



IBM Software Group

# WebSphere Business Events

## *Overview, architecture and concepts*



@business on demand.

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This presentation will give you an overview of the WebSphere® Business Events product, its architecture and some of the high-level concepts which are critical to your understanding of WebSphere Business Events as a Business Event Processing solution.

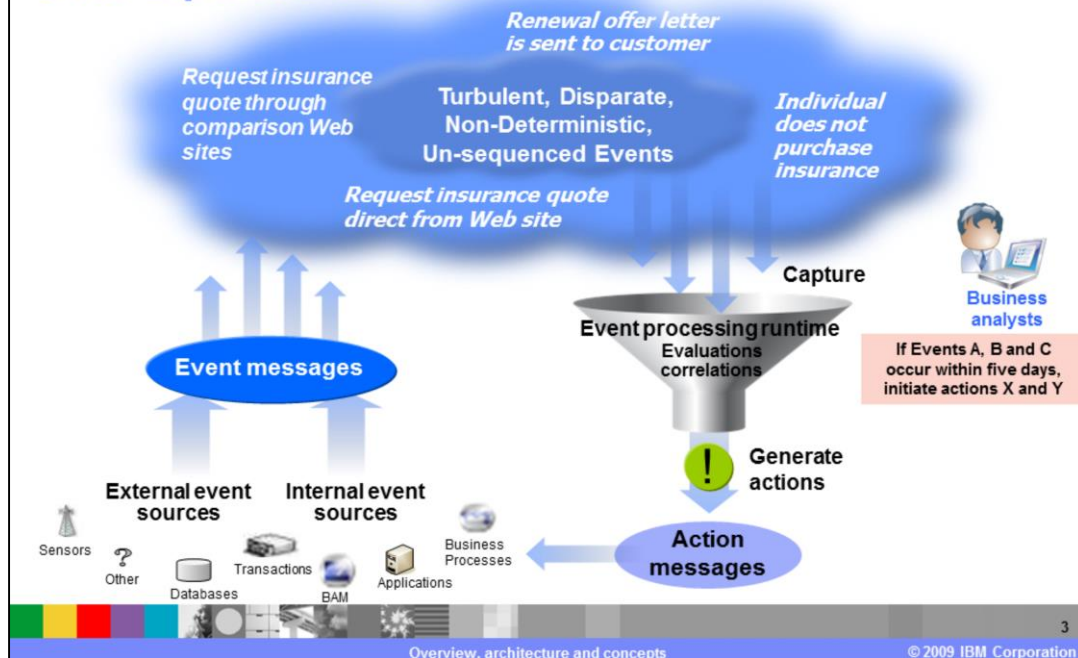
## Agenda

- Introduce the WebSphere Business Events Concepts
- Introduce the WebSphere Business Events tools
- Depict the runtime architecture



The aim of this presentation is to introduce the concepts used in WebSphere Business Events and its runtime architecture. The presentation will also briefly describe the WebSphere Business Events tools.

## Correlation of events from different sources, over a period of time

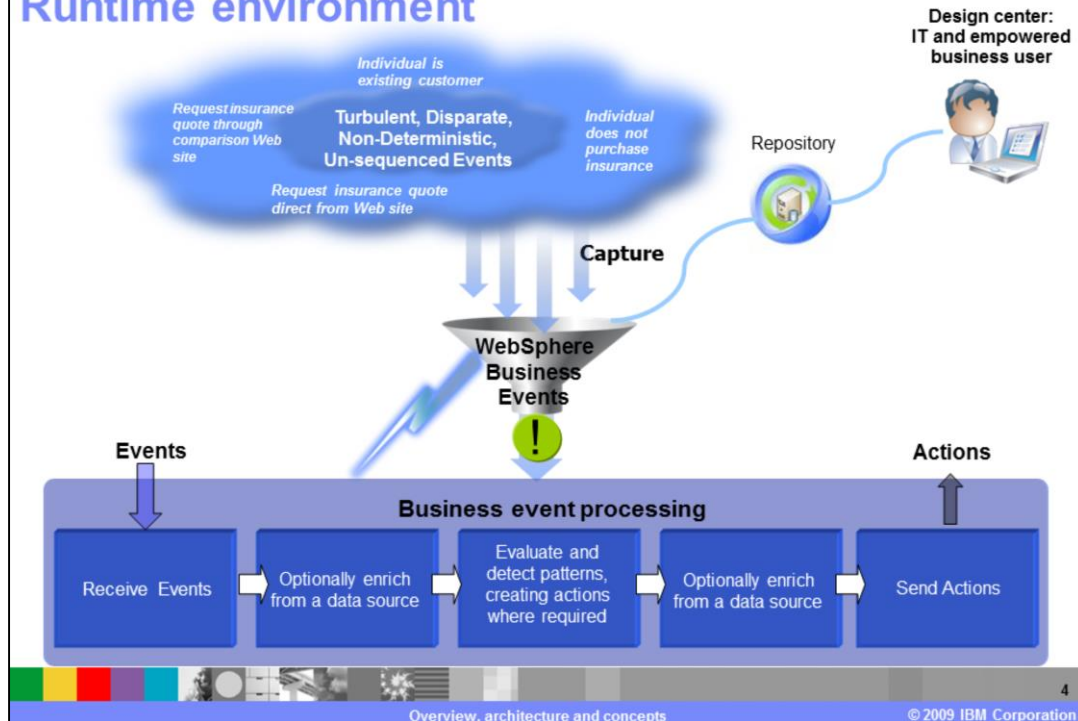


This chart summarizes the essence of WebSphere Business Events. In the depicted example, an insurance organization wants to maximize customer retention. When a customer's insurance policy is due for renewal they are automatically sent a renewal offer letter. The customer then starts investigating other options and so they use comparison Web sites to get a range of quotations, some of which are provided by the customer's current insurer. Additionally the customer uses the insurer's Web site directly to check what quote they can get as a new customer. All of this activity by the customer generates business events. Additionally, WebSphere Business Events can generate an event internally when the insurer **does not** receive a renewal order from the customer within three days of them getting the set of quotations from the various Web sites.

Taken separately, these events are quite meaningless. They come from different sources, happen over a substantial period of time and do not seem to indicate any kind of behavior. Correlated, they become a powerful business tool that lets a company proactively and precisely detect situations they can act upon. In this case, you can imagine that when this situation is detected it can trigger a business process that can initiate a customer retention call, or a personalized mail.

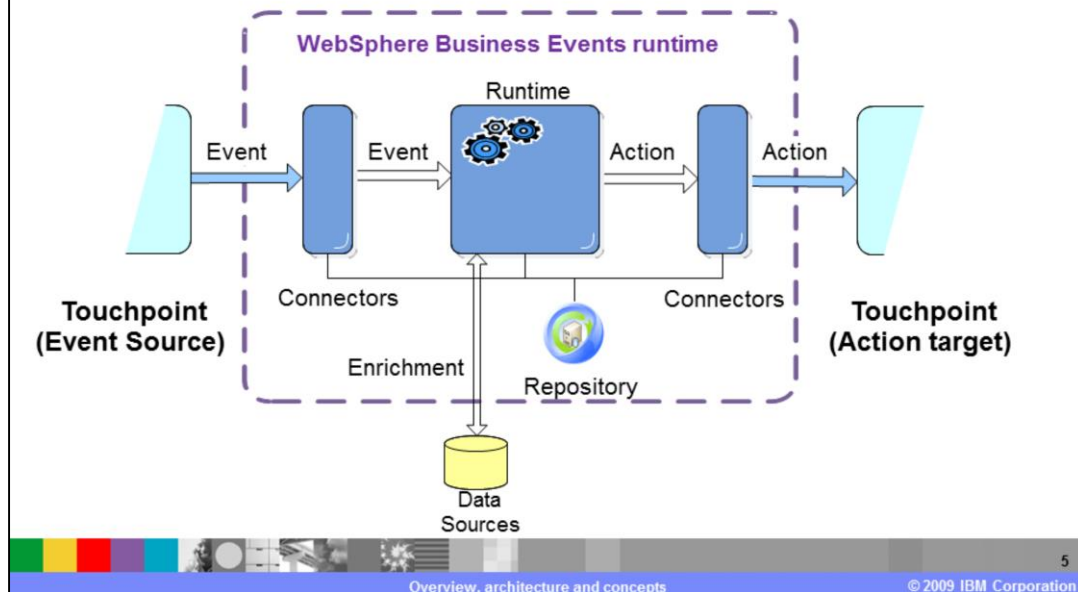
WebSphere Business Events lets you capture, describe and correlate various **events** and take **actions** to respond to pre-defined business conditions derived from those events, and additional data, if necessary. Those conditions are defined by business users, based on the events and actions defined by IT developers.

# Runtime environment



This chart depicts the event processing which happens in the WebSphere Business Events runtime. At a high level, events are received and enriched if necessary. Additional information can be retrieved by way of connection to a data source. Events are then correlated to detect patterns. If those patterns match with specific criteria known to the business events engine, the corresponding actions are fired, if required actions can be enriched from external data sources.

## Business events processing

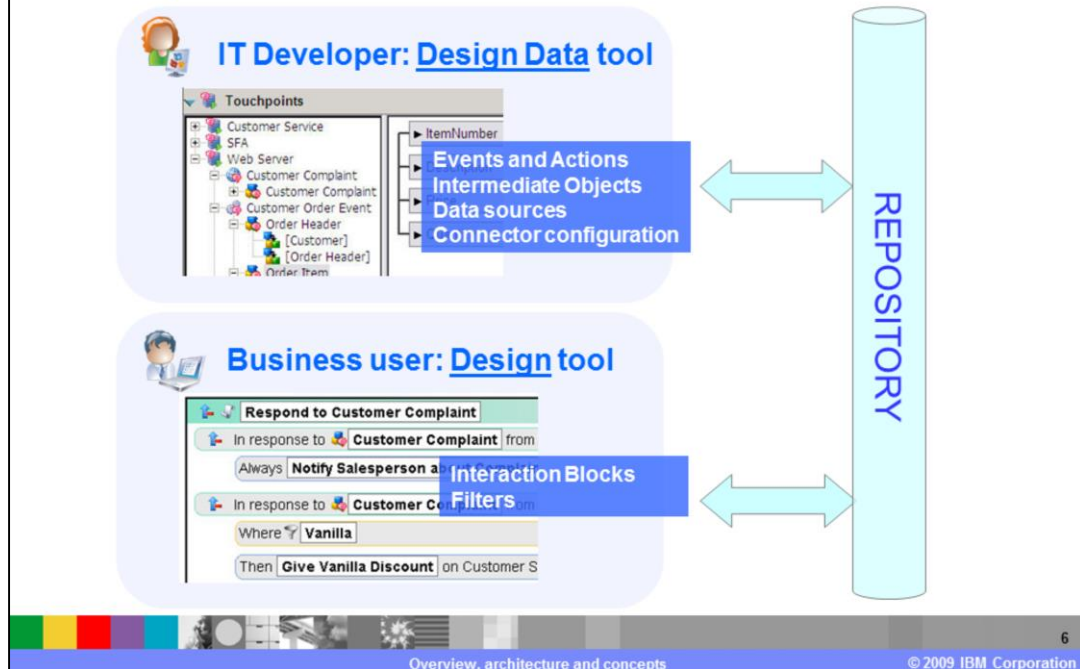


Events for WebSphere Business Events are produced by “touchpoints.” A touchpoint can be any system within an organization, such as a database server, a Web server, a power meter or an ATM. The touch points send events or receive events to and from connectors. Connectors transform events to a common format understood by the WebSphere Business Events runtime. Similarly, they transform from this common format to the format understood by the action target, such as Web services.

The connectors delivered with WebSphere Business Events include JMS, SOAP, FTP and file system connectors. Alternatively, you can use an Enterprise Service Bus to act as a connector, which publishes events directly into the WebSphere Business Events engine.

WebSphere Business Events uses a repository to store its development and runtime artifacts. IT and business users use specialized tools to define events, actions and the business conditions that will trigger the actions from the events. You are introduced to these tools in the next chart.

## WebSphere Business Events tools



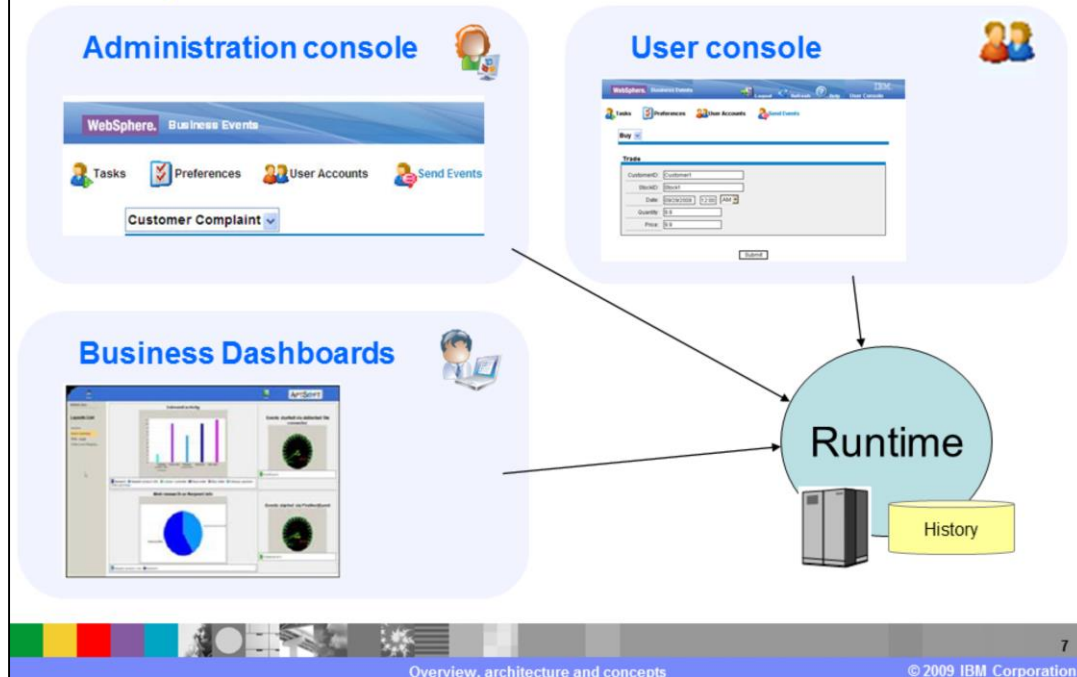
WebSphere Business Events was specifically designed with two classes of users in mind: one called the IT developer and the other the business user.

IT developers use a tool called “**design data**” to define touchpoints, connectors, events and actions which determine how WebSphere Business Events interoperates with the rest of IT middleware. They also define the intermediate objects which give business users a complete and consistent view of the events and actions they need to be aware of. The skills required to achieve this are primarily technical in nature and require an understanding of the protocols and data format. Once created, these objects are loaded into a common repository.

The business users use a tool called “**design.**” The business user uses the design tool to define the business conditions that link the events and actions. For example, the business user might specify that if event A and event B happen within three days of each other, a specific action is executed.

The artifacts created by both tools are stored in a repository, for subsequent use by the tools and the run-time.

## WebSphere Business Events: Web interfaces

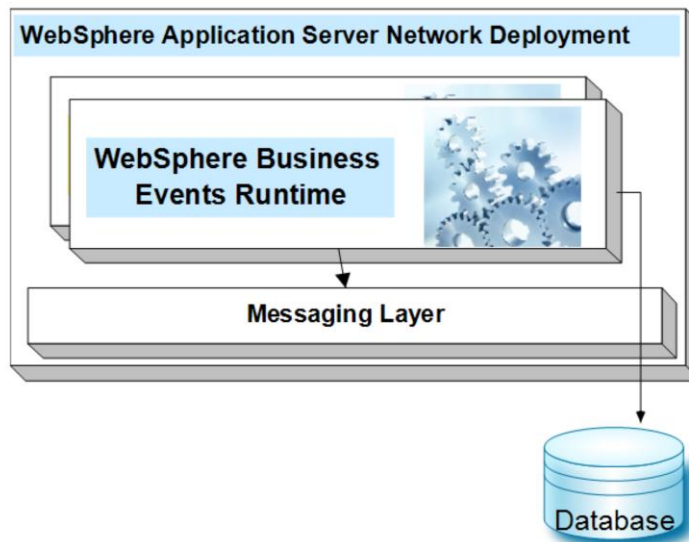


From an administration perspective, users can connect to the administration console to set preferences, administer security and send events manually. Administrators can also monitor the entry of events, interaction block evaluation and the creation of actions. They can also review logs of activity.

Business dashboards can be created to visualize business activity. Dashboards are populated from an historical database managed by the runtime. Alternatively, a powerful business monitoring solution can be created by using WebSphere Business Events in conjunction with WebSphere Business Monitor.

The user console can be used to manually generate events to be delivered to the runtime environment. This is particularly useful for testing specific pattern detection scenarios which are difficult to generate using other test frameworks.

## Runtime architecture



Overview, architecture and concepts

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8

WebSphere Business Events runs on WebSphere Application Server Network Deployment. When installed, it runs as an application within WebSphere Application Server, taking advantage of all of the benefits provided by this environment, including security, scalability and serviceability. The developers of WebSphere Business Events solutions do not need any WebSphere Application Server or Java programming skills. The fact that WebSphere Business Events is hosted on WebSphere Application Server is all but transparent to its operations and use. WebSphere Business Events solutions are built using high level tools that do not require programming knowledge.

A copy of WebSphere Application Server Network Deployment 6.1 is provided for use with WebSphere Business Events. If you already have an existing WebSphere Application Server environment, that can alternatively be used.

During the execution of WebSphere Business Event solutions, a database system is required. The data stored in the tables on this database serves several purposes. Firstly, the runtime configuration for WebSphere Business Events is stored within the database. During initialization, and at other times, the runtime retrieves the descriptions and uses them to process the incoming events. As WebSphere Business Events processes events and executes actions, it can be configured to store information about them for subsequent reference during processing. Finally, all events and actions can be stored for display on the business dashboards.

The supported databases include DB2®, Microsoft® SQL Server®, Oracle and Apache Derby. Copies of DB2 and Apache Derby are supplied with the product for use by WebSphere Business Events.

WebSphere Business Events is based on a publish/subscribe architecture. The supported messaging layers are WebSphere Platform Messaging (which is part of the WebSphere Application Server) or WebSphere MQ version 6.



## Summary

- Introduction to WebSphere Business Events concepts
- WebSphere Business Events tools
  - ▶ Design data
  - ▶ Design
- Runtime architecture



In summary, you have been introduced to some of the key concepts that are central to WebSphere Business Events. You were also introduced to the WebSphere Business Events tools and the runtime architecture.

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