Industrial Marketing Management 41 (2012) 521–530

Contents lists available at ScienceDirect

Industrial Marketing Management

Top management's social capital and learning in new product development and its interaction with external uncertainties

Simon Land *, Andreas Engelen [1], Malte Brettel [1]

Aachen University (RWTH), Templergraben 64, 52056 Aachen Germany

ARTICLE INFO

Article history:
Received 8 April 2010
Received in revised form 21 April 2011
Accepted 21 April 2011
Available online 31 July 2011

Keywords:
Social capital
Organizational learning
New product development
Interaction effects

ABSTRACT

This paper examines the effect of the elements of top management's social capital on exploratory and exploitative learning and on the outcomes of new product development (NPD), as well as the interaction effects of these elements with external uncertainties. In so doing, the study follows prior research that calls for a fine-grained analysis of how top management's social capital can positively affect NPD outcomes. Large-scale survey data (675 firms) from the United States, Germany, and Australia are used to develop and empirically validate a theoretical framework. As hypothesized, elements of top management's social capital have positive, but not identical, effects on exploitative and exploratory learning. In addition, the effects of structural social capital on learning, as well as the effects of learning on NPD outcomes, are significantly moderated by the interplay of technology uncertainty and demand uncertainty. The research concludes with implications for theory and practice.

© 2011 Elsevier Inc. All rights reserved.

1. Introduction

Prior research has confirmed the relevance of new product development (NPD) to organizational performance (see literature reviews and meta-analyses by Brown & Eisenhardt, 1995; Henard & Szymanski, 2001; and Page & Schirr, 2008). NPD is often conceptualized as a learning process in which the acquisition and management of knowledge is essential (Tsai & Ghoshal, 1998); in fact, Yang, Yu, and Lee (2002) refer to knowledge management as "the lifeblood of product development" (p. 573). Two types of organizational learning—exploitative and exploratory—are particularly relevant to NPD (e.g., Auh & Menguc, 2005). Exploitative learning refers to "the refinement and extension of existing competencies, technologies, and paradigms," and exploratory learning to "experimentation with new alternatives" (March, 1991; p. 85).

Social capital theory argues that specific elements of external and internal social relationships present valuable learning resources (Adler & Kwon, 2002) and emphasizes the importance of the "relational rather than technical assets of the firm" (Atuahene-Gima & Murray, 2007; p. 2). Although Nahapiet and Ghoshal (1998) identify three distinct dimensions of social capital (structural, relational, and cognitive), prior research almost exclusively views organizational learning as a direct consequence of overall social capital. Therefore, the function of social capital in learning and NPD has not been sufficiently explored, especially with regard to the elements and dimensions of social capital and the forms of learning.

Atuahene-Gima and Murray (2007) present one of the first studies to address how the elements of structural, relational, and cognitive social capital affect exploitative and exploratory learning in the context of NPD. However, since their study was conducted in the context of technology-oriented firms in China, the "generalizability of [their] findings is limited" (Atuahene-Gima & Murray, 2007; p. 22). The need to establish the cross-national validity of theoretical models developed in one country is especially relevant to NPD research because few organizations' NPD processes are limited to a single national setting (Page & Schirr, 2008). Moreover, given that the majority of studies in NPD are main-effect models, Henard and Szymanski (2001) see opportunities in determining whether the roles of certain antecedents of new product performance are more prominent under some conditions than others. In the context of social capital, Atuahene-Gima and Murray (2007) pick up this notion in calling for research into "whether the environmental […] context plays a significant role in exploitative and exploratory learning" and into "the conditions under which exploitative and exploratory learning [most] influence new product performance" (p. 23).

The present research addresses these calls by empirically testing the interaction effects of technology and demand uncertainty, two environmental factors, in a theoretical model. The model, comprised of several elements of social capital, exploratory and exploitative learning, and new product performance, uses multi-country data collected in the United States, Germany, and Australia.

* Corresponding author. Tel.: +49 241 80 96197; fax: +49 241 80 92317.
E-mail addresses: land@win.rwth-aachen.de (S. Land), engelen@win.rwth-aachen.de (A. Engelen), brettel@win.rwth-aachen.de (M. Brettel).
[1] Tel.: +49 241 80 96197; fax: +49 241 80 92317.

0019-8501/$ – see front matter © 2011 Elsevier Inc. All rights reserved.
doi:10.1016/j.indmarman.2011.06.007

2. Conceptual background

2.1. New product development as learning process

NPD is defined as the process and outcome of creating a new product. The definition follows Madhavan and Grover (1998) in viewing the creation and management of knowledge (organizational learning) as central to the NPD process. Organizational learning theory asserts that organizations engage in exploratory and exploitative learning, both of which are relevant to the NPD process (Raisch, Birkinshaw, Probst, & Tushman, 2009). Exploitative learning involves searching for information that is related to an organization's existing technology, customers, and market knowledge, thereby emphasizing the knowledge body's intensification and refinement in an effort to increase efficiency, streamline execution, and improve implementation (Gupta, Smith, & Shalley, 2006). Exploratory learning, on the other hand, involves searching for information that is largely new and beyond an organization's own experience (Zi-Lin & Poh-Kam, 2004).

2.2. Social capital theory

Social capital theory argues that the goodwill engendered by internal and external social relationships can help to capture the benefits of information, influence, and solidarity (Adler & Kwon, 2002). Partanen, Möller, Westerlund, Rajala, and Rajala (2008) cite the evidence in prior research of social capital's positive role in "accessing resources and capabilities from and with other actors" (p. 514) so, in the context of NPD, social capital can be a valuable resource for learning and knowledge creation (Atuahene-Gima & Murray, 2007); for example, customers can support the creation of new product ideas (cf. the concept of co-creation, e.g., Droge, Stanko, & Pollitte, 2010). However, Gu, Hung, and Tse (2008) state that strong social relationships can also create a "collective blindness" to ideas from outside the network and that relationships can create an overload of obligations and rigidities for organizations.

To minimize these risks, it is important to examine the fine-grained effects of each element of social capital. Nahapiet and Ghoshal (1998) identify three distinct dimensions of social capital: structural, relational, and cognitive. The structural dimension describes the connections between individuals or units and external institutions (Adler & Kwon, 2002). In the relational dimension trust and trustworthiness are central because they describe the quality of relationships (Tsai & Ghoshal, 1998). The cognitive dimension describes the level to which vision, interpretation, and a system of meanings are shared among actors.

2.3. External uncertainty

Organizational theory suggests that external uncertainty shapes the interactions among individuals, organizational structure, and performance (e.g., Lu & Chyan, 2004). For the purposes of this study, external uncertainty is captured in two dimensions, technological uncertainty and demand uncertainty, a differentiation common in several literature streams, including those of strategic management (e.g., Oriani & Sobrero, 2008) and NPD (e.g., Sicotte & Bourgault, 2008; Song & Montoya-Weiss, 2001). Technological uncertainty refers to the instability, complexity, and unpredictability of a relevant technology and its future development (Bstieler, 2005), while demand uncertainty refers to the difficulty of predicting customer behavior and preferences and the composition of the potential customer group (Jaworski & Kohli, 1993).

3. Research model

The overall premise of this research is that individual elements of top management's social capital have different effects on the exploitative and exploratory learning processes that affect new product performance. The research assumes that "top managers operate in a social context inside and outside their organizations and that these social interactions influence organizational strategy and its outcomes" (Atuahene-Gima & Murray, 2007; p. 2). In line with previous research on organizational learning and NPD (Augusto & Coelho, 2009), the research assumes that external uncertainties impact the relationships among top management's social capital, organizational learning, and NPD.

3.1. Direct effects of top management's social capital on organizational learning

The structural dimension refers to the embeddedness of actors in a social system, that is, an actor's external management ties from which resource and information benefits can be drawn (Moran, 2005) to promote innovation and company performance (Peng & Luo, 2000). Luk et al. (2008) show a positive relationship between top management's social capital and organizational innovativeness, and Stam and Elfring (2008) distinguish between extra-industry ties with executives from organizations outside one's industry and intra-industry ties with executives from other organizations in the same industry. Extra-industry ties bridge industry boundaries to expose managers to heterogeneous and often novel perspectives from other environments (Geletkanycz & Hambrick, 1997), bringing the focus of the manager's information search to new areas of knowledge, experimentation, and challenges to long-standing beliefs and assumptions. Given the recent trend toward blurred industry borders, many industries face similar challenges in areas like customer service (Kretschmer, Klimis, & Choi, 1999). It follows that executives that are tied together in extra-industry networks may find divergent solutions to problems common to all industries. On the other hand, executives within the same industry, who are challenged with very similar strategic decisions around business opportunities and risks, often respond using similar practices. Prior research has shown that intra-industry ties among managers promote "strategic conformity," in which executives "tend to develop a limited repertoire of strategic alternatives" (Geletkanycz & Hambrick, 1997; p. 658) and to limit their openness to novel information and their capacity to envision alternative courses of action (Nahapiet & Ghoshal, 1998). Gargiulo and Benassi (1997) argue that over-embedded intra-industry ties can reduce the flow of new ideas into a network and create a common body of knowledge that can lead to "collective blindness" (Gu et al., 2008). Therefore, in line with prior research:

H1a. Intra-industry management ties are positively related to exploitative learning in NPD.

H1b. Extra-industry management ties are positively related to exploratory learning in NPD.

Trustworthiness, which reflects the quality of relationships and organizational interactions, is the central element in the relational dimension of top management's social capital (Inkpen & Tsang, 2005). Dooley and Fryxell (1999) distinguish between trustworthiness based on perceived competence (cognitive trust) and that based on loyalty (emotional trust). Cognitive trust has been shown to be conducive to the development of intimacy and closeness in relationships and to increase interactions that facilitate resource exchange and recombination and effective evaluation of existing information (Tsai & Ghoshal, 1998). As a result, the opportunity for exploitative learning is enhanced (Atuahene-Gima & Murray, 2007). On the other hand, extant research suggests that loyalty-based trust in the top management team facilitates the acquisition and sharing of new information, fosters organizational creativity, and provides an atmosphere in

متن کامل مقاله ← دریافت فوری

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات