Understanding the impact of relational capital and organizational learning on alliance outcomes

Chia-Ling (Eunice) Liua,*, Pervez N. Ghaurib, Rudolf R. Sinkovicsc

aNational Cheng Kung University, Taiwan
bKing’s College London, Franklin-Wilkins Building, 150 Stamford Street, London SE1 9NH, UK
cManchester Business School, UK

1. Introduction

The increasing interests in interfirm collaborations have inspired a rich literature during the past two decades. The literature on strategic management and alliances assert that learning and acquiring know-how are important rationales for the formation of international strategic alliances (ISAs), contributing significantly to alliance outcomes (Dong & Glaister, 2006; Hamel, 1991; Inkpen & Beamish, 1997; Lyles & Salk, 1996). Knowledge has emerged as a central theme in the resource-based and alliance literature and is seen as the strategically most important source of competitive advantage (Conner & Prahalad, 1996; Grant & Baden-Fuller, 2004). The accumulation of knowledge acquired from alliance partners opens new opportunities and constitutes a driving force in the development and growth of the firms (Inkpen & Pien, 2006; Yi-Leniko, Autio, & Sapienza, 2001). In our research, knowledge acquisition refers to ‘the extent to which the firm has learned from the alliance partner’. The type of knowledge involved affects knowledge acquisition in interorganizational learning (Lane & Lubatkin, 1998). We focus on external knowledge of local firms acquired from foreign partners. The purpose of our research is to add to the existing knowledge base on alliance learning (Hamel, 1991; Mesquita, Anand, & Brush, 2008; Mowery, Oxley, & Silverman, 1996; Wu & Cavusgil, 2006) by examining the following issues that have not received sufficient attention in the existing literature.

Numerous past studies demonstrate that multinational corporations (MNCs) benefit from alliance learning; yet the conditions under which this improves the competitive advantages of local firms are not well known (Ernst, 2000; Kotabe, Martin, & Domoto, 2003; Tsang, Nguyen, &Erramilli, 2004). Building alliances with local firms in resource-limited countries gains them access to critical skills and competences from their foreign partners. In an attempt to fill this research gap in the alliance literature, our study focuses specifically on the local firm. Though knowledge can be transferred across various entities in alliances, we address knowledge acquisition from the foreign partners because such knowledge is typically valuable for the success of local firms (Tsang, 2002).

Though prior research has contributed to our understanding of certain important outcomes of knowledge acquisition from alliance partners (Inkpen & Tsang, 2005; Kotabe, Dunlap-Hinkler, Parente, & Mishra, 2007; Lyles & Salk, 1996), there has been scant attention to the study of the diffusion of such knowledge within the organization. Interorganizational learning, i.e. knowledge acquisition from partner firms has been the key concept examined in previous literature (Inkpen, 1998; Norman, 2004). Yet, integrated perspectives, which consider both inter- and intrafirm learning at the same time, are rare. We argue that knowledge acquisition from the partnership, in isolation, is unlikely to enhance alliance outcomes; it needs to be disseminated across departments to lift its competitive value. This paper contributes to the discussion by bringing the organizational learning perspective on both an interorganizational level and intraorganizational level.

Prior studies on alliance learning have commonly focused on cognitive aspects. For example, the level of absorptive capacity and
the complexity of knowledge affect knowledge transfer between partners (Lane, Salk, & Lyles, 2001; Simonin, 2004). Relation-capital investments are critical in knowledge acquisition, especially in turbulent environments (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004). Relational capital in alliances refers to a relational rent generated in an exchange relationship that cannot be generated by either firm in isolation (Dyer & Singh, 1998). Relational capital has been identified as a resource that is created through social network processes (Dyer & Singh, 1998; Watthe & Heide, 2004). We identify three key dimensions of relational capital essential to alliance learning: trust, transparency, and interaction. We examine the link between these three factors and the role of relational capital in acquiring knowledge from foreign partners.

We also believe that the literature dealing with relational capital, learning and alliance outcomes has not been integrated in a systematic fashion, leaving gaps in the understanding of the links among the concepts. Some stress the linkage between relationship development and knowledge transfer in alliances (Dyer & Hatch, 2006; Sarkar, Echambadi, Cavusgil, & Aulakh, 2001; Uzzi & Lancaster, 2003), and others highlight the connection between knowledge process systems (i.e., knowledge acquisition and sharing) and alliance satisfaction (Inkpen & Pien, 2006; Lyles & Salk, 1996; Norman, 2004). The relational view and organizational learning theory; the latter links organization learning theory and the resource-based view. Very few attempts, however, have yet been made to relate key concepts from the relational view, organizational learning theory and the resource-based view. By emphasizing the important link between relational capital, inter- and intrafirm learning and alliance outcomes, we seek to contribute to a further convergence between different domains of research.

Specifically, our study pursues the following research questions: (a) how relational capital impacts on the acquisition of knowledge from foreign partners to the local firms, (b) how dimensions of relational capital, specifically trust, transparency, and interaction, between alliance partners interrelate, and (c) how inter- and intrafirm learning influence alliance outcomes.

2. Theoretical background and hypotheses

This paper builds on the relational view, which depicts that competitive advantages derive not only from firm-level resources but also from difficult-to-imitate capabilities embedded in dyadic relationships (Dyer & Singh, 1998; Mesquita et al., 2008). According to the resource-based view, the competitive advantage of firms arises from their superior capability in transferring and creating knowledge (Foss & Foss, 2005; Spender, 1996). Given resource limitations of local firms, they can leverage their relational resources for knowledge acquisition by building relation-specific assets and knowledge-sharing routines (Yli-Renko et al., 2001). As knowledge acquisition is mainly a social process (Kogut & Zander, 1992), relational capital will be important for the success of local firms. The degree of the knowledge transfer a firm achieves from its collaborative relationship is determined not only by knowledge acquired externally, i.e. outside the alliances framework, but also by knowledge disseminated internally among its business units (Walter, Lechner, & Kellermanns, 2007). We draw on organizational learning theory to combine these two perspectives. In a first step the theoretical development of the paper follows the literature of relational capital and knowledge acquisition in alliances. A number of key dimensions have been identified, out of which we discuss those pertinent to our study context, trust, transparency and interaction. Consecutively, we link inter- and intrafirm learning to alliance outcomes.

2.1. Relational capital and knowledge acquisition in alliances

Relationships between alliance partners can be characterized in terms of their mutual trust, their social ties, and the extent to which they share their values (Kale, Singh, & Perlmutter, 2000; Uzzi & Lancaster, 2003). A relationship built solely on legal contracts may make it difficult to facilitate effective knowledge transfer. Recent studies have indicated that interorganizational relationships create opportunities for the firms to gain access to external knowledge and combine it with existing intellectual resources (Dyer & Hatch, 2006; Nahapiet & Ghoshal, 1998). Relational capital involves the pattern of interaction between partners that facilitates the positive feelings and functioning of an alliance (Cullen, Johnson, & Sakano, 2000). We assume that the more relational capital a local firm develops from alliances, the more likely it is to acquire external knowledge from its foreign partners. Without the social fabric of any relationship, alliances will not deliver their potential strategic or economic payoff (Madhok, 1995) and processes of learning will be stifled.

The extent to which a firm acquires knowledge from its alliance relationship depends on the ability of the firm to understand where the relevant knowledge or expertise resides in its partner, and on the willingness of the firms to share knowledge (Dyer & Singh, 1998; Yli-Renko et al., 2001). We follow Kale et al. (2000) and argue that strong relational capital between alliance partners facilitates greater learning across the alliance interface. Central to the argument is that relational capital influences knowledge acquisition through the confidence that alliance partners have in the reliability and integrity of each other to exchange knowledge more freely (Madhok, 1995) (operationalized in the paper as trust); the openness between alliance partners (operationalized in the paper as transparency) (Hamel, 1991); and the interactive process of exchange between member firms (operationalized in the paper as partner interaction) (Yli-Renko et al., 2001).

We assert that the amount of knowledge acquired by a firm depends on three key dimensions of relational capital: the quality of relationship in terms of trust, the level of transparency between firm, and the level of partner interaction. Trust has often been identified as an alternative or complement to formal, arm’s-length or third-party governance mechanisms (Doney & Cannon, 1997; Dyer & Singh, 1998). Establishing high levels of mutual trust should promote knowledge exchange and discourage free-riding because the possibility of violation is reduced when high-quality, hard-to-replace relationships exist (Yli-Renko et al., 2001). Hamel (1991) identifies that transparency in the partner relationship determines the potential for learning. Some partners are more open and accessible to sharing knowledge and communicating ideas with others, while others are not. In many cases, a firm’s alliance partners are important sources of new ideas and knowledge that enhance the value of the firm (Dyer & Singh, 1998). High levels of interaction, whether face-to-face or mediated through information systems, strengthen social ties between partners. Strong relationships usually trigger a close interaction between alliance partners and hence facilitate the exchange and transfer of knowledge across the alliance interfaces (Dhanaraj et al., 2004; Kale et al., 2000). Hyder and Ghauri (2000), in two longitudinal case studies on joint ventures between Swedish and Indian partners, indicate that many uncertainties prevail on both sides when partners start to learn about each other and about each other’s capabilities and knowledge. The more they learn about each other, the more the uncertainties decrease and the more a positive relationship develops.

Trust has been described as a central issue in the literature on strategic alliances and interfirm relationships (Boersma, Buckley, & Ghauri, 2003; Mayer, Davis, & Schoorman, 1995; Schoorman, Mayer, & Davis, 2007). Recent studies indicate that trust in
interfirm relationship may be an important source of competitive advantages because it: (1) reduces transaction costs (Barney & Hansen, 1994; Zaheer, McEvily, & Perrone, 1998), (2) increases the investments in relation-specific assets (Dyer & Singh, 1998), and (3) enhances greater information-sharing routines (Krishnan, Martin, & Noorderhaven, 2006; Zaheer et al., 1998). Given that trust plays a critical role for the interfirm relationship (Johnson, Cullen, Sakano, & Takenouchi, 1996), it becomes important to understand the factors in alliance relationship that facilitate trust. To address it, we isolate two constructs critical for trust in alliances, including transparency and interaction. We then develop the interrelations between them and trust. Transparency between alliance partners acts as an effective mechanism to open discussion of problems and engender better communication. In a truly cooperative alliance, open communication between partners is an essential feature of the relationship (Inkpen, 2000). Building upon it, higher levels of trust are believed to develop when partners are more transparent and there is less behavioral uncertainty (Dyer & Nobeoka, 2000). From the social perspective, trust will emerge due to social interaction between exchange partners (Kale et al., 2000; Uzzi, 1997). Interactions are likely to lead to the development of positive feelings because it offers more cues for interpreting a partner's behavior and motivations, thereby increasing the efficacy of social sanctions (Dyer & Nobeoka, 2000). Therefore, it is considered useful to encourage trust development in alliances.

2.2. Organizational learning and alliance outcomes

Many scholars view organizational learning from the information-processing perspective and link it with knowledge acquisition and performance (Crossan & Berdrow, 2003; Huber, 1991; Nevis, DiBella, & Gould, 1995). According to Huber (1991), organizational learning encompasses knowledge acquisition (the process of obtaining knowledge); information distribution (the process of diffusing information from different sources); interpretation (the process of interpreting distributed information); and organizational memory (the means of storing knowledge for future use). The assumption in his framework is that an organization learns if any of its units acquires knowledge that it recognizes as potentially useful. The knowledge gained from organizational learning is a valuable resource to sustain the firm’s competitive advantage (Day, 1994).

Previous research tends to investigate organizational learning only in isolation, focusing either on interfirm linkage between alliance partners (Inkpen & Pien, 2006; Tsang et al., 2004) or intrafirm linkage between a multidivisional firm's business units (Hansen, Mors, & Lovas, 2005; Tsai, 2001). This separation limits the understanding about interdependencies and interactions of inter- and intrafirm learning. Extending this research, this article examines the process of knowledge acquisition from alliance partners and its subsequent intrafirm dissemination and leads to unique theoretical insights.

From a resource-based perspective, knowledge acquired from the partner can be utilized to create the competitive capabilities (Lyles & Salk, 1996). If local firms can leverage the knowledge, capabilities and skills from the foreign partners, especially when the foreign partner comes from a sophisticated competitive country context (Porter, 1986), they can enhance their competitive advantage and performance (Dhanaraj et al., 2004). Although some researchers have used financial survival, market share, duration, and ownership stability as measures of alliance outcomes, there is still no consensus in the literature on the appropriate definition and possible measures of benefits achieved through alliances (Nielsen, 2007; Sarkar et al., 2001). An alliance may be terminated as a result of its success rather than its non-performance. A group of researchers have suggested that alliance outcomes should be accessed by partners’ subjective assessment of their alliances instead (Geringer & Hebert, 1991; Killing, 1982). Subjective measures may include level of satisfaction with alliance outcomes and perceptions of the partner’s satisfaction level (Ramaseshan & Loo, 1998). In a study by Geringer and Hebert (1991), both subjective and objective measures of alliance outcomes were consistently related to each other and one could be used in place of each other. In our research, we have used a subjective measure for alliance outcomes – a partner’s relationship satisfaction – instead of using an objective measure, such as duration, etc. Relationship satisfaction refers to the extent the partner perceives whether partners were satisfied with the alliance and find it to be worthwhile and productive (Bucklin & Sengupta, 1993).

Fig. 1 illustrates our proposed framework, which proposes that (1) certain dimensions of relational capital that affect the acquisition of knowledge and that (2) the influences of organizational learning on alliance outcomes. The first part of the model examines, from the relational view, the extent to which relational capital influence knowledge acquisition. In this framework, relational capital is viewed as a key antecedent to influence organizational learning. The second part of the model makes use of organizational learning theory and the resource-based view (RBV) and addresses the contributions of knowledge acquisition and dissemination to alliance outcomes. We now discuss the rationale for each of these relationships and develop hypotheses.

2.3. Relational capital dimensions

Trust has been identified as a key relationship variable in many studies in different fields (Madhok, 2006; Perry, Sengupta, & Krapfel, 2004). In economic exchange, trust implies an expectation of good faith efforts by parties through commitment, investment, and an implicit demonstration of willingness to be vulnerable.
Standing, which in turn helps reduce the conflict arising from the differences and create a trusting environment (Das & Teng, 1998; Tsang et al., 2004).

Healthy interfirm relationships are characterized by open discussions of problems, accessibility, availability, information flows and a sense of coordination and involvement in the collaborations (Mohr, Fisher, & Nevin, 1996). Mutual disclosure facilitates the development of shared interests and common goals (Heide & John, 1990) and thus creates an atmosphere of mutual support and respect. These attributes create transparency in the collaborations and signal a mutual willingness to exchange knowledge across organizational boundaries and reduce misunderstandings and uncertainty (Kandemir, Yaprak, & Cavusgil, 2006; Mohr & Spekman, 1994). It is logical to assume that the partner’s transparency will increase the opportunity of learning. Hence, we hypothesize that:

**Hypothesis 2.** The greater the transparency between the alliance partners, the higher the effect of trust.

Interaction is a key factor that is related to relationship characteristics, and facilitates the exchange of information and interpersonal contacts. In our research, interaction is defined as there is degree to which the reciprocal contact or action between alliance partners. Madhok (1995) notes that sustained interaction provides the social glue for holding the alliance partners together. Establishing close interactions with alliance partners allows a firm to deal with conflicts and crises and build up joint problem-solving arrangements (Kandemir et al., 2006). Though trust is typically viewed as a prerequisite for alliance partners to engage in information exchange, interaction in itself is essential for such trust to develop. Trustworthiness may also be enhanced through mutual interaction, allowing the partners to identify and develop more commonalities (Das & Teng, 1998). The extent of interaction, e.g., the number of contacts and face-to-face communication, and the frequency and intensity of these, is positively associated with the relational capital possessed by the MNC units (Kostova & Roth, 2003). A number of previous studies have noted that interfirm trust is incrementally developed through ongoing interaction (Becerra & Gupta, 2003; Gulati, 1995; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006).

As joint-task activities in alliances become more complex, the interaction between the partners will moderate the impact of inter-partner diversity and cultural distance (White & Lui, 2005). The intensity of communication between alliance partners contributes positively to knowledge flows. Knowledge acquisition will be enhanced if the partners understand where important expertise resides within each firm. In order to achieve this, alliance partners can design interfirm routines that facilitate information-sharing and increase socio-technical interactions over time (Dyer & Singh, 1998; Eriksson & Chetty, 2003). The interaction between different value-added functions will encourage productivity and innovation (Chetty & Wilson, 2003; Jao, 1996). A variety of interaction modes such as on-site visits, product concept reviews (Bresman, Birkinshaw, & Nobel, 1999), technical meetings and joint training programs are encouraged to improve the quality of relationships and facilitate knowledge acquisition. The transfer of tacit knowledge is communication-intensive. Subramaniam and Venkatraman (2001) indicate that rich information-processing mechanisms such as face-to-face contacts and regular visits with overseas managers, will increase the effectiveness of transferring and deploying tacit overseas knowledge in MNCs. Therefore, the level of partner interaction is expected to be positively related with knowledge acquisition. Following this line of reasoning, we consequently propose the following hypotheses:
Hypothesis 4. The greater the interaction between the alliance partners, the higher the effect of trust.

Hypothesis 5. The greater the interaction between the alliance partners, the higher the effect of knowledge acquisition.

2.4. The relationship between knowledge acquisition, knowledge dissemination, and alliance outcomes

2.4.1. Knowledge acquisition and knowledge dissemination

Knowledge allows the firms to develop their core competences from collective learning and enhance their ability to survive and grow (Hamel, 1991). Strategic alliances have emerged and proliferated as interorganizational designs that allow firms to access external knowledge, resources, markets and technologies (Inkpen & Tsang, 2005; Walter et al., 2007). Although these external linkages enable a firm to tap into knowledge possessed by its alliance partners, they have limited relevance to the succeeding transfer of such knowledge within the organization (Walter et al., 2007). Few researchers have directly addressed the differences and linkages between inter- and intrafirm learning. Knowledge acquired from foreign partners may only exist in certain functional teams such as R&D and product management. If knowledge is only acquired, but not disseminated within the organization, then its effect in enhancing alliance outcomes is limited (Helleloid & Simonin, 1994; Walter et al., 2007). A large body of literature indicates that organizations transferring knowledge effectively across business units are often more productive than organizations less capable of performing this transfer (Hansen et al., 2005; Kostova & Roth, 2003). Such intrainfirm knowledge dissemination from one business unit to another provides opportunities for mutual understanding and cooperation that motivates the creation of new knowledge and contributes to units’ innovative capability (Gupta & Govindarajan, 2000; Kotug & Zander, 1992). The argument of positive impacts on alliance outcomes when knowledge is not only acquired but also disseminated within the organization is also supported by drawing on Helleloid and Simonin (1994) and Walter et al. (2007). Walter et al. (2007) build on Koka and Prescott (2002) who develop the notion that the number and type of linkages, the overall network structure, and the nature of network partners determine access to and transfer of knowledge. With more social capital “liquidity” (Walter et al., 2007, p. 699), higher levels of knowledge dissemination are likely to occur in the intraorganizational context. Furthermore, developing a shared understanding of their task domain is required to link with the individual and group levels and take coordinated action (Crossan, Lane, & White, 1999).

The creation of knowledge takes place at two levels within the organization: between individuals and between the organization and its network business partners (Gold, Malhotra, & Segars, 2001). Knowledge acquisition from the collaboration between the organizations is a potential source of knowledge. Dissemination of personal experiences between individuals promotes learning and becomes the basis for the socialization of knowledge. Core capabilities are increasingly based on the interplay between knowledge acquisition and dissemination at different levels (Harryson, Dudkowski, & Alexander, 2008; Hedlund, 1994). A broader scope of organizational learning should include knowledge acquisition at interfirm level and knowledge dissemination at intrafirm level. These processes should be integrated to support an ‘actionable learning system’ to link the individual, group, and organizational levels. Learning is not something that occurs in an organization simply through an ‘acquisition effort’ (Nevis et al., 1995). Gold et al. (2001), suggest that for organizations to maximize efficiency, reduce costs and performance outcomes (Davenport & Klahr, 1998), they are challenged to integrate and disseminate this knowledge within the organization. In looking at all these phases simultaneously, we suggest the following hypothesis:

Hypothesis 6. Knowledge acquisition from the foreign partners will be positively associated with knowledge dissemination within the organization.

2.4.2. Knowledge acquisition and relationship satisfaction

Learning has been identified as an important motivation to form alliances in much research. However, many alliance learning studies focus on knowledge acquisition as an end in itself, rather than a consequence of learning and value creation (Inkpen, 2002; Norman, 2004). If firms can benefit from inter-firm learning, how will such learning enhance alliance outcomes? Though a lot of studies have enhanced our understanding of what facilitates knowledge acquisition and skills development (Dhanaraj et al., 2004; Lyles & Salk, 1996; Tsang, 2002), few studies have empirically examined the learning outcomes of alliances (Liu, 2009; Norman, 2004). From the resource-based perspective, knowledge and skills acquired from the foreign partners can be utilized to create and augment the firm’s competitive advantages (Lyles & Salk, 1996; Makino & Delios, 1996). Prior research indicates that the knowledge acquisition by international joint ventures in transitional and emerging economies is particularly significant for their success because of the knowledge gap between foreign and local firms (Dhanaraj et al., 2004; Tsang et al., 2004). Local firms often lack the technological, managerial, and marketing capabilities necessary for global competitiveness to meet customers’ requirements (Lane et al., 2001). The business practice and skills transferred from foreign partners enable local firms to build organizational capabilities leading to better alliance learning outcomes. Norman (2004) has demonstrated in the context of high-technology alliances that with more trusted partners, firms are less protective, and tend to acquire more knowledge, lose less and be more satisfied. Chou, Chang, Tsai, & Cheng (2005) in an empirical test of 157 Taiwanese information service enterprises, found that the learning climate can be seen as antecedent to knowledge management processes by which the satisfaction of participants in the process of exchange is heightened. In a recent extension of research on alliances to the manufacturer-distributor channels context, Mehta, Polsa, Mazur, Xiucheng, & Dubinsky (2006) verify empirically that learning orientation, in tandem with other dimensions such as relationship commitment and cooperativeness, serves as antecedents of alliance performance and relationship satisfaction. Hence, we expect that a positive relationship between knowledge acquisition and relationship satisfaction will hold.

Hypothesis 7. Knowledge acquisition from the foreign partners will be positively associated with relationship satisfaction.

2.4.3. Knowledge dissemination and relationship satisfaction

The creation of organizational knowledge requires the sharing and diffusion of experiences between individuals and between the organization (Gold et al., 2001; Inkpen & Dinur, 1998). Knowledge dissemination refers to the degree to which knowledge is diffused among relevant users within an organization (Kohli & Jaworski, 1990; Moorman, 1995). Many studies have been concerned with knowledge acquisition from alliance partners but less is known about the process of dissemination such knowledge within the organization (Nevis et al., 1995; Walter et al., 2007). If knowledge is held by an individual, there is no value for learning process (Gilbert & Cordey-Hayes, 1996). After acquiring knowledge from alliance partners, it is critical that the firms diffuse this knowledge
among business units. Unless the acquired knowledge is disseminated, it does not provide any tangible benefit (Chou et al., 2005). Effective leveraging of knowledge resources through the transfer and combination of existing knowledge has become increasingly important in many firms (Watson & Hewett, 2006). Knowledge can be disseminated formally or informally. In the more structure approach, the companies may use written documentation, formal training sessions, policies, as well as company memoranda and cross-functional teams (Moorman, 1995). In the more informal approach, organization members or work team share their experiences in ongoing conversations. These arrangements are not only effective in diffusing tacit knowledge but also creating new perspectives. According to Chou et al. (2005), knowledge that is internalized, i.e. integrated through the exchange and combination of knowledge through individuals, and shared by different units, impacts perceived satisfaction (Chou et al., 2005, p. 288). If the knowledge acquired cannot be disseminated among organization members, the level of relationship satisfaction will be limited. Therefore, we suggest:

**Hypothesis 8.** Knowledge dissemination within the organization will be positively associated with relationship satisfaction.

3. Methods

3.1. Data

Data were collected through a large-sample survey from international strategic alliances in the electronics and IT industry in Taiwan. Small firms in a resource-limited country have a limited capacity to compete in the knowledge-intensive and highly globalized industries. However, the experience of Taiwan tells a different story. Companies from Taiwan occupied 18 of the top 100 slots in the Business Week IT100 list in Year 2008. Taiwan has become the world’s biggest producer of notebook PCs and has established itself as a world-class supply source for a variety of computer-related products, key components and knowledge-intensive services. The size-related disadvantages have not prevented Taiwan from becoming a successful competitor in the IT industry which requires a wide range of technological and organizational capabilities. Ernst (2000) argues that the answer to this puzzle is knowledge outsourcing through a variety of interorganizational linkages. This paper examines how Taiwanese IT suppliers enhance their alliance outcomes through collaboration with their MNC buyers.

International strategic alliances are very common in this industry. The partnerships in this industry are usually loosely structured and not equity based. Research into the drivers and consequences of such an important phenomenon is still lacking, thus making it appropriate in the wake of Cullen et al.’s (2000) critique that much of alliance literature focuses on equity-based joint ventures and ignores alliances where is contract-based. The globalized nature of this industry, its reliance on international contract-based alliances, and its understood nature (Sarkar et al., 2001) encouraged us to set the empirical study here.

The sampling in this research involves several criteria within the context of ISAs. The rigorous application of specifications will help to clarify the external validity of this study. Firstly, ISAs in this research should fit the definition of the interfirm cooperative arrangements involving resource flow and linkages to special goals of each sponsoring firm (Parkhe, 1991). Secondly, the cooperation relationships are the alliances between suppliers in Taiwan and their MNC buyers. Thirdly, the industry sector focuses on the electronics and Information industry. According to Ministry of Economic Affairs (MOEA) in Taiwan, the definition of ‘Information Industry’ includes the following seven categories: software and information services, communication products, systems, peripherals, card/board, semiconductors, and components. However, firms providing information software and information services in Taiwan are mainly focused on domestic alliances, and this work excludes these companies from the sample.

Data was collected via questionnaire survey in 2005. To obtain a target sample of international strategic alliances, we examined a variety of sources, such as Taiwan Electronics and Appliance Manufacturers Associates (TEEMA), Taiwan Computer Association (TCA) and the Top 1000 Manufacturing List. The basic company information, such as address, e-mail, contact point, capital, employee numbers, and product category, are included in these databases. There are three main criteria for selecting the firms from these databases: (1) the majority of the sample firms are manufactures with capital of over US$3 million; (2) most of the chosen companies are leading firms with more experience of cross-border alliances; and (3) secondary data of the chosen companies is more easily accessible for the public to obtain more detailed information. The unit of analysis in this research is the cooperation relationship between MNC buyers and suppliers in Taiwan. The sample list was verified by secondary data or a phone call ensuring that every company from the database has ISAs with MNC buyers. Overall, the combined final sample of 609 firms was identified from six primary categories in the IT industry.

3.2. Data collection and respondent profiles

The content and format of the questionnaire were developed on the basis of preliminary interviews and a thorough review of prior alliance literature. Pretests were conducted using several on-site meetings with 11 experienced alliance managers. Based on their comments, scale items that were not applicable, unclear or confusing were revised consecutively until they were clear and easy to understand. We used a mixed-mode strategy (Dillman, 2000) combining e-mail and paper surveys to increase the flexibility and raise the response rate. The paper questionnaire was printed in a booklet that included a covering letter as its front page to produce a more professional layout. Most of the electronic format questionnaires were sent to the people who agreed to answer by e-mail in the previous contact.

We adopted two selection criteria for the key informants in this research. The first criterion was the informant’s position to generalize “about patterns of behavior, after summarizing either observed or expected organizational relations” (Seidler, 1974: 817). The second criterion was knowledge of collaborative phenomenon; that respondents have been personally involved with alliances and were sufficiently knowledgeable to answer the questions. The key informants for the survey were senior executives and managers, with different functional departments such as R&D, Marketing & Business Sales, New Product Development, and Project Management. From the directory of TEEMA and TCA, we obtained the names and telephone numbers of the contact people. Most of the targeted companies were contacted by telephone or e-mail prior to the survey. The purpose was to identify the most appropriate respondent and to seek support for the study. We sent questionnaires to senior executives and alliance managers of 609 Taiwanese firms with international alliances and made phone calls within one week of the mailing. Throughout the three phases of follow-up, continuous effort and repeated contacts, 160 usable questionnaires were returned, resulting in a valid response rate of 26.3%. Of these 160 questionnaires, 97 (60.7%) were returned by post and the remaining 63 (39.3%) were sent back via e-mail. When considering the sensitive nature of ISA issues and the complexities of the questionnaire, the level of the participants is quite satisfactory.

In terms of country origin of the alliance partners, 58.8% were US firms, 17.5% were European firms, 16.9% were Japanese firms...
and the remaining 6.8% were firms based in other areas, such as Korea, Israel, etc. In the review of empirical ISA research, many researchers noted that the short lifespan of an ISA operation has become a limitation on sample generation. Most of the ISA collaborations in this research have reached a satisfactory degree of stability. Over 70% of responding firms reported that their ISA operation duration was more than three years and 8.8% of the firms even maintained a long-term cooperation relationship for more than 10 years. Of the 160 firms, 125 (78.1%) firms not only manufacture but also design products for MNC buyers. They are usually labeled as ODM (original design manufacturing) suppliers. Most of Taiwanese IT suppliers already enhanced their capability in product design for the MNC buyers. Instead of only manufacturing or designing products for global buyers, 84 (52.5%) of the sample firms also market their own products under their own brand. Over 33% of the companies included in this research had a sales volume greater than US$300 million. Half the sample firms had a workforce larger than 1000 employees.

Following the procedure suggested by Armstrong and Overton (1977), we conducted two tests to check the potential of nonresponse bias. Firstly, we compared the respondents’ characteristics (e.g., number of employees, annual sales revenue, capital, and age of the company) to those of the original population sample. Secondly, we compared early with late responses. The first 75% of the returned questionnaires were defined as early responses and the last 25% were regarded as late responses. We found no significant differences from comparing the means of the six constructs in two groups. Therefore, we assume that nonresponse bias was not a significant problem in this research.

All of the measures used in this research were collected via the same questionnaire, which introduced the possibility of common method variance (Simonin, 1999). Harman’s one-factor test (Konrad & Linnehan, 1995; Krishnan et al., 2006; Scott & Bruce, 1994) was used to address the issue of common method variance. We performed unrotated principal components factor analysis on all measurement items, extracting four factors with eigenvalues greater than 1.0, which accounted for 75% of the total variance. Since factor one did not account for the majority of the variance (only 22%). The results of this test indicate that common method variance does not appear to be a problem in this study.

### 3.3. Measures

The latent constructs in the model are measured by multiple indicators. Most of the measures were assessed via seven-point interval scales ranging from ‘strongly disagree’ to ‘strongly agree’. The Likert method of summated ratings allows consistency in the response pattern and offers finer distinctions to be employed by the respondents (Churchill & Iacobucci, 2004). Table 1 reports the descriptive statistics and correlations among all the constructs.

We measured trust using a three-item Likert type scale adapted from Smith and Barclay (1997), Inkpen (2000) and Robson (2001) that captures good faith relationship, understanding, and trustworthiness among alliance partners. Drawing from Hamel (1991), Inkpen (2000) and Jao (1996), transparency was measured through a three-item scale that assesses the partner’s willingness to discuss and solve technical problems, provide product technology data/documentation and provide process technology. The exchange of information and interpersonal contacts are viewed as effective ways of facilitating knowledge acquisition. The measures of interaction involve selectively applying the items developed by Bresman et al. (1999) and Subramaniam and Venkatraman (2001). The respondents were asked to indicate the frequency of three forms of interaction: on-site visits and face-to-face communication, technology sharing and joint problem solving.

In devising scale items of knowledge acquisition, the measurement scheme of Lyles and Salk (1996) was adapted to our context, incorporating insights from the preliminary interview stage of this research. The scale was designed to assess knowledge acquisition from the foreign partner across a variety of areas, including: (1) new R&D expertise; (2) new product development; and (3) managerial practice. Knowledge dissemination was measured with three items modified from Crossan et al. (1999) and Nevis et al. (1993); (1) sharing experience; (2) setting up the mechanism to facilitate knowledge exchange; and (3) promoting dynamic interpersonal and interdepartmental cooperation.

Evaluation of alliance outcomes has been a controversial topic in the alliance literature. The controversy derives from the fact that each party in the partnership might adopt idiosyncratic criteria and no consensus exists on measuring this construct (Krishnan et al., 2006). The scale of relationship satisfaction reflects overall satisfaction with the alliance. It was measured by using three-item Likert scale drawn from Perry et al. (2004); (1) the extent to which the local partner is satisfied with the planned goal, (2) the extent to which the local partner regards this alliance as worthwhile, and (3) the extent to which the local partner is satisfied with the sales growth.

Some dimensions such as relationship duration (Anderson & Dahlqvist, 2002; Krishnan et al., 2006; Simonin, 1999), size (Kotabe et al., 2003) and the country of origin of the alliance partner (Mowery et al., 1996) have been recognized as key variables affecting alliance outcomes. We ran a preliminary analysis of variance (ANOVA) to check whether knowledge acquisition and relationship satisfaction varied by alliance duration (measured by the years of the relationship), firm size (measured by the total number of firm employees) and the country origin of alliance partner. There were no significant differences so we did not include these as control variables in our model to maintain parsimony.

### 4. Analysis and results

To assess the relationship proposed by the conceptual model in Fig. 1, the structural equation modeling (SEM) was used. This approach has become a popular methodology due to the flexible interplay between theory and data and because it bridges theoretical and empirical knowledge for a better understanding of the real world (Simonin, 2004). SEM was considered to be a suitable statistical technique because a series of separate but
interrelated dependencies were estimated simultaneously in this research. The model was estimated using structural equation modeling techniques, with Bentler and Wu's (2003) EQS 6.1 program.

4.1. Measure assessment

Table 2 reports the results of the measurement model. All the constructs display satisfactory levels of reliabilities as indicated by Cronbach's alpha ranging from 0.78 to 0.86. Convergent validity can be judged from the significance of factor loading and shared variance (computed from Fornell & Lacker's, 1981 formula). As shown in Table 2, all the multi-item constructs met the criteria, as indicated by the factor loadings ranging from 0.66 to 0.95 at a significance level of 0.01 in t-test statistics, and also share variance coefficients ranging from 0.64 to 0.77.

To assess discriminant validity, Fornell and Larcker (1981) recommend the use of average variance extracted, which should be greater than the variances shared between the constructs. The comparison is usually made in a correlation matrix. Table 1 provides the correlation coefficients in the off-diagonal elements of the matrix and the square roots of the average variance extracted values calculated for each construct along the diagonal. The discriminant validity of a construct is adequate when its diagonal element is greater than the off-diagonal elements in the corresponding rows and columns. Table 1 indicates that the constructs with reflective indicators had adequate discriminant validity. We also adopted the procedure recommended by Bagozzi, Yi, and Phillips (1991) to assess discriminant validity. We examined pairs of related constructs in a two factor CFA. For example, the set of measures for knowledge acquisition were paired with relationship satisfaction. We ran the model twice, once constraining the estimated correlation parameter between them to 1.0 and once freeing this parameter. A series of chi-square difference tests were conducted for one pair of factors at a time. For example, for knowledge acquisition and relationship satisfaction, the chi-square difference was 125.813 (p < 0.01). A significantly lower $\chi^2$ value for the unstrained models suggests that the constructs exhibit discriminant validity (Bagozzi & Phan, 1982).

The Satorra–Bentler scaled chi-square test, which corrects for distortions of the normal theory method when data are not normal (Satorra & Bentler, 1994), is statistically significant ($\chi^2 = 174.95$ with d.f. = 120; p < 0.001). Furthermore, the other goodness-of-fit indices suggest a good fit for the measurement model: Comparative Fit Index (CFI) = 0.972; Bentler–Bonett Normed Fit Index (BBNFI) = 0.917; Bentler–Bonett Non-Normed Fit Index (BBNFI) = 0.964; Bollen's Incremental Fit Index (IFI) = 0.973; Root Mean-Square Error of Approximation (RMSEA) = 0.054. Although the overall chi-square statistic for the measurement model is significant, this might be due to this test statistic's sensitivity to sample size (Bagozzi & Yi, 1988; Stump & Heide, 1996). However, the ratio of $\chi^2$ to degrees of freedom (1.46, less than 3) corresponds to a satisfactory fit (Hair, Black, Babin, Anderson, & Tatham, 2006). Overall, the measurement model revealed a reasonable model fit for the proposed factor structure.

4.2. Model estimation

Table 3 reports the parameter estimates and goodness-of-fit indicators of the structural equation model. Although the chi-square statistic is significant (Satorra–Bentler–Scaled $\chi^2 = 294.289$ with d.f. = 126; p-value < 0.001), the sufficiently low ratio of chi-square to degrees of freedom (2.3 less than 3) reports a satisfactory fit. Furthermore, Comparative Fit Index (CFI), Bentler–Bonnett Non-Normed Fit Index (BBNFI), and Bollen's Incremental Fit Index (IFI) indicate an adequate fit for the structural model (CFI = 0.914; BBNFI = 0.90; IFI = 0.916). Therefore, the model is a reasonable presentation of the data.

Of the three postulated constructs related to relational capital, the data analysis result displays significant positive effects on knowledge acquisition: trust ($\beta = 0.099$, t = 3.067) and interaction...
There appears to be general support in the literature for the proposition that trust is important in ISA relationship management. Trust leads to a shared understanding between the alliance partners (Dhanaraj et al., 2004; Dyer & Noeboer, 2000) and allows greater access to resources (Uzzi & Lancaster, 2003). Our results show that inter-partner trust is strongly associated with knowledge acquisition. Our results also strongly support the conceptual postulations that inter-partner interaction has a positive effect on knowledge acquisition in the interorganizational context. The close interactions between different levels of personnel in the organizations broaden communication channels and facilitate information flows across borders. Joint tasks between alliance partners become more and more complicated as global buyers grow to rely heavily on their local suppliers for the product development. Inter-partner interactions offer good chances of learning by doing to overcome the difficulties of transferring tacit knowledge. This confirms the relational view that the firms should establish an ongoing relationship that can foster learning to create value (Dyer & Singh, 1998; Joshi & Stump, 1999; Kotabe et al., 2003). However, our finding fails to support the direct relationship between transparency and knowledge acquisition. One possible reason is that transparency between alliances may lead to the risk of knowledge spillover. Trust plays the role of a mediating variable between transparency and knowledge acquisition. Another interesting finding is that interaction is only marginally associated with trust. It is possible that this study only focuses on the contractual relationships between MNC buyers and NIC suppliers. Various alliance types and structures might cause different influences.

5. Discussion

5.1. The effects of relational capital

Table 3

<table>
<thead>
<tr>
<th>Paths</th>
<th>Hypothesis (expected direction)</th>
<th>Standardized coefficient</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust → knowledge acquisition</td>
<td>H1 (+)</td>
<td>0.099</td>
<td>3.067*</td>
</tr>
<tr>
<td>Transparency → trust</td>
<td>H2 (+)</td>
<td>0.132</td>
<td>4.657*</td>
</tr>
<tr>
<td>Transparency → knowledge acquisition</td>
<td>H3 (+)</td>
<td>-0.144</td>
<td>-0.160</td>
</tr>
<tr>
<td>Interaction → trust</td>
<td>H4 (+)</td>
<td>0.140</td>
<td>1.825</td>
</tr>
<tr>
<td>Interaction → knowledge acquisition</td>
<td>H5 (+)</td>
<td>0.146</td>
<td>3.972*</td>
</tr>
<tr>
<td>Knowledge acquisition → knowledge dissemination</td>
<td>H6 (+)</td>
<td>0.094</td>
<td>5.335*</td>
</tr>
<tr>
<td>Knowledge acquisition → relationship satisfaction</td>
<td>H7 (+)</td>
<td>0.073</td>
<td>5.128*</td>
</tr>
<tr>
<td>Knowledge dissemination → relationship satisfaction</td>
<td>H8 (+)</td>
<td>0.058</td>
<td>2.978*</td>
</tr>
</tbody>
</table>

Model fit indices. Satorra-Bentler-scaled $\chi^2$ (126) = 294.289; $p$-value < 0.001; $N$ = 160. CFI = 0.914; BBNFI = 0.861; BBNFi = 0.90; IFI = 0.916; RMSEA = 0.092.

Model fit indices. Satorra-Bentler-scaled $\chi^2$ (126) = 294.289; $p$-value < 0.001; $N$ = 160. CFI = 0.914; BBNFI = 0.861; BBNFi = 0.90; IFI = 0.916; RMSEA = 0.092.

$(\gamma = 0.146, t = 3.972)$ in support of H1 and H5 respectively. That is, the greater (the smaller) the degree of trust and interaction between the alliance partners, the greater (the smaller) the level of the knowledge acquisition in the ISA. Hypothesis 2 is supported at the 1% level: transparency is positively associated with trust between alliance partners $(\gamma = 0.132, t = 4.657)$. Hypothesis 4, which predicts a positive relationship between interaction and trust, is not supported $(\gamma = 0.140, t = 1.825)$. Although the direction of the relationship is confirmed, the result is not significant. Our results did not support Hypothesis 3, suggesting that transparency between alliance partners may not lead to higher knowledge acquisition. Hypothesis 6 is supported $(\beta = 0.094, t = 5.335)$, indicating that the greater the knowledge acquisition from alliance partners, the greater is the likelihood of knowledge dissemination. The confirmation of H7 $(\beta = 0.073, t = 5.128)$ and H8 $(\beta = 0.058, t = 2.978)$ suggests that knowledge acquisition and knowledge dissemination contribute to relationship satisfaction.

With respect to the mediating effect of knowledge dissemination, we test an alternative model by deleting one parameter for the path from knowledge acquisition to knowledge dissemination. The chi-square values for the alternative model is significantly higher that those of the hypothesized model $(\Delta \chi^2 = 28.042, \Delta d.f. = 1)$. Furthermore, Comparative Fit Index (CFI), Bentler–Bonett Normed Fit Index (BBNFI), Bentler–Bonett Non-Normed Fit Index (BBNNFI), and Bollen’s Incremental Fit Index (IFI) indicate that the alternative model does not provide a better solution than the proposed model according to any of the goodness-of-fit statistics (CFI = 0.902; BBNFI = 0.841, BBNNFI = 0.885; IFI = 0.903). We prove that knowledge dissemination influences relationship satisfaction directly and plays the role of a partial mediating variable between knowledge acquisition and alliance outcomes.

5.2. The integration of inter- and intrafirm learning and their impact on relationship satisfaction

Organizational learning is a complex issue. Most studies of alliance learning focus on the acquisition of knowledge externally from partners and, to a lesser extent, on the dissemination of knowledge internally in the organization (Nevis et al., 1995). Although some knowledge acquired externally can be acted on immediately, it is more likely that it will have to be adapted and disseminated internally before it can be applied to commercial ends (Lane et al., 2001). Following these propositions, this research proposes a framework to connect external and internal learning and examines the combined effects on alliance outcomes. This article contributes to the growing body of literature on multilevel research where two or more levels of analysis are integrated to better investigate complex phenomena. The discussion in this paper underscores the importance of examining the connections among inter- and intrafirm levels for explaining relevant learning phenomena in organizational settings.

A firm needs to consider knowledge acquisition from alliance partners, as well as subsequent knowledge dissemination among its own business units. When knowledge is acquired from the partnership, learning only occurs at an individual level or team level. If knowledge cannot be disseminated to an increasing number of individuals and also truly be converted from individual into organizational knowledge, the learning effect is quite limited. More importantly, most of the previous literature – if not all – is concerned only with either inter-firm knowledge acquisition (Grant & Baden-Fuller, 2004; Inkpen, 1998; Tsang, 2002) or the intrafirm learning process (Crossan & Berdrow, 2003; Gold et al., 2001; Huber, 1991). Our study attempts to fill this void in previous alliance studies by providing a systematic analysis to link external and internal learning. Inter- and intrafirm learning can serve as important strategic resources that managers can purposefully design and develop over time to achieve better satisfaction of alliances (Walter et al., 2007).
6. Conclusions

Based on the previous literature about alliance learning, a holistic framework was first proposed, then empirically modified and tested. One of the major contributions of this article is the integration of different streams of theories from past research. Three dimensions of relational capital (trust, transparency and interaction) are identified from disciplines such as the relational view and interaction-management studies (Cullen et al., 2000; Dyer & Singh, 1998; Kandemir, Ghauri, & Cavusgil, 2002; Roath, Miller, & Cavusgil, 2002; Wathne & Heide, 2004). From the resource-based view, the firm will sustain competitive advantages by acquiring rare resources and accumulating difficult-to-imitate capabilities (Beamish & Kachra, 2004; Conner & Prahalad, 1996; Grant, 1991; Makadok, 2001). We also adopt the perspective of organizational learning to propose that the firm should not only focus on acquiring new knowledge from its partners but also disseminating such knowledge within the organization (Crossan & Berdrow, 2003; Gold et al., 2001; Nevis et al., 1995; Walter et al., 2007). Such a model pulls together the main streams of the ISA theories and deals with the intricate cross-links between the various constructs involved.

As most of the prior literature on alliance learning is based on research into joint ventures, scholars assert that equity-based arrangements can promote more interfirm knowledge transfer (Buchel & Killing, 2002; Inkpen, 2000; Kogut, 1988; Mowery et al., 1996). However, this research provides the novel insight that alliance learning is effective within the context of contractual collaborative partnerships between buyers and suppliers. Although the alliance structures and similarities between the alliance partners may facilitate knowledge acquisition, the empirical results of this research suggest that learning opportunities are not limited by the mode or symmetry of the partnerships.

Research on international strategic alliances has primarily focused on alliances between partners in developed countries. This adoption of the perspective of resource-rich MNC partners, while excluding the views of their resource-rich NIC partners, has produced conflicting results (Ernst, 2000; Tsang et al., 2004). This research analyzes what permits resource-rich firms to compete in the highly competitive IT industry from the perspective of Taiwanese IT suppliers. The results show how the local firms compensate for their size-related disadvantages through international linkages with their MNC partners.

The extant literature that relates organizational learning to alliance outcomes is relatively inadequate. An early stream of research on the outcome of alliances identified factors that influence alliance stability and duration (Dussauge, Bernard, & Will, 2000). Another stream of research has focused on alliance outcomes as the result of the collaboration process and partner linkage from a more evolutionary view (Doz, 1996; Dussauge et al., 2000). This research complements prior studies by systematically examining the influences of external knowledge acquisition and internal knowledge dissemination on relationship satisfaction.

6.1. Managerial relevance

Based on the research finding that the Taiwanese IT suppliers do view cross-border alliances as a vehicle for acquiring knowledge, it is important to select the ideal partner to maximize learning benefit. Dussauge et al. (2000), Dussauge, Bernard, and Will (2004) suggest that the link alliances, the interfirm partnerships to which the partners contribute different capabilities, lead to higher level of learning than scale alliances, the interfirm partnerships to which the partners contribute similar capabilities. A prospective partner should be able to provide additional capabilities to satisfy task-related requirements and also be open to share information or knowledge. The collaborations with top brand-name IT companies are viewed as essential platforms from which Taiwanese local suppliers can build new capabilities beyond their existing strengths. These new capabilities can be applied to serve other new product-markets to enrich the suppliers’ assets/skills base. If the supplier can establish a hard-earned partnership with a global competitive buyer, the reputation gained usually enables the firm to gain more alliance opportunities with other global firms.

The analysis of our model developed in this study clearly indicated the influence of knowledge on alliance outcomes and also found the support for the proposition that relational capital has a significant impact on knowledge acquisition from the partnership. Our findings demonstrate that relational capital plays the important role of alliance learning, and therefore, of knowledge-based competitive advantages. As far as managerial practice is concerned, relational capital should be viewed as a resource that can and should be actively managed and harnessed. In order to enhance learning benefit from the collaborations, firms should actively build relational capital in both their internal and external relationships.

Managers can shape learning into favorable contexts for future strategy. In an intrafirm learning, hierarchical intervention or organizational units’ initiatives can easily establish connectivity (Walter et al., 2007). Many types of communication, such as people exchanging ideas and ongoing formal and informal talk are collective investment strategies for the institutional creation and maintenance of social relationships (Nahapiet & Ghoshal, 1998). In an interfirm learning, connectivity is not as easily established because relationships have to cross organizational boundaries (Inkpen & Tsang, 2005). In spite of these challenges, inter- and intrafirm learning can serve as valuable resources. Managers can purposefully design and develop overtime to achieve their objectives.

6.2. Limitations and suggestions for future research

This research has some limitations. The findings of this study are only valid within the narrowly defined scope of the context of ISA partnerships between suppliers and buyers in the electronics and IT industry. Even within this context, the generalizability of the selected sample for the entire population of alliances is not fully guaranteed. Another potential problem is caused by the one-sided survey that depends on the suppliers’ perceptions and judgments about their alliance partners. The unit of analysis in this study was the cross-border alliances between Taiwanese suppliers and MNC buyers. While data from both sides would have been more desirable, it became clear that this was not a feasible option due to the concerns of confidentiality (Schacht, 1999) and the time and expense restrictions (Mohr & Spekman, 1994). Future research may thus benefit by adding balancing views from the perspective of each company in dyadic relationships.

One obvious path for extending this research is to test the findings and contributions in another industry context. One might wish to differentiate the findings between other high-technology industries, such as biopharmaceuticals or other commodity-like environments. The theorizing presented in this article focus on inter- and intrafirm learning and their influence on alliance outcomes. Examining configurations of relational capital at different levels of analysis, such as the individual or industry level, and contrasting the findings across levels would provide interesting insights. On the other hand, this study would benefit from further investigation into other alliance modes that go beyond merely contractual arrangements. This would greatly complement the work done by some scholars, such as Dhanaraj et al. (2004), Inkpen (2000), and Lyles and Salk (1996).
We also encourage other scholars to include other learning constructs in the model to investigate the dynamics of learning among alliance partners. For example, learning intent has been shown to be an important factor in acquiring and internalizing knowledge from collaborating partners that in turn might impact the behavior of the alliance partners (Tsang, 2002).

It is important to understand the evolutionary role of knowledge in order to advance the theoretical understanding of business strategy and alliance outcomes (Dussauge et al., 2000). In addition, some researchers have noted that relational capital is not static and needs to be developed in a gradual manner (Das & Teng, 1998). This study is cross-sectional, since all of the variables included in this research were measured at the same time. A longitudinal research design is deemed a more powerful tool for further exploring the dynamic nature of alliance learning process and in response to environmental changes. However, some alliances may be reorganized, taken over or terminated in a short period. Thus, a longitudinal study may be difficult to conduct due to the relatively short duration of the collaborations.

As firms join forces to achieve mutually beneficial goals through alliances, the relationship between the alliance partners plays an important role in knowledge acquisition (Inkpen & Tsang, 2005). Inter-partner interactions allow mutual information to be shared and joint actions to be specified. The issue of ‘interface-design’ in alliances seems promising for future work (Foss & Pedersen, 2004). It may be useful to consider the multiple learning interfaces between and within organizations. It would be very useful to acquire a better understanding of what the impact of interface-design may have on knowledge flows in the alliance and how interface-design co-evolves with the alliance.

References


Foss, K. & Foss, N. J. (2005). Resources and transaction costs: How property rights shape the market for knowledge flows in the alliance; and how interface-design co-evolves with the alliance.


