



Contents lists available at ScienceDirect

Technological Forecasting & Social Change



Organizational memory and new product development performance: Investigating the role of organizational ambidexterity

Kyootai Lee^{a,*}, Youngkyun Kim^b, Kailash Joshi^c^a Graduate School of Management of Technology, Sogang University, Republic of Korea^b School of Business, Incheon National University, Republic of Korea^c College of Business, University of Missouri, St. Louis, United States

ARTICLE INFO

Article history:

Received 21 March 2016

Received in revised form 26 November 2016

Accepted 30 December 2016

Available online xxxxx

Keywords:

Organizational memory

Exploitation

Exploration

Organizational innovativeness

Technological turbulence

ABSTRACT

Organizational memory representing stored organizational knowledge and experience may have favorable or unfavorable implications for new product development (NPD) performance in technologically turbulent markets. To enhance NPD performance, it is important to understand the mechanisms and contextual factors that shape the role of organizational memory. Analysis of responses from a survey of C-level executives in Korean companies indicates that the total amount of exploration and exploitation can help firms better utilize and benefit from organizational memory for enhancing NPD performance. However, to gain optimum benefits firms need to consciously maintain an asymmetric balance between exploitation and exploration, leaning toward exploration, because organizational memory as routines tends to overemphasize exploitation. The results indicate that the interaction between organizational innovativeness and organizational memory can increase the total amount of exploration and exploitation, but cannot contribute to maintaining a balance between the two. On the contrary, the interaction between technological turbulence and organizational memory helps balance the two learning activities, but does not increase the total effort devoted to them.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

As technological changes intensify and product life cycles shrink, firms face increasing pressure to develop managerial practices for enhancing their new product development (NPD) (Leonard-Barton, 1992). In this pursuit they can feel uncertain about the value of their experience and knowledge. Some executives in Korea that we met in the course of this research emphasized that employees need to forget what they are used to doing and find innovative ways for enhancing NPD. Others averred that employees are often not fully aware of internal knowledge; they should search within and utilize it more effectively.

In line with the industry imperative, though researchers highlighted establishing effective NPD processes (Akgün et al., 2006b; Madhavan and Grover, 1998; Veryzer, 1998), they emphasized different approaches: some called for focusing on the routine aspects of the NPD process based on firms' experiences (Chang and Cho, 2008; Madhavan and Grover, 1998; Moorman and Miner, 1998), although others recommended improvisation in the NPD process (Akgün et al., 2006a;

Aronson et al., 2006), which can render the existing routines obsolete. For enhancing NPD, researchers have also considered the role of organizational memory, which includes declarative memory related to facts and events and procedural memory related to operational processes. However, they reported mixed results ranging from a positive role for organizational memory in NPD performance (e.g., Cohen and Levinthal, 1990; Walsh and Ungson, 1991) to a negative role (e.g., Berghman et al., 2013; Kyriakopoulos and De Ruyter, 2004).

While admitting that the academic perception of the benefits of organizational memory is ambiguous, several researchers viewed NPD as learning processes (e.g., Leonard-Barton, 1992; Madhavan and Grover, 1998), emphasizing the improvement of existing knowledge as well as the development of new knowledge (e.g., Andriopoulos and Lewis, 2010; Choi and Phan, 2014). These researchers argued that organizational memory can be a source of firm performance enhancement only when it supports competencies, organizational adaptation capabilities (Moorman and Miner, 1998) and learning capabilities (Camisón and Villar-López, 2011). Despite the contributions of prior research to understanding the role of existing knowledge for NPD performance enhancement, we still do not have a complete understanding of organizational capabilities through which organizational memory can enhance NPD performance.

* Corresponding author.

E-mail addresses: kyootai@sogang.ac.kr (K. Lee), kkart1@incheon.ac.kr (Y. Kim), joshi@umslu.edu (K. Joshi).

Organizational learning can include two learning approaches, namely exploitation and exploration (Levinthal, 1997; March, 1991). The former signifies leveraging, improving and refining the existing knowledge, while the latter means discovering and creating new knowledge and experimenting with new opportunities (March, 1991). As the two approaches have different nature, the managerial alignment for executing exploitation may create conflicts with the one required for implementing exploration (Andriopoulos and Lewis, 2010). Particularly, as firms are likely to have knowledge about facts and events as well as procedural routines in their organizational memory (Moorman and Miner, 1997), they may not gain NPD performance benefits from their learning efforts if their memories steer their learning efforts in the wrong direction. To achieve better outcomes, researchers (e.g., March, 1991; Tushman and O'Reilly, 1996) emphasized the need for a simultaneous and balanced pursuit of the two and coined the term *organizational ambidexterity*. Numerous studies (e.g., Atuahene-Gima and Murray, 2007; Cao et al., 2009; Li et al., 2010) examined the level of balance between the two and/or their total level for enhancing NPD performance. However, as the prior research does not consider the role of organizational memory for implementing these learning activities, the research on organizational memory as well as that on ambidexterity would face limitations in answering the following questions: *Does organizational memory positively influence learning activities? If so, more specifically, how does organizational memory promote a simultaneous and/or balanced pursuit of exploration and exploitation? Finally, how can a simultaneous and/or balanced pursuit of learning activities along with organizational memory influence NPD performance?*

Some researchers seem to attribute the contradictory results about the relationship between organizational memory and NPD performance to environmental turbulence. However, they do not provide strong evidence to support the argument as they report negative (Akçin et al., 2006a) to insignificant (Moorman and Miner, 1997) moderation effects of technological turbulence in the relationship between organizational memory and NPD performance. One of the reasons may be that contextual factors influence how firms manage their learning activities for NPD performance on the basis of their organizational memory. Based on prior studies examining the role of the two contextual factors, *technological turbulence* and *organizational innovativeness*, we identified the following research question. *Do organizational contexts such as technological turbulence and organizational innovativeness help promote a simultaneous and/or balanced pursuit of exploration and exploitation?*

In order to answer the research questions, we collected paired survey responses from Chief-level (C-level) executives (e.g., Chief Executive Officer, Chief Operations Officer, and other top executives) in Korean companies across several industries. We employed Preacher et al. (2007) moderated mediation analysis to examine the hypotheses, and polynomial regression with response surface analysis (Edwards and Parry, 1993) to further scrutinize the relationship between exploitation, exploration, and NPD performance. The results of the study can provide deeper insights into the role of organizational memory to help reconcile the different explanations reported in prior studies for more than two decades. Furthermore, this study contributes to organizational learning theory by identifying how stored knowledge may play a supportive role in organizational learning, and how firms' contexts may play a role that can help define the routines and strategies for knowledge development and adaptability.

2. Theoretical background

This study aims to identify the specific learning capabilities that firms can build to more effectively leverage their organizational memory for NPD performance enhancement, and examine the role of contextual factors that may interact with organizational memory in developing learning capabilities. Based on a review of literature related to NPD, we adopted organizational learning theory and organizational ambidexterity perspectives for our investigation.

2.1. Organizational learning and memory

Organizational learning refers to a continuous process that enhances the collective actions of individuals that create and transfer knowledge based on their understanding of organizational contexts (Fiol and Lyles, 1985). It starts when firms detect errors and improve routines without changing their underlying values, called single-loop learning (Argyris, 2003). Firms need to continuously re-evaluate and update the governing values and beliefs that guide their behavior and routines when their efforts to improve the status quo are not successful, called double-loop learning (Argyris, 2003). Similarly, firms tend to frequently encounter problems during NPD which necessitate refinement in their existing approaches (representing single-loop learning). As the existing ways of solving the problems lose effectiveness, firms also seek and gain new values and beliefs and explore new knowledge (representing double-loop learning). Thus several researchers viewed NPD as a collection of learning processes (e.g., Leonard-Barton, 1992; Madhavan and Grover, 1998).

Organizational memory is defined as the stored information and/or organizational knowledge that can be brought to bear on present decisions (Walsh and Ungson, 1991). It contains not only facts and events but also processes (Moorman and Miner, 1997; Nelson and Winter, 1982). Organizational memory represents what firms have cumulatively learned, and plays a guiding role for them in terms of when and how to advance learning (Walsh and Ungson, 1991). Particularly, as firms possess the stocks of knowledge about NPD and the routines of how to productively combine the stocks (Madhavan and Grover, 1998), organizational memory helps firms better understand new information, and develop future NPD directions (Cohen and Levinthal, 1990; Walsh and Ungson, 1991). However, several researchers delineated that organizational memory as organizational routines (Moorman and Miner, 1997) can contribute to organizational rigidity (Newey and Zahra, 2009) and filter the interpretation of environmental changes, resulting in performance deterioration (Berghman et al., 2013; Kyriakopoulos and De Ruyter, 2004). The above arguments indicate that firms need to utilize organizational memory more effectively to build their learning capabilities, while leveraging the positive role of organizational memory and minimizing its possible negative effects. Besides the contradictory explanations provided about the role of organizational memory, few prior studies have considered how (and which) learning capabilities can intervene in the relationship between organizational memory and NPD performance.

While highlighting the intervening role of learning capabilities, researchers have emphasized the role of organizational contexts in the learning process. For instance, in their organizational learning process model, Argote and Miron-Spektor (2011) demonstrated that organizational experiences can transform into new knowledge and such transformation is contingent on the context. Particularly, with regard to exploration and exploitation based learning, March (1991) emphasized that the tradeoff between exploration and exploitation learning indicates two distinct features in organizational contexts. One is the mutual learning by employees in an organization, who are socialized to organizational beliefs about the tradeoff (March, 1991). The other is the context of competition for primacy which exaggerates the difficulties for arranging a suitable balance between exploitation and exploration (March, 1991). That is, the contextual factors can play a critical role in guiding the two types of learning.

Regarding organizational beliefs about the tradeoff, since organizational memory can provide values and beliefs about what consequences may result from any given action or behavior (Argyris, 2003), the beliefs can be profoundly engrained into organizational culture (Argyris, 2003). Since novel ideas occur to individuals, firms need to possess appropriate cultural values for encouraging employees' idea-sharing and action-taking (Turro et al., 2014) to increase flexibility in their routines, to build their adaptability (March, 1991), to facilitate learning of new knowledge on the basis of the existing knowledge, and to improve

Download English Version:

<https://daneshyari.com/en/article/5036774>

Download Persian Version:

<https://daneshyari.com/article/5036774>

[Daneshyari.com](https://daneshyari.com)