

BPMN Model

BPMN, what is it, what is it not

Business process modelling is the discipline of graphically representing a process in a readable diagram. The Business Process Modelling Notation (BPMN) is a graphical notation that depicts the steps of business processes in an end-to-end flow. The notation has been specifically designed to coordinate the sequence of processes and the messages that flow between different process participants in a related set of activities. Created by the **Business Process Management Institute (BPMI)**, in March, 2001, BPMI members began discussing the idea of creating a notation that aligned to executable BPML. In August 2004, the BPMN 1.0 specification was released to the public and it is now maintained by the **Object Management Group (OMG)**. This followed with the release of the BPMN 2.0 specification to the public in January 2011. BPMN 2.0 is a standard for business process modelling that provides a graphical notation for expressing and specifying business processes in a Business Process Diagram (BPD), based on a flowcharting technique, a manner very similar to activity diagrams from Unified Modelling Language (UML). The objective of BPMN is to support business process management, for both technical users and business users, by providing a notation that is intuitive to business users, yet able to represent complex process semantics. The BPMN specification also provides a mapping between the graphics of the notation and the underlying constructs of execution languages, particularly Business Process Execution Language (BPEL). The primary goal of BPMN is to provide a standard notation readily understandable by all business stakeholders. These include the business analysts who create and refine the processes, the technical developers responsible for implementing them, and the business managers who monitor and manage them. Consequently, BPMN serves as a common language, bridging the communication gap that frequently occurs between business process design and implementation. LEADing Practice is a part of OMG and is a part of creating the BPMN standard. The official OMG BPMN description is found here: http://www.omg.org/news/whitepapers/Business_Process_Model_and_Notation.pdf

What is vital to understand is that the OMG BPMN development was somewhat constrained by the desire to create models of execution with greater fidelity. While the Global University Alliance members realized that while BPMN is the standard in the market, we were forced to acknowledge that the BPMN standard itself had critical gaps and lacked the ability to express key concepts which we saw as essential in the context of Enterprise Modelling and Enterprise Architecture. These deficiencies meant that with BPMN 2.0, a modeller could not:

- Specify the difference between manual and automated Tasks
- Specify the difference between manual and automated Services
- Link processes to Strategies
- Define Relationship between Business Competencies and Processes
- Specify Measurements and reporting aspects
- Define Rulesets (business, application, etc.)
- Define decisions based on the number of given conditions/actions

- Classify Business Objects of any kind
- Specify Information Objects

This page describes the results of a new breed of process modelling capabilities that are collectively known as eXtended Business Process Model and Notation (X-BPMN). The notational extensions defined by X-BPMN are build within a normal BPMN environment (fully integrated). To achieve our goal to facilitate the creation of models of understanding for capturing organizational business processes, it became clear to us that BPMN need to be augmented with additional notational elements (objects) to have the expressiveness needed for this larger consideration.

In order to further motivate the discussion of the potential role of extended the BPMN diagrams here a couple of practical examples follow.

- Models created in X-BPMN facilitate the specification of business concepts like Manual Services and Automated Tasks, which are necessary for conducting meaningful process simulation and break point analysis.
- X-BPMN provides constructs that allow the modelling of system, service, and information flows.
- Without the X-BPMN notation, process analysts are constrained by the assumption that information flow is the same as the process flow.

As can be readily seen, this assumption makes it difficult to rationalize an approach to Master Data Management (MDM). The X-BPMN Business Objects are particularly useful for mapping the interaction of a process with real-world, tangible artifacts. This of course is necessary for the depiction of the real-world effects of a process as it executes.

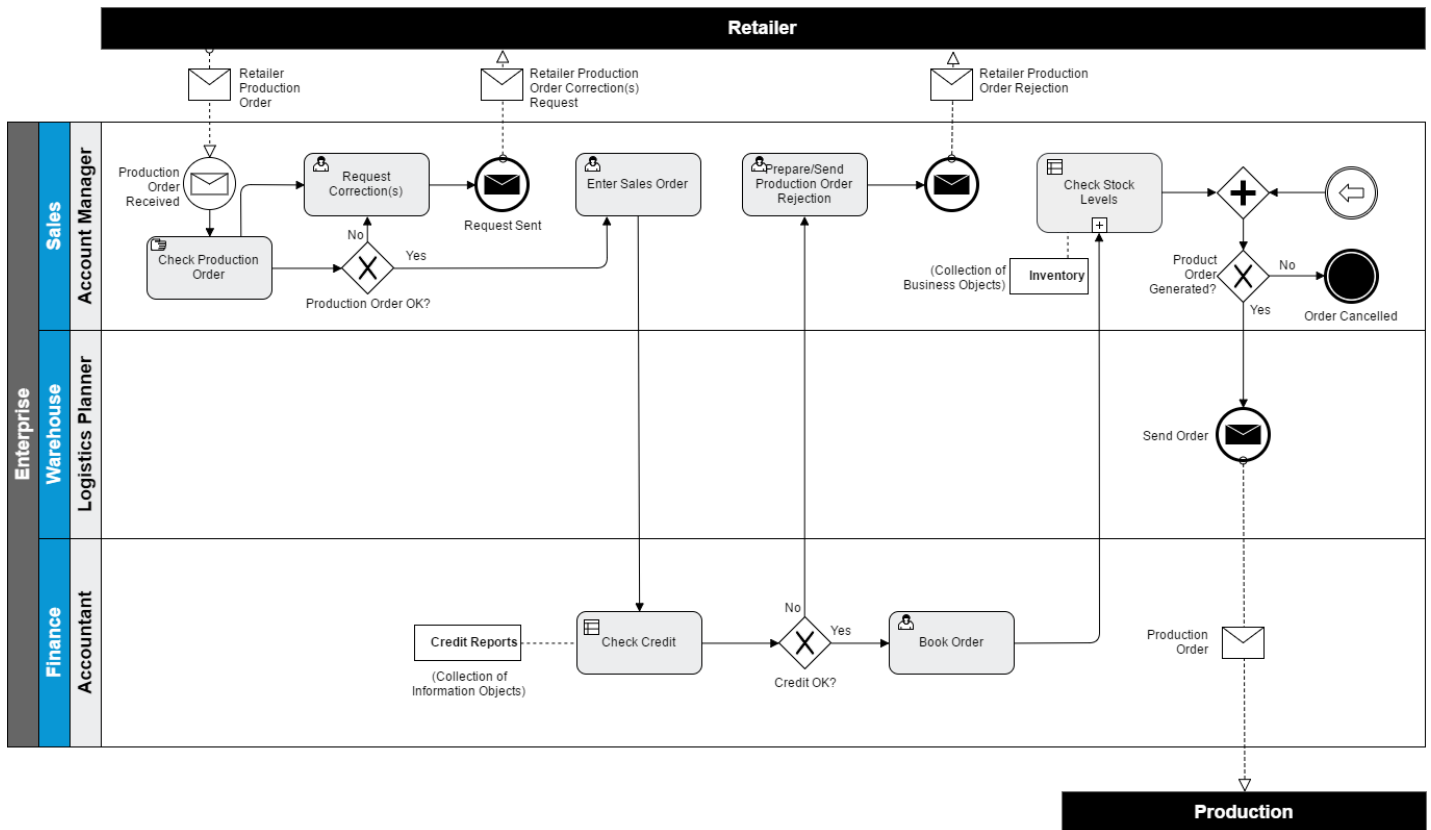
Other examples of the benefits of using of X-BPMN include:

1. The ability to model advanced process measurement in terms of Key Performance Indicators (KPIs), Process Performance Indicators (PPIs), and Service Performance Indicators (SPIs)
2. The linking of Business Strategies, Business Competencies, resources, and measurements to processes, and their activities
3. The monitoring of results in Scorecards, Dashboards, and/or Cockpits
4. The identification of the duplication of business functions, processes, services, information/data, measurements, and reporting
5. The ability to run Ownership Gap Analysis (to process, service, rule, measurements)
6. The support for Business Rules Modelling and decision making support

In short, the X-BPMN enhanced process modelling capabilities enable an entirely new way of working with processes. They provide the ability to relate process models to other vital aspects of enterprise modelling (e.g. Business Modelling, Strategy Modelling, Value, and Performance Management) and

enterprise architecture (e.g. Business Architecture, Information Systems Architecture, and Technology Architecture).

Retailer Production Order



In the BPMN diagram of the Retailer Production Order you see the normal BPMN objects as well as additional objects relevant to process modelling. The Objects used within the Retailer Production Order BPMN Model are the following (LEAD specific highlighted in red):

- Business Process
 - Retailer Production Order
- **Organizational Competencies**
 - **Retailer**
 - **Finance**
 - **Warehouse**
 - **Sales**
 - **Production**
- Organizational Roles

- Account Manager
- Logistics Planner
- Accountant
- Sent/Received Tasks (messages)
 - Retailer Production Order
 - Production Order Received
 - Request Sent
 - Retailer Production Order Correction(s) Request
 - Rejection Sent
 - Retailer Production Order Rejection
 - Send Order
 - Production Order
- Process Steps
 - Check Production Order
 - Request Correction(s)
 - Enter Sales Order
 - Check Credit
 - Prepare/Send Production Order Rejection
 - Book Order
 - Check Stock Levels
- Gateways
 - Production Order OK?
 - Credit OK?
 - Parallel Gateway (used with Link Catching)
- Locations
 - Copenhagen
 - Aarhus
- Business Object
 - Inventory
- Information Object
 - Credit Reports

Using the Objects within the context of Process Automation – example SAP

Applications like Oracle, Microsoft, SAP or IBM are information systems, they are specialised software used to automate a set of business processes, steps, activities, events, and flows. Applications are also used to automate process reporting through the use of system measurements and system reporting. Being able to leverage process notations for application/system implementation requires both the capturing of the detailed elements needed for full process automation and thereby application blueprint and software development, and the details of where and in which ways is the organization is unique in creating value.

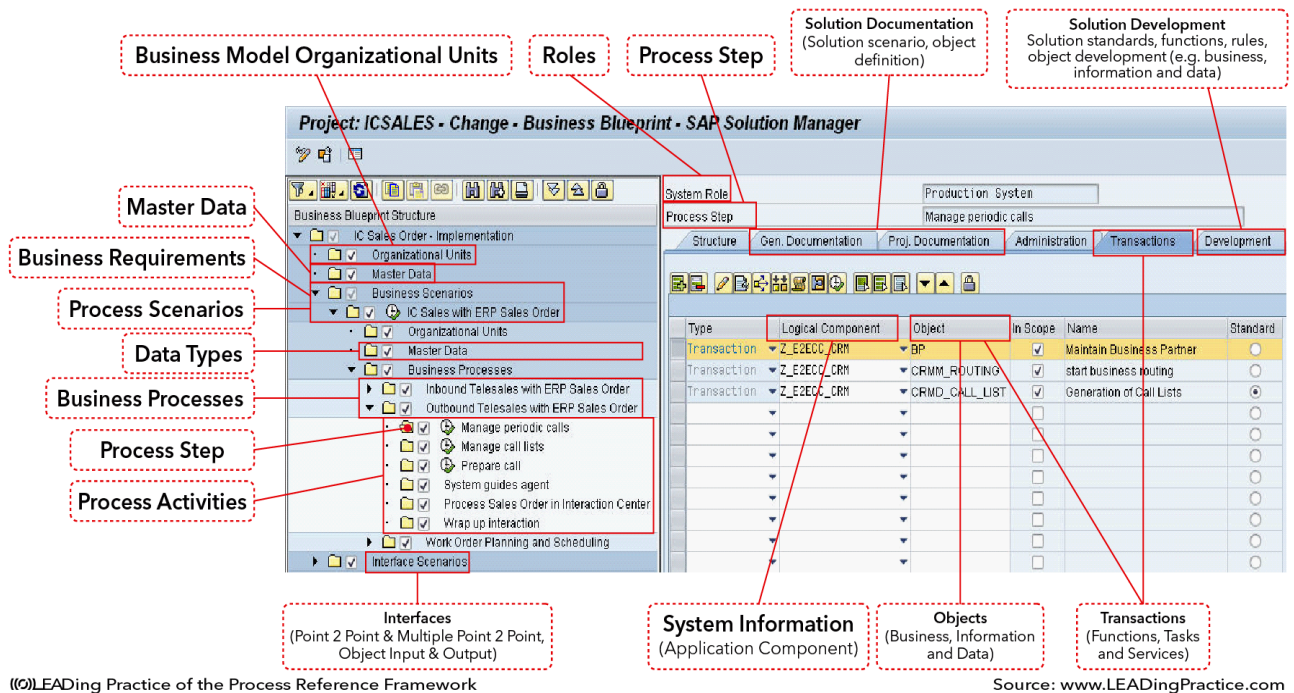


Figure 2: Example of SAP Solution Manager which relates process, objects and application aspects together (picture of Solution Manager 7.2, using ASAP 7.2 and the LEAD meta models and principles within Business Blueprint, Application Design & Build, Application implementation/go live and maintenance)

A good deal of additional information is needed in order to use extended BPMN notation for application blueprinting and software development. In the SAP Solution Manager example, are the detailed elements needed for an SAP ERP. Without the ability to capture all of the required information within the notation it is not possible to complete the solution design in a manner that is properly and fully connected to the business and the context of execution and its configuration, nor upload via SAP Solution Manager an application design that is fully integrated to the business. Examples of this required information are, among others:

- The business model in terms of how the organizational units are constructed, which is both input to the solution construct and solution license,
- The To-Be business process, steps, and activities,
- Automated process details, in terms of tasks, events, gateways, measurements, decision points, reports, and rules,

- Automated service details, in terms of tasks, events, gateways, measurements, decision points, reports, and rules. This enables advanced service modelling and automation,
- The ability to specify SAP roles within the automated processes and services
- The business objects involved e.g. real world objects: people, material, physical goods, etc.,
- The information objects involved and their linkage to measurements, reporting, decision making and information rules,
- The data objects involved and the specification of data types (meta and/or master and/or transactional), data input/output, data storage, link to measurements, reporting, decision making and data rules,
- The business scenarios, including the goals/requirements, the processes, the flows in terms of business workflow, information, and data. This includes the Objects input and output for the flows and the interfaces.

To complete a business blueprint and make appropriate application design choices as well as have an integration between your process environment (process model world) as well that of the ERP (SAP Solution Manager), it is essential to identify all the relevant elements (objects).