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A framework for quality management practices in strategic alliances

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Abstract

Purpose – This paper aims to investigate the role of quality management (QM) practices in the success of strategic alliances.

Design/methodology/approach – Through a review of the literature, a conceptual model employing a relational view of inter-organizational competitive advantage is proposed, which attempts to address the concept of quality management in strategic alliances and networks.

Findings – Trust and co-operative learning have emerged as critical factors that affect the success of strategic alliances. The proposed model, while integrating elements of quality management and strategic alliances, determines alliance success and alliance satisfaction as the outcomes of strategic alliances. Several propositions have been developed to address the relationship between different constructs in the model. The effects of trust and co-operative learning on alliance performance are discussed, and key areas for research are identified.

Practical implications – Companies can achieve a higher level of performance and satisfaction from alliances.

Originality/value – While previous research on quality management has been focused on the implementation of quality management within a firm, by extending the concept of quality management to strategic alliances this paper expands quality management implementation beyond the traditional view of quality.

Keywords Quality management, Strategic alliances, Trust, Learning

Paper type Conceptual paper

1. Introduction

Quality management (QM) has been recognized as a comprehensive management paradigm for enhancing organizational performance and competitiveness. Kanji (1990, p. 4) regarded quality management as “the second industrial revolution”. Empirical research shows that quality management practices affect firm performance and competitiveness (Das *et al.*, 2000; Douglas and Judge, 2001; Kaynak, 2003; Sila, 2007).

The importance of QM in management research was addressed in a special issue of *Academy of Management Review* (Vol. 19 No. 3, 1994, Special Issue, “Total quality”). While quality management and its underlying assumptions about organizations may be different from other management theory (Grant *et al.*, 1994), research on quality management can be an important source for generating theories in the field of



management. Quality management has practitioner origins which management theory should address (Dean and Bowen, 1994).

Traditionally, quality management has been considered as a functional/operational level strategy, where most of the research and theory building in QM is related to the micro-level of organizations, like organizational structure (Spencer, 1994; Jenner *et al.*, 1998), work performance (Waldman, 1994), organizational change (Reger *et al.*, 1994; Jenner *et al.*, 1998), control (Sitkin *et al.*, 1994) human resource management (Cardy and Dobbins, 1996), organizational behavior (Shea and Howell, 1998) and leadership (Puffer and McCarthy, 1996). Despite some works in areas like organization systems (Spencer, 1994), contingency theory (Sitkin *et al.*, 1994), organization culture (Manley, 1998), strategy (Reed *et al.*, 1996, 2000), and ethics (Wicks, 2001; Ahmed and Machold, 2004), there is not much related work on the macro-level analysis of organizations. Accordingly, there is a need to look at quality management from the strategic viewpoint of a firm, and to define a framework for its implementation through the strategic and corporate levels of analysis. While concepts such as ethics, cooperation, and trust are related to enterprise and corporate-level strategies, these concepts are closely related to the practice of quality management (Wicks, 2001; Ahmed and Machold, 2004).

On the other hand, researchers in the field of quality management are concerned about the domain of quality management. Quality management has been traditionally addressed within the firm's boundaries and they argue that, due to the growing interest in inter-organizational alliances and networks, there is a need to understand quality management in new settings such as supply chain management and strategic networks (Sousa and Voss, 2002). Recent studies show that there are synergies between quality management and supply chain management performance (Flynn and Flynn, 2005). As Prahalad and Krishnan (1999) indicated, due to the emergence of new forms of organizations, traditional definitions and approaches of quality do not fit within the new information age and a new definition for quality needs to be adapted. According to Robinson and Malhotra (2005), understanding quality management in a supply chain environment requires a transition from the product to the process-oriented perspective towards quality.

While there is increasing interest in strategic alliances and networks, scholars and practitioners are interested to know the critical success factors for such alliances (Gulati, 1998; Gulati *et al.*, 2000; Arino *et al.*, 2001; Inkpen, 2005; Sampson, 2005; Singh and Mitchell, 2005; White and Lui, 2005). Strategic alliances are considered as a useful mechanism for gaining competitive strategy, yet the success of strategic alliances requires effective management and control of inter-organizational procedures and practices (Inkpen and Ross, 2001; Cohen and Mankin, 2002). Problems such as individual identity, cultural conflict and practices, and unstructured mission may affect the performance of alliances (Browning *et al.*, 1995). Recently, scholars have called for research on the effect of firms' characteristics on the performance of alliances (Zollo *et al.*, 2002). It is expected that developing a holistic approach for improving the overall quality of strategic alliances can provide practical implications for resolving the above-mentioned shortcomings of alliances and result in a network of organizations that leads to the success of alliances.

Despite extensive research and different theoretical frameworks for understanding strategic alliances and their success factors, little has been said concerning the effect of

quality management practices on the success of strategic alliances. How is quality viewed, defined, and implemented within a network of firms?

In that regard, this paper contributes to the theory development in both quality management and strategic alliances. First, it extends the concept of quality management beyond the scope of a firm and provides new directions and outlets for research in quality management. Second, it contributes to the existing body of knowledge in understanding successful strategic alliances.

2. The purpose of the study

The purpose of the paper is to develop a conceptual/theoretical model for the implementation of quality management in strategic alliances. A learning perspective of quality management and strategic alliances has been employed to understand the dynamics and evolution of inter-firm collaborations within a network of firms. The proposed model encompasses the elements of successful strategic alliances built upon the principles of QM. From a theoretical perspective, a top management perspective and focus on the network/institutional effect of QM within strategic alliances has been employed (Young *et al.*, 2001).

From the network perspective of strategic alliances, firms need to develop a new set of practices (quality management) applicable to the new setting (strategic alliances). In other words, while the traditional practice of quality management within a firm employs a top management perspective to quality (a vertical approach to quality), within strategic alliances, both the top management perspective and a network approach (a horizontal approach to quality) need to be considered. The empirical research shows that top management is the major driver of quality management implementation in a firm (Wilson and Collier, 2000; Kaynak, 2003). However, there is not any evidence on how the principles of quality management can be implemented within a network of firms, and in our particular context, within an alliance. Is top management the major driver of performance while a firm enters such collaboration with other firms? More important, what is the definition of quality in this new context? Can we employ a product-based approach to quality (Garvin, 1984)? These are questions that are outside the domain of existing knowledge in quality management.

Here, the major challenge is the level of analysis in quality management. To answer the above questions we need to move from an organization (as a traditional unit of analysis for quality management) to the network (multiple firms). Therefore, our focus is on the network of firms, not an individual firm *per se*. The practice of quality management within a firm will be different than the practice of quality management within an alliance (Westphal *et al.*, 1997; Young *et al.*, 2001). This transition requires a new definition, new theoretical lenses, and new frameworks for quality. Accordingly, a process orientation of quality has been employed to address the definition and practice of quality management in the new context (Robinson and Malhotra, 2005). For the purpose of this paper, we define quality in a network of firms as the degree to which firms can develop an environment for cooperative learning.

Table I shows the characteristics of the traditional view of quality and the network aspect of quality. As we see, the transition from a single firm (traditional view) to a network of firms (the new approach) requires a new definition for understanding quality in the networks of the firms.

3. Cooperation and alliances

Previous research has emphasized the importance of cooperation and networking in achieving higher performance and profitability (Smith *et al.*, 1995; Gulati *et al.*, 2000). Gulati (1998, p. 293) defined strategic alliances as “voluntary arrangements between firms involving exchange, or co-development of products, technologies, or services”. Arino *et al.* (2001, p. 110) defined a strategic alliance as “a formal agreement to pursue a set of private and common goals through the sharing of resources in contexts involving consented markers and uncertainty over outcome”. Gulati (1995, p. 86) defined strategic alliances as “any independently initiated interfirm link that involves exchange, sharing, or co-development [between firms].” Zollo *et al.* (2002, p. 701) defined strategic alliances as “cooperative agreement of any form aimed at the development, manufacture, and/or distribution of new products”. Smith *et al.* (1995) emphasized the critical role of cooperation and coordination in achieving organizational objectives. They pointed out that while cooperation and coordination within organization and between firms were not new in the management and organizational studies, the emergence of total quality management philosophies emphasized more need for cooperation throughout organizations and between firms. For the purpose of this paper, strategic alliances are defined as long-term cooperation between firms aimed at achieving a shared (common) set of goals through knowledge sharing and cooperative learning between partners.

Research on strategic alliances has uncovered certain aspects of the alliance process as well as the critical success factors. In their study of strategic alliances between firms in the semiconductor industry, Browning *et al.* (1995) found that firms forming strategic alliances encountered an early phase of chaos and complexity. Such a chaotic environment was due to the mixed conceptions of culture of firms within the alliance, which created ambiguity about individual identity and status. However, as the degree of understanding among individual firms increased (as more cultural practices were experienced), the alliance formed a base for common values and social networks. The process further supported trust, through personal and individual contributions. Through the formation of trust and morale among members, a new order (sets of practices) developed in the alliance, which served as the norm and standard for fostering cooperation.

Different approaches and theoretical perspectives have been used for understanding strategic alliances. Building upon transaction cost theory and in a comparative study

Characteristic	Traditional quality management	Network perspective of quality management
Level of analysis	Within a firm (single firm)	Within a network (multiple firms)
Theoretical lenses	Institutional theory	Network theory
Objective	Improve the quality of products and/or services	Improve cooperative learning
Leadership	Centralized in a single firm	Decentralized within the network
Principles	Continuous improvement Customer satisfaction	Trust Learning
Decision making	Vertical (within a firm)	Horizontal (across the network)

Table I.
Traditional versus
network perspective of
quality management

of interfirm collaboration in the auto industry between the USA and Japan, Dyer (1996) showed that transaction costs did not necessarily increase with an increase in relation-specific investment. His findings supported an inverse relationship between trust and transaction cost where, in the case of Japanese auto firms, they tended to trust their suppliers and made the investments based on oral premises of the automaker and without a written agreement.

806 From a social network perspective, Gulati (1998) justified that there were three main motivations for formation of alliances:

- (1) transaction cost resulting from small numbers bargaining;
- (2) strategic behavior that leads firms to enhance their competitive behavior; and
- (3) learning.

He noted that firms entering alliances might face considerable moral hazard concern due to the unpredictability of their partners in the alliance. He referred to trust as an important aspect of alliances, where it served as a mechanism through which partners could predict each other's behavior. According to Gulati (1995), the problem with transaction cost theory was the exclusion of interfirm trust. To avoid this shortcoming, a learning perspective of strategic alliances has been employed in this paper.

3.1 Determinants of alliance success

Most scholars agree upon the importance of *trust* in successful cooperation between firms (Smith *et al.*, 1995; Gulati, 1995; Jones and George, 1998). McAlister (1995) reported that trust could enhance coordination, which led to lower administration costs. Browning *et al.* (1995) reported on the role of leaders as being role models for developing trust and building relationships. Gulati *et al.* (1994) argued that familiarity between partners enhanced trust, which in turn replaced legal relationships like equity sharing as a governance system for managing the cooperation. He pointed out the role of cultural closeness in managing cooperation among partners, where similar partners used more informal cooperation mechanisms. Arino *et al.* (2001) indicate that the success of strategic alliances depends on their level of *relational quality*, which was the extent to which the partners felt comfortable with each other and were willing to rely on trust in dealing with one another.

Knowledge sharing and learning have been recognized as the most essential attributes of successful strategic alliance. Crossan and Inkpen (1995) state that the survival of alliances is dependent upon the ability of partners to extract knowledge and skills from each other. They defined *learning* as the primary objective of strategic alliances. While learning and performance are not synonymous, learning enhances long-term performance of firms. Morrison and Mezentseff (1997) indicated that creating a learning environment was the key and focus of strategic alliances. According to Inkpen (2005), firms within an alliance can learn from their partners' past experiences and transfer their knowledge and experiences back to the parent organization.

4. Introducing quality management and learning to strategic alliances

The extensive research on quality management indicates that the ultimate goal of QM is to establish a management system and an organizational culture that ensures customer satisfaction and continuous improvement (Kanji, 1990; Sitkin *et al.*, 1994;

Spencer, 1994; Hackman and Wageman, 1995; Powel, 1995; Wicks, 2001; Kaynak, 2003).

As Reed *et al.* (1996) indicated, there was no consensus on the definition for QM, since its definition varied based on the approach taken towards quality. Flynn *et al.* (1994, p. 342) defined QM as “an integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels and in all functions of the organization, in order to met or exceed customer expectations”. Anderson *et al.* (1994) perceived quality management as a holistic approach to organization-wide quality, operationalized through leadership, internal/external cooperation, effective process management, product design, learning, customer focus and involvement, employee fulfillment, and continuous improvement.

Dean and Bowen (1994) conceptualized QM in terms of principles, practices, and techniques. The principles are customer focus, continuous improvement, and teamwork. Each principle includes a set of practices, like direct customer contact, process analysis, group skills training, and collaboration with suppliers. These practices, then, are implemented through a number of techniques, like quality function deployment, control charts, cause and effect diagrams, team building, six sigma, and so on.

Based on an extensive review of the literature on the definition and elements of quality management, Mehra *et al.* (2001) identified five key factors for quality management including, human resources focus, management structure, quality tools, supplier support, and customer orientation. Recently, Kaynak (2003) studied the effect of QM practices on firm performance, and provided a summary of previous research on QM practices and organizational performance. A consistent finding among these studies is that infrastructural QM practices, such as top management leadership, training, and employee relations affect performance through core QM practices such as quality data and reporting, supplier quality management, product/service design, and process management.

Despite the differences among scholars and practitioners on the definition of QM and its components, most studies refer to the Malcolm Baldrige National Quality Award (MBNQA) as the model for QM (Dean and Bowen, 1994; Wilson and Collier, 2000; Flynn and Saladin, 2001). The Baldrige Award consists of seven criteria, including leadership, customer and market focus, measurement, analysis and knowledge management, human resource management, process management, and business results. Within this framework, empirical studies indicate that leadership is the main driver for achieving business results and customer satisfaction (Wilson and Collier, 2000; Flynn and Saladin, 2001; Lee *et al.*, 2003).

4.1 QM in strategic alliances

Despite the fact that quality management has been addressed only within a firm (Sousa and Voss, 2002) QM and its underlying assumptions could be applicable to strategic alliances.

It has been stated that trust and cooperation are among QM's underlying philosophical assumptions (Wicks, 2001). By employing an institutional perspective to organizational study, Westphal *et al.* (1997, p. 367) defined QM as “a managerial innovation that emphasizes an organization's commitment to the customer and to

continuous improvement of every process through the use of data-driven, problem-solving approaches on empowerment of employee groups and teams". They assert that a social network can influence the form of practices that organizations introduce. While it has been argued that institutional forces affect both QM adoption and its content (Westphal *et al.*, 1997), it seems that the formation of strategic alliances brings such pressure to the firms, to the extent that firms need to restructure their practices and develop a new set of practices compatible with the new settings (Browning *et al.*, 1995). This calls for new QM content and process within strategic alliances (Westphal *et al.*, 1997).

Another relevant issue that bridges QM and strategic alliances together is the role of learning in alliances (Morrison and Mezentseff, 1997). QM emphasizes learning (Hackman and Wageman, 1995). In the perspective that the objective of strategic alliances is learning, QM can enhance the learning environment. In fact, as Garvin (1993) pointed out, continuous improvement would not happen until there was a learning environment. Continuous improvement is one of the principles of QM (Dean and Bowen, 1994). Accordingly, QM has the potential to enhance learning, which is the objective of strategic alliances (Smith *et al.*, 1995). A recent study by Linderman *et al.* (2004) demonstrates the link between quality management and knowledge creation, where quality management practices create knowledge and enhance organizational learning, which leads to higher performance.

Regarding the overall quality of strategic alliances, Arino *et al.* (2001) argue that in achieving the objectives of strategic alliances, reliance on trust is not sufficient since trust is a complex issue and management should focus on a broader concept – the quality of the alliance and the critical success factors of enhancing the overall quality of the alliance. By defining relational quality as “the extent to which the partners feel comfortable and are willing to rely on trust in dealing with one another” (Arino *et al.*, 2001, p. 111), they clarify that relational quality encompasses a broader concept than trust, such as degree of compatibility of corporate culture and decision-making style, and a convergence of worldviews. However, they do not go beyond that and do not address the development and evolution of relational quality as well as its relationship to the alliance performance. It is the purpose of this paper to address this issue from quality management perspective.

Based upon the above and for the purposes of this paper, quality management within strategic alliances has been defined as:

The coordination and integration of all business activities (e.g. processes, procedures, techniques) involving all partners (firms) in the alliance through continuous improvement of processes to enhance performance and achieve customer satisfaction – a key part of which is continuous learning.

It should be noted that the above definition reflects a process orientation toward understanding quality in strategic alliances – an approach that has been recommended by Robinson and Malhotra (2005). The process approach is critical for understanding quality with respect to the emphasis on learning in alliances. Such a definition for quality resolves the shortcomings of previous approaches for relating quality to strategic alliances in a network of firms, to the extent that it focuses on the processes (rather than the product) within the alliance.

4.2 Development of concepts and their relationships

In this section, a model for QM in strategic alliances is introduced and defined. Each element of the model is grounded with the relevant literature and evidence is provided to support its inclusion. The main elements or components of successful strategic alliances based on QM and learning are trust, strategic intent, organizational culture, alliance governance, knowledge sharing, process improvement, and cooperative learning. Figure 1 shows the conceptual framework and the relationship between the variables.

4.2.1 *Trust*. While trust is the catalyst for learning in strategic alliances, the role of trust in the success of strategic alliances is critical. Wicks (2001) argued that trust was a critical facilitator of cooperation and a vital ingredient of QM.

Ring and Van de Ven (1994, p. 110) defined trust as “an individual’s confidence in the good will of the others in a given group and belief the others will make efforts consistent with the group’s goal”.

4.2.2 *Strategic intent (direction)*. Not all firms can be considered as potential candidates for partnership and strategic alliances. Among factors considered for the evaluation of an appropriate partner, common strategic direction is one that needs to be taken into account. If firms entering into an alliance share common strategic (intent) direction, such a direction helps them to have better understanding of their mutual goals and expectations (Ellram, 1990). Lo and Yeung (2004) pointed out that having a common strategic direction is a requirement for effective supplier integration in strategic alliances. Gulati *et al.* (1994) pointed out that most strategic alliances were neither strictly competitive nor strictly cooperative; rather they involved mixed motives where the partners had both private and common interests. Zollo *et al.* (2002) pointed out the importance of firm-level characteristics (culture, strategic orientation) on alliance performance.

4.2.3 *Organizational culture*. Smith *et al.* (1995) argued that similarities in the partners’ values contributed to the level of cooperation. Since values shape the culture of an organization, it is evident that cultural closeness among firms facilitates communication between individuals, which is based upon achieving mutual

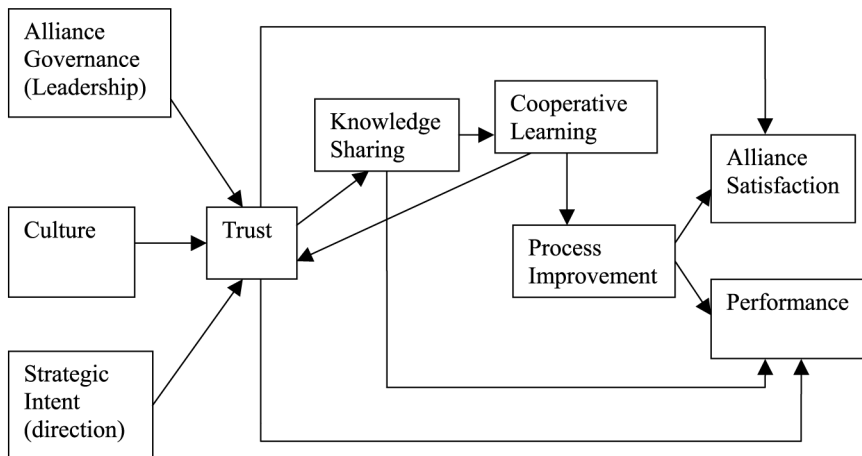


Figure 1. Conceptual framework for QM in strategic alliances

understanding and trust. Organizational culture has been defined as one of the firm-level variables in studying alliance performance (Zollo *et al.*, 2002).

4.2.4 Alliance governance (leadership). In their study of alliance in the semiconductor industry, Smith *et al.* (1995) found that leaders could play an important role in building trust within the alliance. Inkpen (2005) refers to the role of top management as one of the most essential factors facilitating leaning process in strategic alliances. This issue is more critical when the leaders serve as the role model in developing a trustworthy environment. According to the Baldrige criteria, leadership is the key in quality management practices and has a direct impact on the business results.

4.2.5 Knowledge sharing. Leaning has been regarded as one of the major motives for strategic alliances (Morrison and Mezentseff, 1997; Inkpen, 2005). Jones and George (1998) indicated that leaning is achieved through sharing information and knowledge within individual and organizations. In fact, firms enter alliances to get knowledge, information and other sources. Koka and Prescott (2002, p. 795) emphasized the role of social capital in the formation of alliances, where they defined it as “sum of resources that accrue to a firm by virtue of possessing a durable network of inter-firm relationships”.

4.2.6 Process improvement. Both practitioners and scholars recognize continuous improvement as one of the major principles of quality management (Dean and Bowen, 1994; Hackman and Wageman, 1995). In a recent study of strategic alliances in construction management firms, Lo and Yeung (2004) argued that continuous improvement played an important role in strategic alliances.

4.2.6 Cooperative learning. The term “cooperative learning” refers to the ability of partners in sharing knowledge, information and resources (Morrison and Mezentseff, 1997). Organizations develop cooperative relationship through creating a learning environment so that they can facilitate mutual learning. Cooperative learning emphasizes the role of cooperation in alliances, rather than competition (Morrison and Mezentseff, 1997).

4.3 The conceptual model for QM within strategic alliances

The proposed model for QM within strategic alliances revolves around trust and learning. Since trust is the major ingredient of any strategic alliance, the way trust is created within a strategic alliance will be related to the values, attitude, and moods and feelings of parties (Jones and George, 1998). The closer the culture of the organizations involved in strategic alliance, the greater the level of trust. In their study with semiconductor firms, Browning *et al.* (1995) pointed out that cultural difference between firms hindered productive communication among individuals in the alliance. Arino *et al.* (2001) indicated that familiarity and shared experience were sources of trust, where differences in cultures and institutions had significant impact on trust. They argued that trustworthiness in strategic alliances was rooted in the cultural context of the firms within the alliance. Jones and George (1998) argued that shared experience was related to the culture of organizations. This leads to the generation of the first proposition:

- P1.* The closer the organizational cultures are to each other, the greater the degree of trust in the alliance (the degree of closeness of organizational culture has a positive effect on building trust in a strategic alliance).

However, building trust within strategic alliances is also affected by strategic intent (the motivation for formation of the alliances). Such a motivation should range from the economic (e.g. for economy of scale, efficiency, risk sharing), to the more complex (e.g. learning new technologies, seeking political advantage). Parties involved in a strategic alliance should share the same motivation for becoming long-term partners. It should be a win-win situation for all firms and, to the extent that organizations involved in the alliance have closer motivation and objectives, the level of trust between them increases. Arino *et al.* (2001) argued that strategic changes in each party's goals could affect the level of trust among them. They indicated that changes in strategic objectives posed a great threat to the level of trust among partners. Accordingly, it is proposed that:

- P2.* The closer the strategic intent (direction) of the firms, the greater the degree of trust between firms in the alliance (the degree of closeness of strategic direction positively affects trust).

It has been asserted that without cooperative learning the success of strategic alliances will be limited in the long term (Morrison and Mezentseff, 1997). The role of leaders within an alliance is to provide an environment in which people can easily share their knowledge and information with each other. Successful alliance governance develops trust. Management style and leadership is a key element in the success of strategic alliance (Browning *et al.*, 1995). Therefore:

- P3.* Effective alliance governance (leadership) has a positive effect on building trust in a strategic alliance.

Formation of trust helps in knowledge sharing among partners in the alliance. Koka and Prescott (2002) indicated that firms' commitment dedicated to building relationships enhanced access to information, since partners shared more information with each other. Gulati (1998) argued that trust not only enabled greater exchange of information, it also promoted ease of interaction and a flexible orientation on the part of each partner. Partners share information with confidence because of the development of trust (Koka and Prescott, 2002). Empirical research also supports that the development of trust between alliance partners affects knowledge sharing between them (Uzzi, 1996, 1997). Therefore, it is proposed that:

- P4a.* Trust positively affects knowledge sharing in strategic alliances.

Trust can lead to lower transaction costs, which leads to competitive advantage (Dyer, 1996). Empirical studies also show that trust can influence the performance of the alliance (Gulati, 1998). Gulati *et al.* (2000) indicated that strategic alliances promoted trust and reduced transaction costs. Therefore, trust directly affects performance. In the presence of trust, organizations rely on less detailed contracts, which are costly (Gulati, 1995). Accordingly:

- P4b.* Trust positively affects performance in strategic alliances.

Alliance satisfaction is defined as one of the outcomes of strategic alliances (Zollo *et al.*, 2002). Such satisfaction provides an assessment of the overall satisfaction of individuals (firms) in the alliances. Building trust among alliance members improves their overall satisfaction with the alliance. Therefore:

- P4c.* Trust positively affects alliance satisfaction.

Learning within a mutual collaboration and within a strategic alliance requires trust and honesty (Crossan and Inkpen, 1995). Learning emerges through the communication and information sharing in strategic alliances (Browning *et al.*, 1995). In that regard, in strategic alliances, knowledge sharing affects cooperative learning. Levinthal and March (1993) asserted that strong ties with partners in alliances resulted in exploitative learning – learning activities that include refinement, choice, production, efficiency, selection, implementation, and execution (March, 1991; Schildt *et al.*, 2005). Therefore:

P5a. Knowledge sharing positively affects cooperative learning in strategic alliances.

In their study on the nature of social capital in alliances in the steel industry, Koka and Prescott (2002) empirically showed that the nature of information exchange (information volume and information diversity) between firms in strategic alliances was significantly and positively related to firm performance. Inkpen (2005) discussed the role of knowledge sharing in enhancing organizational performance in the auto industry. Accordingly:

P5b. Knowledge sharing affects firm performance in strategic alliances.

Morrison and Mezentseff (1997) explain that strategic alliances that incorporate shared learning encouraged a foundation of trust and mutual respect, where by developing cooperative learning in strategic alliances, the degree of trust within an alliance is increased. Arino *et al.* (2001) stated that the interactions between partners led to constantly evolving relationships where tests of loyalty and fidelity occurred periodically. Koka and Prescott (2002) indicated that a firm's history and experience with partners resulted in exchanging information that was rich with value and context because of increased opportunities for learning-by-doing, which leverages relationship-based investment and possibly trust. Jones and George (1998) asserted that interaction among members and organizations generated knowledge and learning, which was a form of tacit knowledge. Accordingly, cooperative learning affects the level of trust among partners. Arino *et al.* (2001) stated that the level of trust among alliance members increased as they engaged in the process of mutual adjustment. Mutual adjustment is the degree of responsiveness of each partner to the circumstances in their alliance, which requires cooperative learning. The change or absence of (cooperative) learning in alliances affects the level of trust between partners. Zollo *et al.* (2002) demonstrated that knowledge gained through collaborative work between partners helped them to develop a refined understanding of each other's culture, management style, capabilities, and weaknesses. Such a mechanism affects the level of trust among partners. Thus:

P6a. Cooperative learning enhances trust within the strategic alliance.

Firms in the alliance attempt to systematically diffuse knowledge throughout their organization (Hamel *et al.*, 1989). Crossan and Inkpen (1995) demonstrated that learning was directly linked to the ability of the firms to develop a sustainable competitive advantage. In that regard, learning positively affects the performance of firms. Garvin (1993) justified that continuous improvement requires a commitment to learning. Knowledge acquired within an alliance is valuable after it has been diffused

through the organization (Hamel *et al.*, 1989). Accordingly, learning should enhance continuous improvement of processes in firms within the alliance:

P6b. Cooperative learning positively affects process improvement in strategic alliances.

Firms try to achieve higher level of performance and productivity through continuous improvement of their processes (Kaynak, 2003). There is agreement among researchers that continuous improvement and customer satisfaction are the main principles of quality management (Anderson *et al.*, 1994; Dean and Bowen, 1994). Accordingly, we expect that continuous process improvement will result in higher customer satisfaction as the quality of products and/or services increases. In the context of network of firms where firms are viewed as customers to each other, improving the process of each firm will lead to higher satisfaction for network partners. Having said that, we propose:

P7a. Process improvement positively affects alliance satisfaction.

Continuous improvement is defined as the ability of the firm to continuously develop its processes (Dean and Bowen, 1994). Empirical research shows that process improvements affect firm performance (Wilson and Collier, 2000). Therefore:

P7b. Process improvement positively affects performance in strategic alliances.

It should be noted that the proposed model has some characteristics that need elaboration. Gulati *et al.* (2000) argued that both exogenous and endogenous variables could explain how strategic alliances and networks evolved over time. In that regard, the proposed model for strategic alliances within QM addresses this issue. The environmental variables (culture, strategic intent) serve as exogenous variables in the model. Madhavan *et al.* (1998) indicated that environmental variables should be regarded as exogenous variables. Therefore, the model covers this issue as well.

Both the top management perspective and the network perspective have been included in the framework. It has been indicated that both top management and network/institutional perspectives were important for understanding patterns in the adoption of innovations among organizations (Young *et al.*, 2001). While the role of top management has been recognized as one of the key variables in the model, the network effect has been considered as well, where its effect on building trust is unquestioned. The inclusion of top management's role in the model is consistent with the role of top managers in the successful implementation of quality management in a firm, where it addresses the critical role of managers in organization-wide quality improvement (Wilson and Collier, 2000; Lee *et al.*, 2003).

4.4 Caveats

As with any new approach or departure from an existing paradigm, doubts and challenges will arise. Some of those doubts would include the following.

4.4.1 Causality. While performance improvement is a key reason for entering into strategic alliances, and "trust" is a key ingredient in performance improvement, Quality management is not solely responsible for creating trust. QM may be one important source of trust, but others exist and their relative contribution will vary.

4.4.2 Complementarity. Along with causality, successful quality management programs and strategic alliances can exist independently. The proposed model merely

suggests that the presence of factors such as cooperation and a learning environment enhance the likelihood of success of both QM and strategic alliances, with greater mutual benefit when present together.

4.4.3 Divergent goals. While successful strategic alliances and QM may share certain characteristics, the two approaches may have inherently different goals. QM's goal is to increase customer satisfaction via improved quality, while strategic alliances focus primarily on firms' performance. While the two may not be perfectly congruent, they are not contradictory and can be complementary.

4.4.4 Lack of empirical support. There is no direct empirical research supporting common success factors for QM and strategic alliances, only logic and conceptual reasoning. It is hoped that the propositions presented in this paper may help to alleviate this shortcoming.

5. Future research

The proposed model proposes two outcomes for a strategic alliance:

- (1) performance; and
- (2) customer (alliance) satisfaction.

While performance encompasses the overall performance of the alliance, customer satisfaction is related to each individual firm, to the extent that each firm is satisfied with the alliance. Empirical research is needed to determine the applicability of the proposed framework.

Westphal *et al.* (1997) point out that QM involves structures, developing processes for identifying and solving problems, and finding opportunities for further improvement. It has been suggested that firms could capture, integrate, and disseminate alliance-management know-how through the creation of separate, dedicated centers or organizational units, whose major responsibility would be to capture past experience (Kale *et al.*, 2002). Having said that, identifying tools, techniques and procedures for developing trust, generating knowledge, enhancing organizational learning, and continuous process improvement in strategic alliances could be considered as future research in the application of QM tools within strategic alliances.

6. Conclusion

In this paper, a framework for strategic alliances based on the theory of quality management has been proposed and the relationship between various elements of the model has been established. In the proposed model, trust is the major driver for the success of the strategic alliance, which facilitates organizational learning.

As Mintzberg *et al.* (1996, p. 70) indicated, "collaboration is fundamentally a communicative process, one that includes nonverbal, experimental and emotional communication". The success of strategic alliances, first of all, depends on the formation of trust among individuals from all levels and hierarchies within the alliance. Building trust among individuals is affected by a group of variables; some are firm-specific and some are alliance-driven. According to the proposed model, a firm can affect the initial formation of trust. However, the level of trust is also affected by the cooperative learning in the alliance. Such learning affects process improvement, which

results in higher satisfaction and performance. Successful alliances are those that develop a high level of trust and maintain a cooperative learning environment.

The propositions based upon the proposed model provide the basis for testable hypotheses, which can be achieved through empirical studies. Considering the caveats discussed earlier, appropriately testing the hypotheses should add to our understanding of the relationships between and the realm of applicability of both quality management and strategic alliances.

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