Knowledge Representation Strategy Determination in Quantitative Terms

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ABSTRACT

Knowledge strategy is a critical component of knowledge management (KM) success. Surprisingly, a simple and quantifiable model of KM representation strategy does not seem to exist. This paper applies economics principles to derive a model for thinking of the decision problem in quantitative terms. The decision is about choosing the right codification-personalization split where all knowledge related resources are efficiently allocated to simultaneously support the business process or production. It shows that failing at making a diversified resource choice may conclude a suboptimal strategy (split). It seems to justify the propositions of an oft-cited paper and some published evidence. That is, a 50-50 split or a merely pure strategy can also be the optimal strategy. The model can be extended to include subjective decision factor, and be mastered easily. In future research, it may be developed into a game theoretical framework to capture the strategic and/or cooperative KM behaviors.

Keywords: Business Economics, Decision Theory, Information and Knowledge, Knowledge Management, Knowledge Representation Strategy, Organizational Behavior

INTRODUCTION

‘Knowledge and information is being produced today like cars and steel were produced’ in industrial economies (Stiglitz, 1999, p.1). Knowledge is also used to produce an economic benefit (Jennex, Smolnik & Croasdell, 2012). We have witnessed the widespread use of information technologies (ITs). In certain situations, the general public adopt ITs for knowledge management (KM) purposes earlier than the organizations (Jennex, 2010). Organizations are under pressure to incorporate IT-oriented KM into their business processes or production in order to please the growing population of knowledgeable customers.

In reality, many organizations have initiated a range of KM projects/initiatives (Davenport & Prusak, 1998), but failed to realize the expected benefits of knowledge assets (Kim et al., 2003). This outcome is expected, as KM practitioners find the existing knowledge or KM frameworks are ‘too abstract or too limiting’ (Earl, 2001). Not surprisingly, executives

DOI: 10.4018/ijkm.2013100105

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do not have well-developed strategic models that can help them to link knowledge-oriented processes, technologies, and organizational forms to business strategy (Zack, 1999). The lack of strategy leads to failure in realizing the benefits of knowledge assets (Jennex, Smolnik & Croasdell, 2012) or in linking KM to strategic advantage (Zack, 2002). There is an imperative to develop quantifiable strategic models that link KM to competitiveness.

KM is, like knowledge \textit{per se}, hard to define (Earl, 2001). A working definition is that KM is the process of selectively applying knowledge from previous experiences of decision-making to current and future decision-making activities with the express purpose of improving organizational effectiveness (Jennex & Olfman, 2006). KM success is achieved through capturing the right knowledge, getting the right knowledge to the right user, and using this knowledge to improve organizational and/or individual performance (Jennex, Smolnik & Croasdell, 2012).

KM strategy has been identified to be the most important KM critical success factor (Jennex & Olfman, 2005) whose crucial construct is knowledge strategy (Jennex & Olfman, 2006). A knowledge strategy is a knowledge process that identifies users, sources, processes, storage strategy, knowledge, and links to knowledge for the KM enabling information system (KMS) \textit{(ibid.)}.

Some taxonomies of knowledge strategy dimensions have been proposed and/or tested (see Denford & Chan, 2011; Russ \textit{et al.}, 2006; Zack, 1999, for example). The results are of reference value for knowledge strategy decision-making. However, knowledge strategy only deals with business outcomes and support for competitive advantage (Denford & Chan, 2011). From a strategic perspective, knowledge has applications in balancing its internal strengths and weaknesses with its external opportunities and threats (Zack, 2002). Hansen \textit{et al.} (1999) reckon the association between knowledge strategy and competitiveness strategy. The work misses some elements to qualify it to be a proposal for determining KM strategy. For example, it needs KM strategy to deal with the structural and technical management issues (Denford & Chan, 2011). Jennex (2012) shows that KM strategy is multidimensional and changes when KM initiative changes. However, developing a quantifiable KM knowledge (K²M) representation strategy model appears essential for achieving KM success.

Hansen \textit{et al.} (1999) propose that an organization that relies on ‘reuse economics’ of codified knowledge may choose a codification strategy (‘people-to-documents’) and ‘expert economics’ a personalization strategy (‘person-to-person’). Some evidence suggests that business performance depends not only on the effective management of knowledge, but also on what type of knowledge is managed (Sivaramakrishnan \textit{et al.}, 2010). Hansen \textit{et al.}’s proposal seems to be backed by evidence to some extent. A theory of firm does suggest that the cost of transferring knowledge depends on the nature of the knowledge, the organizational environment, and technology (Jensen & Meckling, 1992). The cost also determines individuals’ roles, and hence organization structure (\textit{ibid.}). Besides, knowledge use and value only occurs within context of the users and the organization (Jennex, Smolnik & Croasdell, 2012). So, organizational knowledge and its content can be inferred from organization structure. Technical and organizational initiatives, when aligned and integrated, can provide a comprehensive infrastructure to support KM processes (Zack, 1999). The appropriate infrastructure can enhance an organization’s ability to create and exploit knowledge (\textit{ibid.}). So, a K²M representation strategy choice is a decision about efficiently allocating ITs and human resources to optimize the potential benefits of knowledge. Its formulation is in the realm of economics.

This paper applies economics principles to derive a sample and quantifiable model of K²M representation strategy. The subsequent section presents the formulation, an extension model and an example of its applications. The final section presents the conclusions, implications and discussion of further research directions.
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