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Untangling the mystery of absorptive capacity: A process or a set of success factors?

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ABSTRACT

The absorptive capacity of an organization is its ability to translate the knowledge sourced from outside into commercial benefits. Having gained a certain academic interest, the mechanism of the absorptive capacity phenomenon is still puzzling. This paper provides some limited confirmation of earlier frameworks; however, absorptive capacity is demonstrated to be a set of interrelated success factors rather than a sequential process of knowledge articulation in a company. The new model of absorptive capacity proposed encompasses four dimensions: continuing development, bottom-up innovation, trust-based internal cooperation, and deferred knowledge use. The continuing development facet entails a strong positive impact on organizational performance, while the bottom-up innovation dimension deteriorates it. Trust-based internal cooperation and deferred knowledge use report mixed results.

1. Introduction

An increasingly turbulent business terrain is pushing companies to compete fiercely and to produce new innovative solutions at regular and short time intervals (Bettis & Hitt, 1995; Menon, Chowdhury, & Lukas, 2002). The ability to come up with new ideas as well as to react promptly to innovative solutions proposed by competitors as well as to demands of partners, suppliers, clients, and other agents, is significantly influenced by how well a company is able to capture the value of external knowledge — and that, in turn, is determined by the absorptive capacity of the organization (Cohen & Levinthal, 1994). Absorptive capacity represents a firm's unique skill of translating externally generated knowledge into own commercial benefits.

Earlier research on absorptive capacity has demonstrated the importance of the phenomenon for a number of organizational performance indicators. While seen as a mediator by some scholars (Hutzschenreuter & Guenther, 2008; Saenz, Revilla, & Knoppen, 2011), absorptive capacity is mainly considered to entail a direct, significant, and positive influence on organizational performance indicators including innovative output (Cohen & Levinthal, 1990; Fabrizio, 2009; Tsai, 2001), competitiveness (George, 2005; Winter, 2003; Zahra & George, 2002), and financial performance (George, Zahra, Wheatley, & Khan, 2001; Rothaermel & Alexandre, 2009; Tsai, 2001).

Despite gaining a rather vast academic interest, the mechanism of the absorptive capacity phenomenon is still somewhat confusing (Lane, Koka, & Pathak, 2006; Todorova & Durisin, 2007) as the concept is intangible, challenging any attempt to quantify the studies of it (Jimenez-Barrionuevo, Garcia-Morales, & Molina, 2011). As such, earlier research has been criticized for its reliance on proxies capturing the phenomenon only partially (Murovec & Prodan, 2009).

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The current paper examines the prevailing understandings on the paradigm of absorptive capacity, attempting to reveal a model actually employed by the firms. Next, the paper proceeds in investigating the impact that the facets of absorptive capacity entail on organizational performance, both separately and in conjunction with environmental turbulence.

2. Theoretical background

Absorptive capacity, most often defined as “the ability of an organization to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen & Levinthal, 1990: 128), enables companies to develop through commercial application of knowledge sourced from outside.

The concept of absorptive capacity was introduced in 1989 by Cohen and Levinthal, who proposed that absorptive capacity consists of three stepwise elements of knowledge articulation within a company: recognition of the value entailed in the knowledge generated externally, its assimilation to firm's existing knowledge base, and application of a combined knowledge base for commercial purposes.

Later, several alterations to the model were proposed, with the most significant alternative model being that of Zahra and George (2002), who suggested a framework encompassing four stages — acquisition, assimilation, transformation, and exploitation of external information. They group the dimensions into two pairs: acquisition and assimilation as the potential to use the knowledge sourced from outside, and transformation and exploitation as realization of this potential. The nature of this differentiation is similar to the one proposed by March (1991) in the model of organizational learning — a company's potential absorptive capacity is exploratory in its nature, while realized absorptive capacity relates to exploitation of knowledge.

However, Garud and Nayyar (1994) argued that absorptive capacity as such is not sufficient to create a sustainable competitive advantage. They introduced transformative capacity to signify knowledge retention, bridging recognizing the value of external information to its usage — *i.e.* linking assimilation and application stages. Expanding their argument, Lichtenthaler (2009) tried to propose a model of absorptive capacity entailing six stages, with transformative learning linking exploration to exploitation.

Despite being rather intensively referred to by scholars, the concept of absorptive capacity is mostly given a brief notice (Lane et al., 2006). Although there is certain empirical support for sequential models in some specific contexts such as ICT (Daspit, 2012), some contrasting schemes have also been demonstrated. As such, Lane, Salk, and Lyles (2001) argued that absorptive capacity in an international joint venture context entails only two stages, demonstrating that the acquisition and assimilation stages as suggested by Cohen and Levinthal (1989) are highly correlated. Also, Heeley (1997) proposed that the actual use of new external knowledge depends on technological capabilities at a firm's possession, claiming that application cannot be considered a separate stage. It has been noted that the actual mechanism of the phenomenon remains unclear (Lane et al., 2006; Van den Bosch, Van Wijk, & Volberda, 2002).

The most important outcomes of absorptive capacity as proposed by Cohen and Levinthal (1989, 1990) are innovation and innovative output. Their view was expanded by numerous following studies (*e.g.* Ahuja & Katila, 2001; Fabrizio, 2009; Fosfuri & Tribo, 2008; Zahra & George, 2002), arguing further that absorptive capacity is central for sustaining the competitive advantage of a firm. The lack of absorptive capacity has been demonstrated to act as a major obstacle for a firm's agility, reducing its competitiveness (Szulanski, 1996). Despite being generally noted as contributing to competitiveness, the role of absorptive capacity for shaping the competitive position has been subject to limited research endeavours, with most of the studies equating competitive position either to innovative outcome (Ahuja & Katila, 2001; Fosfuri & Tribo, 2008) and/or financial performance (*e.g.* George et al., 2001; Rothaermel & Alexandre, 2009; Tsai, 2001). Other less quantifiable strategic outcomes that absorptive capacity has been demonstrated to determine include, for example, strategy formation (Volberda, 1998) and knowledge transfer (Kim & Inkpen, 2005; Mowery, Oxley, & Silverman, 1996).

In addition, organizational performance and the need to respond to the developments external to a firm are highly influenced by environmental turbulence (Levinthal & March, 1993). The speed of change occurring in the surrounding environment determines if a company should be focusing on exploratory or exploitative activities, with turbulent times favouring exploration (Bierly, Damanpour, & Santoro, 2009) and stable environments leading to exploitation (Koka & Prescott, 2008).

Considered to be stable before, the current business environment is characterised by continuous revolutions (Brown & Eisenhardt, 1997) — product development cycles are short (Mowery et al., 1996) and are constantly becoming shorter (Bettis & Hitt, 1995). The shortening product lifecycle is influenced by rapid changes in technology (Bettis & Hitt, 1995) as well as by the general movement towards incremental changes, promoting easy adoption and potential evolvment of early adopter gains (Coombs & Bierly, 2006; Tushman & Anderson, 1986). The contemporary environment is high-paced, with tight competition, great complexity, and an elevated degree of uncertainty (Emden, Calantone, & Droge, 2006; Leonard-Barton, 1992). However, the so-called threats entailed by the turbulence (Leonard-Barton, 1992) can also be sources of opportunity (Song, Droge, Hanvanich, & Calantone, 2005). Absorptive capacity is a dynamic capability (Wang & Ahmed, 2007; Zahra & George, 2002), a meta-capability over functional capabilities (Daspit, 2012), allowing for constant recreation of core competencies, helping sustain competitive advantage in a dynamic setting (Tece, Pisano, & Shuen, 1997). Also, being innovative in turbulent times requires companies to combine old and new knowledge (Henderson & Clark, 1990), a process that once again is shaped by absorptive capacity (Rothaermel & Alexandre, 2009). Thus, a high-velocity setting shall favour organizations with a well-developed absorptive capacity, calling for an investigation of the joint impacts of environmental dynamism and absorptive capacity on organizational performance.

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