

Chapter 4

Evaluating Adequacy of Business Process Modeling Approaches

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ABSTRACT

From the practical point of view, the most important parameter that describes the quality of a particular model is its adequacy to the task for which the model will be used. The selection of a “right for the task” modeling approach can substantially increase chances of creating a high quality model. To ensure the “right” choice of modeling approach the following three factors should be considered: (a) properties of the object to be modeled, (b) characteristics of the environment in which the model is being built, (c) intended use of the model. This chapter is devoted to the analysis of these factors for the domain of business process modeling. It presents a simplified classification of the approaches to business process modeling. It lists the most essential properties of business processes, it classifies modeling environments, and it discusses some practical tasks where a business process model can be used. Based on the analysis, practical recommendations on what modeling approach to choose are given dependent on the type of the process under consideration, the task at hand, and the environment in which the model is being built and verified.

INTRODUCTION

There are many different parameters that should be taken into consideration when measuring the quality of a particular model, like precision, level of details, formal correctness, etc. From the practical point of view, however, the most important factor is the adequacy of the model to a practical task that the model should help to solve. A formally incorrect model can be corrected, absent details can be added later, but an inadequate model may be of little practical use. It may be formally correct, precise, and very

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detailed, but the level of details may be too high in respect to the aspects that are of low interest for a given practical task, and too low for the aspects that are critical for this task.

The adequacy of a particular model depends, in a very high degree, on the type of the modeling approach (also called modeling method or technique) chosen for the given modeling task. Under modeling approach we understand modeling language, and related guidelines on how to use it in practice. In any particular application domain, there, usually, exist several, sometimes too many, competing modeling approaches. These approaches may be formally equivalent to each other; nevertheless, the choice of the “unsuitable” approach may seriously affect the chances for success. To make a right choice, a way of evaluation of the adequacy of a modeling approach to a practical task should be developed so that a “right” approach could be chosen for each particular modeling task.

In our opinion, the following factors are to be considered when making the choice:

1. Properties of the object to be modeled.
2. Characteristics of the environment in which the model is being built.
3. Intended use of the model.

Interpretation of these three factors depends on the application domain in which the modeling work is to be done. Thus, for each application domain, the following work needs to be completed in order to create a practical manual for selection a suitable modeling approach:

1. Classify the existing approaches to modeling according to the most important characteristics of the given application domain. This is extremely important when there exist too many approaches in a particular domain. In such a case, choosing an approach by comparing all of them can be both time consuming and confusing.
2. Select and describe the most essential properties of the modeling objects in the given application domain. Analyze which modeling approaches suit best for describing particular properties of the modeling objects.
3. Select and describe the most essential properties of the environment in which the modeling work is to be completed. Analyze which of the modeling approaches suit best for particular modeling environments.
4. List all thinkable tasks for which a model could be used in the given application domain. Analyze which modeling approaches are the most suitable for particular tasks.
5. Give the final recommendation on how to choose a suitable approach

This chapter presents an example of work completed according to the steps above. The work concerns the domain of business processes that we consider as quite representative for the task of testing the principles listed above. This is because:

- Based on our practice, there is no universal approach of business process modeling suitable for all possible projects in this field
- In this domain, there are far too many approaches and tools to consider all of them one by one to see which one suits best the needs of a particular project. Some classification of approaches is needed so that first a particular class can be chosen, and after that a approach that belong to the class.

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