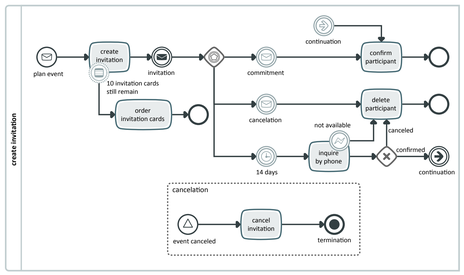
BPMN 2.0 - Business Process Model and Notation

Innovator for Business Analysts

Events

Events: represent all incidents within a process. An event may be used as a start, intermediate, interrupting and end event.



	Start Event	Intermediate Event Caught	Intermediate Event Thrown	End Event	Interrupting Boundary Event Connected	Non-Interrupting Boundary Event Connected	Interrupting Subprocess Start Event	Non-Interrupting Subprocess Start Event
None	○	◎		●				
Message	✉	✉	✉	✉	✉	✉	✉	✉
Signal	△	△	▲	▲	△	△	△	△
Timer	🕒	🕒			🕒	🕒	🕒	🕒
Conditional	▤	▤			▤	▤	▤	▤
Escalation			⌃	⌃	⌃	⌃	⌃	⌃
Error				↯	↯		↯	
Compensation			⏪	⏪	⏪		⏪	
Cancel				✕	✕			
Terminate				●				
Link		⇢	⇢					
Multiple	⬠	⬠	⬟	⬟	⬠	⬠	⬠	⬠
Parallel Multiple	✚	✚			✚	✚	✚	✚

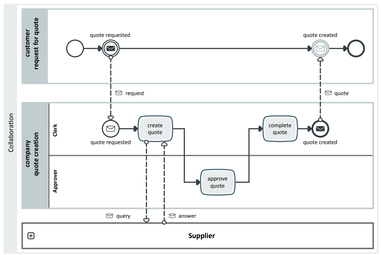
Intermediate Event

Processes and Collaborations

Collaboration: describes the interaction between participants (in this example: customer, company and supplier).

Process: describes the flow of activities in an organization (in this example: quote creation).

Lane: represents the responsibilities within a process like involved roles or systems (in this example: clerk and approver).



Edges and connectors

Sequence Flow

Shows the flow in a process. The sequence flow cannot cross a pool boundary but can switch between lanes.

Massage Flow

Shows the flow of messages between two participants. It can start or end at a participant or at any element of the process. It always goes beyond participant borders.

Association

Is mainly used as data association for modeling data flows. For modeling compensations it is used as compensation association.

Default Flow

Is traversed if none of the conditions after a gateway is true.

Conditional Flow

A means to attach a condition to a sequence flow that does not belong to a gateway.

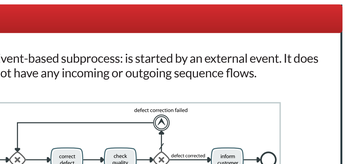
Artifacts

Text annotation

Text annotations enable to capture important additional information.

Groups

Groups help to structure elements and do not influence the process flow.



Data

Data Object

A data object represents data which is relevant for the process. They can only be referenced inside the process.

Data Input

Data Inputs represent data which has to be passed to a process or subprocess from the outside i.e. the calling process for further processing.

Data Output

Analogous to the data input the data output represents data which is returned from the process or subprocess to the calling process.

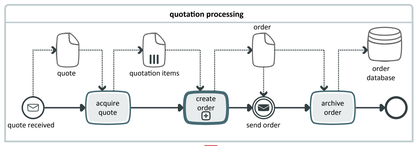
Data Store (Reference)

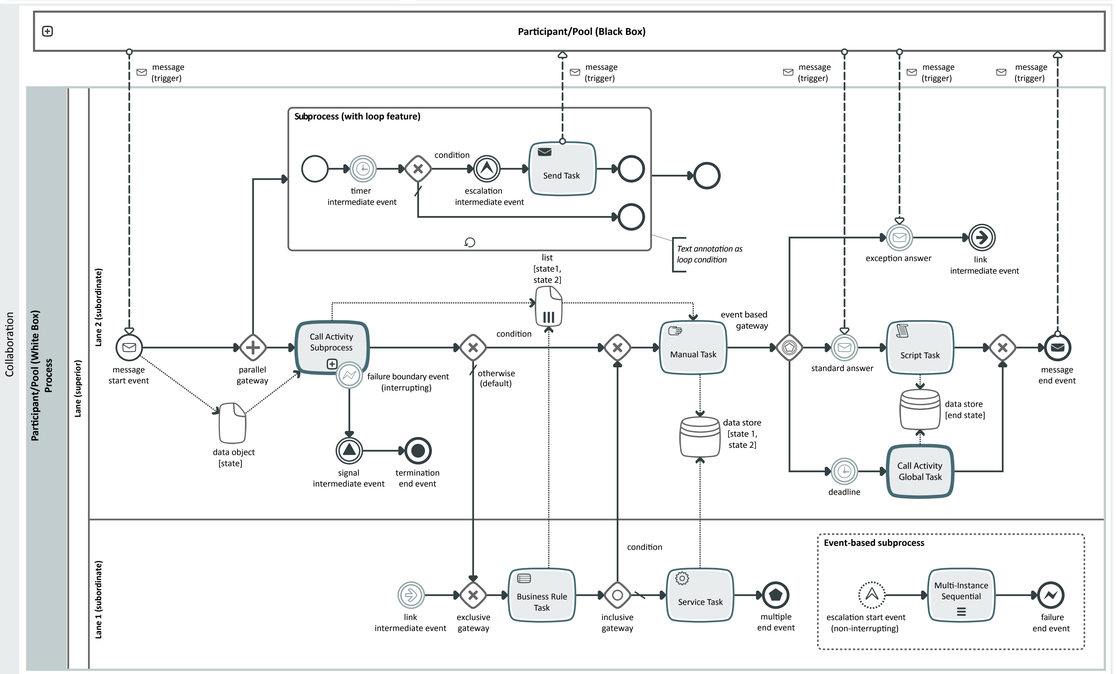
Using a data store (reference) instead of a data object emphasizes that the data used is persistant rather than transient data and that it is accessible from different processes rather than having a local scope.

Data Association

Data associations model the flow of data including data transformations.

List of data objects



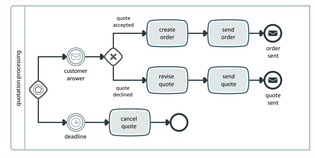


Instantiation

Instantation: is mainly relevant in the process automation realized by gateways and events.

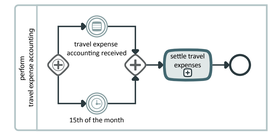
Event-Based - Exclusive

The occurence of the first events instantiates the process. All other paths of the event-based exclusiv gateways are no longer valid.



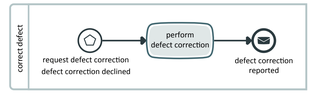
Event-Based - Parallel

The occurence of the first event instantiates the process. The process may only terminate normally if further events occured.



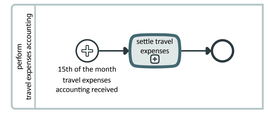
Multiple-Start Event

The process can be instantiated through different events.



Parallel Multiple-Start Event

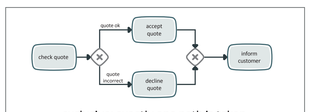
All events have to occur so that the process can be instantiated.

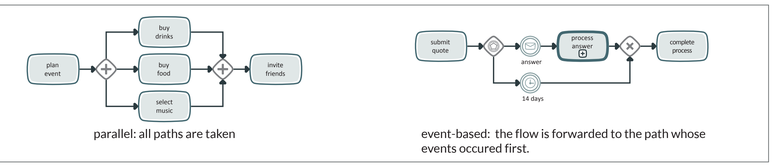


Gateways

Gateways are used to control how the process flows through sequence flows as they converge and diverge within a process.

data-based exclusive (either OR)	only one path can be taken
inclusive (OR/AND)	none, one or more paths can be taken
parallel (AND)	all paths are taken
complex	can be used to model complex synchronization behavior
event-based exclusive	one path is taken depending on the first occuring event





Activities

Task: represents a single step in a process or a work unit.

Manual Task: is expected to be performed without the aid of any business process execution engine or any application.

User Task: is executed by a user with the assistance of a software application.

Service Task: is performed automatically. From a technical point of view, it is a call of a service operation.

Business Rule Task: provides a mechanism for the process to provide input to a business process engine.

Script Task: is executed by a business process engine.

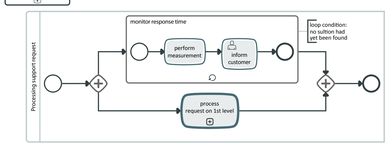
Send Task: sends messages and complies with the semantics of an intermediate event for messages thrown.

Receive Task: receives messages and complies with the semantics of an intermediate event for messages caught.

Call Activity Global Task: identifies a point in the process where a global task is used. Activation of a call activity transfers control to the called task.

Call Activity Subprocesses: is an independent process that can be called from various processes.

Subprocess: is a graphical object within a process but it also can be „opened up" to show a lower-level process. It is not an independent process and may not be devided in different lanes.

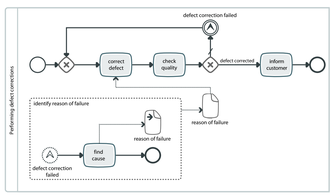


Transactions: are subprocesses which require special actions to be taken in case of failure or hazard.

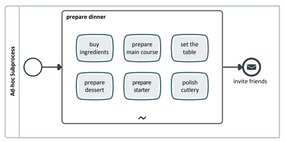
Compensation Association

occurs outside the normal sequence flow and connects a compensation event with a compensation activity at a roll back.

Event Subprocess: Event-based subprocess: is started by an external event. It does not have any incoming or outgoing sequence flows.



Ad-hoc Subprocess: Ad-hoc Subprocess: do not impose a sequence on its contained activities. The sequence and number of performances of the activities is up to those persons or resources doing the work.



Markers for Tasks and Subprocesses

- This activity implies a subprocess.
- Loop: repeats the performance as long as the loop condition is met.
- Multi-Instance Parallel: multiple, simultaneous execution for a number of objects.
- Multi-Instance Sequential: multiple, sequential execution for a number of objects.
- Compensation: undoes steps which have already been successfully completed.
- Ad-hoc: whether and how often an activity is performed is left to the discretion of the person responsible.

Find more information about the **Innovator for Business Analysts** and business process modeling with BPMN 2.0!

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