



## Full Length Article

## Balancing market exploration and market exploitation in product innovation: A contingency perspective☆

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## ABSTRACT

This paper examines three different ways to balance market exploration and market exploitation in product innovation. First, following the knowledge-based view, we examine whether market exploration and market exploitation have differential effects on various new product outcomes based on their different learning mechanisms. We find that market exploration facilitates new product innovativeness, whereas market exploitation is more beneficial for new product development speed. This indicates that market exploration and market exploitation influence new product financial performance via distinct paths. Second, we examine the interaction between market exploration and market exploitation on new product outcomes. Our findings indicate that the joint effects of market exploration and market exploitation reduce new product development speed and have no significant impact on new product innovativeness. Third, we examine the contingent role of customer need tacitness in influencing the effects of market exploration and market exploitation. Our results show that customer need tacitness strengthens the effects of market exploration on both new product innovativeness and new product development speed. In contrast, it weakens the effect of market exploitation on new product innovativeness, and has no significant influence on new product development speed. Our results provide specific guidelines for managers regarding how to achieve a balance between market exploration and market exploitation in product innovation.

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## 1. Introduction

In product innovation, firms are required to acquire and utilize market information efficiently and effectively in order to meet customer needs (e.g. Moorman, 1995; Slater & Narver, 1995; Troy, Hirunyawipada, & Paswan, 2008). Following the seminal work of March (1991), current literature has distinguished between two types of market learning activities in an organization: market exploration and market exploitation (e.g. Kim & Atuahene-Gima, 2010; Kyriakopoulos & Moorman, 2004). *Market exploration* refers to the search and pursuit of completely new knowledge and skills outside the firm's current product market, whereas *market exploitation* emphasizes the use and refinement of existing knowledge and skills in the current product market. Due to the distinction and tension between these two learning activities, recent studies have devoted to finding solutions for achieving organizational ambidexterity that

allows a firm to simultaneously exploit existing competencies and explore new opportunities (e.g. Benner & Tushman, 2003; Raisch, Probst, & Tushman, 2009). Despite the growing interests in this area of research, understanding organizational ambidexterity has proven to be a challenging task (e.g. Raisch & Birkinshaw, 2008; Tushman & O'Reilly, 1996), and there lacks consensus in the current literature on how to achieve this goal within and across organizations (e.g. Gupta, Smith, & Shalley, 2006; Lavie, Kang, & Rosenkopf, 2011).

This study aims to contribute to the existing literature by providing our perspective regarding how to balance market exploration and market exploitation in product innovation. Specifically, following the knowledge-based view and a contingency perspective, this study takes a closer look at the learning mechanisms underlying market exploration and market exploitation, and empirically examines three different ways to balance the two market learning activities in product innovation. Built upon previous literature on balancing exploration and exploitation within an organization (e.g. Levinthal & March, 1993; Raisch et al., 2009; Tushman & O'Reilly, 1996), our study aims to provide a comprehensive and unique view of achieving organizational ambidexterity by taking into account the differential effects of market exploration and market exploitation on distinct innovation outcomes as well as examining the contingent role of customer need tacitness in such learning processes. The objectives of this study are threefold.

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First, following the knowledge-based view, we examine whether market exploration and market exploitation have differential effects on various new product outcomes based on their different learning mechanisms. Few existing studies have centered on whether exploration and exploitation will influence various new product outcomes differently with several exceptions (e.g. [Atuahene-Gima, 2005](#); [Kim & Atuahene-Gima, 2010](#)). Our study aims to contribute to the existing literature by comparing and contrasting the differential effects of market exploration and market exploitation on three distinct new product outcomes: new product innovativeness, new product development speed and new product financial performance. Further, this study goes beyond that by examining how the two types of market learning will influence new product financial performance via distinct paths.

Second, we directly model and test the ambidexterity hypothesis by examining the interaction effects of market exploration and market exploitation on new product outcomes. Empirical evidence is limited and inconsistent regarding the performance implications of such joint effects (e.g. [Lavie et al., 2011](#); [Raisch et al., 2009](#)). Some research has lent support to the positive association between organizational ambidexterity and firm performance (e.g. [He & Wong, 2004](#); [Katila & Ahuja, 2002](#); [Lubatkin, Simsek, Ling, & Veiga, 2006](#)), thereby indicating the complementarity of exploration and exploitation. Others have found a negative influence of such joint effects on performance outcomes (e.g. [Atuahene-Gima, 2005](#); [Atuahene-Gima & Murray, 2007](#); [Nerkar, 2003](#)). Our study attempts to provide new empirical evidence regarding the potential joint effects of these two market learning activities on innovation outcomes. Our findings indicate that the joint effects of market exploration and market exploitation reduce new product development speed, and have no significant impact on new product innovativeness. These findings provide new insights into how to achieve an optimal balance between market exploration and market exploitation in order to gain desirable innovation outcomes.

Third, we examine the contingent role of customer need tacitness and assess whether the effects of market exploration and market exploitation on innovation outcomes differ depending on the level of customer need tacitness. Understanding customer needs is not an easy task since such information can be tacit and hard to articulate ([De Luca & Atuahene-Gima, 2007](#); [Madhavan & Grover, 1998](#)). The tacitness can affect whether specific information will be effectively harnessed and integrated into the new product development (NPD) process ([De Luca & Atuahene-Gima, 2007](#); [McEvily & Chakravarthy, 2002](#)). Even though past studies have started to explore a few notable internal and external contingency factors, such as market orientation and environmental uncertainty, in these two learning activities (e.g. [Atuahene-Gima, 2005](#); [Kim & Atuahene-Gima, 2010](#); [Kyriakopoulos & Moorman, 2004](#)), they did not take into account the characteristics of customer knowledge involved in such learning. This study fills this research gap and examines whether the type of knowledge involved in market exploration and market exploitation can play a contingent role in influencing innovation outcomes. We propose that when customer needs are highly tacit, market exploration, rather than market exploitation, would be more beneficial for new product outcomes. Our findings support the above proposition and help to provide specific guidelines for managers regarding how to balance market exploration and market exploitation in product innovation.

## 2. Theoretical background

### 2.1. The market learning process

According to [Sinkula \(1994\)](#), an organization's market learning process encompasses the acquisition, distribution, interpretation and storage of market information. Past research has shown that an organization's inherent orientation and its abilities to process market-related information can be considered as sources of competitive advantage ([Day, 1994](#); [Jaworski & Kohli, 1993](#); [Slater & Narver, 1995](#)). There is

also ample empirical support that demonstrates that market information in organizational learning is crucial for NPD performance (e.g. [Li & Calantone, 1998](#); [Rodríguez-Pinto, Carbonell, & Rodríguez-Escudero, 2011](#)) as well as firm performance (e.g. [Cano, Carrillat, & Jaramillo, 2004](#); [Morgan, Vorhies, & Mason, 2009](#)).

Several related streams of research have examined the underlying mechanisms of market learning, including market orientation ([Hurley & Hult, 1998](#); [Slater & Narver, 1995](#)) and information-processing view of an organization ([Huber, 1991](#); [Sinkula, 1994](#)). The literature on market orientation emphasizes developing an organizational culture that gears towards "being market-oriented" ([Hurley & Hult, 1998](#); [Slater & Narver, 1995](#)). It promotes developing an organizational mind-set that facilitates the generation, dissemination and responsiveness of market intelligence ([Morgan et al., 2009](#)), and proactively shapes the market demand when needed ([Slater & Narver, 1995](#)). Another large body of research on market learning centers on the information-processing view of an organization ([Huber, 1991](#); [Sinkula, 1994](#)). An organization is often engaged in finding ways to process market information efficiently and effectively in order to acquire, disseminate, and apply new market information and strive towards gaining sustainable competitive advantage in the long run ([Day, 1994](#); [Moorman, 1995](#)).

While these streams of research have helped to advance our understanding of the market learning process, few studies take into account the characteristics of market knowledge or the performance objectives of such learning. These two factors are important in assessing marketing learning for a firm since they can play a major role in the formation of a firm's marketing capabilities ([De Luca & Atuahene-Gima, 2007](#); [Li & Calantone, 1998](#)), which could ultimately lead to better new product outcomes.

### 2.2. Market exploration and market exploitation

Following the seminal work of [March \(1991\)](#) as well as several recent studies on market learning (e.g. [Kim & Atuahene-Gima, 2010](#); [Kyriakopoulos & Moorman, 2004](#)), we distinguish between two types of market learning activities, market exploration and market exploitation. According to [March \(1991, p. 85\)](#), the essence of exploration is "experimentation with new alternatives" that has uncertain and distinct returns, whereas the essence of exploitation is "the refinement and extension of existing competences, technologies, and paradigms" whose return is positive and proximate. Applying March's view to the domain of market learning, we define *market exploration* as the search and pursuit of completely new knowledge and skills in the new and/or emergent market, whereas *market exploitation* refers to the use and refinement of existing knowledge and skills in the current market ([Kim & Atuahene-Gima, 2010](#); [Kyriakopoulos & Moorman, 2004](#)).

Market exploration involves broad search beyond a firm's current product market. It aims at discovering new possibilities and creating new knowledge outside the firm's current market boundaries. In contrast, market exploitation emphasizes following existing organizational routines, and expanding and refining an organization's existing knowledge towards the current customer base ([Kim & Atuahene-Gima, 2010](#); [March, 1991](#)). Due to the differences in their learning mechanisms, these two types of market learning tend to compete for resources within an organization. Since exploiting existing knowledge tends to give immediate and predictable returns, a firm has a tendency to overly rely on exploiting its existing competencies which may lead to "competence traps" ([Leonard-Barton, 1992](#); [Levinthal & March, 1993](#)). In contrast, firms that engage predominantly in market exploration may find it difficult to gain the return of its newly discovered knowledge, thereby creating an endless cycle of "failure traps" ([Gupta et al., 2006](#); [Levinthal & March, 1993](#)).

Due to the inherent tension between market exploration and market exploitation, there is increasing attention in the literature to finding solutions to achieve an optimal balance between them which allows firms to develop both activities simultaneously for their long-term survival

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