



Identifying the moderating influences of external environments on new product development process

Keon Bong Lee^{a,*}, Veronica Wong^{b,c,1}

^a School of Business Administration, Korea University, Jochiwon-eup, Yeongi-gun, Chungnam 339-700, Republic of Korea

^b Department of Business and Management, School of Business, Management and Economics, University of Sussex, Brighton BN1 9RF, UK

^c Audencia Nantes Ecole de Management, Nantes, France

ARTICLE INFO

Keywords:

Competitive intensity
Functional-specific sources of advantage
Implementation capabilities
Project-specific sources of advantage
Technological change

ABSTRACT

Few studies have attempted to investigate the following: (1) whether the firm's core capabilities or resources and routines (e.g., integration among functions) for product development, in the presence of environmental dynamics, become incumbent inertia or core rigidities? and (2) how environmental dynamics affect the influence of a project team's implementation capabilities in the new product development (NPD) process on new product launch performance? This study approaches these questions by addressing the three most indispensable NPD process components (i.e., marketing, technology, and organization) and incorporating new moderators, namely pace of technological change and competitive intensity, within a single study. It specifically examines the extent to which the latter two external environmental variables moderate the impact of NPD practices on new product launch outcome. Data obtained from a survey of NPD projects developed and launched by Korean manufacturers suggest that environmental dynamics would reduce the contribution of functional-specific sources of advantage (resources) and project-specific sources of advantage (e.g., integration among functions) to organizational implementation capabilities (i.e., a project team's proficiency in executing NPD activities). Moreover, the research also shows that market dynamics may increase the contribution of organizational implementation capabilities to NPD project performance.

© 2011 Published by Elsevier Ltd.

1. Introduction

Dynamic markets characterized by shifting technologies and market competition, pose additional challenges for new product development (NPD) project managers who must remain alert and responsive to emerging technical and market information over the course of a project (Eisenhardt and Tabrizi, 1995). However, except for a few studies (e.g., Bstieler, 2005; Fernández et al., 2010; Song and Montoya-Weiss, 2001; Song and Parry, 1997b; Song et al., 2005; Souder and Song, 1998), previous investigations have paid relatively little attention to examining the interactions between external environmental variables (e.g., competitive intensity and technological turbulence) and determinants of NPD project outcome that are more readily controlled by the firm, such as functional-specific sources of advantage (i.e., marketing synergy and technology synergy), project-specific sources of advantage (i.e., coordination routines such as cross-functional integration), and quality of implementation in the NPD process or organizational

implementation capabilities (i.e., the NPD project team's proficiency in conducting marketing and technical activities).

Previous research provides evidence to support the moderating role of external environmental variables in determining NPD outcomes (Song and Montoya-Weiss, 2001; Song et al., 2005; Song and Parry, 1997b). For example, external environments weaken the impact of positional advantage on new product success (Song and Montoya-Weiss, 2001; Song and Parry, 1997b). However, there is relatively little empirical research that addresses whether a firm's core capabilities or resources and organizational routines become incumbent inertia or core rigidities in the presence of market and technological uncertainty. Moreover, implementation capabilities are significant mediators of the relationships between functional-specific sources of advantage, project-specific sources of advantage, and new product performance (e.g., Lee and Wong, 2010; Song and Parry, 1997b; Song et al., 1997c). By implication, even the best core resources and capabilities will not translate into higher levels of new product performance, but, rather, contingent on expediency in completing process activities. While these prior studies have examined mediational roles of internal, NPD project variables in influencing NPD project outcomes, empirical testing of the moderating role of external environmental forces (e.g., competition) on the NPD process and project outcomes remain relatively sparse.

* Corresponding author. Tel.: +82 418601 530.

E-mail addresses: keonbonglee@korea.ac.kr (K.B. Lee), v.wong@sussex.ac.uk (V. Wong).

¹ Tel.: +44 1273 872687.

Therefore, the present study refocuses attention on the moderating influences of external forces and sheds further light on the mechanisms by which these variables impact the relationships among functional-specific and project-specific sources of advantage, organizational implementation capabilities, and new product launch performance. A fuller understanding of these mechanisms should provide a useful benchmark for NPD managerial decisions concerning the optimum ways of allocating resources to the NPD process and expected outcomes. Importantly, it will yield deeper insights into how, and the extent to which, a firm's response to external forces might control the translation of core marketing and technical resources, and project routines into resultant implementation capabilities and launch performance.

Our study seeks to strengthen understanding of the effects of external environmental forces on NPD activities and performance, and to contribute to the NPD literature by focusing on two questions that are relatively neglected in previous work: (1) do the firm's resources and routines (e.g., integration among functions) for product development, in the presence of environmental dynamics, become incumbent inertia or core rigidities? and (2) how do environmental dynamics affect the influence of a project team's implementation capabilities in the NPD process on new product launch performance?

The above questions address the notion that NPD process outcomes may be contingent on external environmental forces, which can be regarded as presenting both a constraint on, and an opportunity for, leveraging the firm's internal processes (Song and Parry, 1997a,b). However, we more specifically examine core NPD capabilities at a project level and extend Song et al.'s study (2005) that investigated the role of technology turbulence in determining the impacts of technology-related capabilities, marketing-related capabilities, and their interaction (marketing-related capabilities x technology-related capabilities) effects on firm performance (i.e., profit, sales, and ROI) relative to joint venture objectives. We propose the impacts of both types of external environmental dynamics (technology and competition) within a single model to clarify the flows from NPD project resources/routines, to implementation capabilities, and outcomes.

This paper makes three primary contributions to the NPD literature. First, this paper suggests that environmental dynamics would reduce the contributions of resources and routines to a project team's implementation capabilities in product development. Second, the research also shows that market dynamics may increase the contribution of the project team's implementation capabilities in the NPD process to organizational performance (in terms of project performance). Third, the present study will examine the aforementioned influences of environmental dynamics on NPD resources, routines, implementation capabilities, and new product project outcome in a sample of South Korean manufacturers. In doing so, we add to the limited data concerning NPD undertaken by firms in non-western, emerging economies. A few studies addressing NPD practices in Korean sample settings (e.g., Song et al., 1997c; Song and Noh, 2006; Thieme et al., 2003), have focused on the determinants of new product performance (e.g., skills and resources, marketing activity proficiency, project environment, project leadership, strategic fit, process, product positioning strategies, project manager style and skills, senior management support, cross-functional integration, and planning proficiency), but have not incorporated external environments as moderator variables.

2. Conceptual model

Fig. 1 presents the proposed conceptual framework of antecedents of NPD outcome and the moderating roles of external environmental variables on the relationships between proposed antecedents and launch outcome. We draw upon Song and his colleagues' works (Song and Parry, 1997a,b; Song and Montoya-Weiss, 2001) in developing our conceptual model of the potential impacts of antecedent variables (i.e., the level of marketing and technical synergies, cross-functional integration, and development proficiencies) on new product outcomes, because marketing, technology, and organization are the three most indispensable NPD process components (Mu et al., 2009). In addition, we extend the work of Song and Parry (1997a,b) and Song and Montoya-Weiss

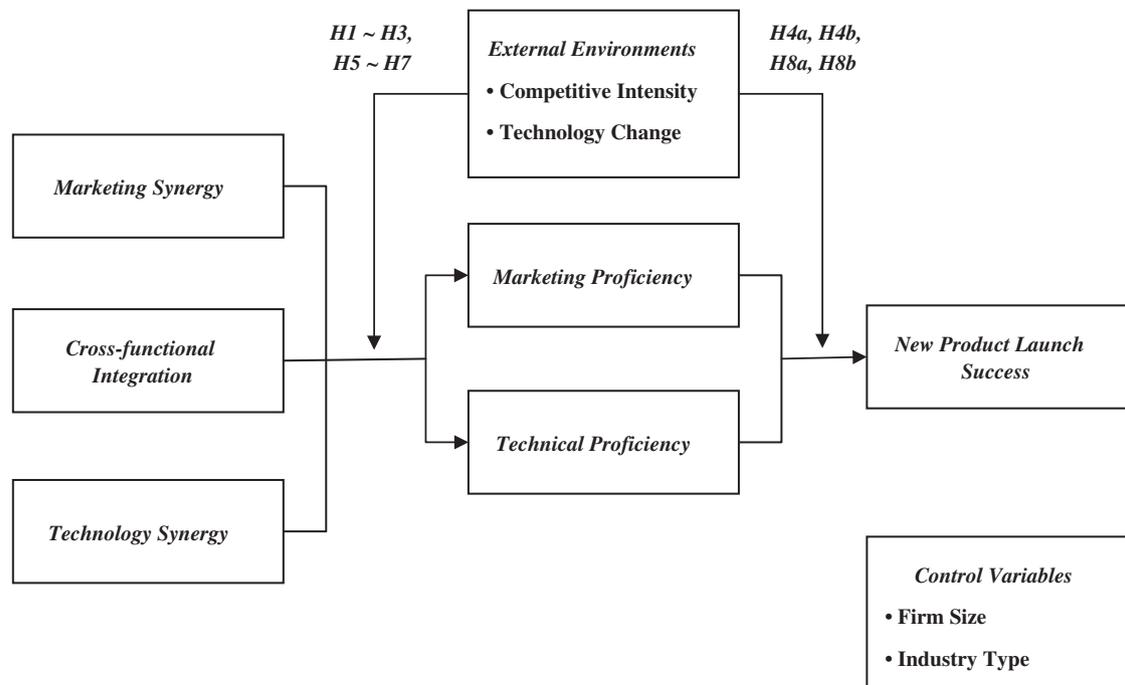


Fig. 1. Conceptual framework.

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