Journal of Purchasing & Supply Management 21 (2015) 192–203

Contents lists available at ScienceDirect

Journal of Purchasing & Supply Management

journal homepage: www.elsevier.com/locate/pursup

Managing supplier relationships in a new product development context

Maarten Sjoerdsma [a,*], Arjan J. van Weele [b,1]

[a] Philips N.V., De Blecourtstraat 14, 5652 GB Eindhoven, the Netherlands
[b] Eindhoven University of Technology, School of Industrial Engineering, P.O. Box 513, CNT 0.16/0.08, 5600 MB Eindhoven, the Netherlands

ARTICLE INFO

Article history:
Received 8 July 2014
Received in revised form
8 May 2015
Accepted 18 May 2015
Available online 30 May 2015

Keywords:
Supplier relationship management
New product development
Early supplier involvement
Inter-organizational relationship

ABSTRACT

Organizations can no longer rely solely on their own resources to innovate and therefore look for strategic interactions outside their organizational boundaries. During the past years Early Supplier Involvement, supplier relationship management (SRM) and knowledge exchange in supply chain relationships have been separately covered in academic research. Using insights from RBV Theory this study proposes and validates an integrated framework that explains outcome effects of new product development (NPD) projects. The initial framework was derived from existing research and validated using four in depth case studies studying actual global NPD projects taken from a large multinational company. The case study findings resulted in a revised framework that can be used to assess NPD outcomes of buyer–supplier interactions. Our research confirms that a positive relationship between relationship quality, knowledge transfer and NPD outcomes exists. Twelve constructs appear decisive for buyer–supplier relationship quality. These constructs act on either an individual or organizational level. A better relationship quality allows for more knowledge transfer among partners, more (innovative) ideas and solutions and positive NPD project outcomes. The reverse, however, also appears to be the case. The proposed integrated framework can be used to predict the performance of a NPD project by measuring the quality of the relationship between buyer and supplier on the twelve constructs. As such this research advances our understanding of the importance and dynamics of supplier relationship management in NPD projects. Future research, however, is needed to further validate and test the proposed framework.

1. Introduction

Firms increasingly rely on resources beyond their own to innovate in today's competitive environment. They foster strategic interactions beyond their organizational boundaries, contracting out non-core activities, thus allowing them to invest in core competencies and improve the quality of their internal resources. During the past years supplier relationship management (SRM) and early supplier involvement in new product development (NPD) have received ample interest from researchers. Suppliers increasingly seem to represent an important source for innovation to firms Chesbrough (2003). However, unleashing this innovation potential i.e. mobilizing a supplier's innovative capabilities still seems to be a challenge.

A major issue here is: which formal coordination mechanisms (e.g. contracts) and informal coordination mechanisms (e.g. relationship quality) foster innovation knowledge exchange in supply chain relationships. Research studying the impact of informal coordination mechanisms on NPD outcomes is rare. Our study contributes to this field of research by providing outcomes of four in depth case studies, taken from complex consumer goods innovation projects. During the past years the relationship between supplier relationship quality and NPD performance have been the subject of study many times. Also, a large amount of research has been conducted on the role of knowledge transfer and its impact on NPD performance. Empirical research that includes these two important aspects of the NPD process appear to be limited. More specifically: empirical studies that investigate the constructs that determine the quality of a relationship between buying and supplying organizations and their outcome effects within an NPD context were not found. Therefore, this research aims to study the relationship between supplier relationship quality, knowledge transfer and NPD performance. More specific: our research aims to

* Corresponding author.
E-mail addresses: maartensjoerdsma@gmail.com (M. Sjoerdsma), a.j.v.weele@tue.nl (A.J. van Weele).
[1] Fax: +31 40 246 80 54.

http://dx.doi.org/10.1016/j.pursup.2015.05.002
1478-4092/© 2015 Published by Elsevier Ltd.

answer the following question: 'What key factors underlying supplier relationship management foster buyer–supplier knowledge transfer and positive NPD outcomes'?

After having considered different theoretical perspectives, we adopted the Resource Based View (RBV) as the main basis for developing a theoretical framework. Based on our literature review we present a comprehensive research framework that can be used to explain moderators and outcomes of early supplier involvement.

Our study brings advances to the existing literature in several ways. First, our study identified twelve constructs that seem decisive for the quality of the buyer–seller relationship. Next, using RBV theory our study proposes an integrated theoretical framework that explains the causal relationship between SRM in a NPD. Third, we use four in depth case studies to explore how the buyer–seller relationship quality affects NPD performance. Fourth, our revised framework can be used to assess the performance of a NPD project by measuring the quality of the relationship between buyer and supplier on our proposed twelve constructs. Therefore, our study has important implications for practitioners. For researchers, our research model provides a starting point to further define, explore and validate the dynamics of innovation in buyer–seller relationships.

The paper is organized as follows. First, we review the literature on SRM in NPD to develop a research framework that delineates the relationship between supplier relationship quality, knowledge transfer and NPD performance. Hereafter, our research methodology is described, followed by in depth within-case and cross-case analyses. We conclude the paper with a discussion of our findings and their managerial implications. Also we indicate the limitations of the study and promising directions for further research.

2. Theoretical background

Innovation is a crucial process central to the development of a competitive advantage. The management of supplier involvement in design and development, therefore, can be positioned as being a major and increasingly important part of this process (Croom, 2001). Establishing a successful buyer–supplier relationship is key to attain a competitive advantage (Rajendran et al., 2012) as it enables the buyer to gain benefits that are unlikely to come from traditional transactional relationships (Rajendran et al., 2012). Thus, by managing the supplier innovation potential effectively, the performance of the buying firm is more likely to improve. (Cusumano and Takeishi, 1991; Lawson et al., 2009). In order to exploit this potential and thus improve the NPD performance, the relationship with the supplier should be actively managed (Walter, 2003; Gemünden et al., 1996; Håkansson and Snehota, 1989; Dyer and Ouchi, 1993). Following RBV theory we argue that companies can become more successful if they are able to manage and to access (supplier) resources that are immobile, scarce, inimitable, non-substitutable and that provide competitive advantage (Hunt et al., 2002). The RBV states that the basis for a firm competitive advantage primarily lies in the application of that bundle of valuable tangible and intangible resources, both internal and external, that are at the firm disposal. These resources should be heterogeneous in nature and not perfectly mobile. Therefore, supplier's resources and the firm ability to exploit these resources to achieve its goals are key factors in its competitive and innovation strategy.

The impact of successful, high quality buyer–supplier relationships on the NPD performance have been studied by many authors (e.g. Kale et al., 2000; Walters and Rainbird, 2007; Zsidisin and Ellram, 2001). We have done an extensive literature search based on a collection of papers published between 1990 and 2013. Using various sources (e.g. JSTOR; ABI/Inform) and a pre-determined set of keywords (e.g. "relationship management"; "NPD performance") a selection of 133 potentially relevant papers were selected. This set has been expanded using two methods (i) back- and forward searches; and (ii) snowballing leading to a total of 193 publications. Through both a content and an abstract check this set was reduced to 123 sources that were used for our literature review.

Using this literature review seventeen factors were identified that are significant for the outcome of the NPD process. Fourteen of these factors are independent, three factors had dependencies. The fourteen independent variables are the following:

(i) access to resources and knowledge; (ii) information sharing; (iii) efficiency and effectiveness in NPD processes; (iv) organizational performance; (v) value through synergy; (vi) innovativeness; (vii) NPD complexity; (viii) customer satisfaction; (ix) profit margins; (x) supplier contribution of new ideas; (xi) quality of relationship; (xii) joint problem-solving activities; (xiii) manufacturability of the product; (xiv) redesign and rework.

In literature, there is consensus that three outcomes are the most significant for the NPD process, i.e. product quality, cycle time or time to market and NPD costs. This is why we choose these three outcomes as metrics to measure NPD performance (see Table 1).

Next, we explored the determining factors of the quality of a buyer–seller relationship using our literature survey. Twelve different constructs were identified as having a strong impact on the relationship quality. These are discussed below in order of magnitude and effect. The following five determinants are the most powerful in establishing a high quality relationship.

The first factor is trust: when buyers have high levels of trust in their suppliers and vice versa, they are likely to pursue more co-operative negotiations and open communication, which affects the NPD performance in a positive manner. Trust also increases the willingness to share information and knowledge (Bensaou, 1999; Wognumet al., 2002; Walter, 2003; Knudsen, 2007; Dyer and Chu, 2011; Cantista and Tylecote, 2008; Lawson et al., 2009; Rajendran et al., 2012; Walter et al., 2003; Bunduchi, 2013). Second, communication is key. Without sufficient communication, there cannot be any relationship build-up. The performance of the relationship depends on the appropriateness and effectiveness of the communication (Knudsen, 2007; Kale et al., 2000; Sivadas and Dwyer, 2000; Walters and Rainbird, 2007; Lorange et al., 1992;

Table 1
Main outcomes of buyer–supplier relationships.

Outcome	Authors
Increased product quality	Cusumano and Takeishi (1991), Zhao and Lavin (2012), Petersen et al. (2005), Bunduchi (2013), Wagner and Hoegl (2006), Goffin et al. (2006), Walter (2003), Primo and Amundson (2002), Madhok (2002)
Reduced cycle time or time to market	Zsidisin and Ellram (2001), Zhao and Lavin (2012), Petersen et al. (2005), Wynstra et al. (2010), Primo and Amundson (2002), Bunduchi (2013), Wagner and Hoegl (2006), Madhok (2002), Walter (2003)
Reduced NPD costs	Zsidisin and Ellram (2001), Zhao and Lavin (2012), Petersen et al. (2005), Rajendran et al. (2012), Wynstra et al. (2010), Primo and Amundson (2002), Goffin et al. (2006), Madhok (2002), Dyer (1997), Walter (2003), Walter et al. (2003)