Chapter VI

Evaluation of Reference Models

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Abstract

Evaluating a reference model is a demanding task. Not only do reference models inherit the problems well known from the evaluation of conceptual models in general, but furthermore, their claim for general (re-) usability implies the ability to take into account the possible variety of requirements and specific constraints within the set of potential applications. This Chapter presents a method that is aimed at fostering a differentiated and balanced judgement of reference models. For this purpose, it takes into account various perspectives—among others, economic, engineering and epistemological. It also includes a process model that demonstrates how to organize a specific evaluation project.

Evaluation of Reference Models as a Multi-Faceted Challenge

Reference models are a reification of a very attractive vision: They promise higher quality of information systems at less cost. This vision goes along with two pivotal claims. On the one hand, reference models are intended to provide appropriate *descriptions* of an application domain. On the other hand, reference models are aimed at delivering *blueprints* for a distinctively good design of information systems and related organizational settings. Thus, they are descriptive and prescriptive at the same time. While many conceptual models include descriptive and prescriptive elements, reference models should fit the specific needs of a whole range of organizations. Since the idea of reference modeling is emphasizing the improvement of quality, evaluating them is a core issue: From the perspective of prospective users, it can hardly be taken for granted that a particular reference model is of superior quality. However, evaluating reference models is a major challenge. This is for various reasons. Not only that reference models inherit the problems well known from the evaluation of conceptual models in general, but furthermore, that their claim for general (re-) usability implies a takeing into account the possible variety of requirements and specific constraints within the set of potential applications. Another source of complexity is the variety of objectives related to the use of reference models. They include economic goals, such as increase of productivity, or goals related to specific analysis, design or implementation tasks. In addition to that, testing the claim for excellence faces deep and subtle epistemological problems.

Against this background, the paper will propose a *method* for evaluating reference models. It consists of a conceptual framework that serves to structure the overall evaluation problem, which is supplemented by a prototypical process model that demonstrates how to organize a specific evaluation project.

Related Work

While reference models are arguably of pivotal importance for the IS discipline, the idea of reference models has not been around for too long. This is even more the case for actual reference models. In a recent survey focussed on German speaking countries, Fettke and Loos identified only 33 reference models of various kinds, 22 of which were accessible (Fettke & Loos, 2004). Therefore, it does not come as a surprise that there have been only a few approaches that focus explicitly on the evaluation of reference models. However, there is other work which is directly related to this topic: approaches to the evaluation of conceptual models and approaches to the evaluation of modeling languages.

Evaluation of Conceptual Models

Reference models are conceptual models. A conceptual model is an abstraction that stresses the core terms or concepts which characterize an application domain, while neglecting technical

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