

# Chapter IX

## Activity Theory for Knowledge Management in Organisations

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### ABSTRACT

*Current approaches to KMS (Knowledge Management Systems) tend to concentrate development mainly on technical aspects, but they ignore social organisational issues. Effective KMS design requires that the role of technologies is supporting business knowledge processes rather than storing data. CHAT (Cultural Historical Activity Theory) can be used as a theoretical model to analyse the development of knowledge management systems and knowledge sharing. Activity theory as a philosophical and cross-disciplinary framework for studying different forms of human practices is well suited for study research within a community of practice such as knowledge management in collaborative research. This chapter shows how activity theory can be used as a kernel theory for the development of a knowledge management design theory for collaborative work.*

### INTRODUCTION

The design and development of knowledge management systems is not trivial. Organisations are communities of people who compete among themselves for power and resources. There are differences of opinion and values, conflicts of priorities, and goals (Handy, 2005). Much of the research so far in KM (Knowledge Management) focuses on studying technological functionalities,

but not the long-term impact of the system. Effective use of knowledge management system requires careful study of the continuous process of co-evolving complex social and technical systems. New tools lead to new practices and ways of working, which in turn lead to affordances for and constraints on technical innovation (Winograd, 1995). Knowledge management communities cannot be declared; they need to be allowed to grow over a long period of time (Wenger et al.,

2002). Instead of studying isolated relations between a particular innovation and an increase of effectiveness in a KM community, they should be examined as embedded in complex socio-technical systems, characterised by interdependence and long-term evolution (Moore, 2005). A way of conceptualising such systems, well-suited to the dynamic, evolving, and permeable nature is an activity system using activity theory. The traditional approach of developing such systems using the waterfall-based system development methods with their clear stages, deliverables and well-understood dependencies no longer suffices (Brooks, 1995). A more holistic approach is needed, particularly in the design stage. It is necessary to go beyond studying KM systems as change agents. Instead, to proactively improve specific ways of design that can contribute to desired changes in the environment. KM systems are complex and evolving socio-technological systems; they require a systematic and situated design approach. Each stakeholder in the system has unique design needs. The effects of conflicts need to be studied. They can only be studied in their interactions with other elements and systems in context. This requires that designers have understanding of this knowledge.

Activity theory not only provides an ideal candidate for understanding and helping with KM design, it can also be used as a kernel theory for the KM theory. This paper explores activity theory to help with knowledge management design in KMS. At the beginning there is a brief review of knowledge management; then design theories and their benefits for KM are given. This is followed by a short overview of activity theory. Some of the implications from activity theory for KMS kernel theory are proposed. The final section gives suggestions for further research.

The objectives of the paper are:

- A brief review of knowledge management
- A review of design theories for knowledge management

- A discussion of activity theory
- Description of how activity theory is used as a kernel theory for KMS
- Suggestions for future works

## **KNOWLEDGE MANAGEMENT**

We are living in a knowledge economy. Knowledge is the whole body of cognition and skills that individuals use to solve problems. It includes theories and practical, everyday rules, and instruction for action (Probst et al., 2003). Knowledge has become the most important asset of an organization. Knowledge management is the process of identifying, capturing, organizing, and disseminating the intellectual assets that are critical to the organization long-term performance (Debowski, 2006). In order to survive in a knowledge society, organisations must learn to manage their intellectual assets. Knowledge is the only resource that increases with use. Knowledge management is referred to as the process for creating, codifying and disseminating knowledge for a wide range of knowledge intensive tasks. (Harris et al., 1998). These tasks can be decision support, computer assisted learning, research (e.g. hypothesis testing) or research support.

Knowledge management systems are tools to effect the management of knowledge and are manifested in a variety of implementations (Davenport et al., 1998) including document repositories, expertise databases, discussion lists, and context-specific retrieval systems incorporating collaborative filtering technologies. The purpose of KMS is to provide the technical support to enable knowledge capture and exchange among different users in organisations. It provides each user with a means to acquire, create, document, transfer, and apply knowledge to meet an organisation's needs. A KMS is a complete system because it comprises a number of sub-systems. Knowledge management is supported by a range of technologies, broadly grouped into four areas of activity:

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