Chapter V

Dynamics of Knowledge Management Systems

Knowledge management systems refer to a class of information systems applied to manage organizational knowledge. These systems are IT applications to support and enhance the organizational processes of knowledge creation, storage and retrieval, transfer, and application (Alavi & Leidner, 2001).

According to the resource-based theory, the difference between successful and unsuccessful companies is their respective abilities to mobilize and utilize their resources. In the knowledge economy, the most important resource is knowledge. Strategic knowledge resources are characterized by being valuable, rare, inimitable, nontransferable, nonsubstitutable, combinable, and applicable.

Knowledge resources are applied within the value configuration(s) of the organization. In the value chain, knowledge is applied in areas such as logistics and production. In the value shop, knowledge is applied in areas such as problem diagnosis and problem solving. In the value network, knowledge is applied in areas such as subscriber recruiting and service extensions.

Knowledge resources are applied in actions at the individual, group, and organization levels. Such actions create reactions, which the individual, group,

or organization has to respond to. In these interactions dynamics occur, and such business dynamics are modeled using system dynamics in this book.

The knowledge management technology stage model presented in this chapter is a multistage model proposed for organizational evolution over time. Stages of knowledge management technology is a relative concept concerned with IT's ability to process information for knowledge work. The knowledge management technology stage model consists of four stages (Gottschalk, 2005).

Characteristics of Knowledge

Knowledge is an important organizational resource. Unlike other, inert organizational resources, the application of existing knowledge has the potential to generate new knowledge. Not only can knowledge be replenished in use, it can also be combined and recombined to generate new knowledge. Once created, knowledge can be articulated, shared, stored, and recontextualized to yield options for the future. For all of these reasons, knowledge has the potential to be applied across time and space to yield increasing returns (Garud & Kumaraswamy, 2005).

The strategic management of organizational knowledge is a key factor that can help organizations sustain competitive advantage in volatile environments. Organizations are turning to knowledge management initiatives and technologies to leverage their knowledge resources. Knowledge management can be defined as a systemic and organizationally specified process for acquiring, organizing, and communicating knowledge of employees so that other employees may make use of it to be more effective and productive in their work (Kankanhalli, Tan, & Wei, 2005).

Knowledge management is also important in interorganizational relationships. Interorganizational relationships have been recognized to provide two distinct potential benefits: short-term operational efficiency and longer-term new knowledge creation. For example, the need for continual value innovation is driving supply chains to evolve from a purely transactional focus to leveraging interorganizational partnerships for sharing information and, ultimately, market knowledge creation. Supply chain partners are engaging in interlinked processes that enable rich (broad-ranging, high-quality, and

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