



## **Chapter III**

# **Modeling Techniques for Knowledge Management**

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### **Abstract**

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*Knowledge management is an umbrella concept for different management tasks and activities. Various modeling abstractions and techniques have been developed providing specialized support for different knowledge management tasks. This article gives an overview of modeling abstractions that are frequently discussed in the knowledge management literature as well as some promising techniques in a mature research state. Six groups of modeling techniques are presented and additionally evaluated with respect to their suitability for different fields of applications within the knowledge management domain.*

## Introduction

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Knowledge management (KM) is a collective concept for a variety of management tasks and embraces different management functions. The term knowledge management covers strategic as well as operational activities that are dedicated to the

- Management—that is, analysis, planning, control, and leadership—of the knowledge base of a company
- Personnel management of knowledge workers
- Organization of knowledge work
- Management of information systems supporting knowledge work

Each of the four management areas of knowledge management embraces a multiplicity of possible tasks and management instruments. Knowledge management is additionally complicated by the fact that the different management areas are interdependent and connected. Hence, knowledge management is often faced with sociotechnical as well as socioeconomical challenges.

The complexity of the domain and the multiplicity of possible management instruments require watchful analysis of the problem domain and careful strategy development as well as planning of knowledge management measures. In order to support (systems) analysis, discussion of strategic knowledge management issues, and knowledge management planning, academic literature and business practice suggest a number of modeling techniques and methods. They promise to foster the explication and collaborative reflection of strategic issues, the understanding of operational challenges, as well as the planning and documentation of specific measures for knowledge management in a particular enterprise.

This article gives an overview of modeling abstractions for knowledge management and compares the techniques according to their relevance for different fields of application within the knowledge management domain. Our discussion covers modeling abstractions frequently discussed in knowledge management literature as well as some promising techniques that are in a mature research state. Section 2 examines mapping techniques typically used in early planning stages of knowledge management initiatives. Section 3 presents different types of conceptual modeling techniques for knowledge management. Section 4 is dedicated to formal modeling techniques for knowledge management, focusing on ontologies. A comparative evaluation of the different modeling techniques is provided in Section 5. The article closes with concluding remarks.

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