

Chapter 6.2

An Ontology–Based Competence Management Model to Support Collaborative Working and Organisational Learning

José Braga de Vasconcelos
Universidade Fernando Pessoa, Portugal

Chris Kimble
University of York, UK

ABSTRACT

This chapter describes an ontology-based competence management model that can be used to support distributed collaborative working and facilitate organisational learning. The chapter begins by examining the concepts of collaborative working and organisational learning in the context of knowledge management and competence management systems. It describes the different forms of knowledge that can be represented in such systems and uses this to describe an ontol-

ogy-driven approach to competence management. An outline design for an ontology-driven competence management system and the related content management approach is then outlined using material from earlier work on a group memory system; the competence ontology and expert annotation technique used in group memory system is described in detail. The chapter concludes with some discussion concerning the role of such systems in knowledge-intensive industries and some directions for future research.

INTRODUCTION

Besides labour, capital, and land, knowledge has been recognised as an important factor for productivity in organisations (Abecker et al., 1999). Knowledge-intensive companies employ highly skilled people, knowledge workers, who constantly face problem-solving tasks that require the efficient utilisation of existing sources of knowledge and information (Alvesson, 1995). In such an environment, people, the knowledge they hold, and the interactions between them—in short, organisational knowledge—are seen as crucial for effective business performance (Brown & Duguid, 2000).

However, since the 1980s, many organisations have taken steps to outsource and downsize in an effort to remain competitive. Outsourcing, downsizing, and programmes of planned redundancy all mean that, as people leave, they take with them a valuable stock of knowledge about the way an organisation works on a day-to-day level (DeLong, 2004). This loss of knowledge inevitably limits the long-term effectiveness of an organisation, as those who remain may be unaware of key resources that lie “hidden” in various knowledge repositories within the organisation (Dzbor, Parlic, & Parlic, 2000).

Knowledge-intensive organisations (KIOs), in particular, rely heavily on making effective use of such knowledge. By definition, knowledge-based tasks such as recognising patterns in organisational behaviour and dealing with abstraction, ambiguity, and uncertainty, form a large part of their corporate activity (Alvesson, 1993). In practice, much of this work is done through exploiting a constantly changing and evolving network of relationships between people, sources of information, and organisational needs. Organisational groups in such organisations need to create mechanisms to elicit innovation, find sources of information, manage skills efficiently, and gather ideas and suggestions in order to do their work. In other

words, to work effectively in a KIO, groups need to be able to work collaboratively.

Collaborative work is work undertaken as part of a group activity that is directed toward a shared goal or common purpose. In recent years, collaborative working has tended to become synonymous with the use of technology to support the operation of virtual teams (Kimble, Li, & Barlow, 2000), communities of practice (Kimble & Hildreth, 2005), or networks of practice (Teigland & Wasko, 2004). Much of this literature, however, focuses on simple “task groups” whose role is to fulfil a particular task; collaborative work in a KIO is more than a group of individuals working in isolation. For collaborative work to be effective, there must be a degree of “esprit de corps.” A balance of dealing with factual content, relationships, and the coordination of a central process is required. Social aspects such as a shared social context, a feeling of trust, and a human interest in each other need to be balanced against the more process-orientated aspects such as the planning of work and the scheduling of activities (Sharratt & Usoro, 2003).

Tuomi (2002) claims that modern knowledge management (KM) systems have now moved away from their roots as “dumb” databases and have begun to encompass broader concepts such as computer-supported collaborative work, computer-mediated communication, groupware, collaborative systems, and organisational learning. Following Heijst, Spek, and Kruizinga (1997), we view the concept of organisational learning as an organisational process where three forms of learning can occur in parallel: individual learning by reusing lessons learned from previous experiences, learning through communication (or group learning), and learning through the use of an information repository. The competence management (CM) system we describe is one approach to facilitating this last form of organisational learning. It is designed to act as a single front end for the human user, providing a

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