# Chapter 1.10
# Sustainable Communities for Knowledge Management Systems in the New Technological Era

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## ABSTRACT

The topic of knowledge management has received considerable attention in research as well as practice. However, the success of knowledge management systems remains elusive. This chapter provides a framework, which suggests that knowledge management success can be achieved by designing sustainable communities of practice. Communities of practice have proven to have significant economic and practical implications for organizations. A growing body of literature in knowledge management recognizes the importance of communities that foster collaborative learning in organizations and almost all knowledge management systems have a 'network' component that facilitates connecting people in communities of practice. Technological advancements in social systems such as weblogs, wikis, social networking sites, and virtual worlds enable new ways in which such communities can be supported. This study takes into account affordances of these technologies in facilitating knowledge management. This study draws on literature in knowledge management and communities of practice to arrive at properties of a community that make it sustainable. These properties can then be viewed as a blueprint of what a community needs to have to achieve its function of fostering collaboration and hence, generating knowledge. In sum, this research is intended to help practitioners arrive at how best to design communities in knowledge management systems.

DOI: 10.4018/978-1-60960-783-8.ch1.10

## INTRODUCTION

The topic of knowledge management (KM) has received considerable attention in research as well as practice. However, the success of knowledge management systems (KMS) remains elusive (Akhavan et al. 2005; Hammer et al., 2004). There is a considerable body of literature that has studied factors for KMS success (Jennex and Olfman 2005). In this paper, our goal is to contribute to this line of research by identifying how these success factors may be achieved. Specifically, we restrict our scope of inquiry to a certain type of knowledge management systems; those that are designed to support communities of practice (CoPs).

Prior literature that has sought to identify important factors in KM success has adopted either the individual level of analysis (e.g. Bock et al., 2005; Kankanhalli et al., 2005), the organizational level of analysis (e.g. Brown and Duguid, 2000), or the technological level of analysis (e.g. Markus et al., 2002). We propose an approach that incorporates research on individuals, organizations, and the technology pertaining to knowledge management to suggest a set of design principles for sustainable communities of practice. Communities of practice have proven to have significant economic and practical implications on organizational practice (Brown and Duguid, 1999 and 20002000). A growing body of literature in knowledge management recognizes the importance of communities that foster collaborative learning in organizations and almost all knowledge management systems have a 'network' component that facilitates connecting people in communities of practice. Evidence has shown that community has been a key element in knowledge management systems of many companies including Xerox PARC, British Petroleum Co., Shell Oil Company, Halliburton, IBM, Proctor and Gamble, and Hewlett Packard (Brown and Gray, 1995; Cohen, 2006; Cross et al., 2006; McDermott, 1999a; McDermott, 1999b). Technological advancements in social systems such as weblogs, wikis, social networking sites, and virtual worlds enable new ways in which such communities can be supported. In this study we take into account properties of these technologies, which enable and constrain different uses of the technological environment (i.e. the technological affordances) (Gibson, 1977; Zammuto, 2007) in facilitating knowledge management.

Attributes of communities of practice, which we believe determine the success or failure of KM initiatives, have been thus far under-researched. KM can benefit from literature in virtual communities that looks at what properties of a community make it sustainable. These properties can then be viewed as a blueprint of what a community needs to have to achieve its function of fostering collaboration and hence, generating knowledge. In sum, this research is intended to help design communities in KMS, taking into account affordances of technologies, in order to achieve KM success.

KMS success models provide a strategic level process approach to achieving success. KMS success factors provide a means for evaluation of KMS success. Our goal is to suggest how these success factors could be achieved at an operational level. We draw on Jennex and Olfman's (2005b, 2006) work to arrive at a list of eight success factors that are applicable to our conceptualization of a KMS that supports CoPs. Table 1 provides a list of these factors.

*Table 1. KMS success factors adopted from Jennex and Olfman (2005b and 2006)*

| Success Factor | Description |
|---|---|
| SF1 | Identification of users, sources, knowledge, and links |
| SF2 | Clear articulation of knowledge structure |
| SF3 | Motivation and commitment of users |
| SF4 | Senior management support |
| SF5 | Measures for assessment of appropriate use |
| SF6 | Clear goal and purpose |
| SF7 | Support for easy knowledge use |
| SF8 | Designing work processes to incorporate knowledge capture and use |