Journal of Operations Management 30 (2012) 85–98

Contents lists available at ScienceDirect

Journal of Operations Management

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

The moderating effects of supplier portfolio characteristics on the competitive performance impacts of supplier-facing process capabilities

Xinlin Tang[a,1], Arun Rai[b,*]

[a] College of Business, Florida State University, Tallahassee, FL 32306, United States
[b] Robinson College of Business, Georgia State University, Atlanta, GA 32303, United States

ARTICLE INFO

Article history:
Received 17 June 2010
Received in revised form 17 July 2011
Accepted 22 July 2011
Available online 28 July 2011

Keywords:
Supplier relationship management
Supplier-facing process capabilities
Supplier portfolio
Competitive performance

ABSTRACT

We draw on the interorganizational relationship management literature to examine how contextual characteristics of the supplier portfolio (portfolio concentration, relationship length, and supplier substitutability) moderate the impacts of process alignment and partnering flexibility – two of a firm's key supplier-facing process capabilities to manage supplier relationships – on a product line's competitive performance. Our analysis of survey data on a firm's supplier portfolio for a major product line indicates that the impacts of process alignment and partnering flexibility on competitive performance are moderated by the three supplier portfolio characteristics. Specifically, while concentrated relationship portfolios, long-term relationships, and supplier substitutability amplify the positive effect of process alignment on competitive performance, concentrated relationship portfolios and long-term relationships attenuate the competitive benefits that firms derive from partnering flexibility. While long-term relationships and concentrated supplier portfolios enhance the competitive benefits of process alignment, operations managers also need to recognize the detrimental effects of these supplier portfolio characteristics on the competitive benefits of partnering flexibility.

1. Introduction

With intensified competition and globalization, firms are increasingly relying on their relationship portfolios, defined as the group of immediate core business partners (Lavie and Miller, 2008), to implement operations strategies for competitive performance (Carr and Pearson, 1999). While traditional research on relationship management has focused more on dyadic relationships (Johnson et al., 2004; Larson, 1992), recent research suggests that relationship portfolios are more crucial for a firm's strategic interest than a single relationship alone (Choi et al., 2001; Ozcan and Eisenhardt, 2009). The turnaround of Apple and its astounding success in the last several years shows that an effective portfolio of relationships can enable a firm to focus on its strengths (the architectural design of the product platform in Apple's case) while leveraging partners' resources and market positions (Yoffie and Slind, 2006). In this study, we focus on a focal firm's portfolio of supplier relationships, or its supplier portfolio, a key strategic asset (Johnson, 1999), and examine two supplier-facing process capabilities (process alignment and partnering flexibility) that are important to manage it. Our target is to enhance theoretical understanding about the operational mechanisms that enable a firm to generate competitive benefits for a product line from its supplier portfolio.

Extensive research on relationship management has suggested that a firm should establish interorganizational process capabilities with its suppliers to pursue strategic goals and to accrue competitive benefits (Bala and Venkatesh, 2007). By cultivating certain process capabilities, a firm can effectively manage and even manipulate its suppliers' resources and capabilities to achieve its strategic goals. On the one hand, a firm can continuously refine existing supplier relationships through process alignment,[2] which is defined as a firm's ability to coordinate interdependent activities and optimize operations with its suppliers (Clark and Stoddard, 1996; Jarvenpaa

* Corresponding author. Tel.: +1 404 413 7857; fax: +1 404 413 7867.
E-mail addresses: xtang2@fsu.edu (X. Tang), arunrai@gsu.edu (A. Rai).
[1] Tel.: +1 850 644 1044; fax: +1 850 644 7843.

[2] Multiple constructs have been introduced in the interorganizational relationships literature that spans disciplines to describe various aspects of collaboration between a firm and its partners [e.g., supply chain integration (Narasimhan and Kim, 2002), a broad concept including both internal integration and external integration with customers and/or suppliers; information flow integration (Patnayakuni et al., 2006), with a focus on information integration between a firm and it suppliers; supplier integration (Morgan and Monczka, 1996), with a focus on the use of internal and supplier capabilities; and e-integration in supply chains (Frohlich, 2002), with a focus on Internet-based supply chain integration]. Consistent with Rai and Tang (2010), our focus is on process alignment, or the firm's ability to manage process interdependencies with its suppliers effectively so that the firm's supplier-facing activities are aligned and jointly optimized with suppliers.

0272-6963/$ – see front matter
doi:10.1016/j.jom.2011.07.001

and Stoddard, 1998; Rai and Tang, 2010). This process capability facilitates knowledge sharing and behavioral coordination with the supplier portfolio, enabling the generation of efficiency and effectiveness benefits (Lambert and Cooper, 2000; Rosenzweig et al., 2003). On the other hand, a firm can explore new relationships through partnering flexibility, which is defined as a firm's ability to adjust its supplier portfolio for a product line (Shapiro and Varian, 1999). This process capability enables the focal firm to adapt its supplier portfolio to access new knowledge and complementary resources and to avoid relationship lock-ins (Fjeldstad and Haanaes, 2001; Young-Ybarra and Wiersema, 1999).

However, while the benefits of a firm's process alignment and partnering flexibility to manage its supplier relationships are widely touted, the espoused benefits have not factored the contextual characteristics (i.e., the situational opportunities and constraints presented by the supplier portfolio) that may change the performance gains realized from these process capabilities (Johns, 2006). For instance, in a dense network, the focal firm and its suppliers are better able to work together because of greater trust (Sivades and Dwyer, 2000), more frequent communication (Larson, 1992), and easier coordination (Sivades and Dwyer, 2000), all of which reduce the friction of exchange and the risk of opportunism (Uzzi, 1996). Similarly, a focal firm can enhance the value it creates from its supplier portfolio by changing the portfolio's contextual characteristics, for example, by adjusting tie strength (Rowley et al., 2000) or partnering with resource-rich firms (Katila et al., 2008). The moderating role of the supplier portfolio characteristics is an important void in our understanding, as overlooking it can constrain the benefits a firm realizes from its supplier-facing process capabilities, leading to suboptimal long-run performance (Das et al., 2006; Milgrom and Roberts, 1995).

In this study, we evaluate how the contextual characteristics of a firm's supplier portfolio (portfolio concentration, relationship length, and supplier substitutability) moderate the impacts of the two supplier-facing process capabilities on the competitive performance of a product line, defined as the achievement of a firm's objectives for the product line in relation to the external environment (Ferrier, 2001; Porter, 1980b). Specifically, we examine the following research question:

RQ: For a specific product line, how do the contextual characteristics of the supplier portfolio moderate the competitive performance impacts of a focal firm's process capabilities to manage its portfolio of supplier relationships?

By focusing on one of a focal firm's major product lines, we define clearly the boundary of the focal firm's supplier portfolio and its process capabilities to manage it. Large firms can have multiple product lines, differing in both supplier portfolios characteristics and management strategies for them. For example, Johnson & Johnson not only has different types of supplier portfolios for its baby-care products, prescription products, and medical devices, all of which are targeted at different customer groups but also requires different process capabilities to manage these supplier portfolios (Fisher, 1997). Thus, conducting the study at the level of a major product line enables us to delineate a firm's process capabilities to manage its portfolio of supplier relationships and examine how the effects of the process capabilities on competitive performance are moderated by the contextual characteristics of the supplier portfolio (hereafter referred as supplier portfolio characteristics).

Our study makes important contributions to our understanding of operations strategy by responding to the call for broader-based operations strategy research on supply chain as an interorganizational system (Boyer et al., 2005). By delineating sources of competitive advantage emanating from specific process capabilities to manage supplier relationships, we add to our understanding of operations strategy for supply chain management. We provide empirical evidence that the competitive performance impact of a firm's process capabilities for supplier relationship management is influenced by its supplier portfolio characteristics. Our study surfaces the moderating effects of supplier portfolio characteristics on the performance impacts of process capabilities and contributes to our understanding of how and why the development of process capabilities and the restructuring of supplier portfolios need to be managed as a whole. Finally, our study adds to our understanding of the joint effects of key operational decisions and capabilities on competitive performance at the product line level.

2. Theory building and hypothesis development

Interorganizational relationships are important sources of a firm's resources, knowledge, and complementary capabilities (Dyer, 2000; Lee and Klassen, 2008). Their importance for a firm's competitiveness has grown with advances in information technology and increases in globalization (Boyer and Lewis, 2002). Now, firms usually maintain a portfolio of relationships with their partners, including major suppliers, to enhance their competitiveness (Ketchen et al., 2008; Lavie, 2007). These relationships vary from arm's length, transaction arrangements to close, collaborative partnerships (Cannon and Perreault, 1999). This broad variety of relationships is often difficult for a firm to manage, with roughly half of inter-firm partnerships ending in failure (Alliance Analyst, 1996). We suggest that a firm should not manage its supplier portfolios for various product lines using a one-size-fits-all strategy. We argue that the supplier portfolio characteristics influence the competitive benefits of process capabilities for supplier relationship management.

2.1. Process alignment and partnering flexibility to manage supplier portfolios

Supplier relationships are considered as strategic assets for firms to achieve competitive performance (Johnson, 1999; Srivastava et al., 1998). However, firms have to develop process capabilities to extract value from their supplier portfolios (Majchrzak and Wang, 1996). Based on a review of the literature and the empirical evidence (e.g., Frohlich and Westbrook, 2001; Gosain et al., 2004; Lee, 2000; Rosenzweig et al., 2003; Shapiro and Varian, 1999), we identified process alignment and partnering flexibility as two key process capabilities that enable a firm to effectively manage its supplier portfolios for a product line.

Aimed at optimizing coordination with partners, process alignment enables a firm to continuously fine-tune business-to-business exchange with its supplier portfolio. It promotes learning and efficiency, increasing profit margins and market responsiveness (Ahmad and Schroeder, 2001; Narasimhan and Kim, 2002). Indeed, a strategic strength of Cisco is its capability to align processes with its supplier portfolio, an indispensable foundation of its dominant position in the networking equipment industry (Kraemer and Dedrick, 2002). As such, there is significant empirical evidence that aligning processes with suppliers enables a firm to reduce coordination costs, lower lead times, reduce order fulfillment errors, and increase inventory turnover rates (Malone and Crowston, 1994; Rai et al., 2006; Simchi-Levi et al., 2007).

Unlike process alignment that focuses on improving the effectiveness of existing relationships, partnering flexibility focuses on enabling the firm to adjust its supplier portfolio as necessary (Shapiro and Varian, 1999). Changing customer preferences and shortening product lifecycles require firms to deliver and modify offerings in short time-periods and at reasonable costs. This market responsiveness requires firms to have the capability to establish