

Chapter V

How to Elaborate a Use Case

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ABSTRACT

This paper challenges established wisdom with respect to use cases. Use cases are classically elaborated by directly identifying objects, methods and data. The research reported in this paper indicates that there are other better constructs for modeling use cases, at least initially, and that objects are not a particularly good medium for discussing requirements with users. This paper rehearses the arguments leading up to these conclusions and identifies some implications of these conclusions.

INTRODUCTION

This paper describes conclusions from two action research studies concerned with modeling use cases. Because an alternative structure of a use case is proposed, the term **business rule** will be used throughout to signal that a different structure for a use case (though not purpose) is implied. At this point, however, the reader may regard the terms business rule and use case as synonymous. Initially in these action research studies, the classical process of elaborating use cases was followed (Jacobson, Christerson, Jonsson & Overgaard, 1992). That is, business objects were

used as a means of capturing and documenting the requirements of the information system, so the ability of business objects to describe requirements in the early stages of developing a system was tested. It was found that business objects did not contain constructs that were **directly** conducive to requirements gathering from users and neither did they facilitate presentation and discussion of requirements at an appropriate level of abstraction. It was found that a more appropriate vehicle for analyzing requirements at this stage was brought about by (customizing) the notion of a **business rule**.

This paper attempts to explain the relationship between business objects and business rules. In doing so, it highlights some inadequacies of business objects as a medium for gathering and expressing requirements at any early stage of development, and, most importantly, it demonstrates how all analysts who work with use cases can improve requirements specification. Some of this discussion relates to how users prefer to conceptualize their world; other parts of this discussion relate to the pragmatics of conceptual modeling.

The paper proceeds as follows. The remainder of this section introduces the idea of a business rule and some of its history in the literature. It then details the action research studies so the reader can appreciate the ensuing discussion. This is followed by a discussion of certain inadequacies of business objects that arose from the research.

There has been a continued and active discussion of business rules in both the practitioner and academic literature. With regard to the practitioner literature, especially in North America, there has been a concern of insufficient treatment of and insufficient focus on business rules generally (Chikofsky, 1990; Sandifer & Von Halle, 1991a, 1991b; Jones, 1991; Lucas, 1993; Moriarty, 1993a, 1993b, 1993c, 1993d; Von Halle, 1994; Baum, 1995). The discussion in the practitioner literature is wide ranging. For example, it covers questions of how a DBMS environment can deal with business-rule implementation options (Von Halle, 1994) through to Joint Application Design (Lucas, 1993). Much of the discussion, however, quite naturally focuses on immediate solutions to existing problems, such as illustrating how business rules could be integrated into data dictionaries (Sandifer & Von Halle, 1991a) or how CASE tools could improve the documentation of business rules (Baum, 1995), rather than exploring the conceptual basis for modeling business artifacts.

As regards the academic literature, there are a number of examples of authors actively using the term business rule in their work (Feuerlicht & Blair, 1990; Ross, 1994; Sandy, 1994; Herbst, 1996). However there are difficulties in identifying work in this area because there are a wide variety of names given to diagrams, which model business rules or, at least, some aspects of a business rule. While there is, as yet, no standardization of terminology in this area, the work of Kung and Solvberg (1986), Kappel and Schrefl (1989) and Tsalgatidou and Loucopoulos (1991a, 1991b) could be regarded as synonymous with business rules modeling. The Business Rule

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