CONTROL AS A KEY SUCCESS FACTOR IN SUPPLY CHAIN ALLIANCES

Abstract
Research into supply chain alliances has identified a number of key success factors. However, alliance success has not been systematically linked to the control mechanisms employed in them. We argue that alliance partners need to balance trust building and control mechanisms and that the optimal level of control and trust varies with the alliance form. In this paper we propose a theoretical model that refines and extends the existing alliance success models in supply chain management by introducing control mechanisms as a key success factor and the alliance form as a moderator of trust and control.

Key words
Control, trust, supply chain, alliances
INTRODUCTION

Strategic alliances have become a well established inter-organizational form. Over the years, complexity and uncertainty in the market place have increased to the point where competing autonomously is no longer a viable option (Inkpen, 2001). This development is particularly true of the supply chain activities of manufacturing firms, where increasing alliance formation is driven by the deregulation, globalisation as well as the need for outsourcing and shorter order fulfilment (Hertz, 2001). Despite extensive academic research and practitioner interest in the area of strategic alliances, many of these alliances still fail (Park & Ungson, 2001; Spekman, Forbes III, I.A., & MacAvoy, 1998), with failure rates reaching as high as 70% (Das & Teng, 2000). As the number of alliances continues to grow (Dyer & Singh, 1998), it becomes critical to establish factors that contribute to their success.

We contribute to the literature on supply chain alliances by extending the existing models of antecedents of alliance success in the supply chain context. The following factors have been identified to contribute to alliance success: the level of trust (Handfield & Bechtel, 2002; Monczka, Petersen, Handsfield, & Ragatz, 1998), coordination, interdependence, information sharing and participation, positive conflict resolution techniques (Mohr & Spekman, 1994; Monczka et al., 1998), and partner selection process (Monczka et al., 1998). Although these models have provided evidence regarding the determinants of the alliance success, they have left the role of day-to-day control mechanisms largely unexplored. Given the potential for partner conflict, controls are usually important considerations for alliance partners (Geringer & Hebert, 1989). Control facilitates coordination (Kumar & Seth, 1998) and is argued to be one of the key factors for attaining confidence in partner cooperation (Das & Teng, 1998). Our research extends the existing models of antecedents of success in supply chain alliances as integrated by Monczka et al. (1998) by incorporating an important explanatory variable – day-to-day control mechanisms employed to govern the alliance.

Extant literature on alliance formation recognises that alliances are formed for different motives (Glaister & Buckley, 1996; Hagedoorn, 1993). These include efficiency reasons (e.g. cost and risk sharing, consolidation of production capacity), competitive reasons (teaming up with a competitor, exerting market power on customers or suppliers) and strategic reasons (entry into a new geographic market, development of new capabilities) (Colombo, 2003). We argue that because inter-organizational agreements in the supply chain are characterised by distinct purposes (e.g., exchange of goods or joint research and development) the antecedents of success of these different types of alliances may be different. This is likely to be particularly true with respect to governance mechanisms employed by the alliance partners. We conceptualise the governance structure of in terms of trust and control mechanisms as trust can be viewed as a substitute for hierarchical controls in organisations (Zaheer & Venkatraman, 1995).

We propose that alliances focused on improving partners’ operating efficiency and effectiveness, would benefit from the implementation of formal controls rather than trust-building. For example, the well known logistics case from Laura Ashley and Federal Express (Loveman & Anthony, 1992) in the nineties was based mainly on trust, but with few specific control elements in the formal agreement. Alliances aimed at achieving strategic goals, where the degree of interdependence among partners is greater, are more successful when focused on trust-building rather than control. This
opens up an interesting issue of an optimal combination of trust and control for different alliance forms.

We divide the paper into four parts. First, we discuss the typology of alliance forms. Second, we examine the existing models of alliance success in the supply chain literature. In the third section, we argue for the introduction of control as an important factor in alliance success and develop propositions that extend the existing models of supply chain alliances. Forth, we offer some concluding remarks.

ALLIANCE AS AN ORGANISATIONAL FORM

Alliance Definition

Alliance is defined as any “independently initiated inter-firm link that involves exchange, sharing or co-development” (Gulati, 1995; Gulati & Singh, 1998). Alliances can be seen as inter-organisational forms that use resources and governance arrangements from more than one existing organisation (Inkpen, 2001). Such resources can include partners’ contributions of capital, technology or firm-specific assets (Gulati et al., 1998). Supply chain alliances take place when organisations at related points in the supply chain agree to work in a cooperative rather than adversarial manner.

Strategic alliances are characterised by the following features. First, the partnering firms remain independent after the alliance is formed. Second, because of this independence, there is uncertainty as to what one party expects the other party to do (Powell, 1996). This phenomenon is referred to as behavioural uncertainty. Third, the firms forming the alliance are mutually interdependent (Parkhe, 1993), and consequently, are vulnerable to one another.

The typology of alliance forms

Several studies (Gulati, 1995; Gulati et al., 1998; Krishnan, Martin, & Noorderhaven, 2006; Pisano, Russo, & Teece, 1988; Pisano & Teece, 1989) have examined the choice among organizational forms of alliance. Many of these studies were grounded in transaction cost economics (Williamson, 1975; Williamson, 1985), which views alliances as intermediate hybrid forms of organization between the extremes of “markets” and “hierarchies” (see Figure 1). Transaction cost theory contends that alliances develop under conditions where there are too many uncertainties for a complete contract to be written, but when it is not effective to internalize (Hennart, 1988). The intermediate organisational form uses some degree of hierarchical controls that are usually associated with organisations. These controls are designed to reduce appropriation concerns caused by behavioural and environmental uncertainties, (Balakrishnan & Koza, 1993; Pisano, 1989; Pisano et al., 1988).

Hierarchical controls embedded in the structure of an alliance include (1) a command structure, (2) incentive systems that facilitate performance measurement and link rewards to performance, (3) standard operating procedures and (4) dispute resolution procedures (Gulati et al., 1998). First three mechanisms facilitate coordination of activities by clarifying decision-making procedures and anticipating issues before they arise. The implementation of hierarchical controls, however, implies incurring coordination costs. Coordination costs relate to costs involved in the division of tasks and decision making among partners as well as the related communication, coordination and monitoring of the partners’ activities (Gulati et al., 1998). Coordination costs are a
result of the need for partners to cooperate rather than to control a partner to avoid hold-up.

The magnitude of hierarchical controls varies across different alliances depending on the degree of appropriation concerns and the related coordination costs necessary to reduce these concerns. The universe of organizational forms can be visualized as a continuum ranging from markets to hierarchies. The extremes of the continuum are excluded from the definition of an alliance. Alliances, therefore, include a range of organizational forms including equity joint ventures, licensing arrangements, minority equity relationships, joint manufacturing and R&D alliances. In the supply chain context, market transactions refer to arm-length supply arrangements. Fully hierarchical structures, on the other hand, denote vertical integration along the supply chain. Supply chain alliances predominantly comprise buyer-seller relationships, although they may extend to include joint R&D agreements, technology exchange, direct equity investment and joint manufacturing arrangements among partners.

**Equity versus non-equity alliances.** Within transaction cost economics, alliances are often classified in terms of the degree of hierarchical controls employed. The presence of equity investment in an alliance partner has been considered as the most salient hierarchical control. Equity is considered to be an efficient mechanism for managing behavioral uncertainty concerns associated with alliances (Hennart, 1988; Pisano, 1989; Pisano et al., 1988). Most prior research into alliance forms has classified alliances into two broad categories – equity alliances (i.e. joint ventures and acquisitions of minor equity holdings) and contractual, non-equity alliances (Gulati et al., 1998; Monczka et al., 1998). Contractual agreements offer a number of advantages over equity based alliances in that they offer greater flexibility, easier dissolution, reduced legal encumbrances and more transient and less institutionalised relationship between parties (Johnson, Cullen, Sakano, & Takenouchi, 1996). On the other hand, contractual agreements offer less opportunity of combining partners’ relevant tacit resources and may imply more challenges in countering opportunism (Gulati et al., 1998).

**Non-equity alliance forms: traditional contracts and non-traditional contracts.** Less academic attention has been drawn to finer typology of alliance forms. Contractual alliances can be further sub-divided into so-called “traditional contracts” and non-traditional contracts” (Monczka et al., 1998). Traditional contracts comprise straightforward long term contracts, such as (cross-) licensing and franchise agreements. Non traditional contracts extend beyond transactional exchanges of goods or services and include adoption of and/or connection to partner’s systems. Due to their greater complexity, non traditional contracts require a higher level of coordination. This paper focuses on the non-equity, contractual alliances, a less researched field of research in strategic alliances.

**Non-traditional contracts: Strategic and Operational Partnering.** Non-traditional contractual partnership arrangements have different objectives. Several typologies have been introduced in the literature, which converge on proposing two types of contractual alliances. The first type of alliances has been termed “strategic partnering” (Mentzer, Min, & Zacharia, 2000) or an “integration alliance” (Chen & Chen, 2002). It refers to alliances that are designed to improve the company’s competitive position (Hitt, Ireland, & Hoskisson, 1999) through the development of new technologies, new products and new markets. This type of alliance comprises arrangements where partners’ resources are internalized, such as joint R&D / product development, joint manufacturing and research consortia (Chen et al., 2002). Due to substantial learning costs involved in joint R&D and other long term strategic objectives, such alliances are likely to offer
more distant benefits.

In contrast, operational partnering seeks to achieve improvements in operational efficiency and effectiveness (Mentzer et al., 2000). Efficiency refers to minimization of resource use to accomplish specific outcomes, whilst effectiveness denotes the ability of supply chains to deliver products and services in a manner that is acceptable to the final consumers. Operational partnering arrangements do not require internalization of resources and therefore, neither partner perceives the other as an extension of its own firm. On the contrary, resources are usually first exchanged and then used independently by the partners. This form of alliance usually involves fewer organizational resources and is easier to implement and reverse (Hitt et al., 1999). Examples of operational partnering include long term sourcing agreements, resource pooling and shared distribution services as well as outsourcing. Each partner concentrates its efforts on building its core competencies whilst obtaining from the alliance partner resources of secondary importance. In the fields of production and distribution, which are characterized by scale economies and organizational rigidity, operational partnering may result in immediate benefits.

Strategic partnering alliances go beyond the efficiency and effectiveness to bring resources owned by the alliance partners into the organization to perform certain prescribed functions. Whereas efficiency and effectiveness are the aim in operational partnering arrangements, synergies are the main objective of strategic partnering arrangements (Chen et al., 2002). Strategic partnering differs from equity-based joint ventures in that in the former case there is no joint ownership involved. Partners in a strategic partnering relationship recognize each other as an extension of their own firm (Mentzer et al., 2000; Varadarajan & Cunningham, 1995) and therefore perceive the partnership as exclusive and not easily imitated by the competition.

Figure 1: The continuum of inter-organizational relationships
EXISTING MODELS FOR ANTECEDENTS OF ALLIANCE SUCCESS

Several studies have examined the antecedents of strategic alliances (Dwyer, Schurr, & Oh, 1987; Mohr et al., 1994; Monczka et al., 1998; Zajac & Olsen, 1993). Some studies have linked the nature of the relationships to the environmental uncertainty and resource interdependence (Gulati et al., 1998; Pfeffer & Salancik, 1978). Others link the confidence in partner’s cooperation with two governance mechanisms, trust and control (Das et al., 1998; Das et al., 2000). Fewer studies have looked at the process through which long term inter-organisational relationships develop. For instance, Ring and Van de Ven (1994) proposed a framework that combines formal, legal and informal social-psychological factors that sustain long term inter-organisational relationships.

In supply chain management, researchers (Mohr et al., 1994; Monczka et al., 1998) have integrated and tested models of the antecedents of alliance success, tying it with factors previously identified in the extant literature. These success factors could be grouped into the following four categories: alliance attributes, such as commitment (Cummings, 1984; Williamson, 1975), coordination, interdependence and trust; effective communication behaviour, positive conflict resolution techniques (Mohr and Spekman, 1994; Monczka et al., 1998), and partner selection process (Monczka et al., 1998; Spekman, 1988).

The existence of trust, commitment, interdependence and coordination implies that both partners acknowledge their mutual dependence and their willingness to work for the survival of the relationship. Should one party act opportunistically, the relationship will suffer and both partners will feel the consequences Williamson (1985) posits that credible commitments partially come from mutual hostage situations.

Given that communication is key to most organisational processes, (Cummings, 1984; Mohr & Nevin, 1990; Snyder & Morris, 1984), effective communication behaviour of alliance partners is crucial to alliance success (Mohr et al., 1994; Monczka et al., 1998). Companies need to collect evidence about their partner’s trustworthiness and effective communication facilitates this process (Creed & Miles, 1996). Communication may also aid conflict management in that if differences are openly discussed, fatal conflict may be avoided. Several specific aspects of communication behaviour have been shown to be important for alliance success: quality of information (i.e. its timeliness, accuracy and credibility), information sharing (the extent to which critical and proprietary information is communicated to one’s alliance partner) and information participation (the extent to which partners engage in joint planning and goal setting (Mohr et al., 1994). Honest and open communication lines between partners are important for the continued growth of closes ties between partners, which in turn result in more relevant and frequent information exchanges between partners (Mohr et al., 1994). By sharing information and by being knowledgeable about each others’ business, partners are able to act independently to maintain the relationship over time. Participation in planning and goal setting, likewise, allows for mutual expectations to be established and tasks and behaviours to be specified (Mohr et al., 1994; Monczka et al., 1998).

Similarly, appropriate conflict resolution techniques have implications for the success and continuity of an interorganisational relationship. Constructive conflict resolution techniques focus mainly on joint elimination of the conflict or persuasion (Cummings, 1984). Joint efforts are used to find a mutually satisfactory solution and therefore, likely to enhance alliance success. Partners often resort to persuasion which tends to yield better results than destructive conflict management techniques such as
domination and confrontation, which would only strain the relationship (Deutsch, 1969). The general pattern of the above relationships between constructive and destructive conflict resolution techniques has received empirical support (Mohr et al., 1994; Monczka et al., 1998).

Selecting an alliance partner, serves to mitigate opportunism and contributes to alliance success (Monczka et al., 1998). The main argument here is that, before entering into an alliance, a company needs to ensure that its potential partner is capable of improvements in key areas and is willing to develop a close, long term relationship.

In this paper, we extend the existing model proposed by Monczka and his colleagues (1998) by proposing a more comprehensive view of alliance governance mechanisms.

GOVERNANCE STRUCTURES OF THE ALLIANCES

The governance structure of an alliance is a set of contractual arrangements that formalises the relationship between the partners (Gulati et al., 1998). Prior research has relied on transaction cost economics in differentiating among governance structures in terms of the degree of hierarchical elements they involve. Transaction cost theory explains the choice of the governance structures through the concepts of appropriation concerns and behavioural uncertainty at the time of alliance formation (Gulati, 1995; Pisano, 1989; Pisano et al., 1988). Hierarchical controls are widely seen as mechanisms designed to reduce uncertainty and moral hazard problems.

Extant research has focused primarily on the anticipated appropriation concerns as the main basis of the choice of governance structure (Williamson, 1991; Williamson, 1985). Scholars have argued that hierarchical controls are an effective response to appropriation concerns prevalent in joint ventures (Gulati et al., 1998), given the ability of such controls to govern by fiat, to monitor and align incentives. From this argument follows that the greater the appropriation concerns, the more hierarchical the likely governance structures for organizing the alliance should be (Gulati et al., 1998). Although resource-based view scholars have focused on the origins of ties between partners rather than their structure, they too have suggested that moral hazard concerns are the reason why some exchange relationships are transferred into power relationships (Pfeffer & Nowak, 1976).

Trust is another factor that has been argued to improve partner cooperation. Some researches maintain that it could be used as a substitute for hierarchical controls in organizations (Zaheer et al., 1995). Managing behavioural uncertainty and relying on trust are two alternative approaches in managing joint ventures (Madhok, 1995). When there is trust, firms no longer consider hierarchical controls necessary and control comes into play only when adequate trust is not present (Gulati, 1995; Powell, 1996; Ring & Van de Ven, 1992). Because trust cannot be instantaneously created or destroyed, partner firms must balance the inevitable trade-off between trust and control (Inkpen, 2001).

Control as a governance measure in strategic alliances

The design and implementation of an appropriate control structure is an important determinant of alliance success (Geringer et al., 1989). We define control as a “regulatory process by which the elements of a system are made more predictable through the establishment of standards in the pursuit of some desired objective or state”
(Leifer & Mills, 1996). Firms in alliances tend to be more confident in the cooperation of their partners when they have an adequate level of control over the partners’ behaviour (Das et al., 1998). Appropriate controls also protect the partners against the loss of competitive advantage to the partner or some other competitor (Geringer et al., 1989).

Existing models of alliance success (Mohr et al., 1994; Monczka et al., 1998) do not explicitly capture the concept of day-to-day control mechanisms yet we contend that this factor is of fundamental importance for alliance success. Das and Teng (1998) posit that goal setting and formal control measures aimed at discouraging partner opportunism are particularly relevant for strategic alliances. Goals are important for formal control because they specify what is expected of partners. Indeed, clear definition of desired results is an essential part of the control process (Eisenhardt, 1985). This process also includes measurement and reinforcement. Formal control becomes very difficult in the absence of clear goals and ensuring that one’s own goals are reflected in the official goals of alliance is the starting point of control (Geringer et al., 1989).

Formal control measures that deter opportunistic behaviour of alliance partners has been termed “structural specifications” (Geringer et al., 1989). They include mechanisms that are set to mitigate opportunism in the process of managing alliances (Parkhe, 1993) such as reporting and monitoring devices (e.g. financial and quality controls) as well arbitration clauses. Although these rigid control arrangements control mechanisms require substantial resources and information processing capacity, they do set the boundaries for the behaviour of alliance partners (Das et al., 1998).

Trust and Control

Trust is often considered to be a substitute for hierarchical control in organisations (Leifer et al., 1996). Ring and Van de Ven (1994) discuss the relationship between formal legal contract (control) and psychological contract (trust) in interfir cooperation. When there is trust, firms no longer consider hierarchical controls to be necessary (Gulati, 1995; Ring et al., 1992). In a similar vein, Madhok (1995) contends that preventing opportunistic behaviour and relying on trust are two alternative approaches to managing joint ventures.

Most scholars argue that the relationship between trust and control is
complementary, that is, the higher the level of trust, the less there is a need for control (Leifer et al., 1996). This complementarity is attributed to a cost-based argument. Because both trust building and control implementation are costly and both mechanisms contribute to the level of partners’ confidence, an organisation will not pursue an excessive level of confidence. However, the relationship between trust and control may not be strictly the inverse considering that there is no minimal level of confidence acceptable to all partners (Das et al., 1998). The authors argue that a supplementary relationship would be a more realistic depiction of trust and control in inter-firm relationships. Higher trust does not necessarily imply the need for lower controls, but rather higher confidence in partner cooperation. Higher confidence in partner cooperation, in turn, is essential for satisfactory partner cooperation. Because alliances involve coordinating two or more partners to pursue shared objectives, satisfactory cooperation is vital for their success (Doz, 1996; Kanter, 1994). Therefore, we propose that both trust and control will determine alliance’s perceived success.

Proposition 1a: The level of trust will influence the overall success of an alliance.

Proposition 1b: The level of control will influence the overall success of an alliance.

Trust and Control in Different Types of Supply Chain Alliances

As alluded to earlier, operational partnering agreements are intended to improve partners’ operating efficiency and effectiveness. As such, their expected performance can be specified in terms of detailed operating objectives such as delivery speed, flexibility in handling customers’ requirements and inventory levels, among others (Bowersox & Closs, 1996). Clear definition of the alliance objectives warrants successful implementation of formal control mechanisms (Eisenhardt, 1985).

Strategic partnering agreements, in contrast, are characterised by high degree of interdependence between the parties (Gulati et al., 1998). Resulting greater behavioural uncertainty due to the difficulty of observing and measuring adherence to the contractual arrangements by the transacting parties (Chen et al., 2002; Mentzer et al., 2000) implies greater need for hierarchical controls. However, formal control is difficult to implement and typical hierarchical control is not feasible in view of the lack of equity ownership, trust building activities are likely to be more salient in the success of strategic partnering agreements.

Based on the above arguments, we therefore propose that the type of an alliance moderates the relationship between the control- and trust building mechanisms and the alliance success such that:

Proposition 2a: Operational partnering relationships that maintain higher degrees of control mechanisms are more successful than those that focus on trust.
Proposition 2b: Strategic partnering relationships that engage extensively in trust building are more successful than those that build on higher degrees of control.

Figure 2: the proposed model

CONCLUDING REMARKS

Whether to trust or to control is one of the key questions for partners in strategic supply chain alliances. This paper extends earlier research on alliance success by Monczka et al. (1998) by introducing the type of governance mechanism (trust or control) as an important antecedent of the alliance success. We also argue that the relationship between the types of governance mechanisms is moderated by the nature of the strategic supply chain alliances. Specifically, reliance on control mechanisms by exchange alliances is likely to be associated with greater alliance success. In contrast,
successful integrations alliances are likely to be the ones that rely on trust building mechanisms. The managerial implications to be drawn from this analysis relate to the ways of managing different types of alliances in order to reap the benefits of success.

Overall, our model represents a more fine-grained yet parsimonious analysis of success of strategic supply chain alliances. At the same time, it opens up exciting avenues of future research beyond the mere empirical testing of the proposed model. In particular, researchers are encouraged to examine mediation and / or moderations effects among the different antecedents of alliance success, within the framework of different types of alliances.
REFERENCES


