Industrial Marketing Management xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Industrial Marketing Management

Examining the new product innovation – performance relationship: Optimizing the role of individual-level creativity and attention-to-detail☆

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ARTICLE INFO

Article history:
Received 23 November 2013
Received in revised form 4 August 2014
Accepted 30 August 2014
Available online xxxx

Keywords:
New product innovation
Individual
Attention-to-detail
Creativity
Ambidexterity

ABSTRACT

New product innovation has been identified as the key to firms' marketplace success, profit and survival. Yet, the failure rate for new products is high. Because of the high costs associated with new product development, there is considerable theoretical and managerial interest in how to minimize the high failure rates of new products and what separates new product winners from losers. This study focuses on individual level ambidexterity – namely head of the R&D departments' capacity to engage in creativity and attention-to-detail simultaneously, a skill involving different centers of attention, and relying on somewhat incompatible behaviors and processes. The ability to engage in these behaviors simultaneously is seen as being ambidextrous. Drawing from the data of 150 advanced manufacturing firms in India (gathered from one CEO and one head of the R&D department for each firm), the results show that when an individual head of R&D engages heavily only in creativity, too many new, risky ideas may come and when he/she engages heavily only in attention-to-detail, he/she may suffer through a lack of novel ideas. Both approaches limit individual's contribution to enhancing product innovation – financial performance relationship. The results also show that an individual head of R&D needs to engage in high levels creativity and attention-to-detail in the pursuit of enhancing product innovation to achieve superior financial performance.

1. Introduction

In today's markets with increasing levels of competition and shorter product life cycles, new product innovation has been identified as the key to success, profit and survival (Menguc & Auh, 2010; Slater, Mohr, & Sengupta, 2013). By identifying new solutions to customer problems, new product development can both transform existing markets and create new ones. Without innovation, incumbents will slowly lose their markets as rivals innovate past them (Hauser, Tellis, & Griffin, 2006). With increasing market velocity, firms need greater responsiveness (Day, 2011) when commercializing new products. Some firms invest heavily in research and development (R&D) in an effort to create and commercialize products that provide a solution to customer problems, capture the attention of the market and become the next market success. However, such investment does not always pay off. The failure rates for new products has been increasing at an alarming rate, with some reports showing between 40 and 75% (e.g. Stevens & Burley, 2003) and 50% and 90% (e.g., Gopalkrishnan, LaPlaca, & Sharma, 2006; Heidenreich & Spieth, 2013) of all new products fail. Such failure rates raise a puzzling question about what separates new product winners from losers (Droge, Calantone, & Harmancioglu, 2008; Henard & Szymanski, 2001).

Because of the high costs and rewards associated with new product development in terms of success and failure, there is considerable theoretical and managerial interest in how to minimize the failure rates (Joshi & Sharma, 2004). One path worth considering is that of the important role of individuals in the new product development process (Amabile, 1988; Bharadwaj & Menon, 2000), and their contribution to new product innovation. Firms are increasingly relying on individuals (i.e., in teams or departments) who possess specific knowledge, skills and perspectives and deal with the complexity of new technologies and information (Lovelace, Shapiro, & Weingart, 2001) to successfully innovate. The literature shows that individuals' underlying psychological characteristics are significantly related to the performance of the team or organization (e.g., Bell, 2007; Harrison, Price, Gavin, & Florey, 2002).

We argue that one avenue that may lead to minimizing new product failure rates and enhance innovation success is through promoting and encouraging individuals to engage in appropriate levels of creativity and attention-to-detail. The Individual[2] of our focus is the head of the R&D

☆ This paper was prepared with the assistance of the Services Innovation Research Program, QUT Business School, Queensland University of Technology.
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[2] When we use the term "individual" from now on, we refer to the head of the R&D department. This is our focal individual.

http://dx.doi.org/10.1016/j.indmarman.2015.02.040
0019-8501/

department. We focus on this individual because his/her leader - manager behavior largely defines the work context of the department (Coelho, Augusto, & Lages, 2011). For example, when the head of the R&D department demonstrates the importance of, and is a role model for the simultaneous engagement in creativity and attention-to-detail, it can motivate subordinates to engage in such behaviors. However, this is not as easy as one may believe because the simultaneous deployment of creativity and attention to detail may be seen as involving different centers of attention, and rely on somewhat incompatible behaviors and processes. While creativity allows 'rule infringements', attention-to-detail advocates 'strict rules' (Miron, Erez, & Naveh, 2004). The ability to engage in these actions simultaneously could be classified as being ambidextrous. Developing a high quality, innovative product requires creativity (e.g., Stanko, Molina-Castillo, & Munuera-Aleman, 2012), and to design products with superior benefits and minimal flaws or attributes that are superior to competitors requires adherence to attention-to-detail (e.g., Miron et al., 2004), both of which are critical in enhancing new product innovation success.

We draw on the ambidexterity literature that reflects alignment in the pursuit of dual, and sometimes, seemingly conflicting goals or activities (e.g., Simsek, 2009). Ambidextrous firms manage the conflicting activities – exploration and exploitation – to achieve superior performance (March, 1991; Raisch & Birkinshaw, 2008). It is argued that ambidexterity ultimately becomes manifest at the individual level (Raisch, Birkinshaw, Probst, & Tushman, 2009), where the ambidextrous individual performs conflicting activities in the pursuit of multiple organizational goals such as efficiency-oriented tasks and variability-increasing tasks (Mom, Van Den Bosch, & Volberda, 2009).

In relation to the current study, we see ambidexterity as being akin to an individual's dual engagement in creativity and attention-to-detail (hereinafter individual creativity – attention-to-detail ambidexterity) within the new product development process. While focusing on the individual's creativity and attention-to-detail has great potential to contribute to improved understanding of new product innovation and its pursuit to achieve superior financial performance, the product innovation literature has rarely considered whether creativity and attention-to-detail can co-exist within an individual level and whether it enhances the new product innovation – financial performance relationship. The lack of research in this area is critical as there is the potential in many individuals to trade-off creativity and attention-to-detail.

This study makes two important contributions to the literature. First, we conceptualize individual creativity – attention-to-detail ambidexterity (individual's ambidextrous behavior) as the head of the R&D department engaging in both creativity and attention-to-detail simultaneously. Our approach contributes to the literature about whether individuals can be truly ambidextrous (e.g., Gupta, Smith, & Shalley, 2006; Mom et al., 2009) and whether there are beneficial consequences in enhancing the new product innovation success.

Second, ambidexterity has been identified by some as consisting of two dimensions: combined ambidexterity which focuses on the interaction between exploration and exploitation in the form of high-high (e.g., Atuahene-Gima, 2005; Cao, Gedajlovic, & Zhang, 2009) and balanced ambidexterity which focuses on the absolute differences between exploration and exploitation in the forms of high-low and low-high (see also Cao et al., 2009). We contend that while new product innovation drives the firm's financial performance, the individual's creativity – attention-to-detail ambidexterity – helps achieve a stronger connection between new product innovation and the firm's financial performance. Within this contribution, we firstly articulate the extent to which the firm's new product innovation can be enhanced when the individual engages in high levels of creativity and attention-to-detail simultaneously (hereinafter combined individual creativity – attention-to-detail ambidexterity). Secondly, we articulate the extent to which new product innovation is enhanced when the individual engages more in creativity and less in attention-to-detail and vice versa (hereinafter balanced individual creativity – attention-to-detail ambidexterity).

To articulate the theoretical focus of this study, Fig. 1 presents the conceptual model developed to examine the role of individual creativity and attention-to-detail ambidexterity in enhancing the new product innovation - financial performance relationship.

2. Literature review

2.1. Managements role in creativity and attention-to-details

In contemporary organizational environments, managing is increasingly challenging. Globalization, restructuring, downsizing, outsourcing, preoccupation with short-term results, and advances in technology all place greater demands on managers (Ohlott, Bhandary, & Tavares, 2003). It is obvious that managers must be highly skilled to manage well and succeed in this increasingly dynamic environment.

The head of R&D departments represent managerial positions which give and receive direction (Stoker, 2006). They are close to the day-to-day operations and manage employees who engage in key work tasks to create and deliver the products, but are still far enough away from frontline work that they can see the big picture (Huy, 2001). Kanter (1981, p. 96) comments that "middle managers have their fingers on the pulse of operations, and because of this they can conceive, suggest, and set in motion new ideas."

An important form of engagement is middle managers' behavior in championing new ideas, facilitating adaptability (Floyd & Wooldridge, 1992; Pappas & Wooldridge, 2007), and being attentive to detail (Miron et al., 2004). Many of the roles managers engage in are divergent. For example, Pappas and Wooldridge (2007, p. 324) indicate championing alternatives and facilitating adaptability are considered divergent behaviors because they "challenge the 'dominant logic' of the firm, help organizations enter new markets, and spark the development of new capabilities". More specifically, such divergence can stem from middle managers' championing and facilitating initiatives at the operating level (Burgelman, 1983). The literature identifies divergent behaviors across a spectrum of activities. In this domain research on middle managers' divergent behavior such as that by Floyd and Wooldridge (1992) and Pappas and Wooldridge (2007) would see middle managers' adaptive behaviors as the manager proposing, accommodating, and embracing adjustments in planned functional level strategies (e.g., R&D) at the business unit or team level to fit with operational situations. These behaviors can include (1) *championing creativity* by stimulating new ideas, and (2) *facilitating attention to detail by focusing on analysis, error free work and adhering to precision* (Miron et al., 2004; Naveh & Erez, 2004). The middle manager in our context is the head of the R&D department who resides at the lower end of the middle management tier of the firm (see Rouleau, 2005).

We analyze the influence of a manager to provide a better understanding of what contributes to or inhibits a department's new product innovation capability through its manager's ambidextrous behavior. Managers' behaviors largely define the work context of the unit or team through demonstrating how a new product development project should be managed by providing leadership in creativity and attention to detail. In recognizing this situation, the manager can motivate his/her subordinates within the department to practice similar approaches.

2.2. New product innovation – financial performance

This study defines new product innovation as the firm's ability to introduce new products in the market (Hult, Hurley, & Knight, 2004; Nakata, Zhu, & Izberk-Bilgin, 2011). Understanding what facilitates or impacts on these activities and resulting outcomes is critical. Product innovation, according to Kim and Mauborgne (1997) and Ngo and O'Cass (2009), enables firms to not only develop new products to respond to the changes in customers' needs, but also continuously create and deliver enhanced value embedded in their products. Therefore, to achieve market superiority, the continuous renewal of market offerings (in the form of

Please cite this article as: Sok, P., & O'Cass, A., Examining the new product innovation – performance relationship: Optimizing the role of individual-level creativity and attentio..., *Industrial Marketing Management* (2015), http://dx.doi.org/10.1016/j.indmarman.2015.02.040