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Supplier–supplier relationships in buyer–supplier–supplier triads: Implications for supplier performance

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ABSTRACT

A growing number of studies and evidence from industries suggest that, besides managing the relationship with its suppliers, a buyer needs to proactively manage the relationships between those suppliers. In a buyer–supplier–supplier relationship triad, the buyer, as the contracting entity, influences the suppliers' behaviors and the relationship between them. By considering the relationships in such a triad, we are able to gain a richer and more realistic perspective of buyer–supplier relationships. In this study, our goal is to examine supplier–supplier relationships in buyer–supplier–supplier triads, focusing on how such relationships impact the supplier performance. We frame the supplier–supplier relationship as co-opetition—one in which competing suppliers work together to meet the buyer's requirements. We investigate the role of the buyer on such relationships, and how the buyer and co-opetitive supplier–supplier relationships affect supplier performance. We find mixed empirical support for our hypotheses. However, we are able to demonstrate the dynamics of supplier–supplier co-opetition in the buyer–supplier–supplier triad. We point out the need for further studies in this area.

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1. Introduction

To improve the flow of ideas and materials, many buying firms now work with a smaller number of suppliers and relegate to them much of the product design and production coordination (Mol, 2007; Ro et al., 2008; Youngdahl et al., 2008). Buyers recognize how upstream suppliers' operations affect their downstream customers (Latour, 2001; Nishiguchi and Beaudet, 1998). In particular, the way suppliers work with each other (e.g., supplier–supplier relationships) has strategic importance to the buying firms (Choi et al., 2002; Lazzarini et al., 2008).

One salient characteristic of supplier–supplier relationships is that these suppliers compete and collaborate at the same time. Recent supply management studies call such dynamics co-opetition (Brandenburger and Nalebuff, 1996; Davis, 1993). Co-opetitive supplier–supplier dynamics were first observed in the sourcing practices of the Japanese automotive industry (Asanuma, 1985; Gadde and Håkansson, 2002; Richardson, 1993). These early studies documented cases where buyers sometimes encouraged suppliers to work closely together, while other times they kept the suppliers apart.

Recent studies also suggest that buying firms are proactively creating co-opetition among suppliers to elicit both collaborative synergy and market efficiency (Cross, 1995; Dyer and Nobeoka, 2000; Sako, 2004; Wu and Choi, 2005). Choi et al. (2002) established "supplier–supplier co-opetition" as an archetype of relationships between suppliers. Wu and Choi (2005) subsequently expanded co-opetitive supplier–supplier relationships to include various forms and highlighted the roles that buying firms can play in creating them. They illustrated how buyers can strategically manage supplier–supplier co-opetition to improve supplier performance.

These emerging studies of supplier–supplier relationships, to the best of our knowledge, are confined to reports of best practices and analysis of limited cases. To date there have been no studies that systematically validate the performance benefits of co-opetitive supplier–supplier relationships. In this paper, we set out to provide the empirical investigation and hypothesis testing of supplier–supplier co-opetition. As part of an iterative theory-building process (Handfield and Melnyk, 1998), our goal is to evaluate, refine and further develop a theoretical argument of supplier–supplier co-opetition. Using triadic data from a buyer and its suppliers (i.e., buyer–supplier–supplier triads), we examine the theoretical linkage between co-opetitive supplier–supplier relationship and supplier performance and explore the role of the

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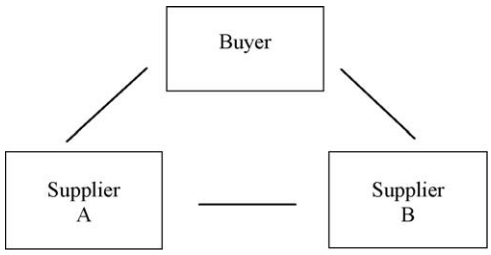

Fig. 1. Buyer–supplier–supplier triad.

buyer in managing supplier–supplier co-opetition. Fig. 1 illustrates this triadic relational context.

This study makes two contributions. First, it validates the emerging conception of supplier–supplier co-opetition. Second, it highlights the role of the buyer in managing supplier–supplier co-opetition and consequently offers guidance to the buyer in managing the relationships between the suppliers.

In the following sections, we first introduce the game theoretic argument of co-opetition, as well as the emerging studies of co-opetitive supplier–supplier relationships and the role of buyers in the buyer–supplier–supplier triad. Then, we articulate three hypotheses related to supplier–supplier co-opetition. These three hypotheses can be depicted as the mediating model as shown in Fig. 2. Finally, we report our findings and discuss their practical and theoretical implications.

2. Theoretical background and hypothesis development

2.1. Co-opetition and supplier–supplier relationship

The notion of co-opetitive relationships originated from the Prisoner's Dilemma variant of game theory (Axelrod, 1984; Lado et al., 1997; Raiffa, 1957; Rapoport and Chammah, 1965; von Neumann and Morgenstern, 1944). It was then popularized by the best selling business book *Co-opetition* (Brandenburger and Nalebuff, 1996). The idea is that competing parties, individuals or organizations, being mindful of potential retaliatory actions of their counterparts in future interactions, are willing to engage in collaboration. A co-opetitive relationship can induce optimal gains for both parties. Business strategy researchers find that co-opetitive behavior explains the strategic actions of competitors in a variety of industries such as airlines, automotives and telecommunication services (Chen and Hambrick, 1995; Gnyawali et al., 2006; Luo et al., 2006; Tsai, 2002). Competing companies would engage in a co-opetitive exchange because they expect an open-ended engagement in the future, whereas direct confrontational actions such as competitive pricing tactics would be met with retaliation (Gimeno and Woo, 1999; Lado et al., 1997; Young and Wilkinson, 1997). Examining the relationships between the industrial buyer and suppliers, Heide and Miner (1992) found that competition between buyers and suppliers would attenuate as they consider the prospect of future interactions. Axelrod (1984: 124) called such consideration "the shadow of the future," where anticipated future interactions induce reciprocity and collaboration and, at the same time, reduce the intensity of head-on competition between buyer and suppliers.

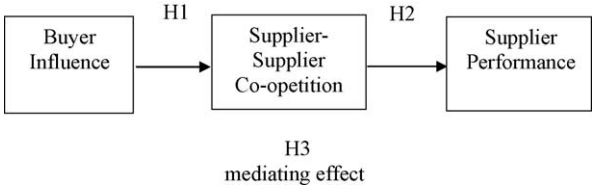

Fig. 2. A proposed research model of supplier–supplier co-opetition in buyer–supplier–supplier triad.

Co-opetitive relational dynamics are found between suppliers in studies that analyze parallel sourcing practices carried out by Japanese automotive companies (Asanuma, 1985; Fujimoto, 1999; McMillan, 1990; MITI, 1984; Richardson, 1993; Richardson and Roumasset, 1995). Although researchers did not refer to such relationships between suppliers as co-opetition, their description of parallel sourcing captures the essence of this phenomenon. We define *supplier–supplier co-opetition* as the cooperative behavioral actions which two competing suppliers (of a given buyer) engage in. As Asanuma (1985) observed, Japanese automotive companies often first require the suppliers to work together in product development. Then, they instigate competition through bidding when it comes to selecting suppliers for production. As a result, the suppliers have to take into account how to collaborate with a competitor for future contracts. In essence, the buyer uses parallel sourcing to induce cooperative interactions between the competing suppliers. The merit of parallel sourcing practiced by the Japanese automotive companies attests to the game theory argument of co-opetition in that both market efficiency and supplier synergy can be attained by having suppliers compete and cooperate at the same time.

2.2. Buyer influence on supplier–supplier co-opetition

While the majority of business research on co-opetitive relationships has focused on the strategy and behavior of the companies involved (Afuah, 2000; Browning et al., 1995; Gimeno and Jeong, 2001; Gnyawali and Madhavan, 2001; Lado et al., 1997; Madhavan et al., 2004), the analysis of parallel sourcing in supply chain management studies highlights the role of the buyer, who instigates co-opetition when it structures such parallel sourcing contracts. Because of its business interest, the buyer is motivated to influence the nature of the relationship between suppliers. Through systematic case analyses, Wu and Choi (2005) found that interactions between suppliers, or lack thereof, would eventually affect the performance of the buyer's supply chain operations. They cautioned that the buyer must be engaged in supplier–supplier relationships. Otherwise, the buyer stands to lose control of its supply chain. Recent reports corroborate this claim. As many buyers relegated supply chain relationship management tasks to their suppliers, their bargaining power diminished because over time such a strategy reduced the buyers' understanding of their suppliers' business (Mol, 2007; Rossetti and Choi, 2005; Youngdahl et al., 2008). Murphy (2003) reported that after Ford Motor Company outsourced complete modules and subsystems to its tier-one suppliers, its managers realized that they no longer had the expertise to access the real production cost of these modules and subsystems.

Game theory research has had a long history of considering the role of the third party in relationship interactions. Studies on coalition formation in social psychology have also made a critical extension to game theory by examining the significance of the third player in group structure and relationship behavior (O'Rand, 1992). One important question researchers explored is how a third party can change the nature of an existing dyadic relationship in a triadic setting (Caplow, 1956, 1968; Heider, 1958; Mills, 1958, 1963). For instance, Caplow found that when three players seek optimal gains for themselves, they often create the "two against one" coalition, in which two parties tend to form an alliance in order to counterbalance the single strong party.

Building on these early studies on triads, business researchers in recent years have begun to analyze triadic supply chain