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The influences of Internet-based collaboration and intimate interactions in buyer–supplier relationship on product innovation

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ABSTRACT

With the increasing importance of the Internet in connecting buyer and suppliers, how does Internet-based collaboration affect firm product innovation? This study proposes that Internet-based collaboration positively affects product innovation performance of supplying firms, but too much dependence on it impedes product innovation. That is, Internet-based collaboration has an inverted U-shaped relationship with product innovation performance of supplying firms. This study further posits that face-to-face interaction between buyer and supplier strengthens the positive effect of Internet-based collaboration on product innovation, such that when the degree of face-to-face interaction is high, Internet-based collaboration is associated with better innovation performance. These propositions are tested using data from an original survey data on buyer–supplier relationships in China. The results provide strong supports for the predictions of hypotheses.

1. Introduction

As the business world is increasingly becoming customer centric, firms have continuously devoted more attentions and resources to existing and potential customers of their organizations and treat them as customer equity (CE). Unfortunately, the effect of the CE management on innovation outcome has been largely neglected. This lacuna is surprising, as in a highly dynamic, competitive environment, innovation output occupies a central position among all organizational outputs and has profound influences on firms' survival, growth and sustainability (Eisenhardt & Tabrizi, 1995). This neglect becomes particularly glaring with the widely adoption of Internet as a platform to connect with key business partners. Internet-based buyer–supplier relationship has quickly emerged as one of the key determinants that enable a firm to identify market niches, generate new features, and attract valuable customers. Understanding the effect of Internet-based collaboration on a firm's ability to produce new ideas and continually innovate thus is an urgent issue in marketing research.

The recent researches on marketing strategy in digital era have devoted sustained attention to the consequences of the Internet-based marketing strategy but have failed to reach consensus as to whether it has a negative or positive effect on firm performance (Sultan & Rohm, 2004). Some scholars have suggested that the Internet allows a firm to dialog with its buyers in real-time and at a much higher frequency than traditional media, which cements its relationships with buyers and channel members (Sultan & Rohm, 2004). The Internet reflects the opportunities that enable a firm to reach a much broader base of buyers, reduce the cost of buyer engagement, and efficiently create value for buyers (Sawhney, Verona, & Prandelli, 2005). In contrast, other scholars have emphasized the challenges a firm encounters when embracing the Internet. The direct e-commerce initiated by a firm to garner more channel control with its users generates potential conflict with its channel partners (Sultan & Rohm, 2004). Therefore, the innovation performance implications of the usage of the Internet as a collaboration platform between buyers and suppliers remain unclear.

This study contributes to the literature in three areas. First, this study fills an important research gap in the marketing literature by examining how the Internet as a platform that facilitates CE management promotes product innovation. In so doing it addressed an important unresolved issue in previous researches—the nature of the relationship between the Internet-based CE and innovation outcome. Studying how the Internet-based collaboration as a form of CE can promote innovation performance can shed light on and contribute scarce empirical evidence to the research on the CE-firm value link.

Second, previous studies have examined either the opportunities or challenges offered by the Internet for marketing performance. But this study argues that both perspectives provide insights into the role of the Internet-based collaboration between buyers and suppliers, but neither approach provides a complete explanation. Researchers from the opportunities' perspective have often assumed, implicitly or explicitly,

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that the availability of opportunities offered by the Internet is not a constraint and a firm can benefit from the power of the Internet without a limit. On the other hand, the challenges' perspective has recognized the drawbacks of the Internet in business and marketing, but focused its attention primarily on the negative aspect. This study argued that a combinative view of opportunities and challenges is necessary to resolve the existing controversy.

Third, this study proposes that suppliers need to cultivate face-to-face interaction with buyers that enables them to maximize the value and minimize the costs of the Internet-based collaboration. In particular, face-to-face interaction with buyers may help engender their trust on the focal supplier, which facilities its acquisition of buyers' in-depth information useful for product innovation. As a result, face-to-face interaction has the potential to strengthen the positive effects of the Internet-based collaboration on product innovation success.

The theoretical framework is tested in an empirical analyse of Chinese firms that involve the Internet-based collaborations with customers in developing new products. The results indicate an inverted U-shaped relationship between Internet-based collaboration and product innovation. This study further demonstrates how this non-linear relationship is moderated by in-person interaction between buyers and suppliers. The results from this study hold implications for reconsidering the role of Internet-based collaboration as an effective way of CE management that is capable of augmenting firm innovation.

2. Theoretical development

2.1. Insights from management perspectives

While the CE management provides a very useful tool to effectively manage customer relationships, it has largely ignored two important aspects in customer relationship management. First, it ignores the potential risks in the relationship with customers, which may adopt opportunistic behaviors for their own benefits. Second, the CE literature does not fully take account of social interactions in cultivating trust and commitments between parties. This study proposes that the insights generated from the management perspectives can provide beneficial materials that supplement the CE's explanations. This study focuses on two management perspectives that are most relevant for inter-organizational relationship: the governance perspective, and the social exchange literature.

The literature on governance alliance suggests that how to effectively manage the relationship with its suppliers is a fundamental question for a focal firm, as a supplier that often possesses a different goal and operational routine has an incentive to act opportunistically for its own interest at the expense of a buying firm (Birnberg, 1998). As such, a buying firm is often uncertain whether the supplier will act cooperatively (Lee, Jeon, Li, & Park, 2015). Governance is essential to the stability of the relationship development between the members in a supply chain (Benton & Maloni, 2005). The alliance governance literature has identified transactional mechanism and relational mechanism that govern inter-firm relations (Aulakh, Kotabe, & Sahay, 1996). Transactional mechanism is manifested in jointly stipulated contractual clauses and bilateral transaction-specific investment (Williamson, 1985). Contract and transaction-specific investment are expected to supplement each other through monitoring and incentive-based structures (Jap & Anderson, 2003). On the other hand, relational mechanism is manifested in socially embeddedness economic activities and social interactions of parties involved (Granovetter, 1985). Social embedded relationships generate standards of expected behavior and cultivate relational norms, which increase cohesiveness, social solidarity and cooperation in the business relationship (Provan, 1993). The buyer and supplier thereby develop a shared understanding of the utility of mutually beneficial behavior (Lawler & Yoon, 1996), and their values, attitudes, goals and norms will tend to converge (Mizruchi, 1989). As a result, buyers and suppliers are more willing to share ideas or initiate, solve their conflicts and problems through joint consultations and discussion and participate in joint decision making (Gulati & Sytch, 2007). However, the dependence asymmetry and resulted power disparities in social embeddedness may result in adversarial action and impair the trust between buyers and suppliers. For example, suppliers (buyers) may exploit buyers (suppliers)'s weakness through deliberate opportunistic behavior (Wu, 2012).

According to social exchange theory, social interactions between two parties focus on the role of intimate and frequent interactions in economic activities (Emerson, 1976), which increases the exchange cooperative atmosphere and creates an environment that cultivates trust and commitment between two parties (Gulati & Sytch, 2007). High levels of trust serve as a counter to the problem of moral hazard, reducing opportunistic behavior (Williamson, 1985). With increased trust, buyers and suppliers also become more open, show less defensive behavior, and accept more influence from their partners in the evaluation of new ideas, adoption of new technologies, and development of new products (Zand, 1972). Moreover, the heightened trust will make the dyadic relationship more flexible and innovative (Lorenz, 1988).

Socially embedded relationship generally provides an environment of shared values, attitudes, goals and norms in inter-organizational relationship within which buyers and supplier can cooperate with each other, but sometimes act opportunistically for private interests. Social interactions create an environment that cultivates trust and reduce moral hazard. As such, this study argues that there will be some complementary effect on mitigating opportunities and improving relational performance when both social embedded relationships and social interactions are jointly used. In this study, social embedded relationships refer to Internet-based connections between buyers and suppliers, and social interactions refer to face-to-face interactions of managers from buyer firms and supplier firms. Relationship performance is defined as an innovation outcome of a buyer–supplier partnership in the form of increase new product sales.

2.2. Internet-based collaboration

Over the last several decades, the Internet has achieved unprecedented growth and quickly become a global medium. It creates an open, cost-effective and ubiquitous network that greatly reduces the constraints of geography and distance (Cairncross, 1997). In the physical world, communicating and absorbing rich information require physical proximity for close interactions among parties. Substantial costs and efforts needed limit a firm's ability to engage in a large number of buyers. While a firm can partly overcome the physical constraint through customer survey, this approach is thwarted by the speed of buyer engagement and the limited capacity to tap into the buyer's in-depth information. Other traditional market research techniques like focus groups are limited in terms of the frequency with which firms can engage with customers, and the time taken to solicit buyer input. Instead, in the Internet-based network, the physical and cognitive effort needed for the firms as well as buyers is far lower, so the interactions between two parties can be more frequent and more persistent in virtual environments (Sawhney et al., 2005). Moreover, the WWW provides the opportunity for supplying firms to increase their hours of business on a global spectrum. The Web also help ease doing business overseas by avoiding regulations and restrictions that a company must follow if it physically expands to other countries (Kiani, 1998). Flexible accessibility and cost-effective overseas expansion increase the number and coverage of potential buyers.

Moreover, the Internet allows a firm to create virtual communities that greatly facilitates buyer engagement. With the creation of virtual environments, buyers can choose, based on their interests, to participate in specific discussion groups, blogs, bulletin boards or communities, and, after participation, they can flexibly decide the time of and the level of involvement with other customers (Hagel & Singer, 1999). The Internet-based virtual environments thus offer buyers a platform