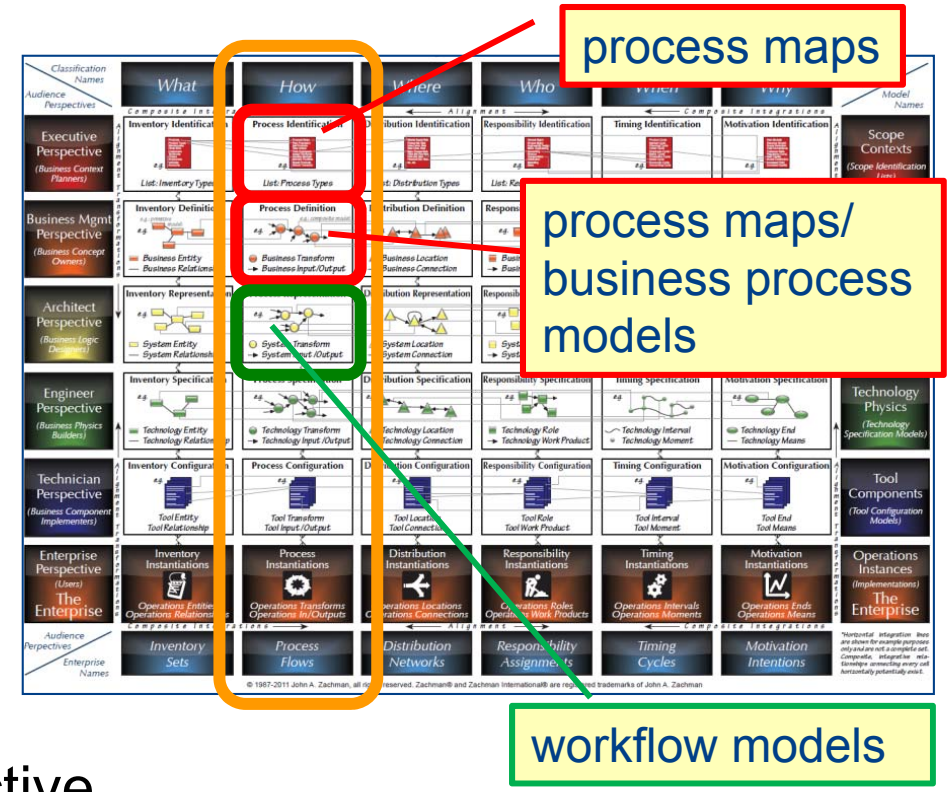
BUSINESS PROCESS MODELING

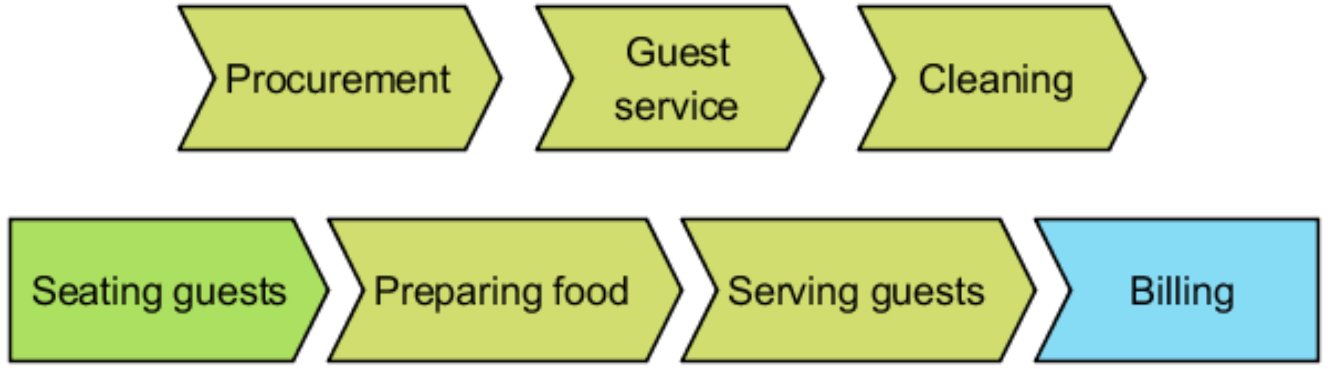
Zachman Framework: Business Processes on different Perspectives

- Vertical Relationships relate the business process represented in the different perspectives
  - A "process map" is an overview of the enterprise's business processes linking them to the value chain
  - A "business process model" is a process diagramm from the business perspective.
  - A "workflow model" or "process implementation" represents the process from the IT perspective



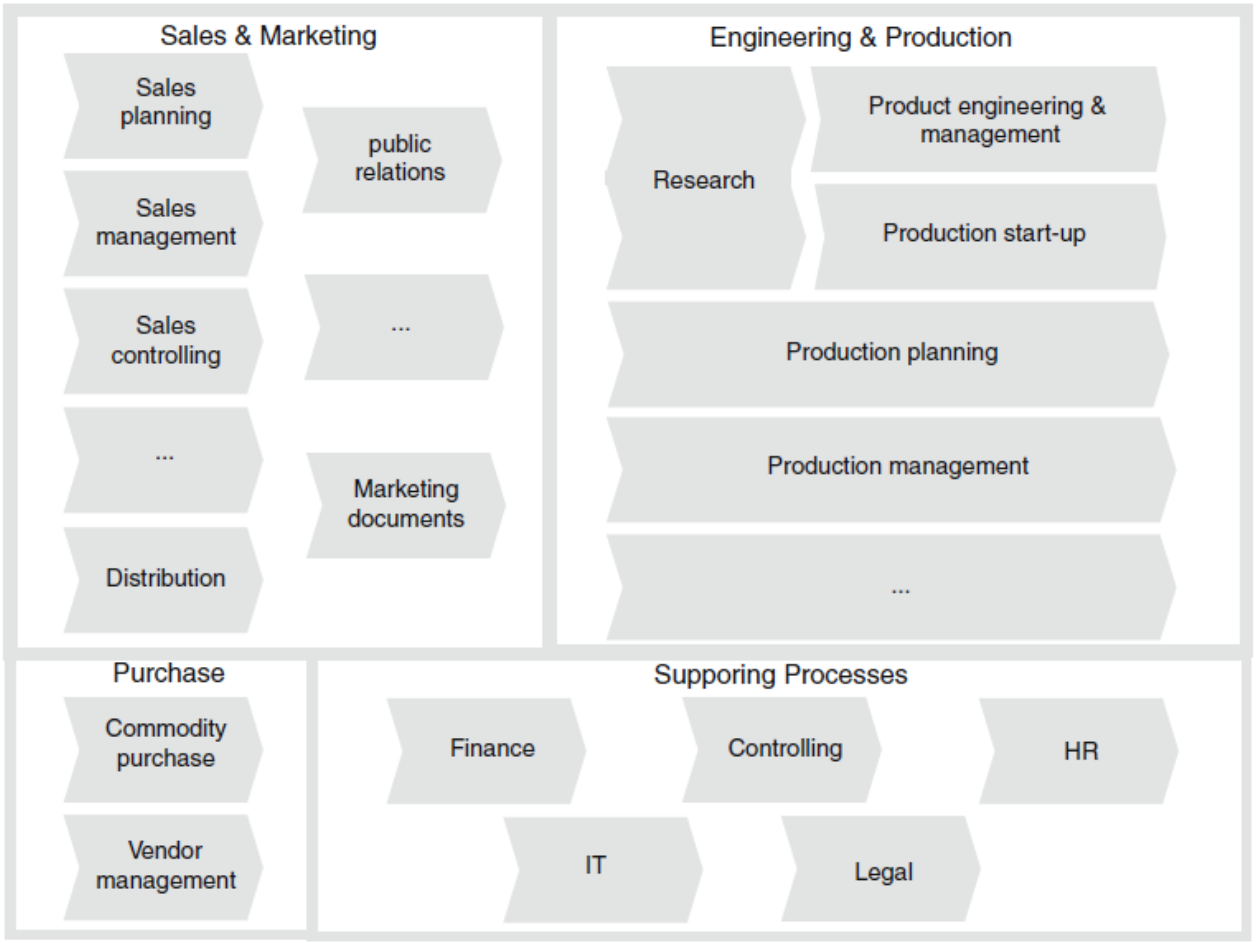
The Workflow Management Coalition defines "workflow" as the automation of a business process

Process Maps



- Process maps give an overview of the business processes on a high level of abstraction
- Each element of a process maps represents a business process
- Process maps represent relationships between processes
  - grouping processes
  - logical ordering (e.g. procurement → production → sales)
- But: process maps do not represent control flow, i.e. a predecessor does not necessarily trigger ist successor

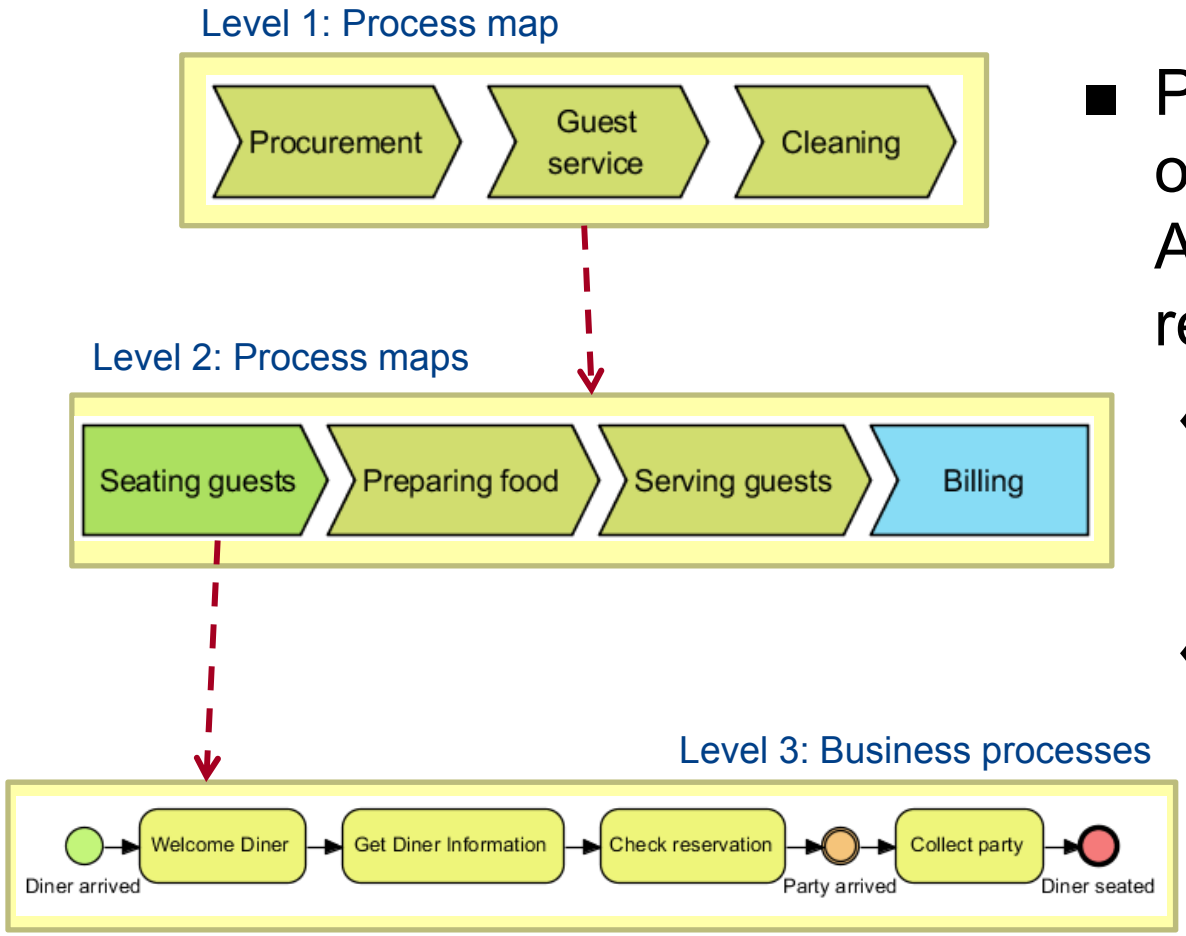
Example of a Process Map



- This example represents a process map as a cluster diagram.
- Business processes on the value-chain level create the “umbrella” clusters, each of which contains a set of sub-processes.
- For example, the sub-process “sales planning” is assigned to its parent process, “sales and marketing”.

(Hanschke 2010, p. 75)

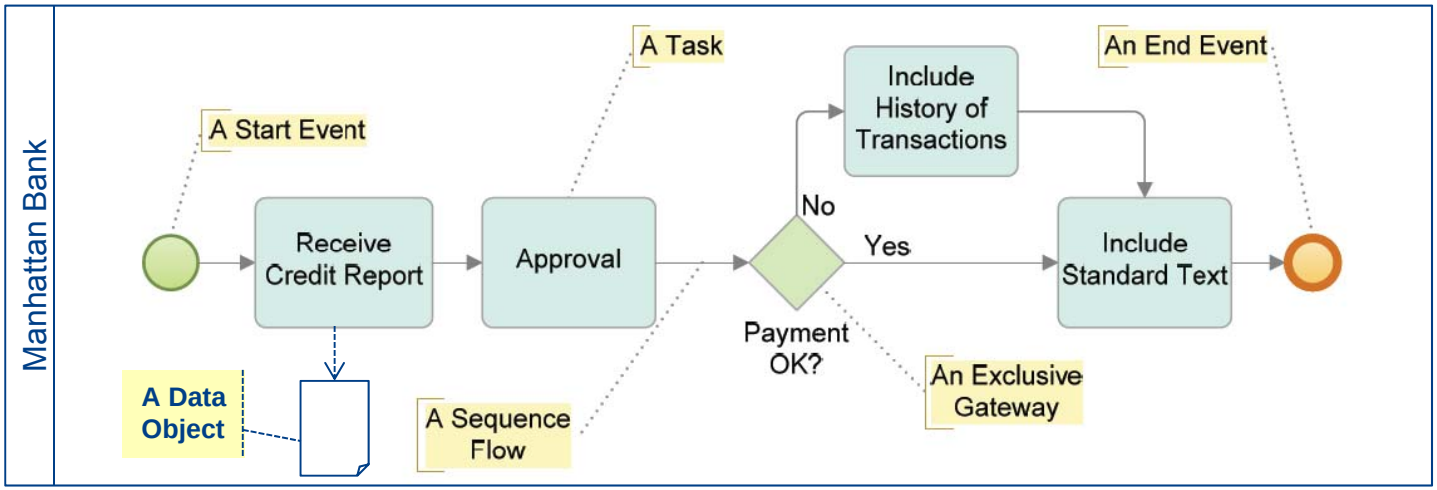
Hierarchical Process Maps



- Process maps can be organized hierarchically. An element either represents
  - another set of processes (i.e. a process map)
  - a business process (e.g. in BPMN)

BPMN

- We assume familiarity with Business Process Model an Notation BPMN 2.0

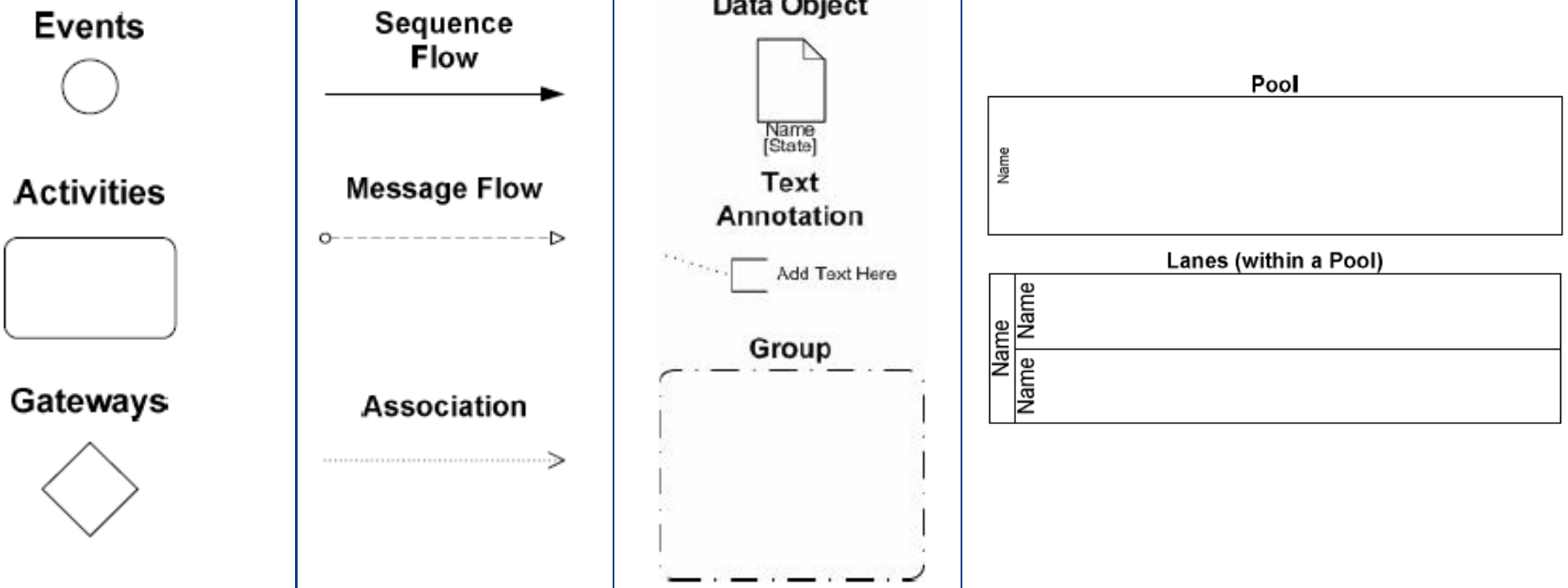


- BPMN was officially adopted as an OMG specification in 2006, updated in 2008 and now available in version 2.0 (http://www.omg.org/spec/BPMN/2.0/)
- In the following we only give an overview of the main elements.

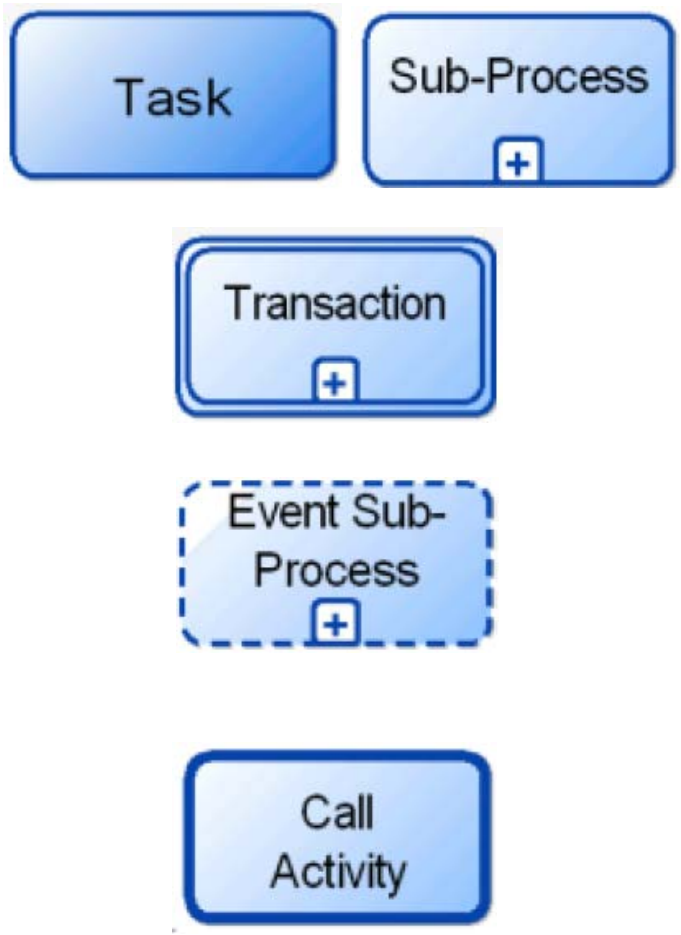
Elements of BPMN

Elements of BPMN can be divided into 4 categories:

Flow Objects	Connectors	Artefacts	Swimlanes
Events	Sequence Flow	Data Object	Pool
Activities	Message Flow	Text Annotation	Lanes (within a Pool)
Gateways	Association	Group	



Activities



- A **Task** is a unit of work, the job to be performed. When marked with a [+] symbol it indicates a **Sub-Process,** an activity that can be refined.
- A **Transaction** is a set of activities that logically belong together; it might follow a specified transaction protocol. .
- An **Event Sub-Process** is placed into a Process or Sub-Process. It is activated when its start event gets triggered and can interrupt the higher level process context or run in parallel (non-interrupting) depending on the start event.
- A **Call Activity** is a wrapper for a globally defined Sub-Process or Task that is reused in the current process.

Event-Types


None
Message
Timer
Con-ditional
Signal
Escalation
Error
Com-pensation
Multiple
Parallel Multiple
Link
Cancel
Terminate
Start Events
Top-Level
Event Sub-Process Interrupting
Event Sub-Process Non-Interrupting
Inter-mediate Events
Catching
Throwing
Boundary Interrupting
Boundary Non-Interrupting
End Events

Gateways – Splitting and Merging

Exclusive Gateway: When splitting, it routes the sequence flow to exactly one of the outgoing branches. When merging, it awaits one incoming branch to complete before triggering the outgoing flow.

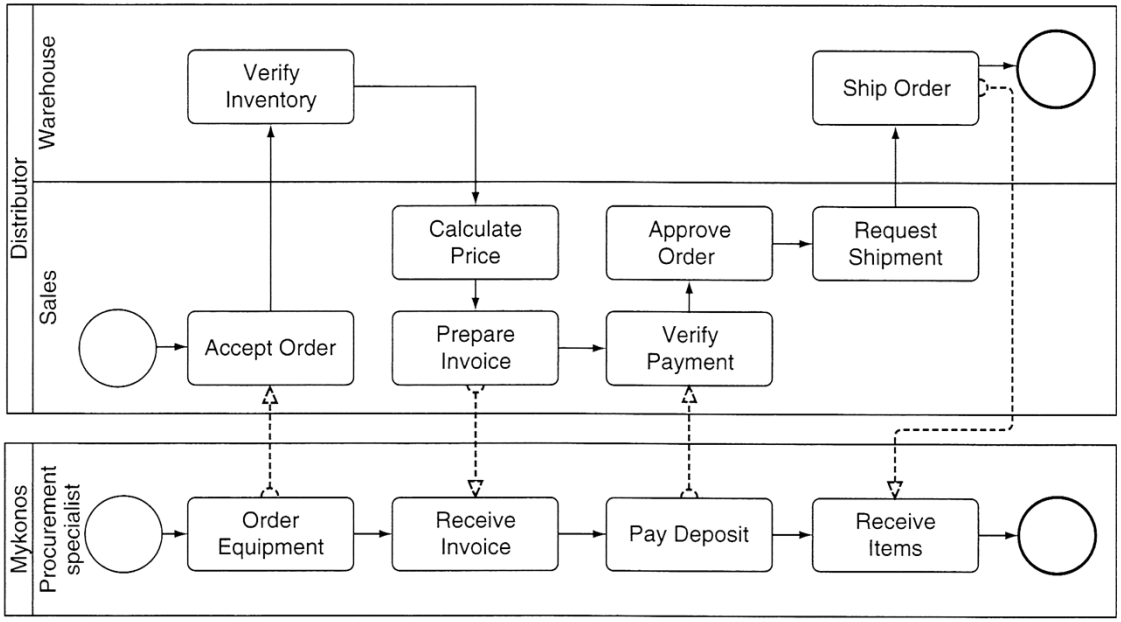
Event-based Gateway: Sequence flow is routed to the subsequent event/task which happens first.

Parallel Gateway (AND): When used to split the sequence flow, all outgoing branches are activated simultaneously. When merging parallel branches it waits for all incoming branches to complete before triggering the outgoing flow.

Inclusive Gateway (OR): When splitting, one or more branches are activated. All active incoming branches must complete before merging.

Swimlanes

- Swimlanes partition and organise activities
- There are two main types of swimlanes: Pool and Lane
  - A pool contains a process or it represents a participants in an interactive (B2B) Business Process Diagram.
  - Lanes represent sub-partitions for the objects within a Pool – they represent participants of a process



(Bridgeland & Zahavi 2009, p. 123)