

Chapter 11

How to Capitalize Knowledge within Online Communities: An Approach Based on the SECI Model and an Empirical Method of Questioning

Lamia Berkani

University of Science and Technology Houari Boumediene, Algeria

Azeddine Chikh

King Saud University, Saudi Arabia

ABSTRACT

Social media has become a rising trend, creating new ways of collaboration, competition, and interaction between people, such as creation exchange and sharing of ideas and knowledge. However, one of the problems encountered is the organization of the knowledge capitalization process in order to facilitate knowledge access and reuse. The authors focus in this chapter on online communities and how they try to help their members to capitalize their knowledge. The authors propose a model for knowledge creation based on both the Nonaka's SECI model and an empirical model of questioning called the six Ws (Who, What, Where, When, Why, and How). A case study related to a higher education community made up of teachers in computer science is presented, and the main results are discussed.

INTRODUCTION

An important research area within group collaboration is the current research on Communities of practice (CoPs), one of three types of practical collective work-based learning explored at length by Raelin (2000, pp. 74 - 89), and for which Wenger et al (2002, p. 4), have proposed the following definition: “*Communities of Practice are*

groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis”. This definition is based on the work initially introduced by Lave and Wenger (1991).

The notion of CoPs has arisen alongside the development of Knowledge Management (KM). A lot of research works addressed the issue of

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KM within CoPs. This issue is particularly challenging at a time of global online learning and implementation and development of CoPs within public and private organizations. Now, more and more companies and public institutions turn to the implementation of CoPs, both for capitalizing knowledge and for improving the experience and knowledge of their employees. CoPs are embedded within all areas and domains including education, engineering, management, health, etc. They are seen as a new organizational structure offering innovative means for creating and sharing knowledge.

In the present book chapter, we address the concept of KM within higher education CoPs of teachers. Educational systems around the world aim to improve quality, increase efficiency, and use the new information technologies. These CoPs could be considered as one of the best means to achieve this objective as such environments allow members to learn from each other, collaborate and exchange efficiently both of their problems and experiences in terms of techno-pedagogic knowledge and know-how. This will facilitate for example the design of their courses taking advantage from past experiences and resources of their peers. This will be also a good opportunity for them to effectively incorporate new learning technologies into their pedagogy.

We focus in this book chapter on the knowledge capitalization within higher education CoPs. Our objective is to discuss and model the creation and sharing processes of knowledge resources in order to facilitate their access and reuse within these CoPs.

LITERATURE REVIEW

Background

One of the most important and extensive area within KM is the debate about the distinction between explicit and tacit knowledge. Most of

the work in this area has emerged from the initial work of Polanyi (1966) who states that “we can know more than we can tell”. Nonaka (1991) brought more meaning to the tacit definition of knowledge of Polanyi and defined the explicit and tacit forms of knowledge. Nonaka defines the explicit knowledge as the knowledge that is often codified and easily expressed, captured, stored and reused. It can be transmitted as data and is found in databases, books, manuals, messages, etc. In contrast, he argues that tacit knowledge is “... highly personal... deeply rooted in action and in an individual commitment to a specific context... tacit knowledge consists partly of technical skills [and partly] of mental models, beliefs and perspectives so ingrained that we take them for granted and cannot easily articulate them”. To understand the dynamic nature of knowledge creation and to effectively manage this knowledge, Nonaka (1994) refers to the spiral of knowledge and the *SECI* model is proposed by Nonaka and Takeuchi (1995). The *SECI* model is based on three main elements: the four modes of knowledge conversion between the explicit and tacit knowledge; a shared context called “*Ba*”; and the knowledge assets.

The four modes of knowledge conversion are defined as follows:

- **Socialization (tacit to tacit):** create new tacit knowledge through sharing experiences and ideas;
- **Externalization (tacit to explicit):** convert tacit to explicit knowledge using concepts, hypothesis, models, etc.;
- **Combination (explicit to explicit):** create new explicit knowledge by aggregating and restructuring exiting one;
- **Internalization (explicit to tacit):** reflect on explicit knowledge and internalize it into tacit knowledge.

The second element “*Ba*” is defined as the shared context in which knowledge is created, shared, and used through interaction, and where

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