



Modeling Processes

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Business Process Reengineering

1392

Outline

- ◆ we are going to consider how one creates a formal model of a business process.
- ◆ We will consider techniques that can be used to model anything from a very small process to a very complex value chain.
- ◆ Process Diagram Basics
- ◆ As-Is, Could-Be and To-Be Process Diagrams

Process Diagram

- ◆ Formal process diagrams are often called process maps, activity diagrams, or workflow diagrams
 - Object Management Group's UML Activity Diagrams
 - Business Process Modeling Notation (BPMN)
 - ARIS

Process Diagram Basics 1



An Activity. A generic term for work that a company performs. Activities take time. Activities can be composed of activities. Complex activities include Processes and subprocesses. In extended BPMN notation a symbol within the Activity box indicates that the process has subprocesses that have been modeled.



An Event. An event is something that happens during the course of a business process. An event is a point in time. Events include triggers that start processes, messages that arrive that disrupt processes and the final production of products, services or data that result in the end or termination of a process or subprocess. In extended notation symbols can be placed within the circle to specify things about the nature of the event.



A Gateway. A gateway is used to show the divergence or convergence of a sequence flow. This might indicate forking or merging activities, or it might indicate a decision that determines which of two or more subsequent flows is to be followed. In extended notation symbols are placed within the diamond to specify things about the gateway. They might indicate, for example that all preceding activities need to be done before the next activity occurs.



A Sequence Flow. An arrow is used to show the order that activities will be performed in a process. A sequence arrow does not imply that a physical output, information, or people move from one activity to the next, though they may. It simply suggests that a subsequent activities is performed next in the normal course of accomplishing the process. Labels can be associated with the Flow arrows to indicate when decision paths are being followed or when things or information is flowing along the arrow.



A Message Flow. An dashed arrow is used to show that messages (information) flows between two organizations or individuals.




A Data Object. Data objects are artifacts that do not have a direct effect on the sequence flow or the message flow of processes. They provide information that activities require to produce what they produce.



An Association. Used to associate text or other annotations to activities or arrows on a diagram.

Process Diagram Basics 2








A **Pool with Swimlanes**. A pool provides a context for a set of activities. Departments or Roles or Participants are described in the boxes on the left. Activities and flows are indicated in the rectangles on the left. The top swimlane is normally reserved for the customer of the process.




Two pools are used to indicate the organizations or individuals within separate organizations are coordinating their work on a common process.

In extended BPMN notation, some of the elements in the core notation are "extended" to provide more information. Examples:

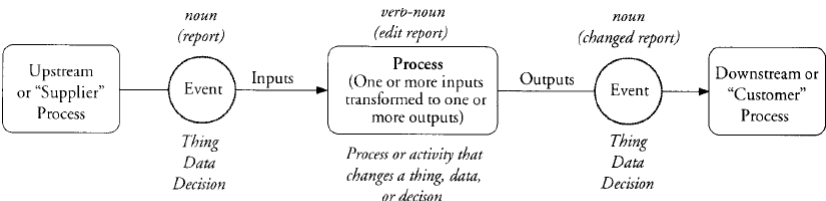
A Few Extensions of the Event circle:

-  Initial or Start Event. Something occurs which starts or triggers a process
-  Intermediate Event. Something occurs between the start and the end of the process. May also suggest that a flow will continue on another diagram
-  Terminal or End Event. The process in-scope ends
-  The Trigger Event is a Message
-  The Trigger Event is a Business Rule

Gateway or Decision Diamond

-  Exclusive (XOr)
Multiple input paths but the actual inputs comes via only one path
Multiple output paths but only one is actually taken
-  Inclusive (Or)
All inputs go to all outputs
-  Parallel (And)
All inputs go to all outputs, but only when all inputs are ready to go together

Process Diagram Basics

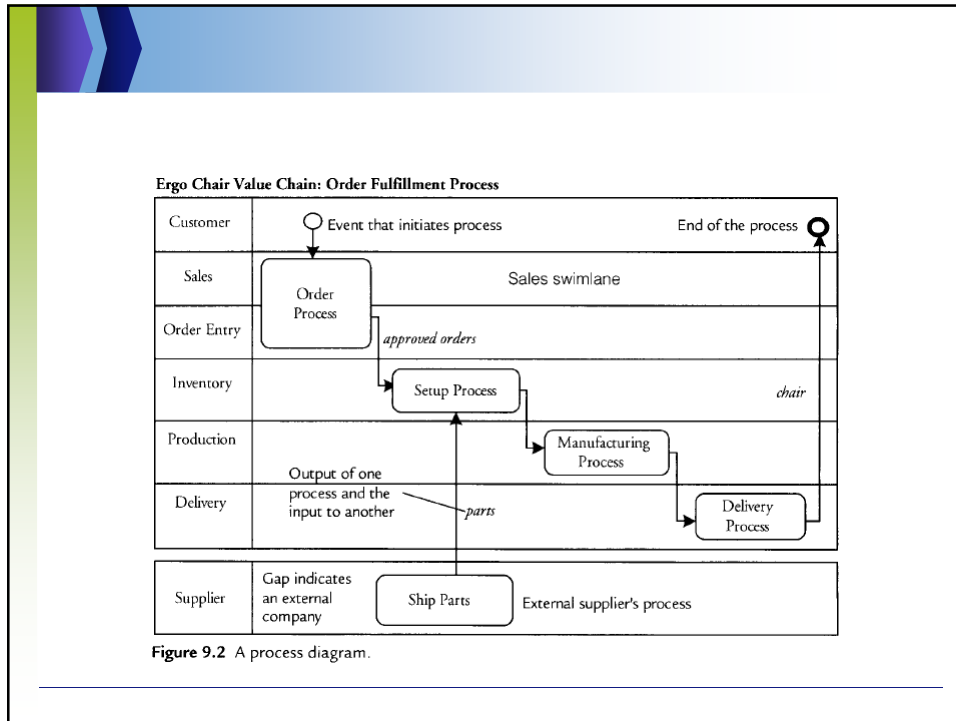


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graph LR
    A[Upstream or "Supplier" Process] --> B((Event))
    B --> C[Process]
    C --> D((Event))
    D --> E[Downstream or "Customer" Process]
    
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The diagram illustrates the flow from an upstream process to a customer process. It includes labels for 'Event' (noun/report), 'Process' (verb-noun/edit report), and 'Event' (noun/changed report). Below the diagram, it lists 'Thing', 'Data', and 'Decision' as categories for these elements.

Figure 9.1 The basic elements in a process or workflow diagram.



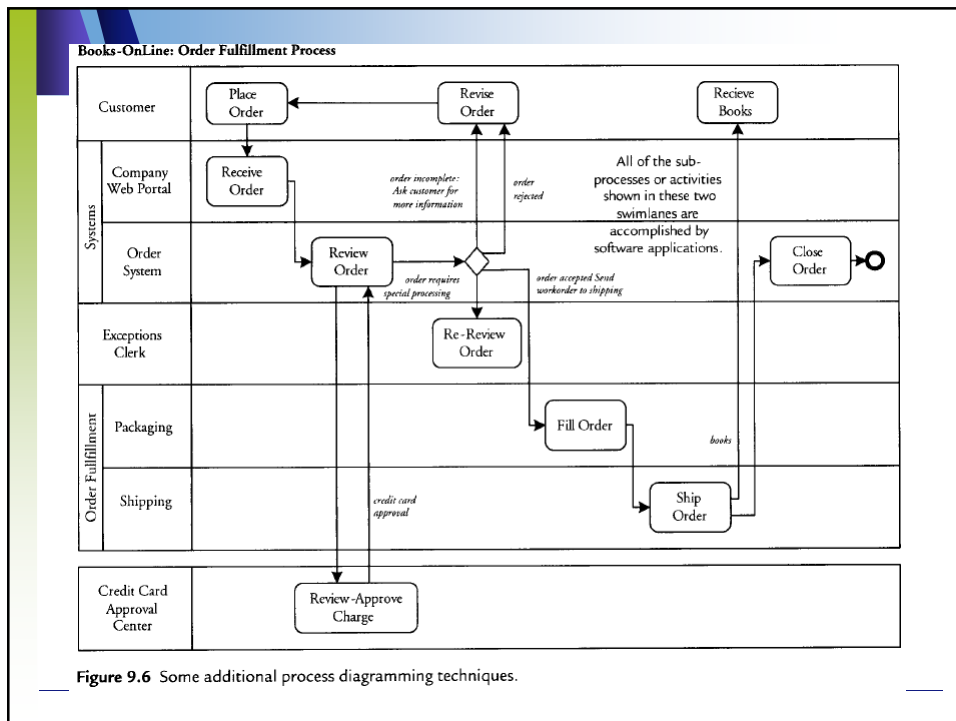
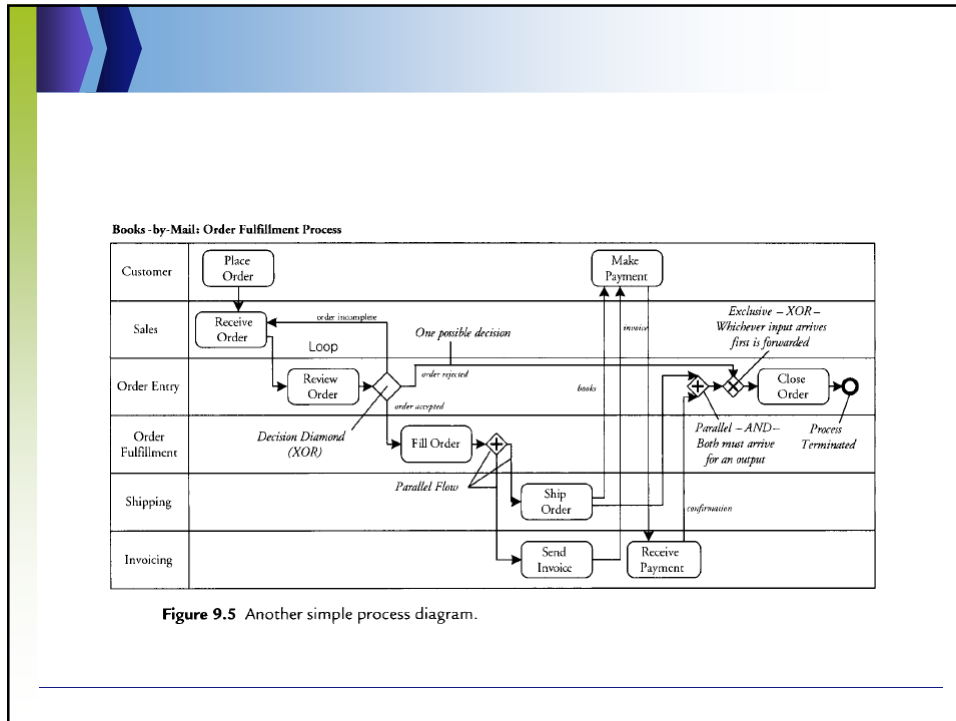
More Process Notation

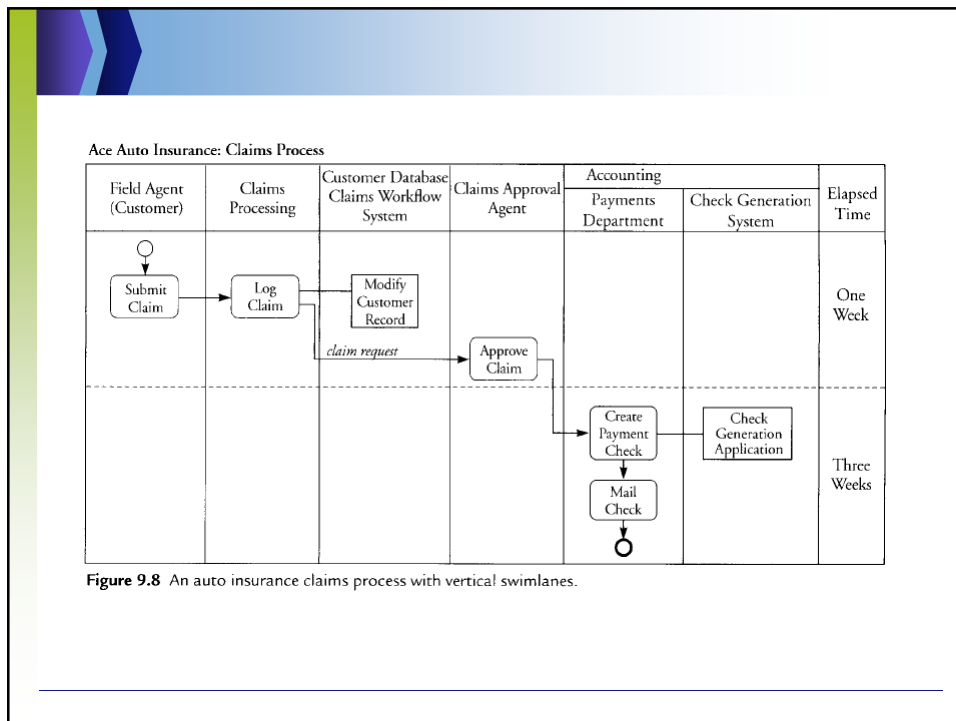
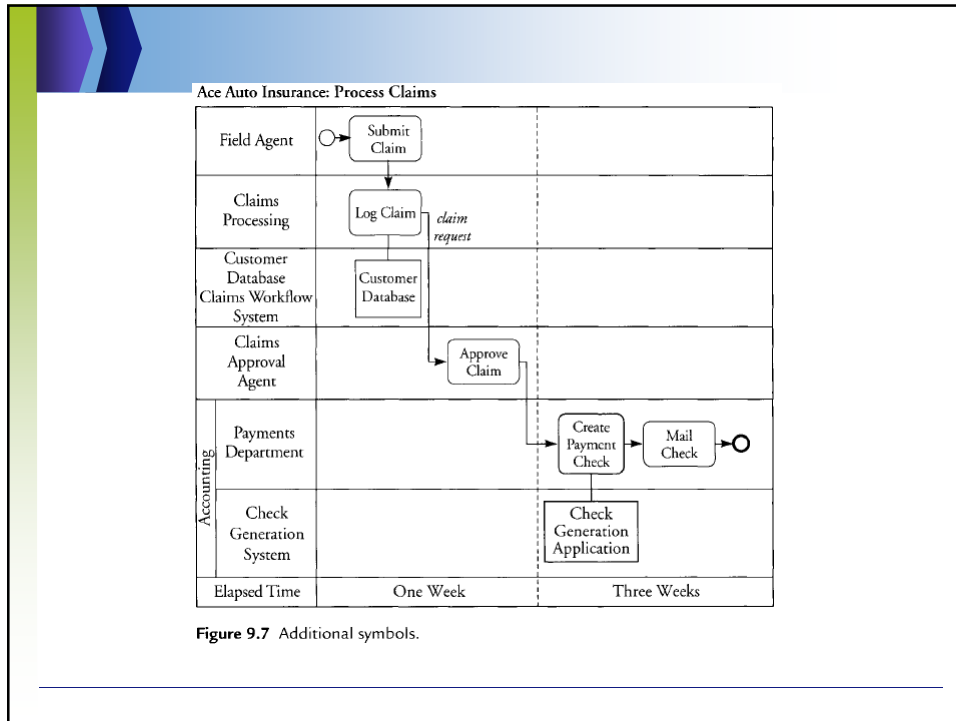
Business rules take this generic form:
 IF < something is the case >
 >
 AND < something else is also the case >
 THEN < do this >
 ELSE < do something else >
 >

For example, we might have a rule that said:
 IF the order is from a customer we don't know
 AND the order is over \$50
 THEN check the credit card number for approval
 OR wait till the check clears our bank.

Books-By-Mail: Order Fulfillment Process

Figure 9.4 Another simple process diagram.





As-Is, Could-Be and To-Be Process Diagrams

- ◆ We usually refer to the process diagram that documents the existing process as the *As-Is process diagram*
- ◆ When we are creating speculative alternative diagrams, we usually call them *Could-Be process diagrams*.
- ◆ When we finally arrive at the new process, we term that a *To-Be process diagram*.

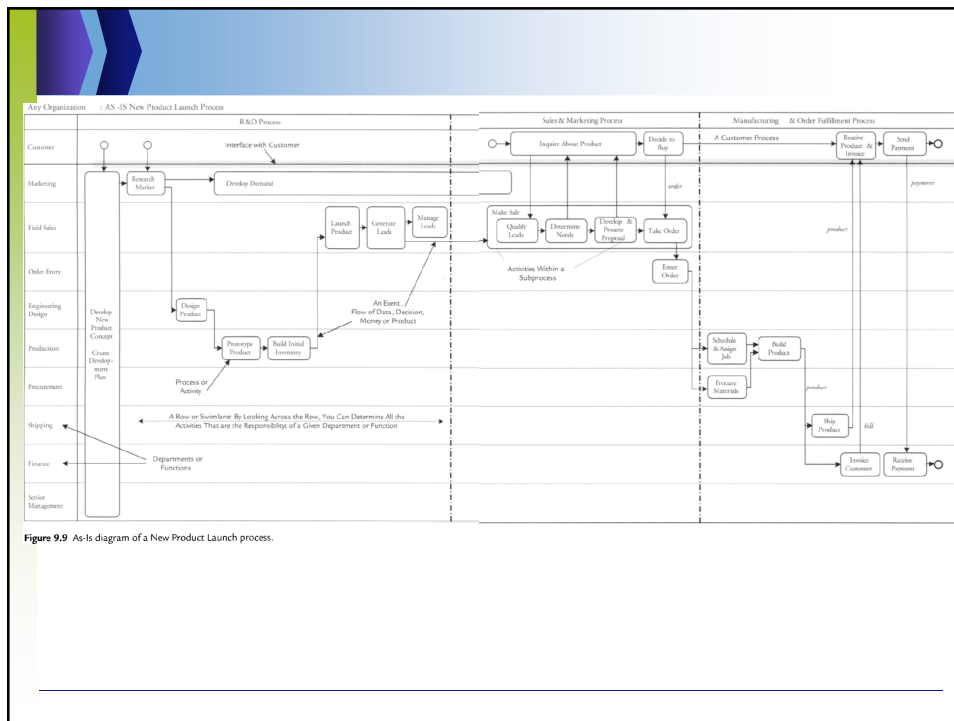


Figure 9.9 As-is diagram of a New Product Launch process.

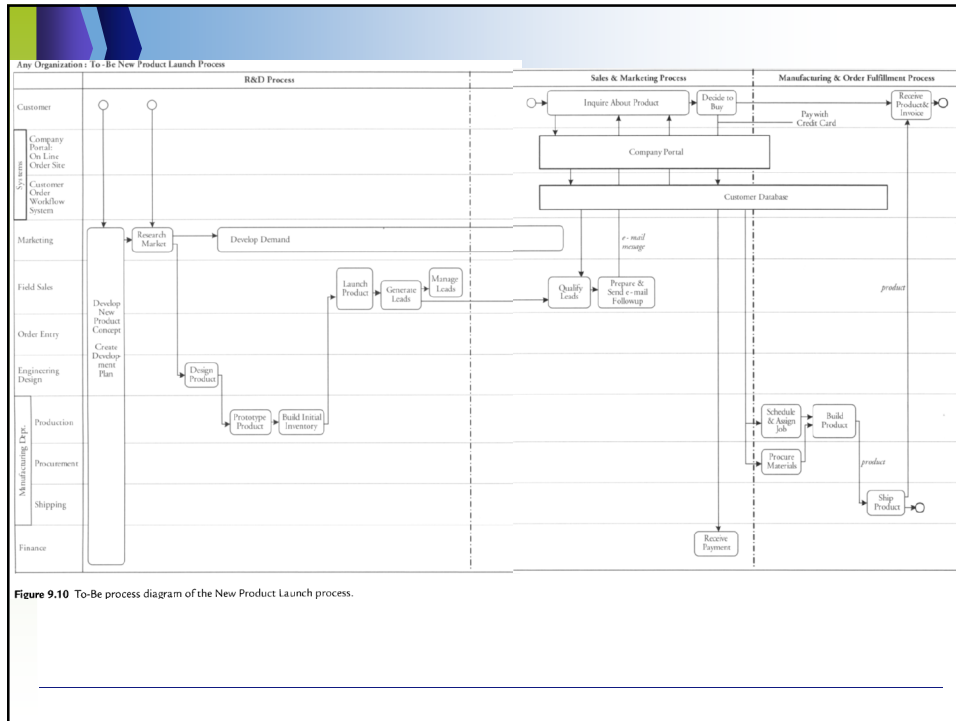


Figure 9.10 To-Be process diagram of the New Product Launch process.

Questions?