How to Draw BPMN 2.0 Business Process Diagram?
Written Date : March 9, 2016

Business Process Modeling Notation 2.0 makes a great improvement in business process modeling. There are number of new notations introduced in BPMN 2.0. In this tutorial we will show you how to draw choreography task and message. We will draw the example diagram of BPMN 2.0 draft specification (An example of stand-alone Choreography diagram). By finishing this tutorial, you will be able to draw a business process diagram that looks like this:

Drawing a BPMN 2.0 business process diagram
1. Create a new project by selecting Project > New from the application toolbar. In the New Project window, enter Tutorial as project name and click Create Blank Project.
2. Let’s create a model first. Select View > Project Browser from the application toolbar.
3. Open the **Model Structure** page in **Project Browser**

4. Click on the **New Model** button on top of the model list on the left hand side.

5. Name the model **Sales** and click **OK** to confirm.

6. We can create pools directly under **Sales** model without using diagram. Let's try. Right click on **Sales** model and select **Model Element > New Model Element**... from the popup menu.
7. You can search the model you would like to create in the New Model Element window. Enter Po in the Model element type text field to search for Pool.

![New Model Element window](image)

8. Enter Customer as Model element name.

![New Model Element window](image)

9. Uncheck Open specification after create and click OK to continue.

10. Repeat the steps to create the pool Bidder, Manufacturer and Supplier.
11. Right click on the Sales model and select **Sub Diagrams > New Diagram...** from the popup menu.

12. In the **New Diagram** window, select **Business Process Diagram** and click **Next**. Keep the diagram name as provided and click **OK** to create the diagram.
13. We can now start creating the business process diagram. First, let's create a start event. Select the **Start Event** tool from the diagram toolbar, and then click on the empty area of the business process diagram.

![Diagram showing the start event](image)

14. Now click on the start event and drag out the **Resource Catalog** icon.

![Diagram showing the start event and Resource Catalog icon](image)

15. Release the mouse button on the blank area of the diagram, and select **Choreography Task** from Resource Catalog.

![Diagram showing the choreography task](image)

16. Enter **Order Request** as the name of the choreography task and press **Enter** to confirm.

![Diagram showing the Order Request task](image)

17. Right click on **Order Request** and select **Open Specification**...
18. Select *Customer* pool as **Participant 1**.

19. Select *Manufacturer* pool as **Participant 2**.

20. Select *Customer* pool as the **Initiating participant**.

21. Click **OK** to confirm. Now the task *Order Request* is done. You can see that the initiating participant is showing in the same color of the task, with the non-initiating participant showing in gray.
22. Let’s create a message between Customer and Manufacturer. Click on the Order Request task and drag out the Resource Catalog icon.

23. Release the mouse button above the choreography task and select Message from Resource Catalog.

24. Then, select New Message Flow from "Customer" to "Manufacturer" from the popup menu.

25. Enter Order as the name of message and then press Enter to confirm.
26. Create an **Event-based Exclusive Gateway** from *Order Request*. Again, click on *Order Request* and then drag out the **Resource Catalog** icon. Release the mouse button in the empty space of the diagram and select **Gateway** from Resource Catalog to create a gateway.

![Event-based Exclusive Gateway](image1)

27. Enter *Can Fulfill Order?* as the name of gateway and press **Enter** to confirm. You can insert a line break by pressing **Alt + Enter**.

![Can Fulfill Order?](image2)

28. Right click on the gateway and select **Type > Event-Based Exclusive Decision/Merge (XOR)**.
29. Repeat the steps to complete the business process diagram, like this:

![Business Process Diagram](https://www.visual-paradigm.com/tutorials/businessprocessmodeling.jsp)

30. There could be multiple instances of ‘procure parts’ activity running simultaneously. Let’s represent this by setting the loop type of task Procure Parts to Multi-Instance Loop. Right click on the Procure Parts task and select Open specification... from the popup menu.

31. Select Multi-Instance Loop for Loop type combo box.

![Choreography Task Specification](https://www.visual-paradigm.com/tutorials/businessprocessmodeling.jsp)

32. Click OK to confirm. Now the Multi-Instance loop marker is shown in the Procure Parts task.
33. Let's create messages between *Manufacturer* and *Bidder* on the *Part Auction* task. With the use of Resource Catalog, create a **Message** from the *Part Auction* activity. Select **New Message Flow** from "Manufacturer" to "Bidder" from the popup menu.

34. Name the message as **Part Request**.

35. Repeat the step to create another message to *Part Auction* task. This time, select **New Message Flow** from "Bidder" to "Manufacturer" during creation. Name the message as **Part Response**. You can see that the message from *Bidder* to *Manufacturer* is in different color since *Bidder* is non-initiating participant.
36. Now the gateway *All Parts Available?* and *All Parts Obtained?* in business process diagram only modeled the false situation. What about the true case? Assuming that the flow should flow back to the *Order Confirmation* task. We don't want to make the diagram too complicated by having too many connector lines. Let's represent the flow with the use of a pair of intermediate events. Click on the *All Parts Available?* gateway and drag out the Resource Catalog icon. Release the mouse button above the gateway and select Intermediate Event from Resource Catalog. Enter *A* as name and press Enter.

37. Name the connector Yes.

38. Right click on the intermediate event and select Trigger > Link Trigger.

39. Repeat the steps to create another link event from *All Parts Obtained?* gateway.
40. Select **Link Intermediate Event** from the diagram toolbar.

41. Click on the left hand side of the **Order Confirmation** task and name it **A**. Connect it with the task. Up to now your diagram should look like this:
42. Create the other messages. Finally, your business process diagram should look like this:

![Business Process Diagram](https://via.placeholder.com/150)

Resources
1. [Complete Project - Tutorial.vpp](https://www.visual-paradigm.com/tutorials/businessprocessmodeling.jsp)

Related Links
- [Introduction to BPMN](https://www.visual-paradigm.com/tutorials/businessprocessmodeling.jsp)
- [How to Define Working Procedures for Business Tasks](https://www.visual-paradigm.com/tutorials/businessprocessmodeling.jsp)