

Chapter 4.20

Towards an Integrated Model of Knowledge Sharing in Software Development: Insights from a Case Study

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ABSTRACT

This article adds to the discussion on knowledge management (KM) by focusing on the process of knowledge sharing as a vital part of KM. The article focuses on the relationship between knowledge, learning, communication, and participation in action, and the role of social interaction and technical media in the knowledge sharing process. We develop an initial theoretical framework of knowledge sharing on the basis of a literature study. Drawing on an empirical study of knowledge sharing in a software development company, we discuss what supports and what hinders knowledge sharing in software development. Finally, we use this knowledge to improve the theoretical framework.

INTRODUCTION

The KM literature is extensive, but the discussion on how to manage knowledge in organisations is far from over, and new proposals as well as lessons learned are continually being suggested. However, the published literature, especially in the information systems field, is largely grounded in a view that considers knowledge as an objective commodity which can be collected, represented symbolically and processed like information (Dahlbom & Mathiassen, 1993; Tsoukas, 1998). The literature consequently shows a certain preoccupation with information technology (IT) and technical solutions while it reflects a limited view of individual and organisational knowledge-related processes (Swan, Scarbrough, & Preston,

1999). The practice of KM is frequently reduced to the implementation of new IT-based systems, and important organisational aspects, in particular human and social issues, are overlooked. There are, however, exceptions in the literature which reviews KM success and critical success factors (Jennex & Olfman, 2005, 2006). Like Kautz and Thaysen (2001), those who emphasise the important but not privileged role of IT provide a balanced discussion of technical issues related to KM.

This article takes this debate into account and is based on a broader perspective of knowledge and KM. Our focus is on understanding especially the process of knowledge sharing as a vital part of KM and on the relationship between knowledge, communication, and participation in action through either social interaction or technical media in the knowledge sharing process.

By studying the knowledge sharing process in a Danish software development company, we provide an insight into how developers draw from organisational memory (Walsh & Ungson, 1991) to share knowledge in a learning context. We discuss the use of social interaction and technical media in the communication process and provide conclusions on how different forms of knowledge are shared through the two types of media.

Our focus is primarily on the role of people in the knowledge sharing process, but we also include empirical findings on how people use technology to share knowledge.

The article is structured as follows. The next section introduces the concepts of knowledge, learning and communication which inform our understanding of knowledge sharing. The third section presents our research approach and setting. Our empirical findings are described in the fourth section and discussed in the fifth section. Finally in the sixth section, we present our conclusions and the challenges for future research.

THEORETICAL BACKGROUND

We begin by exploring the concepts on which we build our initial theoretical understanding in order to present how we utilise them in this study. Knowledge sharing is a bilateral process in which knowledge is exchanged between individuals and groups (Comas & Sieber, 2001). Knowledge is the outcome of a complex process, a part of which is the gathering and processing of information. This has been described by Kolb (1984) and others as a learning process. Learning is significant for the attainment of knowledge, and thus also for the sharing of knowledge. Information is communicated among people with the aid of a shared language, body language, and actions (Fiske, 1990; Nielsen, 1994) and participation in action and practice builds the foundation for learning (Wenger, 1998). This happens through social interaction and in some cases with the aid of technical media (Thompson & Walsham, 2001). Communication and participation in action are thus also significant for the sharing of knowledge. In the following we revisit the concepts of knowledge, learning communication, and participation in action and their relationship and importance for knowledge sharing in more detail.

Knowledge

Many definitions of knowledge have been presented in the literature. Although they differ in scope and orientation, they seem to agree upon the fact that knowledge is a complex multifaceted concept which can be understood from different perspectives (Cook & Brown, 1999; Kautz & Thaysen, 2001). From a hermeneutic perspective, knowledge is not a commodity which can be collected under controlled conditions and bought or sold on a market (Dahlbom & Mathiassen, 1993). On the contrary, it is subjective enlightenment, a personal property which is grounded in human cognition of things and relations in the world

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