

# Knowledge Creation

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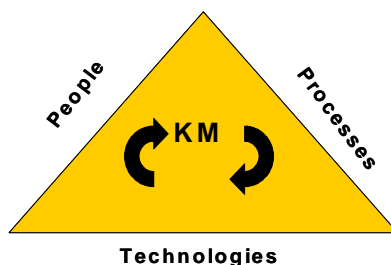
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## INTRODUCTION

Knowledge management (KM) is a newly emerging approach aimed at addressing today's business challenges to increase efficiency and efficacy of core business processes, while simultaneously incorporating continuous innovation. The need for knowledge management is based on a paradigm shift in the business environment where knowledge is now considered to be central to organizational performance and integral to the attainment of a sustainable competitive advantage (Davenport & Grover, 2001; Drucker, 1993). Knowledge creation is not only a key first step in most knowledge management initiatives, but also has far reaching implications on consequent steps in the KM process, thus making knowledge creation an important focus area within knowledge management. Currently, different theories exist for explaining knowledge creation. These tend to approach the area of knowledge creation from either a people perspective—including Nonaka's Knowledge Spiral, as well as Spender's and Blackler's respective frameworks—or from a technology perspective—namely, the KDD process and data mining.

The following discusses each of these major theories on knowledge creation and suggests the benefits of taking a holistic approach to knowledge creation—namely, incorporating both the people and technology perspectives in all knowledge creation endeavors, and thereby facilitating the realization of a broader knowledge base, better knowledge inputs to impact on the consequent KM steps, and hence an increased likelihood in more successful knowledge management initiatives.

*Figure 1. The KM Triad*



## BACKGROUND

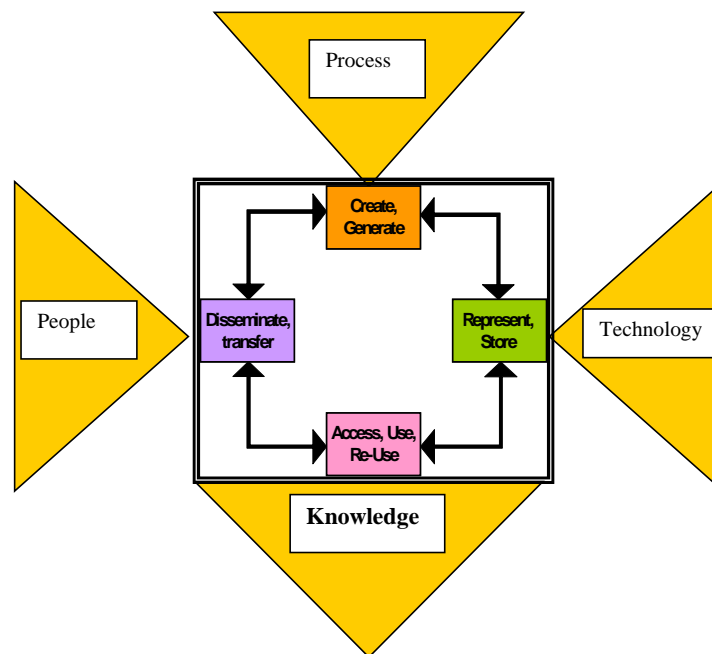
### Knowledge Management

Knowledge management offers organizations many strategies, techniques, and tools to apply to their existing business processes so that they are able to grow and effectively utilize their knowledge assets. In essence then, knowledge management not only involves the production of information, but also the capture of data at the source, the transmission and analysis of this data, as well as the communication of information based on or derived from the data to those who can act on it (Swan et al., 1999). Integral to knowledge management is incorporating the socio-technical perspective of people, processes, and technologies (Wickramasinghe & Mills, 2001). We can visualize this in terms of the KM Triad as shown in Figure 1. The significance of the KM Triad is to emphasize that knowledge can be created by people and/or technologies, and can also be embedded in processes.

Broadly speaking, knowledge management involves four key steps of creating/generating knowledge, representing/storing knowledge, accessing/using/re-using knowledge, and disseminating/transferring knowledge (Davenport & Prusak, 1998; Alavi & Leidner, 2001; Markus, 2001). By combining the KM Triad with these four key steps, it is possible to form the KM Diamond as shown in Figure 2. The KM Diamond highlights the importance of the impact of the three elements of KM—namely, people, process, and technology—on the four steps of knowledge management. In other words, successful KM initiatives require consideration and interactions among all of these components.

Knowledge creation, generally accepted as the first step for any knowledge management endeavor (as depicted in Figure 2), requires an understanding of the knowledge construct as well as its people and technology dimensions. Given that knowledge creation is the first step in any knowledge management initiative, it naturally has a significant impact on the other consequent KM steps (depicted in Figure 2), thus making knowledge creation a key focal point of many theories currently in the literature. In order to fully appreciate the need for taking a holistic approach to knowledge creation, it is important to first discuss the subtleties of the knowledge construct itself.

Figure 2. The KM Diamond



## Historical Understanding of Knowledge

We owe much of our current understanding of knowledge today to the discussions and debates of ancient Greek philosophers such as Socrates, Plato, and Aristotle. The knowledge construct and trying to pin it down, as well as define the process of knowing itself, dominated their thinking. For these ancient Greek philosophers, knowledge was a homogenous construct that ultimately was representative of the truth. Thus knowledge was truth. Other important challenges to what knowledge is then came in the 17th and 18th centuries when philosophers such as Decartes, Leibnitz, and Locke challenged the ideas of knowledge as faith and developed ideas of knowledge as accurate, provable facts, while other philosophers such as Hegel and Kant defined knowledge as divergent meaning or justified true beliefs. Since the 19th century, many different philosophical schools of thought have emerged, and they have all tried to once again pin down this elusive, yet important knowledge construct. Table 1 summarizes the major perspectives.

## The Multifaceted Knowledge Construct

As with many concepts in organizational theory, the existence of duality as discussed by Orlikowski (1992) applies when we examine the knowledge construct. Traditionally researchers have turned to Burrell and Morgan's

(Malhotra, 2000) well-established framework of objective and subjective characterizations, or a more recent approach elaborated on by Schultze and Leidner (2002) is Deetz's four discourses of organizational inquiry to highlight these dualities. In trying to manage knowledge, it is necessary first to understand the binary nature of knowledge—namely, its objective and subjective components (Malhotra, 2000) or consensus/dissensus dimensions (Schultze & Leidner, 2002). Knowledge can exist as an object, in essentially two forms: explicit or documented and formal knowledge—that is, “know-what”—and tacit or experiential—that is, “know-how” (Polyani, 1958, 1966; Nonaka & Takeuchi, 1995; Beckman, 1999). It is well established that while both types of knowledge are important, tacit knowledge is more difficult to identify and thus manage (Malhotra, 2000; Newell, Robertson, Scarbrough, & Swan, 2002). Of equal importance, though perhaps less well defined, knowledge also has a subjective component and can be viewed as an ongoing phenomenon, being shaped by social practices of communities (Boland & Tenkasi, 1995). The objective elements of knowledge can be thought of as primarily having an impact on process, while the subjective elements typically impact innovation. Both effective and efficient processes as well as the functions of supporting and fostering creativity and innovation are key concerns of knowledge management. Thus, we have an interesting duality in knowledge management (Wickramasinghe, 2001) that some have called a



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