

Knowledge acquisition, knowledge loss, and satisfaction in high technology alliances

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Abstract

Drawing on the organizational learning and transaction cost economics (TCE) literature, this study examines how learning intent, opportunities to learn, and a firm's ability to learn facilitate or hinder three alliance outcomes: knowledge acquisition by the focal firm, knowledge loss to the partner, and alliance satisfaction. The research model proposes that firms attempt to influence learning opportunities based on a partner's intent and ability to learn as well as on the trust the firm has in the partner.

A partner's learning intent and ability are positively associated with the extent to which a firm protects its own firm-specific knowledge, but they only have significant effects on one alliance outcome, knowledge loss. With more trusted partners, firms are less protective of knowledge and tend to acquire more knowledge, lose less knowledge, and be more satisfied. Equity alliances are associated with lower levels of knowledge loss and higher levels of satisfaction.

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Competition requires that firms continually acquire and develop new knowledge and skills. A great deal of attention has recently been focused on knowledge acquisition as an important outcome for firms engaged in strategic alliances (Lin and Germain, 1999). Because alliance success has been linked to learning and knowledge sharing (Crossan and Inkpen, 1995), partners have been urged to create an environment conducive to learning. Such an environment, however, can expose a firm's critical knowledge and capabilities to a partner and may lead to imitation or appropriation. To prevent the loss of firm-specific knowledge, firms may try to prevent such losses by limiting a partner's learning opportunities. These actions, however, may also reduce the firm's own opportunities to learn and may affect alliance success.

Lyles and Salk (1996) suggest that we need a greater understanding of what facilitates knowledge acquisition and skills development. Despite their important role in knowledge acquisition, however, few studies have empirically examined the learning outcomes of alliances. In one of the

few studies to do so, Simonin (1997) investigated how collaborative experience and know-how affected knowledge acquisition. He suggests that "... firm- and alliance-specific variables such as strategic intent, transparency, organizational capabilities, and resource commitments" (p. 1170) must also be studied. In line with this recommendation, this paper presents the results of an exploratory study that investigates firm- and alliance-specific factors associated with firm actions to limit partner learning because of the threat of unwanted knowledge acquisition by the partner and, in turn, how these actions and other factors affect the firm's own knowledge acquisition and its partners' knowledge acquisition.

In high technology product development alliances, partners are interdependent because each partner must contribute resources for the development to succeed (Gulati et al., 1994). Reciprocal information exchange is necessary to complete designs and to enable mutual adjustments (Osborn et al., 1998). Greater frequency and quality of information exchange can increase the innovativeness and quality of products designed, while lowering the costs of development (Larson, 1992). Such exchanges, however, create learning opportunities that enable a firm to appropriate knowledge from partners. Thus, the risk of knowledge appropriation is

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particularly high in development alliances (Park and Kim, 1997) and these alliances are the context used for this study.

1. Theoretical background

The model developed in this paper relies heavily on organizational learning, which stresses the importance of knowledge acquisition, and transaction cost economics (TCE), which helps to explain choices about structuring and controlling alliances.

1.1. Organizational learning

Huber (1991, p. 89) takes a behavioral perspective on organizational learning and suggests that “an entity learns if, through its processing of information, the range of potential behaviors is changed.” This paper focuses on knowledge acquisition, one of four organizational learning processes, which occurs when any part of a firm gains knowledge that is recognized as potentially useful (Huber, 1991). The ability of firms to acquire and exploit knowledge has been stressed by organizational learning scholars (e.g., Cohen and Levinthal, 1990; Huber, 1991) and has been linked to a firm’s ability to innovate (Fiol, 1996). Alliance partners are a particularly important source of new, external knowledge (Inkpen and Dinur, 1998).

Firms have different reasons for and goals associated with alliances. When learning is an explicit and primary goal, acquiring and internalizing skills is a key measure of success (Hamel, 1991). Even when learning is not an explicit goal, however, firms can learn from partners and this learning can enhance their competitive abilities (Crossan and Inkpen, 1995). Therefore, learning is a critical issue regardless of the goals of an alliance.

Knowledge is more easily transferred between alliance partners than through market mechanisms (Shenkar and Li, 1999) because learning is a socially embedded process and requires connections through which individuals can share knowledge (von Krogh et al., 1994). With open communication and rich knowledge sharing, alliances become a potentially effective venue for knowledge acquisition (Lincoln et al., 1998).

Hamel (1991) suggests that the amount of learning from a partner is influenced by the receiving firm’s intent to learn and its receptivity as well as by the transparency of the partner from whom the knowledge is acquired. Receptivity depends, in part, on exposure to knowledge and on the skills and ability of the acquiring firm. Transparency is influenced by the design of interfaces, the structure of joint tasks, and how protective the partner is of its knowledge.

Each firm in an alliance may be simultaneously trying to gain knowledge from its partner, to internalize this knowledge, and then use it to further develop its own competitive advantage (Richter and Vettel, 1995). While some learning is needed to accomplish the alliance goals, too much

learning by a partner can strip a firm of critical knowledge. One way to counter this danger is to manage the alliance structure and processes in an effort to control knowledge transfers (Kumar and Seth, 1998). However, limiting communication and information exchange may inhibit learning necessary to meet alliance objectives (Millar et al., 1997).

Learning can result in either common or private benefits (Khanna et al., 1998). Common benefits accrue to all partners in an alliance when learning is applied to activities within the alliance. Private benefits, on the other hand, accrue to only one partner when that partner uses what is learned within the alliance or from an alliance partner to generate rents in activities outside of an alliance. While both types of benefits are important, this study examines only private benefits.

1.2. TCE

TCE provides a theoretical grounding for the circumstances under which firms will attempt to limit a partner’s learning opportunities. TCE was traditionally concerned with choices about whether activities were performed within a firm’s boundaries or in the marketplace. More recently, TCE has been applied to alliances, specifically how to structure relationships to try to mitigate the transaction hazards that are present in a relationship.

Opportunism, which occurs when one party acts in its own self-interest and does so in a deceitful manner (Moschandreas, 1997), is central to a discussion of transaction hazards. While not all parties will act opportunistically, uncertainty and bounded rationality prevent a decision-maker from knowing a priori which parties will act opportunistically (Williamson, 1991). Thus, mechanisms will be designed to prevent losses from potential opportunism.

Recent criticisms of TCE have questioned the assumption that individuals are primarily self-interested and other motives such as altruism have been noted (e.g., Moschandreas, 1997). In this vein, trust has also received increasing attention. The melding of trust with TCE can provide a more complete and accurate picture of how transactions are structured. Trust is the willingness to be vulnerable to another party when their behavior cannot be controlled (Mayer et al., 1995). This definition implies that a trusted party has the opportunity to act opportunistically, but the trustor believes that the party will not act in such a manner. Thus, trust can reduce transaction costs and the need for protective mechanisms (Ring and Van de Ven, 1992) and encourage beneficial behaviors such as more accurate and comprehensive information exchange (Chiles and McMackin, 1996), greater communication (Currall and Judge, 1995), and fewer actions to safeguard knowledge and monitor partner behavior (Inkpen and Li, 1999). In relationships lacking in trust, structural mechanisms are used to either limit the opportunity that a partner has to act opportunistically or to deter opportunistic behavior through pen-

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