



A contingent theory of supplier management initiatives: Effects of competitive intensity and product life cycle

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ABSTRACT

Direct investments in supplier development and close relationship building are the two major collaborative supplier management strategies for developing and accessing superior supplier capability. The impact of these two strategies, however, has not been uniform across firms, calling for a deeper examination of their relative effectiveness. Utilizing multiple theoretical frameworks, this study examines the relevance and effectiveness of the two collaborative strategies across the growth and maturity stages of the product life cycle (PLC). Specifically, the study analyzes the influence of competitive intensity as an antecedent to supplier development and relational initiatives, and the role of product life cycle as a moderator of the *inter-relationships* among competitive intensity, supplier development, relational initiatives, and supplier capability. Based on primary survey data, and discussion with practicing managers, the study finds that the individual and integrative effectiveness of supplier development investments (SDI) and relational orientation (RO) can be influenced differently by competitive intensity and PLC stage. In particular, RO can have a foundational role in motivating SDI for superior supplier capability, as also in safeguarding against supplier opportunism in the standardized product market context of the maturity stage. The managerial and theoretical implications of varied emphasis on the two collaborative supplier management strategies across the PLC stages are discussed.

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1. Introduction

Competition influences a firm's choice of structure, actions and standards of performance (Child, 1972). Competition forces firms into strategically vulnerable positions (Eisenhardt and Schoonhoven, 1996), prompting the acquisition of inimitable resources of competitive value. In this paper we examine the influence of competition on firm's external resource acquisition strategies.

Specifically, we analyze the issue of proactively managing suppliers of critical resources while considering the influence of two distinct environmental contingencies – *competitive intensity* and *product life cycle*. Approaches for supplier management are broadly characterized as transactional and reciprocal (Krause et al., 1998). While the quality of interaction is relatively more short-term, reactive and competitive in the former, it is relatively more long-term, proactive and collaborative in the latter. The collaborative

alternative is generally preferred due to reasons of stability, reliability and adaptability (Child, 1997; Liker and Wu, 2000). The collaborative alternative itself has two distinct approaches: (a) *direct investments* in suppliers to enhance supplier's capabilities and performance, and (b) *relation building* with suppliers to enhance cooperation and information exchange, control opportunistic behaviors, and to leverage supplier capabilities. The two approaches are conceptually and operationally distinct, and may be exercised alone or in tandem (MacDuffie and Helper, 2007). They can have independent, as well as synergistic effects on supplier and buyer performance.

However, our understanding of the motivations and circumstances that guide alternative collaborative supplier management approaches, and their utility in dynamic product/market contexts, remains incomplete because of the wide variability in their application among firms (e.g., MacDuffie and Helper, 2007). To illustrate, US based Japanese and US automakers differ in their emphasis on relationship building while pursuing lean objectives with their US suppliers (e.g., Liker and Wu, 2000); approaches for knowledge sharing have also been found to differ across Toyota's US suppliers (Dyer and Nobeoka, 2000). Since buyer's strategic priorities and supplier's capabilities are dynamic, and context specific,

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it is expected that the relationships among the alternate forms of collaborative supplier management approaches and development of supplier capabilities would also be dynamic and context specific. Although intuitively, competitive intensity, collaborative approaches (i.e., supplier development initiatives and supplier relationship building) and supplier capability should be interrelated, it is not clear how these relationships *co-evolve*. We seek to examine the issue of co-evolution of these relationships across the end product's life cycle stages with respect to a set of supplier capability objectives and the environmental contingency of competitive intensity. The product life cycle stages capture the dynamic nature of business context.

Our study utilizes multiple theoretical frameworks. Multiple theoretical lenses are useful for examining complex issues (Bergh et al., 2010). We allude to contingency theory (CT) and strategic choice theory (SCT) (Child, 1972; Sousa and Voss, 2008) to understand the influence of business context. CT argues that, confronted with a specific environmental challenge, there would be a specific best course of collaborative action; for instance, providing technical assistance to a supplier to develop volume responsiveness in the growth stage of the product life cycle. Thus, the utility of the different collaborative approaches, according to CT, would be context specific. But all firms in an industry do not make the same decision when faced with the same external challenge. SCT clarifies the issue by positing that decisions made by the firm can redefine or manipulate the constraints imposed by the environment. Thus SCT tenets suggest an interdependent and dynamic relationship between external constraints and a firm's choices, resulting in different strategies even under similar environmental influences. In an uncertain supply market environment, for instance, relational initiatives with key suppliers would influence the type and the degree of supply market uncertainty to which the firm would be exposed. Accordingly, a particular collaborative supplier management approach reflects the *joint and dynamic* influence of external business context and internal strategic choice. In contrast to the 'environmental determinism' perspective of contingency theory, strategic choice theory prescribes that external context alone is not the sole influence on managerial decisions. Internal considerations and strategy engage with the external context to shape idiosyncratic managerial choices. Applying the two theoretical perspectives we suggest that: (a) firm's choices regarding inter-organizational structures for managing exchange, supplier development practices, and dimensions of supplier capability are most effective when they are internally and externally consistent, and (b) firm's decisions regarding the dimensions of supplier capability, exchange structure and characteristics of interactions are idiosyncratic and interact with dynamic operational contingencies.

Against the larger backdrop of CT and SCT anchors, we utilize the resource-based view (RBV) and transaction cost economics (TCE) principles to understand the specific dynamics among competitive intensity, the two strategic collaborative supplier management approaches and their outcomes. In our study, competitive intensity characterizes the environmental influence. Supplier development investments and relation building describe the strategic choices to address the competitive challenge across the PLC stages. Firms would differ in their emphasis regarding supplier development and relational initiatives because of the differences in objectives such as minimization of resource acquisition costs, controlling transaction uncertainties, less exposure to supply market uncertainty, and development of heterogeneous and/or imperfectly mobile external resources. The heterogeneity and imperfect mobility of external resources provide the conditions for sustainable competitive advantage (Peteraf, 1993). We examine these issues through two principal research objectives: To examine why and how competitive intensity in the buyer's market motivates supplier development and supplier relation building initiatives. To

examine how the relationships among competitive intensity, supplier development investments, relational initiatives, and supplier capability co-evolve across the product life cycle stages.

This study makes the following contributions. To the best of our knowledge, our SCT and CT based analysis is the first attempt to inform *why* it is important to consider the *interaction between* business context and proactive supplier management initiatives. We theorize that the usefulness of different collaborative supplier management strategies is not only context specific, but can also be dynamic, firm specific and relation specific. Such a nuanced understanding of collaborative supplier management strategies provides clarity on the applicability and limitations of organization theoretic frameworks (e.g., TCE and RBV) in inter-organizational contexts. The study also fulfils the recent calls (e.g., Terpend et al., 2008) for examining the moderating effects of contextual/contingent variables on well-established practice-outcome relationships (e.g., the effect of building trust on operational performance). From a practical perspective, our analysis provides specific, non-intuitive insights that underscore the importance of joint consideration of business context and managerial choice. It identifies that for some firms, relational orientation (RO) is a precursor to supplier development investments (SDI). RO as a precursor to SDI would be most useful in the maturity stage; this is in contradiction to the general belief that relation building is less relevant in the commoditized maturity stage of a product. Furthermore, contrary to popular notion, it is found that SDI in and of itself is not an effective response to competitive pressure.

We utilize cross-sectional, primary survey data collected from US based discrete manufacturing firms to evaluate the hypothesized relationships with respect to a key supplier of a major product. Further, *ex post facto* we assess the recent experiences of three well known US manufacturers in aviation, engineered products, and utility sectors to refine our understanding of the results. The remaining sections of the paper synthesize relevant literature for articulating the constructs and hypotheses, discuss methodology, present the results of data analysis, and discuss the findings along with suggestions for future research.

2. Constructs, theoretical anchors and hypotheses development

2.1. Constructs

Utilizing RBV and TCE frameworks we first explain and hypothesize the relationships among four constructs: competitive intensity (CI), relational orientation, supplier development investments, and supplier capabilities (SC). The pattern of evolution of these relationships is then examined from contingency and strategic choice perspectives (Child, 1997; Sousa and Voss, 2008).

Competitive intensity reflects the domestic and international competitive pressure faced by the buying firm in the focal product market. The biological model of the firm proposed by Henderson (1983) perceives firms competing for resources with other firms in a resource constrained environment. Increase in population leads to competitive rivalry and competitive intensity. Firms need to develop practices that have evolutionary potential to survive in this environment. Competitive intensity thus affects a firm's competitive priorities and its functional strategies (De Meyer et al., 1989; Modi and Mabert, 2007). Studies have defined and measured competitive intensity variously. Mudambi and Helper (1998) evaluate competition in automotive industry in terms of number of available suppliers, duration of contract and time required to replace a supplier. Gatignon and Xuereb (1997) assessed competitive intensity using two items: (a) similarity across products and (b) extent of price competition. The above measures are likely to be sensitive to

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