Leveraging tacit knowledge in alliances: The importance of using relational capabilities to build and leverage relational capital

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Abstract

Effectively managing existing tacit knowledge stocks and transferring knowledge between partners contributes to firm capabilities that allow them to differentiate their goods and services from those of their competitors. Because it also helps them to provide greater value to customers, it contributes to the development of a competitive advantage. In highly competitive industries, firms need to focus on proactively managing their knowledge resources to ensure survival. However, the knowledge management process is at times complex especially because of the difficulty involved in conveying tacit knowledge. Due to its latent potential for enabling firms to achieve potential competitive advantage, how firms utilize and transfer stocks of tacit knowledge requires enhanced understanding. In specific, we explain how firms use relational capabilities to build relational capital with partners. In turn, relational capital facilitates the transfer of tacit knowledge between collaborating partners. We develop several propositions regarding the factors likely to influence the transfer of a firm’s tacit knowledge resources in strategic alliances. The importance of social capital’s relational dimension, relational capital, in this process is highlighted.

Keywords: Social and relational capital; Tacit knowledge; Tesco and Safeway; NedCar; Viewpointe; Social and relational capital

1. Introduction

A critical challenge for most firms regardless of their age, size or industry is how to achieve and sustain competitive advantage. Regardless of economic conditions, competitive dynamics or
the current state of technology, firms can meet this challenge by managing their knowledge repertoires; to do so effectively requires that they focus on building and diffusing knowledge. Knowledge transfers within the firm and between partner firms have become increasingly important with increasing globalization and competition based on knowledge. Although knowledge transfer within the firm and between firms is now one of the most basic functions performed by all companies, successful transfer remains a significant challenge about which we require a greater understanding. Social capital can enhance firms’ knowledge transfer processes thereby increasing the success of such transfers. In particular, social capital-based relational capabilities complement the capability to effectively transfer tacit knowledge stocks. Such a combination of capabilities has noteworthy potential for contributing to a competitive advantage. Therefore, we emphasize the importance of relational capital for transferring tacit knowledge in strategic alliances.

The purpose of this work is two-fold. First, it focuses on tacit knowledge as a potential advantage-creating resource in increasingly competitive knowledge-based environments. Second, it responds to Kostova and Roth’s (2003) call for greater clarity regarding social capital’s potential to influence firm-level strategic actions and outcomes. Managing knowledge stocks are a foremost task facing firms in a knowledge-driven economy. Given the potential of tacit knowledge to aid in the creation of firm-level competitive advantage, we examine the link between relational capabilities (relational capital) and tacit knowledge transfer. The transfer of explicit knowledge is obviously important for knowledge-based firms, but even greater latent value is often found in managing tacit knowledge resources.

Firms that recognize the challenges to transferring tacit knowledge must take steps to alleviate the hurdles to effective transfer. By doing so, they can develop expertise in knowledge transfer, develop a source of competitive advantage and ultimately improve the organization’s performance. Whereas existing research suggests that knowledge transfer is facilitated by repeated interaction among partnering firms (Lane and Lubatkin, 1998; Zahra et al., 2000), we explore the need for firms to recognize the importance of inter-personal dynamics involved in the transfer of tacit knowledge. Building relational capital involves development of trust, information sharing and joint problem solving (Uzzi, 1997). The inherently complex process of transferring tacit knowledge requires greater attention to the relational dimension of social capital than does transferring other forms of knowledge. In particular, tacit knowledge transfer requires greater trust between partners than does explicit knowledge transfer. In contexts where partner firms face the additional challenge of cultural dissimilarity, and partners lack a common understanding of non-explicit information, an even greater emphasis on the development of trust is necessary in order to promote information sharing and joint problem solving (Hitt et al., 2006).

In the following section we briefly highlight the importance of leveraging tacit knowledge stocks in the development of competitive advantage within the context of strategic alliances. This is followed by a concise review of existing research distinguishing explicit and tacit knowledge. We subsequently relate the discussion of tacit knowledge to inter-firm collaborations, an increasingly common strategy among firms. We also provide a detailed discussion of social capital and its relational dimension, relational capital, and their potential value to enhance the ability of firms to effectively utilize tacit knowledge stocks within firm-to-firm partnerships. We augment our arguments with several cases that illustrate the challenges of effectively utilizing tacit knowledge within partnerships and potential approaches for overcoming these challenges.
2. Review of prior research and theory development

2.1. Tacit knowledge and collaboration

Often sharing knowledge between subsidiaries or partners is critical to firm performance because units and/or firms rarely have all of the knowledge they need to build and sustain a competitive advantage. For example, when a multinational firm transfers a particular technology across subsidiaries, such transfers should include tacit knowledge about how well (or poorly) the technology works with other installed technologies. Explicit knowledge of the technology is inadequate for understanding and using the technology. The tacit knowledge that has been accumulated by the subsidiaries in which the technology has been used needs to facilitate implementation of the technology in other subsidiaries. Therefore, intra-firm social capital can be important to transferring this tacit knowledge to other subsidiaries.

Further, inter-firm and inter-unit collaboration is frequently required to assure survival and growth for businesses which do not hold all of the resources required to be competitive in their market(s). Firms which gain access to idiosyncratic resources via such collaborative arrangements may be able to achieve a competitive advantage, particularly when the resources are tacit knowledge-based (Dussage et al., 2000). Knowledge transfer between partners is often the primary goal of inter-firm cooperative arrangements including strategic alliances. However, knowledge can be relatively difficult to transfer between firms (Kogut and Zander, 1993, 1996). Successful knowledge transfer is directly influenced by the ease with which partners can access and interpret each others’ knowledge (Hamel et al., 1989). As one example of potential knowledge asymmetries firms may face in an alliance, one of the partners may have significantly more tacit knowledge regarding particular processes or industry-level relationships.

2.2. Between-firm collaboration

Pharmaceutical firms frequently rely on partnerships with biotechnology firms as a primary source for scientific discoveries crucial for the development of new drugs. Because of their lack of focus on the basic science research, it is often difficult for managers at pharmaceutical firms to gain a tacit understanding of this type of research. Conversely, the exclusive focus on research by biotech firms enables their managers to have a deeper tacit understanding of specific types of basic science research. The difficulty in effectively transferring the knowledge regarding scientific discoveries made by biotech firms to pharmaceutical firms is due in large part to the contrast in scientific paradigms emphasized by each type of firm (McNamara et al., 2000). Whereas biotechnology firms build knowledge based upon immunology and molecular biology, the knowledge base for most pharmaceutical companies is rooted in organic chemistry (Powell et al., 1996).

According to PricewaterhouseCoopers, the majority of strategic alliances involving pharmaceutical and biotechnology companies fail to meet expectations. In their Global Pharmaceutical Company Partnering Capabilities Survey the consulting firm found that, on average, 41% of the alliances have met or exceeded expectations while 59% have not fully meet expectations. Furthermore, 90% of the consortia have failed to meet expectations (Hess and Evangelista, 2003). While alliances have become an increasingly important strategy for many industries including pharmaceuticals, the data cited above suggests that alliance partners are likely to be disappointed (Ireland et al., 2002). Respondents to the PWC survey reported that the top five reasons alliances in this sector have failed to meet their expectations are: results were
slow or failed to materialize, differences in partner cultures, changes in senior management, weak commitment to the alliance, and poor communication among partners. These reasons are cited more frequently than such factors as failure of technology/clinical trials, selecting the wrong partner and changing priorities/environmental changes.

The potential benefits associated with a successful alliance between biotech and pharmaceutical firms are substantial. Drugs produced by pharma-biotech alliances are 30% more likely to succeed in winning FDA approval than those developed by a single company. In addition, nearly a third of new pharmaceutical products are now developed through alliances, compared to only 7% a decade ago (Hess and Evangelista, 2003). In addition, the largest pharma-biotech deals have steadily increased in size in recent years, from SmithKline Beecham’s $125 million deal with Human Genome Sciences in 1993 to the $1.3 billion collaboration between Bayer and CuraGen in 2001 (Hess and Evangelista, 2003).

The knowledge transfer challenge faced by Proteome Systems, an Australian biotech firm, is typical of the challenge facing many companies in the biotechnology industry. Proteome is involved with numerous partnerships/alliances aimed at leveraging its highly specialized knowledge. Approximately half of the company’s employees have PhDs and the firm’s skills are restricted to research. Proteome recognizes that while it possesses highly specific knowledge about proteins, it lacks the skills needed to commercialize this specific knowledge. The company has entered into several collaborative agreements in order to use its scientific knowledge to develop products valuable in the market (Mathews and del Carmen, 2002).

The preceding example is indicative of the approach used by many firms in the pursuit of acquiring and implementing knowledge from outside the organization’s boundaries. Especially challenging are knowledge transfers across cultures. Therefore, the impact of inter-firm social capital on knowledge transfer can be especially important in these cases.

The major challenges to transferring tacit knowledge are listed in Table 1. In addition, methods for overcoming these challenges to effective knowledge transfer are also listed in the table. We first used the partnership between Tesco and Safeway in the online grocery business to emphasize a case of successful tacit-knowledge transfer creating a competitive advantage. Later, the nature of tacit knowledge and the learn-by-direct-experience process by which it is transferred are illustrated in the following discussion of movie interns. Several additional cases also have been utilized in this paper to highlight the usefulness of the other methods for overcoming knowledge transfer challenges. The Viewpointe case demonstrates the need for firms to recognize the necessity of considerable interpersonal contact in order to successfully leverage

Table 1: Challenges and methods of transferring tacit knowledge

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<th>Transfer challenges</th>
<th>Methods for overcoming</th>
<th>Illustrative case</th>
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<tr>
<td>Difficult to articulate</td>
<td>Learn-by-observing and learn-by-doing for individuals directly involved in utilizing the knowledge</td>
<td>Movie interns</td>
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<td>Difficult to diffuse</td>
<td>In-person contact between key executives and employees of partner firms</td>
<td>Viewpointe Archive</td>
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<td>Difficult to integrate with existing knowledge</td>
<td>Develop common understanding of how to utilize knowledge</td>
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<td>Inter-firm differences</td>
<td>Firm-level social capital; intentionally work to develop trust between partners</td>
<td>Viewpointe; NedCar</td>
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<td>Cultural differences</td>
<td>Focus on frequent communication, on-site meetings and partner visits</td>
<td>NedCar</td>
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nuanced and difficult-to-articulate tacit knowledge between partners, suppliers and customers. The NedCar example illuminates the additional challenge faced with knowledge transfer when partners are from significantly different cultures. The development of trust and leveraging of the resulting relational capital resources are particularly important in both the Viewpointe and the NedCar examples.

A traditional view of absorptive capacity implicitly assumes that all relevant knowledge to be transferred is explicit (Szulanski, 1996; Tsai, 2001). However, the absorptive capacity of firms includes a social dimension with regard to tacit knowledge. Social capital built on trusting relationships can enable firms to intentionally develop a capability to transfer such tacit knowledge, and thus, provide a source of advantage relative to competitors. We next illustrate how inter-personal dynamics impact the extent to which tacit knowledge is successfully transferred. Following a brief discussion of the role of individual collaboration, we then elaborate on firm-to-firm partnerships. Then a couple of informative short case studies are used to highlight challenges and successes in effective inter-firm transfer of tacit knowledge.

2.3. Individual collaboration

The transfer of tacit knowledge is crucial for individual and organizational success in the movie industry. In a study examining the role of social networks in movie production, DeFillippi and Arthur (1998) highlighted the importance of social ties in this knowledge-intensive industry. They found that relationships were essential to the overall success of a movie project. The crew and cast members described their industry as a small, socially interconnected network. Although most movies are made with project-based employees, artistic and production staffs often have substantial experience working with other team members. The tacit knowledge they gain from their common experiences enables them to collaborate more effectively than when there are many new team members. The movie’s producer noted that the director had an “ability to choose the right shot” which came from experience and the support of the lighting and camera staff to make the shot work (DeFillippi and Arthur, 1998, p. 133). The results of their study highlight the importance of relational capital for productivity.

Although film schools across the United States actively train students for careers in the movies, perhaps the most valuable source of knowledge for aspiring actors, writers, cinematographers, art directors, and others in the business is the experience they gain from low-level internships. According to DeFillippi and Arthur (1998), learning-by-observing is common in movie projects. As a result, interns often learn the most from careful observations during the filming of a movie. Senior project team members provide opportunities to demonstrate specific craft routines and suggestions during idle periods in filming. Idle periods for a given crew also provide an opportunity to observe how various tasks are performed by members in specialized crews.

In addition, during the actual filming of the movie, interns can closely observe the performance of more senior crew and cast members. This provides them with access to uncodified tacit knowledge in their field. Thus, the interns may acquire valuable tacit knowledge by observing others utilizing their tacit knowledge in the execution of their tasks and responsibilities. The benefits of acquiring this tacit understanding of the movie-making process lead to relatively fierce competition for even minor jobs on movie sets (DeFillippi and Arthur, 1998). Therefore, tacit knowledge can be acquired via observation, as well as by learning-by-doing. Its transfer is also facilitated by intensive interpersonal contact.
3. Knowledge transfer and competitive advantage

The resource-based view (RBV) is helpful in understanding the importance of effectively managing the knowledge transfer process. RBV logic suggests that differences in performance can be linked to the resources held by firms. Firms possessing capabilities, processes and/or knowledge that help them differentiate the value that they provide their customers from that provided by their competitors have the potential to develop a competitive advantage. A competitive advantage can lead to superior performance for the firm (Sirmon et al., 2007).

Barney (1991) and Barney and Arikan (2001) defined resources as tangible and intangible assets a firm uses to choose and implement its strategies. Resources that are rare (i.e., not widely held) and valuable (i.e., able to enhance the firm’s efficiency or effectiveness) can yield a competitive advantage. When resources are also simultaneously imperfectly imitable (i.e., they resist easy duplication by competitors) and nonsubstitutable or nontransferable (i.e., they cannot be purchased in factor markets), can lead to a sustainable competitive advantage (Barney, 1991; Dierickx and Cool, 1989).

From a strategic perspective, the RBV suggests that competitive advantages are products of the resources the firm develops or acquires to implement its product market strategy. The RBV suggests that, “competition among product market positions held by firms can also be understood as competition among resource positions held by firms” (Barney and Arikan, 2001, p. 131). Thus, competitive advantage lies upstream of product markets and is grounded in the firm’s idiosyncratic and difficult-to-imitate resources (Teece et al., 1997). The firm’s ability to capitalize on its knowledge transfer capabilities is precisely such an idiosyncratic and difficult to imitate resource.

The abilities to effectively leverage knowledge transfer capabilities and to leverage knowledge obtained in the transfer have been argued to be potential sources of firm-level competitive advantage (Grant, 1996; Kogut and Zander, 1993, 1996; Spender and Grant, 1996). With increasing competitive pressures on firms, this potential becomes more important to firms in all markets in which they compete. Knowledge resources can be particularly valuable to firms because of the difficulty that competitors have in assessing and understanding tacit knowledge inside a firm (Reed and DeFillippi, 1990; Grant, 1996; Berman et al., 2002; Martin and Salomon, 2003). Thus, firms capable of transferring tacit knowledge between it and partner firms and between internal business units enrich their knowledge stocks and absorptive capacity. These firms are more likely to integrate complementary resources and achieve a competitive advantage (Harrison et al., 2001; Ireland et al., 2002). However, firms focused largely on financial performance and a short-term focus are likely to place less emphasis on transferring tacit knowledge; they maximize short-term firm performance at the expense of long-term value creation. Our conceptual model is presented in Fig. 1. This model highlights the influence of knowledge tacitness, social capital, cultural differences and trust on the potential for creating firm-level competitive advantage.

While tacit knowledge is important but difficult to diffuse in organizations (Polanyi, 1966; Reed and DeFillippi, 1990), explicit knowledge is fairly easy to communicate and convey to others. This is because explicit knowledge can be codified into instructions, explanations and procedures thereby producing routines. Examples of explicit knowledge include standard routines within a firm, processes for servicing a product, the amount of inventory necessary, and supplier contact information. Alternatively, tacit knowledge involves difficult-to-articulate insights, nuanced comprehension, and wisdom derived from experience (Polanyi, 1966). Tacit knowledge involves insights that are not amenable to codification and are influenced by personal
experiences, values and beliefs. Examples include such things as the customization of products for a specific customer, insights regarding competitors’ aggressiveness, and the negotiation strategy that is most likely to succeed with specific suppliers. Tacit knowledge can be thought of as analogous to a baseball manager’s “instincts” regarding when to bring in a relief pitcher or when to insert a new base runner in an attempt to steal a base.

In a world in which competitors each have ready access to explicit knowledge as well as its potential uses, tacit knowledge has become progressively more valuable to firms that can develop the capability to effectively transfer, acquire and integrate this idiosyncratic resource (Zahra et al., 2000). The tacit knowledge residing inside a firm is difficult to identify and interpret by outsiders. As such, tacit knowledge is a more sustainable source of differentiation than is explicit knowledge which can easily be codified and replicated and/or emulated. Forms of explicit knowledge held by a firm, including manufacturing knowledge, process knowledge, design knowledge, and technical knowledge increase in value when they can be effectively leveraged via the tacit knowledge held inside the firm. Although explicit knowledge is not a basis on which competitive advantage is sustained, tacit knowledge holds this potential. Moreover, firms that can effectively leverage their existing knowledge stocks and transfer tacit knowledge to strategic alliance partners increase the likelihood of the partnership developing and maintaining a competitive advantage.

**Proposition 1.** The tacitness of a firm’s knowledge stocks is positively related to the potential for creating a competitive advantage within its inter-firm partnerships.

### 3.1. Tesco and Safeway

The relationship between Safeway and its British partner Tesco serves as an exemplar of the benefits that can be realized from the capability to transfer tacit knowledge among partners. The
success of the collaborative agreement between U.K.-based Tesco and U.S.-based Safeway in the grocery industry provides insights relevant across industry settings. In an industry which has seen numerous failures to deliver an online grocery shopping experience embraced by customers, the Tesco/Safeway partnership stands out as a rare success story. A significant portion of their success is related to the ability of the two partner firms to leverage their respective tacit knowledge via the partnership.

Tesco PLC and Safeway agreed in 2001 to a partnership in which Tesco received a 35% stake in Safeway’s online grocery operations in return for helping to retool Safeway’s GroceryWorks.com, which lagged behind competitors. Tesco is one of the three largest retailers in the world. Prior to entering the U.S. market Tesco.com had been one of Europe’s most successful online businesses. Many analysts believed that Tesco.com would have a difficult time replicating its European success in the U.S. market. Differences in consumer preferences and population density were thought to be insurmountable obstacles to the successful transfer of Tesco’s online expertise to help Safeway build a profitable online grocery business. In fact, consultants from McKinsey, Andersen, and PricewaterhouseCoopers insisted that Tesco.com could not successfully make such a cross-border transfer (Mukund, 2003). However, the country-level cultural similarity between the partners (Hofstede, 2001) appears to have aided in the transfer of knowledge between collaborating firms.

The partnership with Tesco helped Safeway to expedite its learning curve substantially for the online grocery business. Tesco has been highly successful in online grocery shopping and it used that expertise to help Safeway develop the needed capabilities much faster thereby making its online business a viable part of the overall company. This change enabled Safeway to become the top performer among major U.S. grocery chains in online shopping. The partnership between Tesco and Safeway has now evolved into a leading player in the competition to capture a portion of the nation’s $570 billion grocery market. It began offering its online grocery services to customers in Seattle in July 2003, making that city the company’s eighth major online market. Safeway now serves more metropolitan areas than Kroger Co., the nation’s largest traditional chain, which has only recently entered into the online grocery business. Estimates for Safeway.com suggest that it will achieve $1 billion in annual sales in its first 5 years of operation (East Bay Business Times, 2003). Further, this success is in stark contrast to the fortunes of Webvan, one of the first major online grocery retailers in the U.S. Webvan used more than 1 billion dollars in financing in a 2-year period, before ultimately being liquidated. According to Gartner analyst, Whit Andrews, many of Webvan’s problems stemmed from a lack of an intimate understanding of the grocery business (CNET News, 2006). Webvan followed the common thinking of the pre-bubble-burst dot-com era which led companies to seek rapid development of technical infrastructure (based upon readily transferable explicit knowledge); the firm did not possess the necessary tacit understanding of serving grocery customers held by the Tesco/Safeway partnership. Tesco and Safeway each brought their own deep-rooted knowledge of the grocery business to their partnership. They also spent considerable amounts of time and energy to transfer Tesco’s accumulated knowledge regarding online grocery service in Europe to the U.S.-based partnership. Webvan’s approach was focused on totally revamping the shopping experience and supporting logistical systems. In contrast, the Tesco/Safeway partnership is built upon the notion the existing shopping process could be significantly improved, rather than scrapped entirely. The Tesco/Safeway partnership’s tacit understanding of the shopping process provided insight on the portions of the process that could be improved versus those which should be maintained. Thus, tacit knowledge held by Tesco enabled it to use technology so that the process people used could be more efficient rather than trying to create an entirely new shopping process.
4. Social and relational capital

The concept of social capital is of particular relevance to acquiring knowledge because of the inter-personal dynamics involved in tacit knowledge transfer. The initial focus of social capital research was often on the effect of family relations, community ties and resources for the development of children and economic opportunities for minorities (Loury, 1987; Portes and Sensenbrenner, 1993). Burt (1992) suggested that social capital research often falls into two broad categories: (a) “whom you know,” and (b) “how you are connected” to others. Research in the former category often views a network as one actor’s access to other actors with specific resources. Research in the latter category emphasizes the structure of social networks as a key factor in the value of connections within the network (Ahuja, 2000; Burt, 1992, 1997). In a refinement of this view, Kostova and Roth (2003) argue that social capital is “the potential value arising from certain psychological states, perceptions, and behavioral expectations that social actors form as a result of both their being part of social structures and the nature of their relationships in these structures” (Kostova and Roth, 2003, p. 301).

Firm social capital can be thought of as a combination of firm’s relationships and the resources available to the firm as a result of its relationships with other companies. The development and maintenance of social capital require mutual commitment and cooperation from the individuals/groups involved (Coleman, 1988; Portes, 1998; Adler and Kwon, 2002). Developing social capital often requires intentional effort and is accumulated over time and with experience (Dierickx and Cool, 1989). Research has shown that social capital plays an important role in firm-level outcomes (Baker, 1990; Palmer and Barber, 2001; Hitt et al., 2002). Although firm-level social capital is an organizational resource, it is built through the relational networks of individuals. For example, social capital between firms develops as representatives of each partner firm interact with one another (Ireland et al., 2002).

4.1. Structural versus relational dimensions

Social capital has both a relational and a structural dimension (Kostova and Roth, 2003; Nahapiet and Ghoshal, 1998). This view is conceptually closely related to Burt’s (1992) assertion that social capital involves elements of ‘who you know’, as well as how one actor is connected to other actors in a network. The existence of firm-level social capital involves relationships between firms. Over time the inter-firm relationships become institutionalized as more members of the firms become involved in the exchange relationship and as the partner firms develop trust in each other, which results from repeated interactions over time (Gulati, 1995; Kostova and Roth, 2003).

For the present argument both the structural and the relational dimensions of social capital are important. The structural dimension of firm-level social capital is the formal inter-firm connections which exists independent of the individuals involved in executing a transaction. While these connections must exist in order for a firm to successfully transfer tacit knowledge to

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its partner(s), they are a necessary but insufficient condition. Whenever firms are engaged in transferring explicit knowledge, the structural connection plays an important role in facilitating the transfer. It is necessary and often is sufficient to assure that the transfer will occur. However, we argue that the realization of the potential from a partnership involving tacit knowledge depends on the nuances of the relational dimension of firm-level social capital. In other words, it depends on the relational capital. Specifically, we posit that taking advantage of the opportunities created by network connections is influenced by the level of trust developed between potential knowledge exchange partners, the amount of information transfer between them and the extent to which they engage in joint problem solving (Uzzi, 1997). Whereas the inter-firm structural connection must exist to provide the potential for knowledge transfer, relational capital is often critical for the transfer of tacit knowledge between partners. This argument is consistent with Adler and Kwon’s (2002) and Podolny and Baron’s (1997) suggestion that network connections do not yield significant benefits independent of the content of such ties.

The benefits of social capital within a network structure have been demonstrated in numerous organizational settings. For example, Gulati (1995) investigated the role of social networks in the facilitation of new alliance formation and subsequent inter-firm relationships. Other examples of social capital benefits include: knowledge transfer, resource exchange and the higher levels of innovation (often the outcome of knowledge or resource acquisition) within a firm (Tsai, 2001; Tsai and Ghoshal, 1998). In addition, authors such as McEvily et al. (2003), Ahuja (2000), and Podolny and Baron (1997) have illustrated the importance of the structural dimension of social capital (i.e., network connections) through its influence on such firm outcomes as knowledge transfer, including both intra-firm and inter-firm collaborations.

While we emphasize relational capital, we implicitly acknowledge the importance of the structural dimension. A given firm must have network connections to its partners to realize the potential of exchanging tacit knowledge. However, social factors (primarily trust) are crucial in transferring tacit knowledge. Effective exchange relationships with partner firms are necessary to capture the full knowledge transfer potential. Fig. 2 illustrates the relative importance of each dimension of social capital in different contexts.

Relational capital often is based on the inter-personal dynamics of partner firms’ representatives. Although two firms or business units may agree to work together to achieve a common purpose, achieving the desired outcome is not guaranteed. The implementation of the agreement is strongly influenced by the interaction between the individuals who represent their respective firms. Although actors may occupy equivalent positions in similar network configurations, they can engage in significantly different actions (Nahapiet and Ghoshal, 1998). Furthermore, network members with the same network connections can also use them in different ways (Emirbayer and Goodwin, 1994). While they may exist in the same network, some actors likely have better relational capabilities than others. Moreover, social forces can at times blunt the economic rationality employed in the development of exchange relationships (Larson, 1992). While economic considerations are obviously important in the formation and development of exchange relationships, social factors are important in exchange relationship processes. And, interactions are necessary to transfer knowledge (Bouty, 2000; Inkpen and Dinur, 1998; Lane and Lubatkin, 1998). Therefore, firms desiring to acquire or transfer knowledge (especially tacit knowledge) must emphasize the development of positive inter-personal dynamics between their representatives and their partners’ representatives.

It is unlikely for all firms to have equal relational capabilities. While they may be motivated to establish intra-firm and inter-firm relationships, to beat the competition (i.e. economic rationale), they must develop relational capabilities in order to realize the benefits of these relationships.
Relational capabilities are the basis for development of relational capital. As previously noted, Larson (1992) argues that while economic rationales for knowledge exchange are a primary base for the formation of new network relationships, the success of the exchange is strongly influenced by social factors. Thus, economic transactions are embedded in social contexts (Granovetter, 1973, 1982; Gulati, 1995). Because most firms must build their knowledge stocks from internal and external sources, they must build effective relational capabilities to acquire external knowledge and to diffuse internal knowledge across the organization (Lane et al., 2006). Relational capabilities are especially critical to enriching a firm’s stock of tacit knowledge. Therefore, firms with stronger relational capabilities are likely to have larger and higher quality knowledge stocks, particularly tacit knowledge.

**Proposition 2.** Firms with well-developed relational capabilities are more likely to be able to effectively leverage tacit knowledge stocks and thereby create a competitive advantage within its inter-firm partnerships than firms with under-developed relational capabilities.

4.2. **Viewpointe Archive**

The case of Viewpointe Archive illustrates the importance of the relational capabilities and relational capital in the knowledge transfer process. As the largest provider of image archive services to the U.S. banking industry, the firm has extensive relationships with several large banks. Moreover, the firm relies on the interpersonal relationships of its key executives to facilitate the transfer of idiosyncratic tacit knowledge from its partner firms. These executives have built trusting relationships with executives in large banking organizations. This capability is
central to the firm’s ability to identify service opportunities as well as to rapidly respond to important strategic and operational issues.

Viewpointe Archive provides check and document image archive and retrieval services for leading financial institutions. Viewpointe was founded as a joint venture of Bank of America, J.P. Morgan Chase and IBM. SunTrust and U.S. Bancorp became investors shortly after the initial funding of the company. Wells Fargo also joined this collaborative venture after the firm had been operating for more than 3 years. The goal in the creation of Viewpointe was to stimulate industry adoption of image technology, check truncation, and image exchange. The check volume from Viewpointe’s owners and customers represents roughly 50% of the checks written in the U.S. annually. The company’s archive is comprised of more than 60 billion items with 1 billion new items added monthly.

As a knowledge-intensive organization, effective knowledge transfer is essential to Viewpointe’s ability to satisfy the needs of its owners and customers. All of the company’s employees have several years’ experience within the banking industry and/or having worked for banking-focused technology companies. This industry experience has enabled the firms’ employees to build an extensive network of industry relationships. In turn, the strength of its relationships has been instrumental in Viewpointe’s ability to effectively transfer knowledge between its partners and from its partners and its customers. As found in recent research, relational capital with customers contributes positively to firm performance (Hitt et al., 2006). To continue to build this capital, the company relies on its extensive relationships within the banking industry to develop insights into its customers’ unique requirements and preferences. This tacit knowledge cannot be effectively transferred without significant relational capital in place. Furthermore, Viewpointe uses the relational capital it has developed with banking organizations in the industry to leverage its own tacit knowledge in servicing its customers and identifying new business opportunities.

As a result, a relationship-driven process is used by Viewpointe to transfer tacit knowledge between the firm, its partners, and its customers. In this process, a significant amount of time is spent in direct interpersonal interactions with partners and customers, which continues to build its relational capital. The company’s executives view the relationship-intensive nature of this knowledge transfer process as necessary. According to Viewpointe senior executives, the company would not have the capabilities to understand and satisfy its customers’ needs without carefully cultivating and managing its external relationships. For example, Viewpointe utilizes a “Users Group” to jointly establish common standard services such as sharing and exchanging archive items among its partners (sharing information). The company makes extensive use of relationship managers, employees whose specific purpose is to understand the needs of each bank customer.

Moreover, the company’s personnel have significant prior experience in the banking industry, with most having previously worked for one or more of the banks that use Viewpointe’s services. The Viewpointe Users Group conducts frequent meetings between Viewpointe executives, key employees, and partner banks’ representatives. Although the overarching goal of these meetings is to generate explicit technical requirements for a common technological platform for each new service offered by Viewpointe, achieving this goal is made possible by the company’s ability to incorporate critical tacit knowledge from partners and customers. These meetings also include joint problem-solving processes when needed. Viewpointe’s deep understanding of the internal priorities, idiosyncratic technical systems, operating procedures and processes of each partner/customer enables the company to effectively implement a common technology platform for a group of customers with widely divergent capabilities, especially when developed in unison with
the customer. As a result, the company’s tacit understanding of each of the bank’s needs enhances its ability to rapidly and effectively address explicit technical requirements.

4.3. Trust among partners

Trust is a fundamental dimension of relational capital (Inkpen and Tsang, 2005). Because it is an idiosyncratic, difficult-to-imitate resource, relational capital can be especially beneficial to organizations that need to acquire external tacit knowledge or transfer current tacit knowledge across internal units. Ireland et al. (2002) assert that effective knowledge transfer does not occur automatically; it requires deliberate management and attention to the transfer process. Transferring tacit knowledge is difficult due to its social complexity and casual ambiguity. Therefore, when firms attempt to transfer tacit knowledge, trust often plays a vital role in the transfer process. Effective social interactions between knowledge transfer partners (internal or external) contributes to the development of trust thus facilitating the knowledge transfer process.

Due to its inherently idiosyncratic nature, transfer of tacit knowledge is likely to be most effective when the parties involved trust one another. In fact, other authors have argued that trust is a prerequisite for sharing tacit knowledge (e.g., Makino and Delios, 1996; Inkpen and Beamish, 1997). Trust is a willingness to be vulnerable and potentially exposed to opportunistic behavior on behalf of the exchange partner because of a positive expectation about that partner’s behavior (Hitt et al., 2000; Kale et al., 2000). When trust exists between firms, the partners do not fear the other partner’s actions; they assume positive intent in the partner’s actions (McAlister, 1995). Trust is learned and is reinforced through repeated interactions among partners (Powell, 1996). Similarly, Gulati (1995) argued that familiarity (via repeated interactions) builds trust between organizations. Trust between partners involved in a collaborative agreement is established based on the prior behavior of the partners (Inkpen and Tsang, 2005). Therefore, regular interaction between partners is one of the essential characteristics of trust-based relationships.

Organizations may encounter significant difficulty in developing trust among knowledge exchange partners. In international business contexts, developing trust is more complicated than in domestic relationships. This is because each partner’s home country culture has a strong effect on the development of trust between partners (Doney et al., 1998; Parkhe, 1998). In international knowledge transfers, trust enables each party to have confidence that a partner’s actions will not be opportunistic and that if they provide resources, the partner will reciprocate when needed. Trust does not automatically develop between knowledge transfer partners and is influenced by both individual-level behavior and firm-level actions (Currall and Inkpen, 2002; Parkhe, 1998). While American managers tend to approach knowledge transfer in a direct, task-oriented manner (Inkpen, 1996), this approach is incompatible with transferring tacit knowledge. It is also incompatible with the cultures in many collectivistic countries, which tend to have a longer time horizon and emphasize relationship development. When multinational companies compete and do business exclusively with firms from individualistic cultures, inter-firm trust is more difficult to build. However, with globalization, firms are developing better understandings of other cultures and doing business in foreign markets. As a result, they realize the need to build trust and cooperation.

The development of trust can help overcome cultural barriers to the transfer of tacit knowledge. Inkpen (1996) found that a climate of trust between collaborating partners is essential to effective exchange of information. In his study, Inkpen found that a history of cooperation between collaborative partners was strongly related to the level of trust between
them. This is consistent with the findings of Gulati (1995) suggesting that repeated interactions
between exchange partners were positively associated with trust. In addition, higher trust
between firms’ executives and key representatives tends to enhance the level of trust between
their firms (Currall and Inkpen, 2002). The ability to leverage tacit knowledge is related to the
amount of shared experience between team members (Berman et al., 2002). Interpersonal
interaction is vital to successfully transferring tacit knowledge, which must be learned by doing
or by rich observation. Therefore, at least during the initial stages of relationship development,
partner firms are likely to experience positive knowledge-transfer benefits from repeated
interactions among relevant employees. In turn, after trust is established between partner firms,
they tend to have mutual goodwill and understanding which in turn will facilitate future
knowledge transfers. Such interpersonal contact between key employees of partner firms is a
visible manifestation of the partner firms’ intent to develop their relational capital. By
demonstrating their commitment to this development, partner firms provide an opportunity for
trust to flourish between them. Furthermore, whenever firms have established trust among each
other based on prior collaborations, this pre-existing trust is likely transferred to later
partnerships between the same firms and will be positively related to success in subsequent
collaborations.

Proposition 3a. The level of trust between partner firms moderates the relationship between
parent firms’ tacit knowledge stocks and the value of this knowledge within firm-to-firm
partnerships.

Proposition 3b. The greater the interpersonal contact between key employees of knowledge-
transfer partners, the greater the level of trust that will develop between their firms.

Proposition 3c. The level of trust developed between partner firms in prior collaborative
arrangements will be positively related to the level of tacit knowledge exchange in subsequent
periods.

5. Cultural constraints on transferring tacit knowledge

The type of knowledge being transferred has a major influence on the success of such a
transfer (Bhagat et al., 2002). As noted earlier, explicit knowledge is more easily codified and
transferred than tacit knowledge, but tacit knowledge is often the most valuable and critical for
achieving a competitive advantage (Harrison et al., 2001; Ireland et al., 2002). The transfer of
both explicit and tacit knowledge is made easier when relational capital exists between exchange
partners. Relational capital reduces the likelihood that a partner might withhold explicit
knowledge and also enriches relational exchanges to facilitate the transfer of tacit knowledge.

In addition, cultural values and frames of reference directly affect the creation and transfer of
knowledge (Nonaka, 1994; Nonaka and Takeuchi, 1995). For these reasons, transfer of
knowledge from Japanese companies to U.S. firms has been challenging. Simonin (1999)
examined data from 151 multinational firms and found that while degree of tacitness was the
most significant determinant of knowledge transfer, cultural differences between the partners was
a critical barrier to knowledge transfer, especially tacit knowledge. The use of cross-border
collaborations (strategic alliances including joint ventures) is a common strategy for
multinational firms (Currall and Inkpen, 2002; Dussage et al., 2000; Hitt et al., 2000). As a
result, firms desiring to acquire knowledge in the cross-border alliances must take actions to
overcome cultural differences and build strong relationships with their partners.
One potential source of competitive advantage for multinational companies is their ability to exploit locally created knowledge in global markets. To do so, requires a company to effectively transfer knowledge across networks often differentiated in time, space, culture and language (Schlegelmilch and Chini, 2003). Schlegelmilch and Chini (2003) argue that, because knowledge is socially constructed, the human capability to capture and understand complex knowledge is culturally constrained. For example, when significant tacit knowledge is embedded in the types of business activities found in foreign markets, modes of entry that require knowledge transfer are less likely to be used (Martin and Salomon, 2003). Cultural differences are a major source of potential conflict between firms involved in cross-border partnerships (Spicer, 1997; Weber and Camerer, 2003). In a study of the relationships between Americans and Russians working in Moscow, Spicer (1997) found that the transfer of culturally specific knowledge was a primary source of interpersonal conflict. In support of this argument, Bresman et al. (1999) found that the transfer of tacit knowledge between the acquired and acquiring firms in a cross-border acquisition requires time, communication, and multiple relational exchanges.

Transferring tacit knowledge often requires adequate absorptive capacity based on common experiences and understanding of symbolic meanings. Absorptive capacity is more than the routines, processes and programs used by an organization to absorb inputs and use them to generate outputs. Absorptive capacity is typically defined as the ability of an organization to recognize the value of new information, assimilate it with existing knowledge and apply it to create new capabilities (Cohen and Levinthal, 1990). High absorptive capacity is associated with effectively applying new knowledge towards commercial ends, thereby leading to increased innovation and higher business unit performance (Tsai, 2001). The lack of absorptive capacity is viewed as a significant hurdle to transferring knowledge (Szulanski, 1996). Beyond absorptive capacity, understanding the relational processes and the properties of the relationship necessary to transfer knowledge is important in acquiring tacit knowledge. Furthermore, to gain value from the acquired knowledge the firm must know how to use it effectively (e.g., diffuse it further and apply it). When the tacit knowledge must be transferred across firms, the existence of a partner-specific absorptive capacity is less likely to exist, especially if the cultural distance between the partners is high (unless they have a long-term relationship). In these cases, the partners may require time and repeated interactions to build a common understanding of each others’ processes and how to best use the knowledge (Hitt et al., 2006). As a result, successfully transferring tacit knowledge in international contexts requires that firms intentionally cultivate relationships that create common experiences and a mutual understanding of symbolic meanings. Successful acquisition, diffusion and application of tacit knowledge require a shared contextual understanding of the knowledge by the partners. Thus, the capability of firms to build competitive advantage via knowledge transfer is likely to be context dependent. As a result, partner firms must make a concerted effort to build a common understanding between them. The process begins with intentional actions to build and cultivate relational capital.

Recently researchers have highlighted the effects of cultural differences on firm-level processes such as knowledge development, transfer and application (Bhagat et al., 2002; Doney et al., 1998). For example, Bhagat et al. (2002) found that cultural characteristics such as individualism and collectivism exert a significant influence on how individuals, groups and organizations process, interpret and make use of knowledge. They suggest that individualistic cultures tend to emphasize explicit knowledge while collectivistic cultures place greater emphasis on tacit knowledge. Thus, partners from individualistic and from collectivistic cultures are likely to encounter barriers to transferring knowledge between them, unless they have developed a strong relationship and common understanding of the processes each uses. The
transfer of knowledge between them probably will require significant cooperation and possibly the development of some common processes idiosyncratic to the relationship.

**Proposition 4a.** Cultural differences between partner firms negatively moderates the relationship between parent firms’ tacit knowledge stocks and the ability to transfer this knowledge within firm-to-firm partnerships.

**Proposition 4b.** Cross-cultural transfer of tacit knowledge requires even greater amounts of relational capital than intra-cultural transfers of such knowledge.

The case on NedCar highlights the complexity of transferring tacit knowledge between partner firms from difference national cultures. Whereas each partner relied on extensive tacit knowledge in each of their areas of expertise, transferring this tacit knowledge to the other partner was more difficult and time-consuming than originally expected. Because the partners came from significantly different cultural backgrounds, their communication styles, internal processes and understanding of how to best share knowledge also differed. Only after problems developed in the knowledge transfer process did the partners seek to overcome some of the most significant challenges in transferring their tacit knowledge via extensive interpersonal interactions and other remedial steps.

5.1. NedCar

NedCar, a joint venture between Mitsubishi and Volvo, highlights the difficulty partnerships can have in transferring knowledge when the partners are from countries with significantly different cultures. Even when companies have experience in knowledge transfer, this process is more complicated if the firms are from notably different cultures. The joint effort by Mitsubishi and Volvo to develop a new car model specifically for the European market exemplifies the complexities involved in cross-cultural knowledge transfer. Volvo hoped to acquire Mitsubishi’s small-car expertise while Mitsubishi hoped to acquire Volvo’s safety technology. Furthermore, Mitsubishi was interested in learning more about Volvo’s worker-friendly factory environment (White and Ishii, 2003).

An agreement was reached in 1991 between Volvo, Mitsubishi and the Dutch government to undertake a joint venture named NedCar to be based in The Netherlands. The focus of this new company was the joint development and manufacture of two small passenger car models, one to be sold under the Mitsubishi label and one to be sold under the Volvo label. An early problem encountered in this cross-cultural new venture was how to effectively share the appropriate amount and types of information. As a result, there was need for frequent coordination among Mitsubishi, Volvo and NedCar. Thus, the project leader and other engineers from Mitsubishi took frequent trips to Europe. Mitsubishi’s project leader alone made 38 trips from Japan to Europe between 1991 and 1997 (White and Ishii, 2003).

However, the difficulties experienced by NedCar in transferring knowledge successfully were not caused solely by geographic distance. Differences in the firms’ product development processes became obvious soon after the new development began. Each company had unique ways of conducting product development. Product concepts also differed between the two firms. The companies also used different definitions of the stages in the development process. Additionally, the employees of the two companies had different tastes and preferences for such components as seats, electrical switches and other instruments. These differences reflect the different cultures and also the unique tacit knowledge acquired from operating in partly separate
markets over time. As a result, the firms did not have much overlapping absorptive capacity to understand the others processes as expected even though they both operated in the same industry.

Moreover, the primary language and vocabulary used differed for the two firms. This made it difficult to communicate subtle nuances or to understand the partner’s points on specific details. Miscommunication also occurred because the two firms sometimes had different terms for the same part or, conversely, the same term for different parts. The definition and scope of some terms’ meanings also differed. Eventually the teams had to use drawings and blueprints at each meeting to avoid misunderstandings about even basic ideas and concepts. All of these issues made the inter-company transfer of knowledge a difficult undertaking. After nearly a decade, the transfer of some of the most complex knowledge was still incomplete (White and Ishii, 2003). It is clear that these firms needed to build relational capital so that they could transfer information and engage in joint problem solving. Had they been able to do so, they would have been better able to transfer the tacit knowledge necessary to make the collaboration a success.

6. Conclusion

Whether the focus is on movie crews, sports teams, hospitals, banks, grocery stores or any private organization, the need for effective knowledge transfer is important. In fact, Kogut and Zander (1993, 1996) emphasized that firms are social communities that specialize in the transfer of tacit and idiosyncratic knowledge. Due to its idiosyncratic nature, tacit knowledge has greater potential to create a distinctive competitive position than does explicit knowledge (Martin and Salomon, 2003). In changing competitive environments, the ability to recognize, acquire and successfully assimilate external knowledge with the firm’s existing knowledge is especially valuable. Developing the capability to learn from sources external to the firm is highly important in building new capabilities and to long-term firm success (Teece et al., 1997). As highlighted by the successful Tesco/Safeway partnership, firms that develop a capability to build and leverage relational capital to facilitate the flow of tacit knowledge between partners are likely to be especially well-positioned in an increasingly knowledge-based global economy.

As previously noted, an essential challenge facing all firms is how to achieve and sustain competitive advantage vis-à-vis its competitors. Firms can effectively meet this challenge by focusing on the development and maintenance of a superior knowledge transfer capability. In particular, relational capital is a resource that can be leveraged to enhance knowledge transfer processes. Due to an increasingly competitive environment, transferring tacit knowledge has become even more valuable. Whenever knowledge transfer crosses two or more cultures, achieving and sustaining a competitive advantage based on knowledge is often challenging. However, firms that develop a superior capability for acquiring external tacit knowledge or transferring its current tacit knowledge across internal units are likely to achieve an advantage over competitors. The importance of knowledge transfer within the firm and between partner firms has grown with increasing globalization and competition based on knowledge. It is crucial that organizations not take for granted the process of transferring knowledge between business units and partner firms.

Firms that recognize the challenges inherent in transferring tacit knowledge must take steps to alleviate the hurdles to effective transfer. By doing so, they can develop expertise in knowledge transfer, improve the organization’s performance and ultimately develop a source of sustained competitive advantage. The highly complex process of transferring tacit knowledge requires greater trust between partners than does transferring explicit knowledge. In addition, tacit knowledge transfer requires greater attention to the relational dimension of social capital than does explicit knowledge transfer.
Each of the cases examined herein point to the complexities involved in transferring tacit knowledge between business units and/or firms. Frequent communications, on-site meetings and partner visits are necessary to build relational capital and are particularly valuable tools in such knowledge transfer efforts. From online grocery stores to auto manufacturers to banking back office services, effectively transferring tacit knowledge plays an important role in helping firms achieve their performance goals. The approach to between-firm collaboration taken by Proteome Systems is typical of the challenge facing many companies in knowledge-intensive industries. The partnership between Tesco and Safeway in the online grocery business demonstrates that successful knowledge transfer can lead to significant positive outcomes and competitive advantage for partnering firms. The example provided by movie interns highlights the importance of learn-by-observing and learn-by-doing for individuals directly involved in utilizing tacit knowledge.

Further, Viewpointe Archive’s emphasis on the relational capital is a direct response to the challenge of successfully transferring nuanced and difficult-to-articulate tacit knowledge. Viewpointe has become the nation's largest image archive firm in large part because of its successful relationships with customers, partners and suppliers, and its capability to leverage the knowledge gained via these relationships. NedCar faced the additional challenge of having its primary knowledge transfer partners from vastly different cultures. Such challenges are not insurmountable, but they can be daunting. The development of trust and leveraging resulting relational capital are vitally important for both Viewpointe and NedCar. These cases provide conceptual support for the notion that having a connection between firms does not ensure that the desired transfer of knowledge will occur. Only firms that build and leverage their relational capital with their partners are likely to be successful in their knowledge transfer initiatives.

This work explains the importance of building relational capital and its role in transferring knowledge in strategic alliances. It is more challenging and yet even more important to develop relational capital in cross-border collaborations in order to facilitate transfer of tacit knowledge. The case examples presented provided supportive evidence of the importance of relational capital and the criticality of transferring tacit knowledge to the success of alliances and to individual partner firm performance. Thus, it supports the arguments that relational capital contributes to the execution of firm strategy (e.g., engaging in alliances and entering foreign markets) and to firm performance (Hitt et al., 2006).

References


