

December 1998

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Recommended Citation

Snyder, Charles; Wilson, Larry; and McManus, Denise, "Knowledge Management: A Proposed Process Model" (1998). *AMCIS 1998 Proceedings*. 209.
<http://aisel.aisnet.org/amcis1998/209>

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Knowledge Management: A Proposed Process Model

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Introduction

The world is experiencing a dramatic shift toward knowledge-based organizations and a knowledge-based society, (see e.g., Toffler, 1990; Drucker, 1995). According to Drucker (1995), knowledge is the only sustainable source for competitive advantage. A survey conducted by Computer Science Corporation (CSC) found that senior IS executives perceive knowledge management to be among the most critical technologies that will drive business growth and innovation by the year 2000 (CSC, 1996). The management of knowledge supports the competitive advantage of organizations. Companies that develop best practices for managing knowledge capital will be the ones that ride the competitive wave (Hiebeler, 1996). It is widely claimed that in order for organizations to have a lasting competitive advantage they will have to be knowledge driven (Hosapple and Joshi, 1997).

The purpose of this article is to propose a model to serve as a framework of Knowledge Management (KM) in the organization, specifically, a model related to process performance. Since KM is a relatively new field of study, the proposed framework can be used as a basis to guide future research. A framework describes a phenomenon in the form of key factors, constructs, or variables and their relationships; allows an organization to gain perspective; and provides focus to improve effectiveness. The framework should be useful in planning KM activities within an organization and for distinguishing between the required processes. This framework can be used to analyze the resources required and how they should be used. An understanding of knowledge is prerequisite for design and implementation an effective KM process. The relation of data and information to knowledge (the 'information food chain') is also necessary. We add expertise in the chain.

Data are defined as numerical or other information represented in a form suitable for processing by computers. Information in its simplest form is processed data that is meaningful. By processing, summarizing or analyzing data, organizations create information. Knowledge is the state or fact of knowing; understanding gained through experience or study; the sum or range of what has been perceived, discovered or learned. Knowledge has been defined as the capacity and competence to perform (Snyder and Wilson, 1997). According to Manville and Foote (1996), KM implies that there is a systematic process for assembling and controlling organizational knowledge as a resource. Knowledge is similar to potential energy in providing the basic competence to perform. Expertise has been defined as extensive, task-specific knowledge acquired from reading, training, and experience (Turban, et al., 1996). It is expert advice or opinion; a skill or knowledge in a particular area. While knowledge is potential to perform, expertise is the knowledge that enables superior performance.

Knowledge exists in two forms: tacit and explicit. Explicit knowledge is that imparted by traditional learning methods used to fully understand a subject. However, explicit knowledge does not include experience. Tacit knowledge is not readily apparent, but makes information valuable. "One can postulate that it is the vast reservoir of tacit knowledge that an expert can bring to consciousness in a situation of need that makes him/her an expert" (Snyder and Wilson, 1997). This paper proposes a framework for the KM process construct.

Knowledge Management Framework

Each process discussed here includes work ("processes") that should be performed by organizations that deliberately manage knowledge. This process framework includes concepts such as knowledge harvesting and data mining. Knowledge harvesting is an integrated set of processes whereby the hidden insights from top performers are converted into specific, actionable know-how that is transferred to thousands of employees via software. In the proprietary process, displayed in Figure 1, top performers verbalize their tacit know-how and thereby make it explicit. Tacit know-how is composed of the subjective knowledge, insights, and intuitions possessed by a person who has a depth of understanding in a particular area of expertise (Wilson, 1997). This iterative process keeps the knowledge fresh, while creating a continuous lifecycle. In addition, data mining is the search for relationships and patterns that exist in large databases, but are hidden among the vast amounts of data. Figure 2 shows the model of joining data, information, and knowledge with knowledge harvesting and data mining to support the framework of KM. Knowledge warehousing archives the knowledge for later retrieval. The knowledge base contains relevant knowledge that goes through the KM applications process to encapsulate knowledge. The KM applications subprocess makes

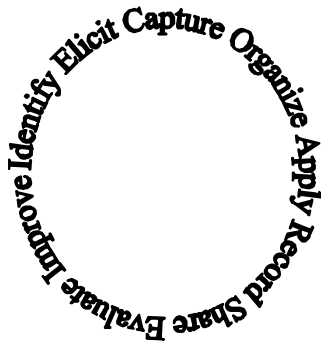


Figure 1. Harvesting Processes
 Source: Modified from Wilson

it actionable know-how. New knowledge moves back to the expert to increase or refresh personal knowledge. Since knowledge is not static, to avoid decay it must be renewed. Knowledge harvesting incorporates the extraction of knowledge from internal and external sources. Naturally the data to information process occurs in both sources and is accessible. The processes, in conjunction with the KM application create new knowledge and knowledge augmentation software.

Conclusion

This KM framework provides a foundation for an organization to understand and structure its knowledge resources and activities. It is presumed that corporations have a program to identify the possessors of knowledge mapping; however, this is beyond the scope of the paper. Corporations around the world have identified the need for KM; however, they have not identified the appropriate processes to extract, retain, and refresh the knowledge. These processes provide a method for creating a sustainable KM system. This framework should also help in gaining a better understanding of the KM process.

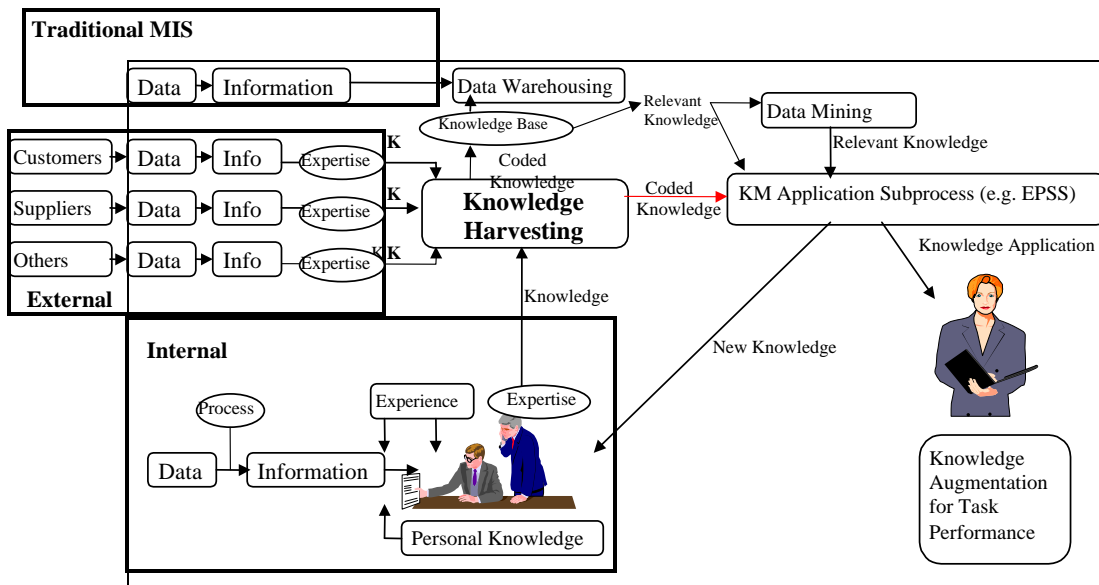


Figure 2. The Knowledge Harvesting Process

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