5 Process Modeling with BPMN

5.1 The BPMN Language

The BPMN is a symbol language which fixes the standards of the business process modeling. Stephen A. White has developed the language in 2001 and three years later it was published as BPMN 1.0 by the Business Process Management Initiative (BPMI).\textsuperscript{96} The BPMI is a consortium which consists of representatives of different modeling companies, organizations and individuals.\textsuperscript{97} Their purpose was to provide a business-friendly graphical notation for process descriptions expressed in the business process modeling language. In the meantime the BPMI has become a member of the Object Management Group (OMG) which is already known for several software standards like the Unified Modeling Language.\textsuperscript{98} After years of intensive work the next version of the BPMN standard, BPMN 2.0, was adopted and published in January 2011 by the OMG.\textsuperscript{99} The notation elements of the former version have not significantly been changed in the new one. It was only been extended by several constructs and by a few new model types.\textsuperscript{100}

BPMN is an uncomplicated and easy language to business users. Each shape was given a precise operational semantics so that the meaning and the logical sequence of the diagram is not dependent on the modeler’s idea, but standardized and subject to automated validation. There are defined rules and characterizations which make it easy to understand a created process without being explained in detail to a person inside or outside a company.\textsuperscript{101} The language consists of different symbols and elements which are a time consistent sequence of activities. In general there will be done things in a process (activities) which caused in results (events), possibly under certain conditions (gateways). These three flow objects are connected with each other through a sequence flow, but only within a pool or a lane. Furthermore there are artifacts that give additional information about the process, but cannot have influence on the sequence of the flow objects.\textsuperscript{102}

\textsuperscript{96} Allweyer (2010), p. 10.
\textsuperscript{97} White and Miers (2008), p. 24.
\textsuperscript{98} Allweyer (2010), p. 10.
\textsuperscript{100} Allweyer (2010), p. 11.
\textsuperscript{101} Silver (2009), p. vii.
\textsuperscript{102} Freund and Rücker (2012), p. 21.
The processes of the thesis are modeled with BPMN 2.0 in the *inubit Suite* software. Therefore the most important elements (see chapter 5.2) that are used and needed for the process modeling are described more in detail.

### 5.2 Important Elements of the BPMN Language

#### 5.2.1 Swimlanes

The entire process is modeled in a pool and is a general kind of box for a complete process. Every process is situated within a pool and usually labeled with the process name.\(^\text{103}\) In figure 13 the pool is named “Process Modeling” and divided into two lanes.

A lane is part of a pool and is used to assign different activities to the responsible person or organization unit; generally it is recommendable to use the name of the organization or the department, but not of a single person. The lanes in figure 13 describe which activities of the process are performed by the department and which ones by the project manager.\(^\text{104}\)

![Figure 12: Pool with two lanes](source: Own illustration from *inubit Suite*)

Pools and lanes together are also called swimlanes because they resemble the partitioning of swimming pools into lanes. Every participant swims only in its own lane.\(^\text{105}\)

---

\(^\text{103}\) Allweyer (2010), p. 16.

\(^\text{104}\) Allweyer (2010), p. 17.

\(^\text{105}\) Allweyer (2010), p. 17.