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EDITORIAL

Organizational Learning, knowledge creation, problem formulation and innovation in messy problems

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Abstract This paper attempts to bring the discussion about knowledge creation, innovation and organizational learning to a level that addresses how messy problems are addressed and how the organizations must integrate the viewpoints of the key decision-makers, establish a process for testing their assumptions, include the context including the environment design, and to allow innovation and creativity to enter the choice of actions. It builds on the literature of problem formulation, innovation, and experimentation and on the articles in this special issue.

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Introduction

This special issue is about the interface between organizational learning, knowledge creation and innovation. Today it is quite important to learn how an organization innovates and what processes go into innovation. Innovation is considered the most important of dynamic capabilities and a necessary component of sustainability. Researchers increasingly recognize the importance of firms creating new knowledge through internal processes as well as sourcing new knowledge from external clusters of firms or from partners (Ahuja & Novelli, 2011; Lyles & Salk, 1996). Firms can create it internally through their R&D or through generating new ways of handling situations. Also firms can acquire knowledge from external sources such as hiring new employees who have worked for competitors or from industrial networks which allow the firm to be in direct contact with advanced knowledge of other firms. However, the internal

processes that firms pursue for sourcing knowledge at the micro-level through its managers or employees and then turning it into knowledge at the firm level is still unclear.

This special section of EMJ contains three papers that seek to explore the frontiers of organizational knowledge and learning. Rather than being narrow in scope targeting a specific set of well-known and -researched questions, the papers seek to open new avenues and explore possible conjectures, perspectives, theories, and results that may help us come closer to answering one of the most fundamental questions in studies of management and organizations: How organizations learn and create new knowledge?

Popularizing organizational learning

Organizational learning and organizational knowledge creation are often pursued as independent themes in research. The links between them tend to be “forgotten” in the literature by scholars who seek to contribute to separate schools of thought, in particular because they find it hard to reconcile fundamental assumptions about knowledge,

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information, environment, and learning (Argote, McEvily, & Reagans, 2003; Easterby-Smith & Lyles, 2011; Meier, 2011). In the complex and messy reality of organizations, organizational learning and organizational knowledge creation are inevitably going to be mutually dependent. An “integrated definition” that captures this dependency could for example be: Organizational learning is a process whereby the organization enhances its capacity to act (Huber, 1991). The capacity to act, in turn presupposes knowledge which when growing presents new options. Organizational learning, therefore, is a dynamic process creating knowledge and transferring it where it is needed and used (Kane & Alavi, 2007). Organizational knowledge creation entails making knowledge created by individuals available, amplifying it in social contexts, and selectively connecting it to existing knowledge in the organization (Nonaka & von Krogh, 2009).

During the past decade, there has been a surging interest in theory and research on organizational learning and knowledge creation in the social sciences in general, and the field of management and organization studies in particular. For example, taking as a starting point the social science papers registered on ISI/web of Knowledge, there were 160 published papers with organizational learning as keyword in 2010 compared with 87 in 2001 ($N = 1926$). Likewise, a stunning 65% of all papers ($N = 371$) combining the keywords of “knowledge creation” and “organization” were published during 2006–2011. Overall, it is worthwhile to contemplate that only 55 papers were published (1994–2012) which match the Boolean search for “organizational knowledge” and “knowledge creation,” pointing out perhaps that the potential for integration has not been fully exploited.

These figures are indicative of the level of interest across fields, and do not provide evidence of the progress made in theory and research. However, by looking at the evolution of work and the type of publications that have appeared during the last decade, it appears the surge in interest follows a recognition that “knowledge matters.” On the one hand, practitioners frequently report on the critical role knowledge management and learning play for the success of their organizations (e.g. Bonabeau, 2009).

On the other hand, scholars have become increasingly proficient in observing knowledge and learning processes. The theories and methods are multifaceted and better designed to explain behavior, unravel mechanisms, and predict outcomes at various levels of observation ranging from individuals via organizations to eco-systems (Nonaka, von Krogh, & Voelpel, 2006). For example, interesting advancements have been made on the individual and network level. Recently questions have been raised regarding whether an individual’s personality or cognitive ability moderates the relationships between knowledge creation and parameters of social networks in organizations. Baer (2010) found that the dimension of an individual’s openness to experiences is critical if the idea network surrounding the individual is to result in the creation of new knowledge.

Another area of research aims to uncover the nature of the relationship between micro-foundations of knowledge creation and organizational learning moderated by organization mechanisms. Why do organizations fail to learn when people within them do, or how do organizations succeed to adapt when individuals seem ignorant or create limited knowledge about changes in the organization’s

environment? How do organizations and people unlearn old routines or past learnings that are no longer relevant? What are the mechanisms that tie together micro-level and organizational-level learning? March’s (1991) computational model that linked individual knowledge, organizational code, and the external reality showed that during several periods of iterations where a stable knowledge equilibrium is an outcome, individuals’ knowledge and the organizational code (belief or knowledge of the organizations) tend to converge. Exploration and exploitation is a result of individual learning rates and rate in code learning, so that slower individual learning coupled with higher rate of code learning may allow for an overall higher knowledge equilibrium.

In particular, regarding the relationship between individual knowledge creation and organizational learning there is potential for a better integration of relevant theories and research. Organizational knowledge creation theory has long grappled with the analysis of individual and organizational knowledge creation, and the relationship between them (Minbaeva, Mäkelä, & Rabbiosi, 2012; Nonaka & Konno, 1998; Nonaka & von Krogh, 2009). This theory addresses the processes by which individuals and groups create knowledge in organizations, utilize the past knowledge stored in the organizational memory, and thus contribute to innovation, change, value creation, and ultimately organizational performance (Lyles & Schwenk, 1992). The knowledge creation process makes available and amplifies knowledge created by individuals in the organization and selectively connects this knowledge to the organization’s knowledge base.

Organizational learning, knowledge creation and problem formulation

We are particularly interested in how organizations recognize and create new knowledge or innovative solutions which can resolve their messy problems and how these get articulated and addressed. Furthermore, how do organizations learn from their experiences and how does this impact how knowledge creation and the innovation process are framed and discussed? In other words, what are the linkages of organizational learning, problem framing or formulation, knowledge creation and innovation, particularly in addressing messy or “wicked” problems.

Why is it important to discuss these linkages in the framework of “messy or wicked” problems? Let’s think first of the context of well-defined problems. If a problem is well defined, then it should be relatively easy to identify what new knowledge or innovation is necessary to solve it and to move on, or at least to understand what needs to be tested so that an innovative solution can be developed. For example, a pharmaceutical firm developing a new drug may have specific technical or scientific issues to be solved before it can move the molecule into clinical studies. This may be a very difficult technical issue whose solution is certainly not easy to find, but the reality is that these are very well-structured problems.

Interest in problem formulation began in the 1980s with the seminal work of Lyles and Mitroff (1980). Their research brought to the forefront of the decision-making literature the recognition that how the problems are framed is just

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