Chapter 1.23
External Knowledge Integration

Jeroen Kraaijenbrink
University of Twente, The Netherlands

Fons Wijnhoven
University of Twente, The Netherlands

INTRODUCTION

As an academic field, knowledge management has concentrated on the creation, storage, retrieval, transfer, and application of knowledge within organizations, while underexposing external knowledge (e.g., Alavi & Leidner, 2001). Although the importance of external knowledge is well recognized (e.g., Cohen & Levinthal, 1990), there remains a need for a better understanding of the organizational processes through which external knowledge is integrated (Grant, 1996; Ranft & Lord, 2002). In particular, we believe that a holistic view on knowledge integration (KI) is both important and lacking. In this article, we address this lacuna in the literature by proposing a process model of KI consisting of three stages—identification, acquisition, and utilization of external knowledge. Our objective is to propose a model consisting of modular subprocesses that parsimoniously reflect the variety of KI concepts in the literature. This model is useful to scholars and practitioners because it provides a better understanding of the various KI subprocesses by putting them together in a coherent way. Such understanding serves as bedrock for solving KI problems and for designing KI solutions (cf. Markus, Majchrzak, & Gasser, 2002).

BACKGROUND

In the current literature, the term KI is used for the integration of knowledge from individuals or departments within an organization (Becerra-Fernandez & Sabherwal, 2001; De Boer, Van den Bosch, & Volberda, 1999; Grant, 1996; Leonard-Barton, 1995; Okhuysen & Eisenhardt, 2002; Szulanski, 1996). Based on the meaning of the word integration ("to incorporate into a larger unit," Merriam Webster Online) we extend the term KI with three stages that model the incorporation of external knowledge. We call the processes associated with the term KI in the current literature utilization. Because external knowledge needs to be acquired before it can be utilized, we include a stage of acquisition in the model that precedes the utilization stage. Correspondingly, to acquire

external knowledge it needs to be identified first. Acquisition is therefore preceded in our model by a stage of identification.

Although there is excellent research done on each of the KI stages, we found no contribution that covers them all. For their own reasons, scholars concentrate on one or two KI stages and disregard either identification (e.g., Almeida, 1996; Crossan, Lane, & White, 1999; Tsang, 2002), acquisition (e.g., Galunic & Rodan, 1998; Rosenkopf & Nerkar, 2001), or utilization (e.g., Leifer & Huber, 1977; McEvily, Das, & McCabe, 2000; Shenkar & Li, 1999). Other scholars regard KI as a black box or elaborate on explanatory models of successful KI (e.g., De Boer et al., 1999; Hamel, 1991; Hansen, 2002; Lane & Lubatkin, 1998; Mowery, Oxley, & Silverman, 1996; Szulanski, 1996; Zander & Kogut, 1995). As such, they provide an understanding of the outcome of KI but less so of the process. Holistic approaches are found in literature on knowledge transfer (e.g., Appleyard, 1996; Bhagat, 2002; Duncan, 1972; Gupta & Govindarajan, 2000; Kostova, 1999; Newell & Swan, 2000; Szulanski, 1996, 2000). In this article, however, networks and alliances are the objects of research, which limits its contribution to the understanding of the KI process in a single organization.

Though they do not provide a holistic model, these scholars provide us with all the necessary ingredients for a holistic KI model. In this article, we try to put the pieces of the KI puzzle together. We follow a pragmatic approach in which we borrow relevant concepts from literature and position them in the KI model: an approach similar to what Glaser called "transcending"—taking relevant variables from theories while trying to raise their conceptual level (1978, pp. 14-15).
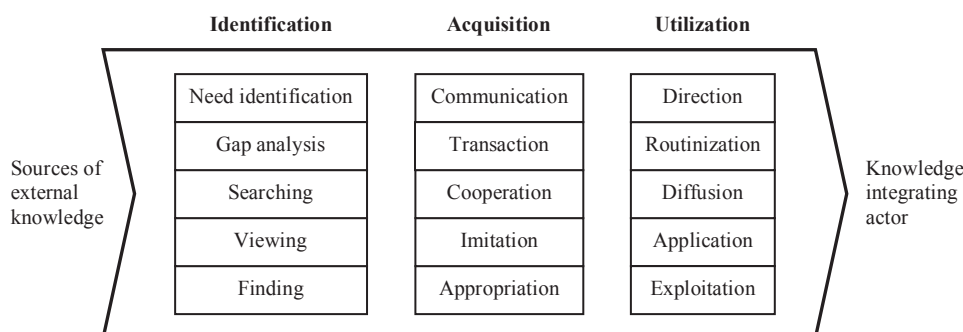
MAIN FOCUS: STAGE MODEL

Although there is no consensus on what constructs form the essential basis of a process model (Curtis, Kellner, & Over, 1992), we define a process as a configuration of connected subprocesses, performed by certain actors. Within this article, we suggest an ordered set of KI subprocesses (see Figure 1) and four views on actors that perform them. An elaboration on the configurations that can be created with these elements is left for future research.

Identification

All subprocesses between initiating a KI process and locating specific external knowledge are considered the identification stage. The apparent relevant theory for this stage is the theory on

Figure 1. Stages and subprocesses of knowledge integration

	Identification	Acquisition	Utilization	
Sources of external knowledge	Need identification	Communication	Direction	Knowledge integrating actor
	Gap analysis	Transaction	Routinization	
	Searching	Cooperation	Diffusion	
	Viewing	Imitation	Application	
	Finding	Appropriation	Exploitation	

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