Chapter 12
Knowledge Management System from Individual Firm to National Scale

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ABSTRACT

Knowledge management system (KMS) is capable of capturing explicit knowledge and tacit knowledge in a systematic manner. As any type of organization scales up, the issue in relation to, how to construct an effective knowledge sharing mechanism in KMS to covert individual knowledge into collective knowledge remains under surveyed. The rising concerns especially focus on the identification of individual knowledge worker, how firms facilitate knowledge sharing and the effectiveness of national knowledge management system. Communities of Practice (CoPs) are well known as effective mechanism to foster knowledge sharing theoretically and practically. This paper aims to explore the journey of CoPs driven KMS from the lens of individuals, firms’ business strategies to the perspectives of national interest. On individual level, knowledge nodes are explored in the context of knowledge flow, which often transcend organizational boundaries and are distinct and different than workflow models. Thus, a CoPs centered knowledge flow model in a multinational organization is developed, implemented, and analyzed. On firm level, this model is underpinned in a CoPs framework built around four expected firms’ major business strategies including four dimensions and sixteen criteria as a comprehensive mechanism to intensify knowledge sharing effect. Finally, a conceptual model of KMS embedded national innovation system is also addressed.

INTRODUCTION

Knowledge management system (KMS) implies a strategic information system and technology in knowledge intensive organizations, which can mine, store and disseminate organizational collective knowledge to improve knowledge sharing and lead to collaboration. Organizational collective knowledge in terms of expertise ability has to be leveraged as critical yet difficult to manage (Cham et al., 2016; Jan &
Contreras, 2016; Wayne et al., 2000; Parise & Henderson, 2001). Particularly organizations today exist in the knowledge era as against the information era of 1980 and 1990’s. They compete with each other on the basis of knowledge and innovation (Wang & Libaers, 2015; OECD 1996, 1999). Thus organizational innovation through knowledge sharing and knowledge node identification is an important means of surviving as well as excelling in a highly competitive business environment, in pursuit of learning organizations of the future will not be constrained by traditional boundaries. Thus this research envisions organizations as a set of knowledge nodes to generate knowledge flow that can extend outside organizational boundaries as against conventional work flow networks. Unlike human nodes used in most of business processes, knowledge nodes can be quite different in the context of knowledge flow and knowledge sharing.

Knowledge node plays an important role known for the majority of professionals such as decision makers, technology developers, and knowledge workers in Communities of Practice (CoPs) in an organization (Huang et al., 2015; Lesser, 2001). CoPs have been proven as effective platform to facilitate knowledge sharing (Chu et al., 2014; McDermott, 1999; Grant, 1996). CoPs are identified as self-emerging groups initially but the strategic importance of CoPs has made organizations to look into the possibilities of identifying and creating CoPs. A number of organizations create communities with managed membership accordingly (John & Patricia, 2000). Resources in terms of technology, people and content (Grant, 1996) are then invested to develop CoPs and these resources have to be utilized optimally. Quite a few researches have suggested guidelines and models for creating CoPs (Wenger et al., 2002, Loyarte & Rivera, 2007, McDermott, 1999). However, a lack of comprehensive CoPs framework as powerful knowledge sharing mechanism drives a growing need to allocate appropriate resources. Therefore, the first objective of this paper is to develop an easy to understand CoPs hierarchy consisting of exhausting dimensions and criteria.

The importance of knowledge has made organizations to focus on knowledge sharing strategy (e.g. CoPs) and its alignment with how to identify the knowledge nodes effectively. Although several scholars have studied the incentives of knowledge sharing, most of them focus on situational characteristics and very limited study has involved the knowledge sharing and knowledge node. This study aims to bridge the gap by identifying knowledge node/knowledge worker in the context of CoPs. The alignment with the business goals and the objectives of the organization are necessary to achieve competitive advantage (Michael, 1999). The need for proper system to position where the knowledge nodes exist to connect with share knowledge in the context of CoPs has initiated the process of alignment. The realization of this alignment as a carrier to imitation (Kogut & Zander, 1992) has diverted the attention to tacit knowledge. CoPs have been identified as an important tool in managing the tacit knowledge and then the knowledge nodes can be identified the most intense knowledge sharing points which provides competitive advantage to the firm (Jeanne, 1999).

The previous work on knowledge node centered knowledge flow networks focus on linking people based on organization structure, tasks, and knowledge compatibility (Zhuge, 2006). In other works, these researches do not throw adequate light on the need that knowledge flow occurs between knowledge nodes outside traditional organizational structure, business functions and organizational boundaries. As the second aim in this paper, the authors propose to enhance in design of knowledge node embedded knowledge flow based on the survey in relation to CoPs perceptions in an organization.

A CoPs framework has been defined, which constitutes 16 criteria along four major dimensions in this research. These criteria and dimensions are used to identify common interaction factors (beliefs and attitudes) which link and facilitate effective knowledge sharing between knowledge workers/nodes.