



## Chapter V

# Assessing Business Process Modeling Languages Using a Generic Quality Framework

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### ABSTRACT

*We describe in this chapter an insurance company that has recently wanted to standardize on business process modeling language. To perform the evaluation, a generic framework for assessing the quality of models and modeling languages was specialized to the needs of the company. Three different modeling languages were evaluated according to the specialized criteria. The work illustrates the practical utility of the overall framework, where language quality features are looked upon as means to enable the creation of models of high quality. It also illustrates the need for specializing this kind of general framework based on the requirements of the specific organization.*

## INTRODUCTION

There exists a large number of business process modeling languages. Deciding which modeling language to use for a specific task is often done in an ad hoc fashion by different organizations. In this chapter, we present the work done within an insurance company that had a perceived need for using process modeling to support the integration of its business systems across different functions of the organization.

We have earlier developed a general framework for assessment of quality of models, where criteria for the language to be used for modeling are among the means to support quality goals at different levels. We have termed this *language quality* (Krogstie, 2001). This chapter presents an example of using and specializing this part of the quality framework for the evaluation and selection of a modeling language for enterprise process modeling for the insurance company. The need for such specialization is grounded on work on task-technology fit (Goodhue & Thompson, 1995). A similar use of the framework for comparing process modeling languages in an oil company has been reported in Krogstie and Arnesen (2004). Although similar, we will see that due to different goals of process modeling, the criteria derived from the quality framework by the oil company was different in the work reported in this chapter.

The chapter is structured as follows. The next section describes the quality framework, with a focus on language quality. Then, the case study is described in more detail, followed by the results of the evaluation. The conclusion highlights some of our experiences from using and specializing the quality framework for evaluating modeling languages for business process modeling.

## FRAMEWORK FOR QUALITY OF MODELS

The model quality framework (Krogstie, 2001; Krogstie, Lindland, & Sindre, 1995; Krogstie & Sølvyberg, 2003) is used as a starting point for the discussion on language quality. The main concepts of the framework and their relationships are shown in Figure 1. We have taken a set-theoretic approach to the discussion of model quality at different semiotic levels. Different aspects of model quality have been defined as the correspondence between statements belonging to the following sets:

- **G**: the (normally organizational) goals of the modeling task.
- **L**: the language extension, that is, the set of all statements that can be made according to the graphemes, vocabulary, and syntax of the modeling languages used.
- **D**: the domain, that is, the set of all statements that can be made about the situation at hand.
- **M**: the externalized model.
- **K<sub>s</sub>**: the relevant explicit knowledge of the set of stakeholders being involved in modeling (the audience **A**). A subset of the audience is those actively involved in modeling, and their knowledge is indicated by **K<sub>M</sub>**.
- **I**: the social actor interpretation, that is, the set of all statements that the audience at a given time thinks of as comprising an externalized model.
- **T**: the technical actor interpretation, that is, the statements in the model as “interpreted” by different modeling tools.

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