Chapter IV

Assessing Enterprise Modeling Languages Using a Generic Quality Framework

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ABSTRACT

Statoil, one of Norway's largest organizations, recently wanted to standardize an enterprise modeling language for process modeling for sense-making and communication. To perform the evaluation, a generic framework for assessing the quality of models and modeling languages was specialized to the needs of the company. Five different modeling languages were evaluated according to the specialized criteria. Two languages were, through this, found as candidate languages, and further criteria related to tool and process support for using the languages in actual modeling were used to decide the language to choose for future standardization. This 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

A large number of modeling languages exist for enterprise modeling. Deciding which modeling language to use for a specific task is often done in an ad-hoc fashion by different organizations. Statoil, one of Norway's largest companies, has over the years developed and used several different modeling languages for modeling enterprise processes. Last year the company embarked on a process for evaluating and selecting a standard modeling language enterprise process modeling.

We earlier developed a general framework for assessment of quality of models, where one type of means to support quality goals at different levels is criteria for the language to be used for modeling, also called language quality (Krogstie, 2001). This chapter presents an example of using and specializing the quality framework for the evaluation and selection of a modeling language for enterprise process modeling for Statoil.

Chapter Structure

The next section describes the general quality framework, with a focus on language quality. We then describe the Statoil case in more detail and followed with results of the evaluation. The conclusion highlights some of our experiences from using and specializing the quality framework for evaluating modeling languages for enterprise modeling.

FRAMEWORK FOR QUALITY OF MODELS

We use the model quality framework (Krogstie & Sølvberg, 2003; Krogstie, 2001) 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, which has 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, i.e., the set of all statements that are possible to make according to the graphemes, vocabulary, and syntax of the modeling languages used.
- **D**, the domain, i.e., the set of all statements which can be stated about the situation at hand.

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