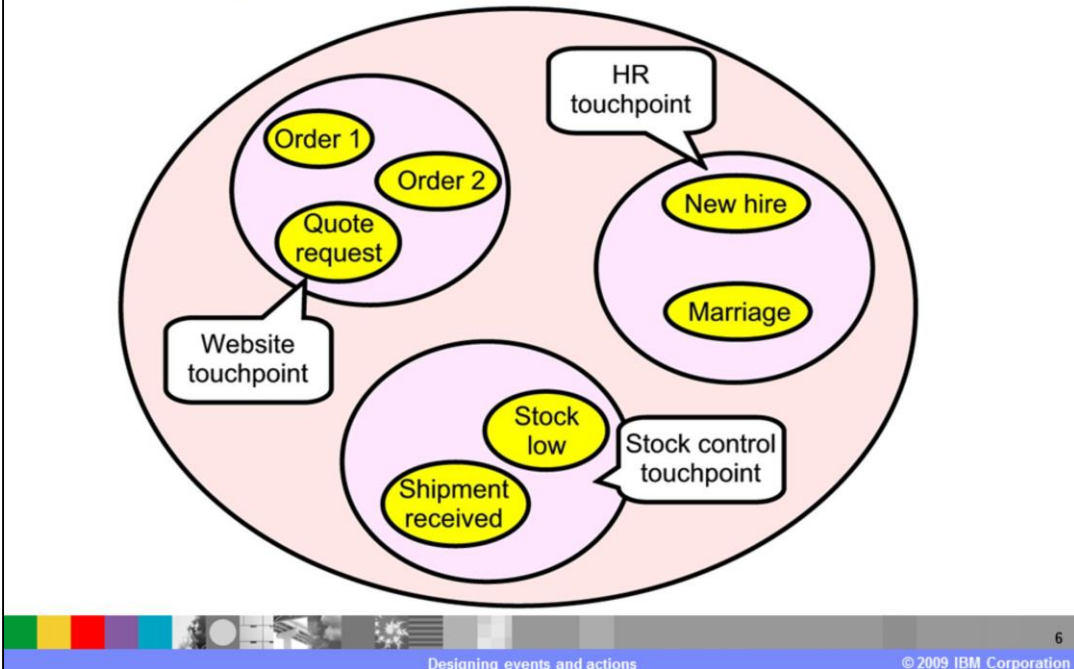
Touchpoints are a grouping mechanism provided by WebSphere Business Events. The model behind Touchpoints is that when an event is presented to the runtime, the event is shown to have originated from some logical source. An example of this is events that come from a customer ordering system such as a Web site with a shopping cart associated with it. When an event is defined through the Design Data tool, each event is associated with its corresponding Touchpoint from which it is supposed to have arrived. Therefore, in this example the touchpoint could be defined as the Web site. An event can **not** be created without associating it with a Touchpoint.

In addition to acting as a description of where events have originated, Touchpoints also serve as the description of where actions are destined to be sent.

From an operational perspective, Touchpoints serve no technical purpose. Whether an event is associated with one Touchpoint or another does **not** affect either its operation or the **actual** source from which the data came. Similarly with actions, an action describes where it is going and is not governed by the Touchpoint with which it is associated. The value of Touchpoints are solely for documentation purposes. Whether you choose to define all events against a single Touchpoint or define different events against different Touchpoints will not modify the behavior of the solution.

Touchpoints are created in the Design Data tool. From within the Touchpoints area, a right click in the left panel produces a popup menu which contains an option to insert a new Touchpoint. When selected, a naming dialog opens into which the touchpoint name can be entered. Upon completion, a new Touchpoint can be seen in the Touchpoints area.

## Describing the events



Designing events and actions

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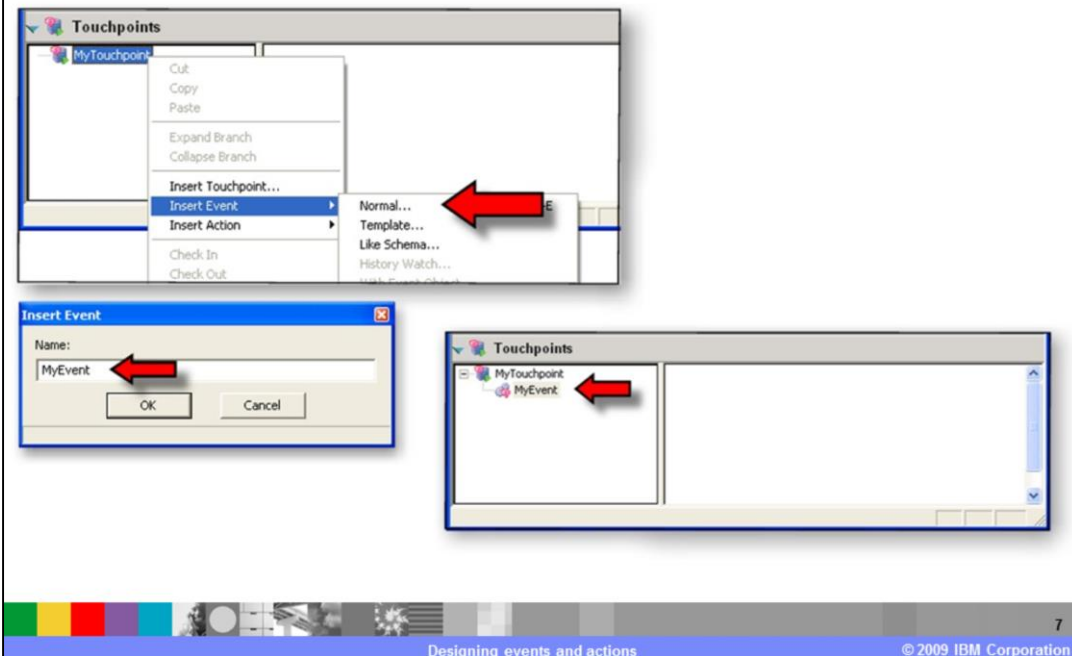
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Events have to be described in order to recognize their arrival and the data contained within them. An event's description consists of its name and an optional data payload that can arrive as part of that event. If you think back to the attributes of an event, one of its primary components is its type. Saying that an event has been detected is not anywhere near as useful as saying that an event of a particular type has been seen. For example, an order event is very distinct from a quote request event. Even though both are technically events, the difference between them is significant.

Within WebSphere Business Events, the name of the event is also used as the description of its type. So you can define two different events, one called "Order" and another called "Quote Request" where the name of the event is also used as the type of the event.

When an event is created, it is always created against a Touchpoint. The diagram illustrates three Touchpoints, with events being associated with each Touchpoint. It is not possible to create an event without associating the event against some Touchpoint. Remember that Touchpoints are provided for logical grouping and are not used during the technical operation of the solution.

## Creating an event



To create an event, a Touchpoint must already have been defined. The event can then be created and associated with that Touchpoint. By right-clicking on the Touchpoint, a pop-up menu is presented from which the Insert Event and then Normal menu items can be selected. This results in a naming dialog to provide a name for the new event. When completed, the new event definition can be seen beneath the Touchpoint it was associated with.

## Describing the event fields

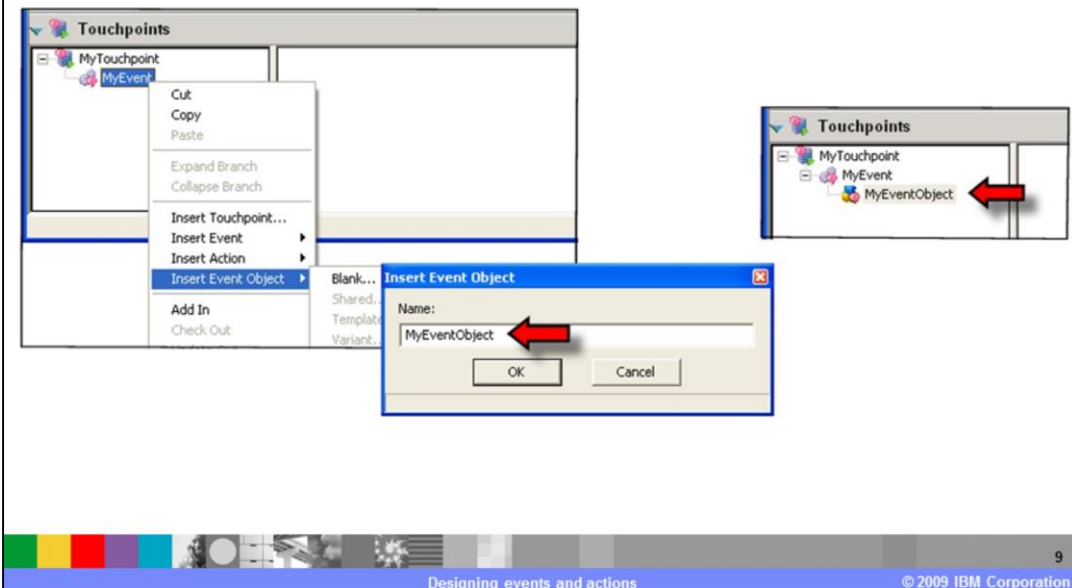
Event Name	
Field Name	Field Type
Field Name	Field Type
Field Name	Field Type
Field Name	Field Type



An event can optionally have payload data associated with it. This is the data that arrives with the event and can provide both context and additional information about it. In order for WebSphere Business Events to consume this data, the event definition must be instructed to recognize the information. This is achieved by describing additional data fields that can be associated with the event. The container of these fields is called an Event Object. One or more event objects can be created against the event definition. For each event object, sets of fields can be entered. A field is used to represent a piece of data supplied with the event. A field definition has both a name and a data type.

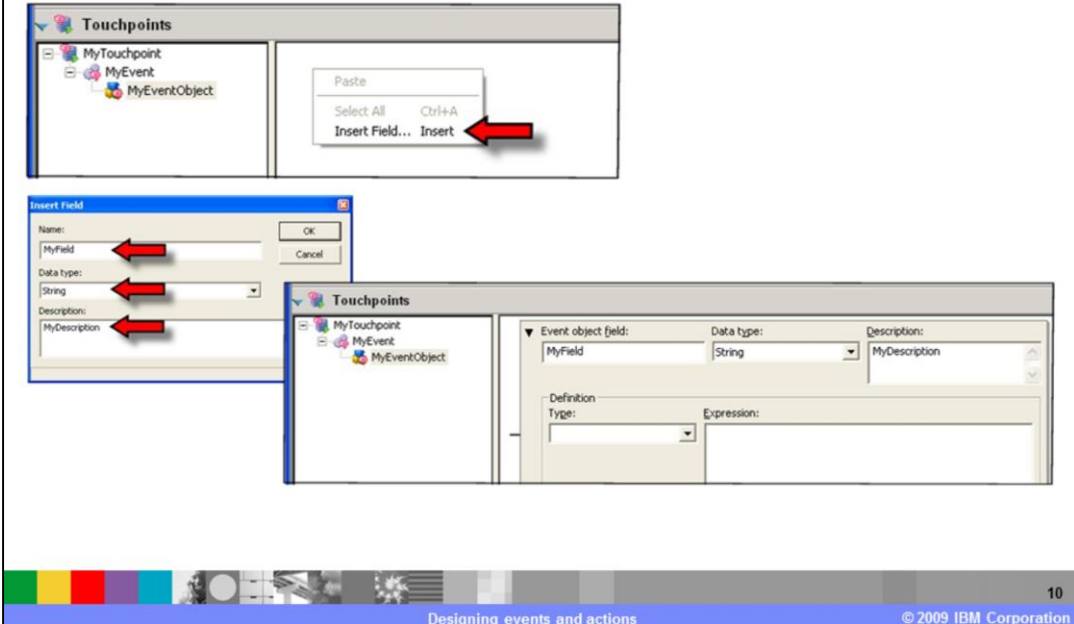


## Creating an event object



To define the fields to be associated with an event, one must first create an event object. This will act as the container for the fields. To create an event object you start with an existing event. By right-clicking on the event definition, you find a popup menu of options. One of the options is called Insert Event Object. When selected, a naming dialog is presented and after entering a name, the newly created event object can be found underneath the associated event.

## Adding fields into the event object



Once the event object has been created, fields can be added to it. To add a field, select the event object in the left panel and in the panel on the right, right-click to bring up the pop-up menu. From that menu, an option to insert a field can be found. Once selected, the insert field dialog is displayed. Within that dialog, the name and data type of the field can be entered. Upon completion, the new field can be found in the right panel associated with the event object.

The data types available for fields include integer for integer numbers, real for floating point numbers, string for text, Boolean for true/false values and Date/Time for date and time values.

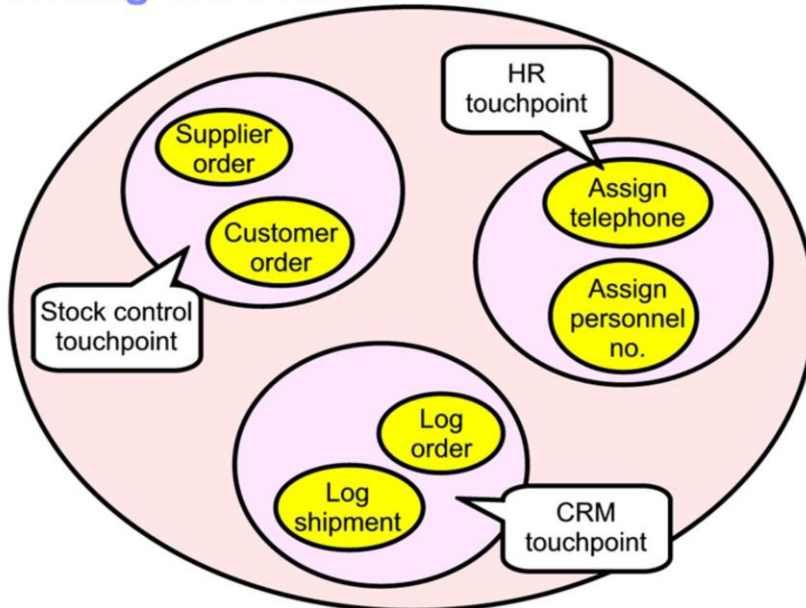
Multiple fields can be defined by repeating these steps to add as many fields as needed. The field details can be shown or hidden by toggling the arrow button in the upper left of the field.

## Setting an event default field value

The screenshot shows a configuration window for an event field. At the top, there are three sections: 'Event object field:' with a text input containing 'MyField', 'Data type:' with a dropdown menu set to 'String', and 'Description:' with a text input containing 'MyDescription'. Below these is a 'Definition' section. Inside 'Definition', there is a 'Type:' dropdown menu set to 'Constant Default' and a 'Default value:' text input containing 'My Value'. Two red arrows point to the 'Constant Default' dropdown and the 'My Value' text input, respectively. The bottom of the window features a blue bar with the text 'Designing events and actions' and '© 2009 IBM Corporation'.

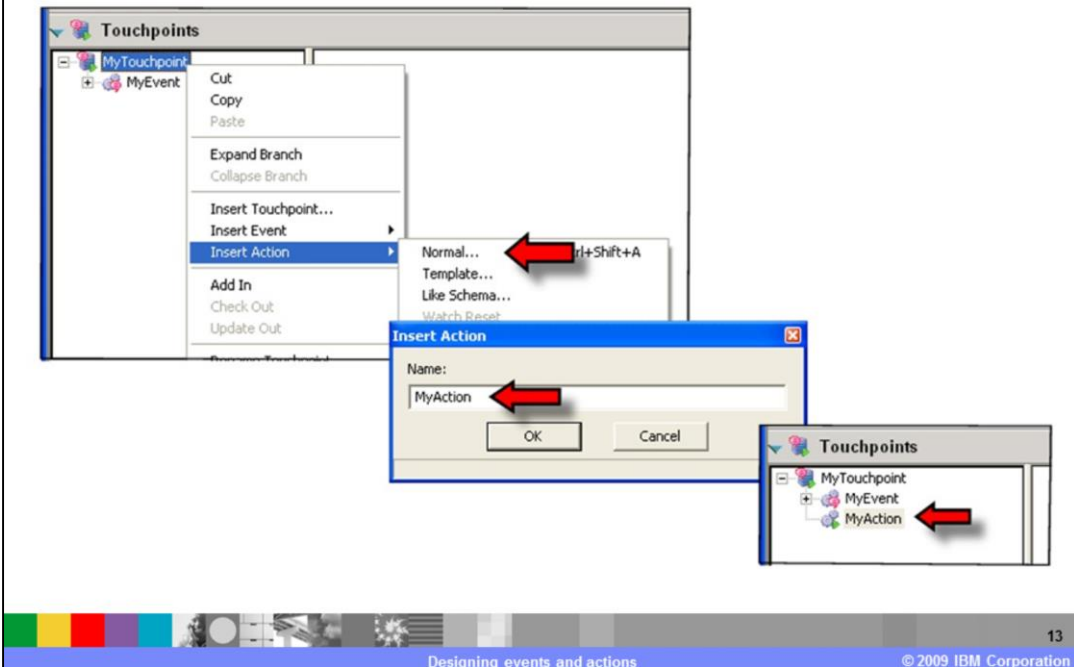
Normally a field in an event arrives as part of the physical event payload data. Additionally, WebSphere Business Events allows an event's field value to take a default value if the event data is omitted when the event arrives. This ensures that if some value is expected, then a value is present even when not supplied as part of the incoming event payload.

## Describing the actions



When an action is called by the WebSphere Business Events runtime, this is a request to have an external system perform some work. An action has to be described to WebSphere Business Events in order for the action to be externalized. Just like events, actions are associated with Touchpoints. Which Touchpoint an action is associated with has no effect on the operation of the solution. The diagram illustrates an example situation where there are three Touchpoints and each Touchpoint has some actions defined against it.

## Creating an action



Actions are created using the Design Data tool. To create an action, right-click a Touchpoint against which the action should be associated. From the popup menu, the insert action menu item can be used to create a new action. When selected, a naming dialog is presented into which the name of the new action can be entered. Once completed, a new action can be seen under the Touchpoint.

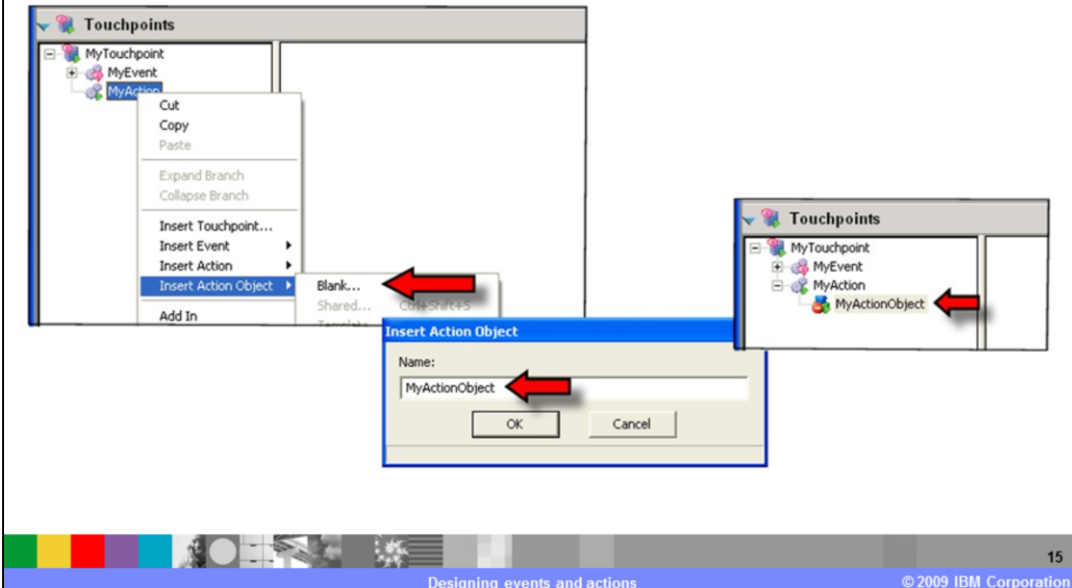
## Describing the action's data

Action Name	
Field Name	Field Type
Field Name	Field Type
Field Name	Field Type
Field Name	Field Type



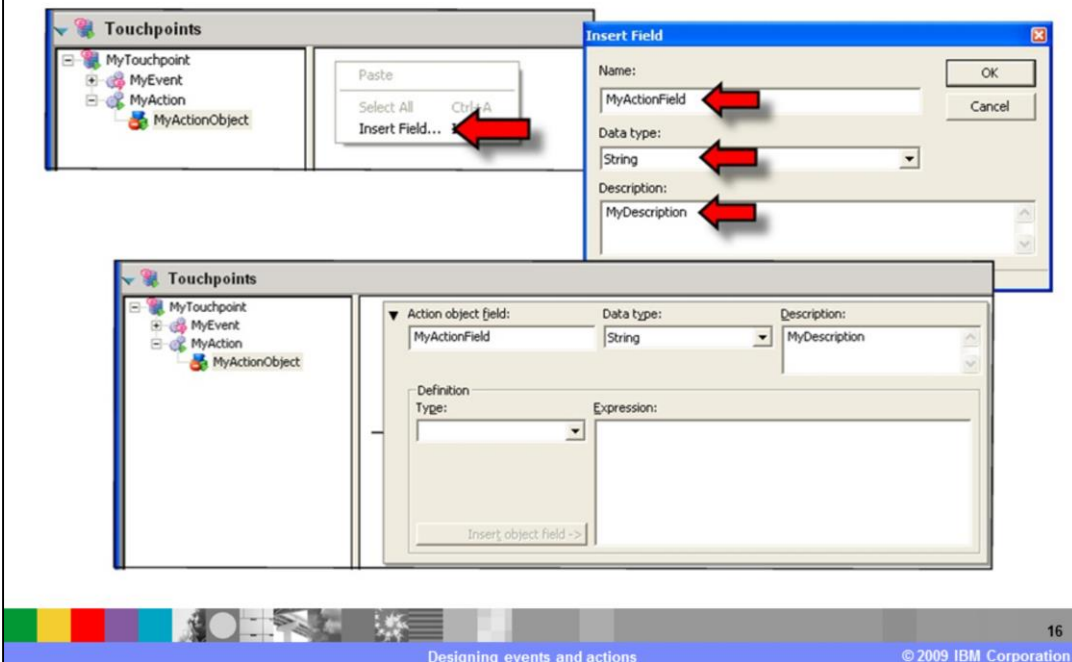
When an action is requested to be transmitted by the runtime, the action can have optional data associated with it. This data is passed with the action to the external system that is the target of the request. How the data is used is not defined by WebSphere Business Events only that it is passed to the system. In order for the WebSphere Business Events runtime to pass data, the data associated with the action must be described. The fields in the action data are described within the context of an Action Object.

## Creating an action object



Fields in the action are defined in one or more containers called action objects. The action object must be created before the fields can be defined. An action object is created against the action for which the fields are to be defined. To create the action object, right-click an existing action definition and from the popup menu, select the Insert Action Object menu item. A naming dialog is presented into which a name for the action object can be entered. Once completed, the new action object can be found associated with the action.

## Adding fields into the action object



Once the action object has been created, fields can be added to it. To create fields, first select the action object which is to contain them. Next, right-click in the panel on the right and from the menu select 'Insert Field...'. A dialog is presented into which the name, data type and description of the field can be entered. Upon completion, a new field is seen in the right panel when the action object is selected. Multiple fields can be added into the action by repeating this task.



## Summary

- Design events
- Design actions



In this presentation you have learnt how events and actions are designed and implemented using the WebSphere Business Events Design Data tool.

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