

# BPMN AT A GLANCE

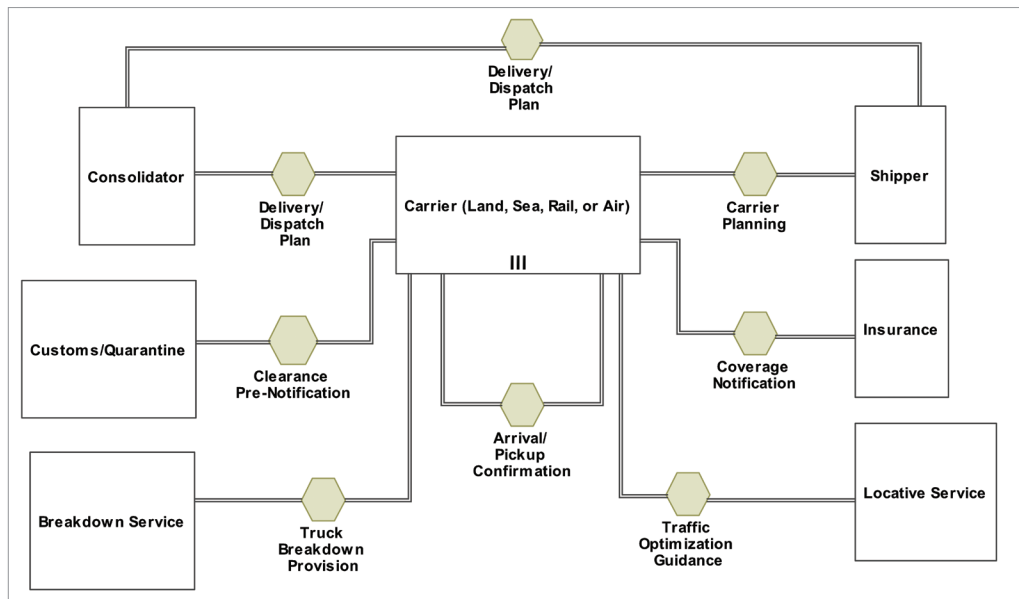
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## CONVERSATION DIAGRAM:

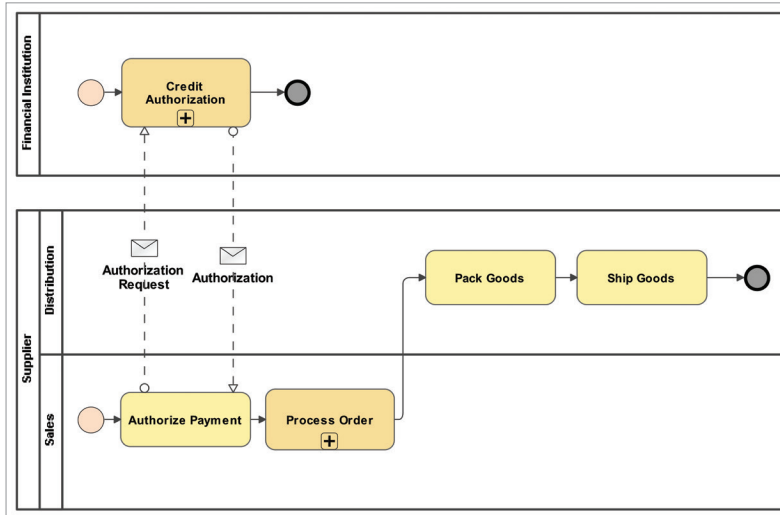
A Conversation defines a set of logically related message exchanges. When marked with a + symbol it indicates a Sub-conversation, a compound conversation element.

A Call conversation is a wrapper for a globally defined Conversation or Sub-conversation. A call to a Sub-conversation is marked with a + symbol.

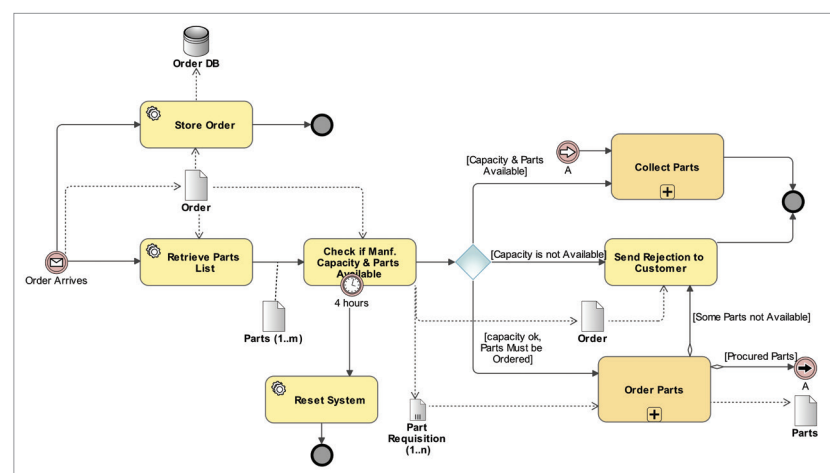
A Conversation Link connects Conversations and Participants.



## COLLABORATION DIAGRAM:



## PROCESS DIAGRAM:



## CHOREOGRAPHY DIAGRAM:

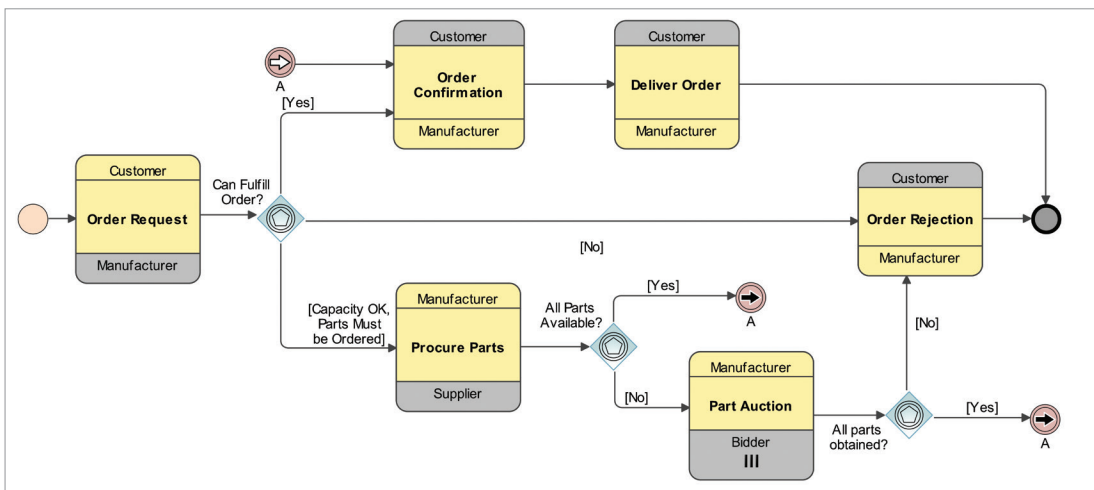
**Choreography Task**: Represents an Interaction (Message Exchange) between two Participants.

**Sub-Choreography**: Contains a refined choreography with several Interactions.

**Call Choreography**: A wrapper for a globally defined Choreography Task or Sub-Choreography. A call to a Sub-Choreography is marked with a + symbol.

**Multiple Participants Marker**: Denotes a set of Participants of the same kind.

**Message Decorator**: Depicting the content of the message. It can only be attached to Choreography Tasks.



## GATEWAYS:

- Exclusive Gateway – Split** – routes sequence flow to a precise outgoing branch.
- Exclusive Gateway – Merge** – waits for one incoming branch to finish before triggering an outgoing flow.
- Event-based Gateway** – Must be followed by a catching event(s) or a receiving task(s). Sequence flow is sent to the subsequent event/task which happens first.
- Parallel Gateway** – When splitting sequence flow – outgoing branches are initiated simultaneously. When merging parallel branches – the gateway waits for all incoming branches to finish before triggering outgoing flow.
- Inclusive Gateway** – One or more branches are activated when splitting. All active incoming branches must complete before merging.
- Complex Gateway** – Gateways that represent actions not captured by other gateways. Can be complex, merging, or branching actions/behaviors.
- Exclusive Event – Event-based Gateway (Instantiate)** – Each occurrence of a subsequent event starts a new process instant.
- Parallel Event – Event-based Gateway (Instantiate)** – The occurrence of all subsequent events begins a new process instance.

## EVENTS

	START		INTERMEDIATE				END
	Top-Level	Event Sub-Process Interrupting	Event Sub-Processing Non-Interrupting	Catching	Boundary Interrupting	Boundary Non-Interrupting	Throwing
None: Untyped events, indicate start point, state of changes or final states	○						●
Message: Receiving and sending messages	✉	✉	✉	✉	✉	✉	✉
Timer: Cyclic timer events, points in time, time spans, or timeouts	🕒	🕒	🕒	🕒	🕒	🕒	
Escalation: Escalating to a higher level of responsibility	⚠			⚠	⚠	⚠	⚠
Conditional: Reacting to changed business conditions or integrating business rules	📄	📄	📄	📄	📄	📄	
Link: Off-page connectors. Two corresponding link events equal a sequence flow				↔			↔
Error: Catching or throwing named errors	⚠			⚠	⚠	⚠	
Cancel: Reacting to cancelled transactions or triggering cancellations				✖	✖	✖	✖
Compensation: Handling or triggering compensation		⏪		⏪	⏪	⏪	⏪
Signal: Signaling across different processes. A signal thrown can be caught multiple times	⚡	⚡	⚡	⚡	⚡	⚡	⚡
Multiple: Catching one out of a set of events. Throwing all events defined	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Parallel Multiple: Catching all out of a set of parallel events	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Terminate: Triggering the immediate termination of a process							⦿

## ACTIVITIES

- Task**: A Task is an atomic activity within a process flow. A Task is used when the work in a process cannot be broken down into finer levels of detail.
- Transaction**: A Transaction is a specialized type of sub-process whose special behavior is controlled through a transaction protocol.
- Event SubProcess**: An Event SubProcess may occur many times. Unlike the standard SubProcess that uses the flow of the parent process as a trigger, it has a Start Event as a trigger.
- Call Activity**: A Call Activity identifies a point in a process where a global process is used. The Call Activity acts as a 'wrapper' for the invocation of the global process within the execution.

**Activity Markers** – Markers indicate executive behavior of activities.

**Task Types** – Types specify the nature of the action to be performed.

- ⊕ SUB-PROCESS MARKER
- 🔄 LOOP MARKER
- ≡ PARALLEL MI MARKER
- ≡ SEQUENTIAL MI MARKER
- ⤵ AD HOC MARKER
- ⚠ COMPENSATION MARKER
- ✉ SEND TASK
- ✉ RECEIVE TASK
- 👤 USER TASK
- 👉 MANUAL TASK
- 📄 BUSINESS RULE TASK
- ⚙ SERVICE TASK
- 📜 SCRIPT TASK

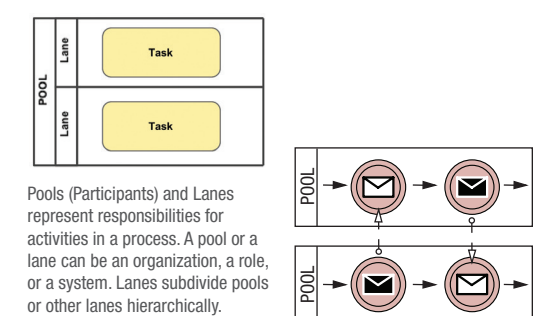
## CONNECTING OBJECTS

- ➡ **Sequence Flow**
- ⋯➡ **Data Association**
- - -➡ **Message Flow**
- ➡ **Default Sequence Flow**

## DATA OBJECTS

- Data Object**: A Data Object element can optionally reference a DataState element, which is the state of data contained in a Data Object.
- Data Store**: A Data Store provides a mechanism for activities to retrieve or update stored information that will persist beyond the scope of a process.
- Data Input**: A Data Input is an external input for the whole process.
- Data Output**: A Data Output is a data result of the whole process.
- Collection Data Object**: The Collection Data Object represents collections of information.

## SWIMLANES



Pools (Participants) and Lanes represent responsibilities for activities in a process. A pool or a lane can be an organization, a role, or a system. Lanes subdivide pools or other lanes hierarchically.

The order of message exchanges can be specified by combining message flow and sequence flow.

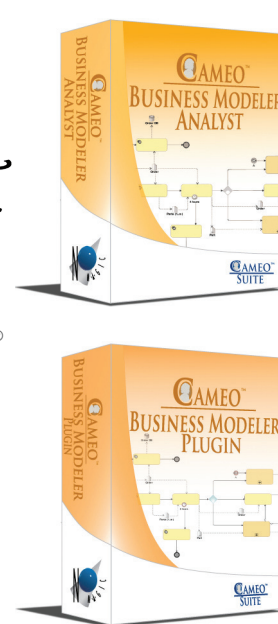
Message Flow symbolizes information flow across organizational boundaries. Message flow can be attached to pools, activities, or message events. The Message Flow can be decorated with an envelope depicting the content of the message.

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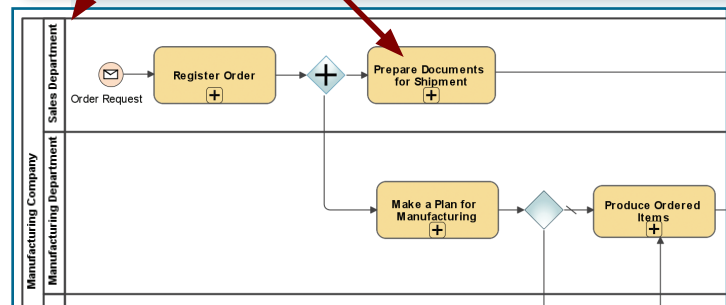
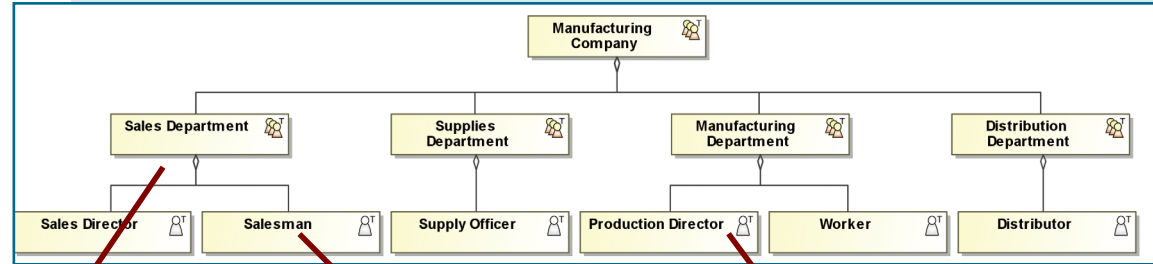
### ORGANIZATION STRUCTURE DEFINITION:

- Helps to understand business domain concepts
- Can be reused in business processes
- Enables traceability between process and data views

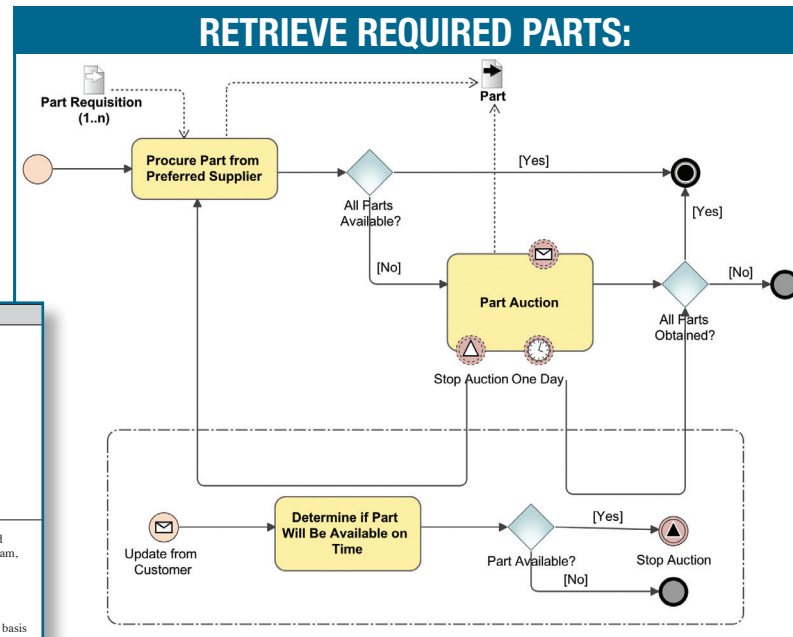


### MODEL ANALYSIS:

- Multiple ways to visualize related elements
- Powerful search of related elements



Name	Documentation
1 Sales Director	<p>The Sales Department Manager is responsible for the development and performance of all sales activities. He staffs and directs a sales team, establishes plan and strategies to expand the customer base, and contributes to the development of training and educational programs for the sales force.</p> <p><b>Sales Manager Responsibilities</b></p> <ul style="list-style-type: none"> <li>• Develops a business plan and sales strategy</li> <li>• Maintains accurate records of all pricing, sales and activity reports</li> <li>• Provides feedback to management regarding performance</li> <li>• Assists sales in the preparation of proposals</li> <li>• Creates and conducts proposal presentations</li> <li>• Responsible for the performance and development of the sales force</li> </ul>
2 Production Director	<p>The Production Manager coordinates the resources and activities required to produce ordered manufacturing items. This person is responsible for staffing and directing a manufacturing team, establishes plans and strategies to improve manufacturing processes, and contributes to the development of training and educational programs for workers.</p> <p><b>Production Manager Responsibilities</b></p> <ul style="list-style-type: none"> <li>• Responsible for fulfilling all orders, plans and schedules for each worker on a timely basis</li> <li>• Maintains accurate records of all manufacturing, resources and raw material reports</li> <li>• Provides feedback to management regarding staff performance</li> <li>• Plans and schedules tasks for each worker</li> <li>• Responsible for the performance, safety and career development of workers</li> </ul>

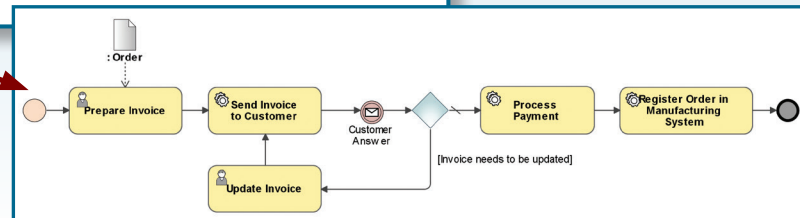
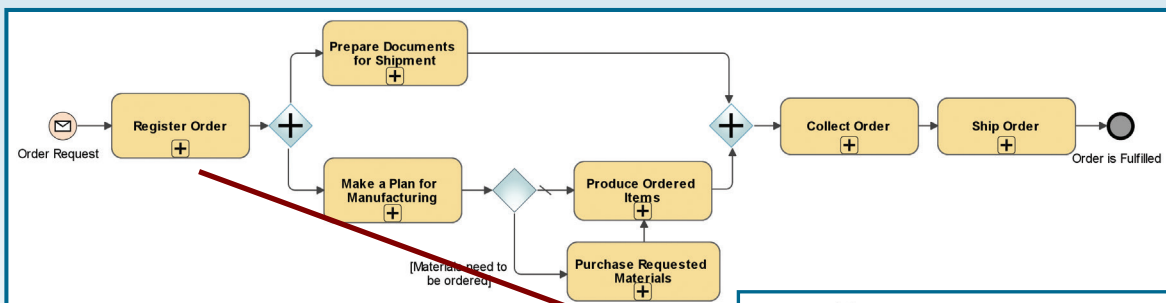


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	Distributor	Production Director	Sales Director	Salesman	Supply Officer	Worker
Business Processes						
Fulfill Order	4	12	13	2	2	
Close Order						
Collect Order	2	6				
Make a Plan for Manufacturing						
Prepare Documents for Shipment						
Produce Ordered Items						
Purchase Requested Materials						
Register Order						
Ship Order						

### BUSINESS PROCESS MODEL USING BPMN 2.0:

- Represents flow of the process
- Can be drawn at different abstraction levels



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- #### Why modeling?
- Modeling facilitates structural thinking
  - Multi-level models simplify complexity
  - A business model is non-ambiguous
  - Allows for integration of various model types
  - Standard notation is understood by business executives, business analysts, and IT staff
  - **View the BPMN Quick Reference Guide at [www.nomagic.com/products/cameo-business-modeler.html](http://www.nomagic.com/products/cameo-business-modeler.html)**

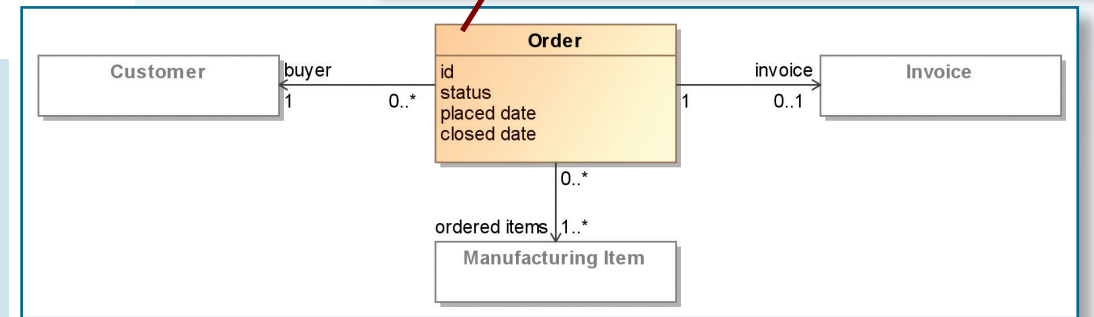
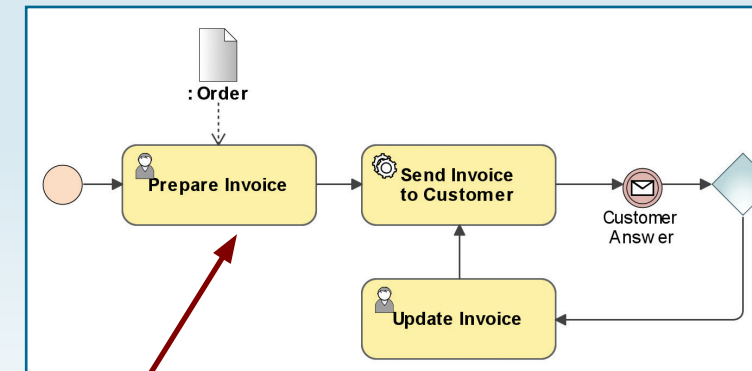
- #### Leverage the Most Standards-Compliant Business Modeling Solution With No Magic's Cameo Business Modeler:
- An intuitive and powerful modeling solution
  - Define business processes using the Business Process Modeling and Notation (BPMN 2.0) standard
  - Capture business vocabulary and business data in business process descriptions
  - Relate your organization structure to the processes
  - Is the BPMN 2.0 reference model for the OMG

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### BUSINESS DATA MODEL:

- Helps to understand business domain concepts
- Can be reused in business processes
- Enables traceability between process and data views



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