



Enhancing knowledge transfer in multinational corporations: a dynamic capabilities driven model

Paul N Gooderham

Norwegian School of Economics and Business
(NHH), Bergen, Norway

Correspondence: PN Gooderham,
Norwegian School of Economics and
Business (NHH), Breiviksveien 40, Bergen
5045, Norway.
Tel: +47 9093 4942
E-mail: paul.gooderham@nhh.no

Abstract

While the possession of knowledge-based assets endows a firm with the potential to benefit following internationalization, a distinct ability to transfer knowledge efficiently is also required. The application of social capital theory has contributed important insights into the processes underlying knowledge transfer within the MNC. However, from a practitioner stand point this perspective needs to be supplemented in two ways. First, there is a need to take into account the influence of the external environment and second a need to incorporate the role dynamic capabilities, in the form of management-initiated practices, can play in enhancing levels of social capital. The latter include transmission channels, socialization mechanisms and motivational mechanisms. It is these mechanisms that represent the key modifiable elements in facilitating knowledge flows. The paper concludes with a conceptual model for the study of intra-MNC knowledge transfers that embraces the various facets of social capital, the influence of the external environment and modifiable practices.

Knowledge Management Research & Practice (2007) 5, 34–43.
doi:10.1057/palgrave.kmrp.8500119

Keywords: knowledge transfer; multi-national corporations; dynamic capabilities

Introduction

Buckley & Casson (1976) explained the multinational firm phenomenon as a firm boundary question. As the market for knowledge-based assets was flawed the cost of internalization is less than the cost of using the market. Thus, firms become multinationals as they internalize the markets for their knowledge assets in multiple locations. Internalization remains the solution as long as the cost of internalization is less than the cost of using the market. More recently Kogut & Zander (1992, 1993, 1996) have proposed that rather than focussing on the causes of and consequences of market failure greater emphasis should be given to the advantages firms have over markets: '(the firm) should be understood as a social community specializing in the speed and efficiency in the creation and transfer of knowledge' (1996, p. 503). That is organizations can develop particular capabilities that enable them to share knowledge in a way that is superior to that of the market.

However, the possession by multinational corporations (MNCs) of these knowledge transfer capabilities varies. This is of particular significance because a growing body of research argues that organizations that have these knowledge transfer capabilities are more productive than those lacking them (Inkpen & Tsang, 2005). Thus, it is important to consider

those practices or mechanisms that reduce the difficulties in transferring knowledge from one unit of an MNC to another. For successful knowledge transfer to occur there must be significant internal coordination in the sense of organizational capabilities that are consistent over time and that promote linkages across units. These dynamic capabilities consist of specific strategic and organizational commitments to particular practices and processes that enable the MNC to achieve new resource configurations (Eisenhardt & Martin, 2000).

The focus of this paper is on those management initiated practices or dynamic capabilities that promote sufficient degrees of social capital for knowledge transfer within the MNC while taking into account the influence of the external environment. The primary aim of the paper is to develop a comprehensive conceptual model for comprehending variations in the ability of MNCs to achieve high levels of knowledge transfer. As will become apparent the paper is limited to bi-lateral exchanges between parent and majority-owned subsidiaries.

The need for an MNC knowledge transfer model

Although firms that possess distinctive technologies are particularly likely both to enter foreign markets and to do so successfully (Dunning, 1993; Caves, 1996), it should not, we emphasize, be assumed that knowledge transfer within the MNC is ever unproblematic. In other words, while the possession of knowledge-based assets endows a firm with the potential to benefit in terms of competitive advantage following their transfer abroad, a distinct capability to transfer knowledge efficiently is also required (Martin & Salomon, 2003). Without this capability knowledge transfer is costly (Teece, 1977) and time consuming, thereby undermining subsidiary performance (Kenney & Florida, 1993; Martin *et al.*, 1995). Hence there is a need to specify the mechanisms that promote knowledge transfer. While Buckley & Casson's (1976) discussion of the transaction cost of using a firm as an internal market for knowledge-based capabilities led them to examine the costs in managing an internal market across borders, there is no indication that they appreciated the complexities associated with the transfer of knowledge across borders (Rugman & Verbeke, 2003). A similar critique could also be levelled at the work of Kogut & Zander (1993) in relation to knowledge transfer within MNCs in the sense that while there is a focus on the transfer of knowledge that is difficult to understand and codify there is a significant under-specification of the actual mechanisms that enables firms to transfer such knowledge, as well as the barriers to successful transfer. Thus, not only are the implications for practitioners ill-defined, but the implications for empirical research are insufficiently specified.

Thus currently, as Gupta & Govindarajan (2000, p. 474) observe:

'...notwithstanding the criticality of internal knowledge transfers within MNCs...very little systematic empirical

investigation into the determinants of intra-MNC knowledge transfers has so far been attempted.'

Coupled to this is:

'...an absence of an adequate understanding of many of the causal mechanisms and contextual factors that mediate between knowledge processes and administrative and other organizational arrangements' (Foss & Pedersen, 2004, p. 340).

While taking into account the impact of contextual factors on intra-MNC knowledge transfer such as cultural distance the model we develop in this paper is rooted in the concept of social capital as developed by Nahapiet & Ghoshal (1998). Social capital comprises those assets that reside in networks of relationships that affect the conditions necessary for knowledge transfer to occur in those networks. However, our model significantly extends Nahapiet and Ghoshal's model by specifying those practices that can be developed by MNC managers in order to promote social capital and thereby knowledge transfer. Currently MNC managers have little guidance as to how they can orchestrate knowledge processes (Foss & Pedersen, 2004). Thus while pursuing our primary aim of developing a comprehensive model of knowledge transfer in MNCs this paper also aims to provide specific suggestions as to which mechanisms or practices ought to be attended to by MNC managers concerned with intra-MNC knowledge transfer. Prior to developing our model we depict the MNC as increasingly constituting a knowledge network. Thereafter we delineate the concept of knowledge transfer with particular reference to MNCs and in so doing indicate the locus of our conceptual model. Thereafter we develop our conceptual model.

The MNC as a knowledge network

The concept of the MNC refers to firms that have substantial direct investment in foreign countries that they actively manage (Bartlett & Ghoshal, 1995). Thus, firms which simply export from their home base or that have foreign investments that are not strategically integrated do not fall within the scope of this paper. Although we acknowledge the significance of entry modes such as international joint ventures and strategic alliances these too will be deemed as being beyond the remit of our conceptual model. In practice this means we are focussing on firms with wholly owned, or majority owned 'geographically dispersed subsidiaries that are combinations of heterogeneous technological competencies and product-market responsibilities' (Hansen & Løvås, 2004, p. 802).

Until the late 1980s the received theory of FDI was Dunning's (1977, 1993) eclectic approach or 'OLI theory'. The central idea of this approach is that three conditions must hold for a firm to become an MNC: ownership, location and internalization. Ownership advantages may be the possession of a patent or management abilities that other companies do not have and imply that owning these assets can earn supranatural profits in several

markets. Localization advantages are to a large extent the same as decentralization advantages. That is there must be reasons why geographically separated production within the same firm is preferred to centralized production. The fundamental trade-off is between economies of scale on the plant level and potential decentralization advantages such as lower factor costs, transport costs or trade barriers. Finally, the firm needs to prefer internalizing the relationship with the producer in the local market over, say, licensing production to a local firm. This could be due, for example, to difficulties in writing a licensing contract that gives the parent firm sufficient protection.

However, as Dunning himself indicated, by the 1990s OLI needed to be supplemented because:

'...increasingly, firms are investing abroad to protect or augment their core competencies. In such cases, they are 'buying into' foreign created assets (notably technological capacity, information, human creativity, and markets) some of which are proprietary to particular foreign firms [hence the pronounced trend towards acquisition of foreign firms, rather than greenfield investment] and others are more generally accessible to corporations, but immobile across geographical space.' (Dunning, 1997, p. 64) [our insertion].

In other words MNCs are no longer simply developing products at home and transferring these innovations to foreign subsidiaries, they are increasingly seeking to optimize their global innovative capabilities by incorporating subsidiary-specific advantages in different countries, sometimes engaging in major research at the subsidiary level (Davis & Meyer, 2004). Thus, one can increasingly discern subsidiaries with a developmental capacity, that is subsidiaries that not only have the capability to adapt products, but which also have the resources to enhance them or even the capability to single-handedly develop new products (Kuemmerle, 1997). In the latter case, it is the subsidiary that is the centre of excellence within the firm for particular products and technologies (Birkinshaw, 1997). As a consequence it is no longer sufficient to analyse the competitive advantage of the MNC solely in terms of its home country 'diamond' (cf. Porter's framework, 1990).

The implication is that for an increasingly significant proportion of MNCs knowledge transfer is not necessarily unidirectional (from corporate headquarters to subsidiaries), but bi-directional, or even multi-directional (cf. Cantwell, 1989, 1994). This notion of the MNC as a knowledge network has given rise to concepts such as 'heterarchy' (Hedlund, 1986) and the 'transnational' (Bartlett & Ghoshal, 1989) as a means of distinguishing this emergent form from the traditional 'multi-domestic' or 'global' MNCs. However, notwithstanding the emergence of differentiated network MNCs, meaning that knowledge transfer is no longer to be assumed to be unidirectional (i.e. from the home country to the subsidiary), Rugman & Verbeke (2003) argue that the basic organizational challenge essentially remains unchanged. While we concur with this we would, however,

point out that knowledge transfer in MNCs is increasingly occurring bi-laterally between 'knowledge-rich equals'. As transfer increasingly occurs between 'knowledge-rich equals' the issue of the absorptive capacity of the recipient unit (Cohen & Levinthal, 1990) is less critical than in previous decades characterized by knowledge-rich parents and knowledge-poor subsidiaries. Given that levels of prior related knowledge are high in the recipient means that explanations of variations in the ability of MNCs to transfer knowledge must look beyond absorptive capacity to those factors that encourage and enable cooperative behaviour between MNC units.

The concept of knowledge transfer

Both the concept of 'knowledge' and the concept of 'transfer' are difficult to define in precise terms. In regard to the former most scholars divide it into two types: that is explicit knowledge and tacit knowledge (Polyani, 1962). The former is objective in the sense that it can be codified in for example scientific formulas and manuals, whereas the latter is subjective and experiential and therefore hard to formalize (Nonaka, 1994; Nonaka *et al.*, 2000). As explicit knowledge is easily transmitted it is readily imitated by competitors and therefore unlikely to be a source of competitive advantage. In contrast tacit knowledge, because it is non-codifiable, is difficult to assess from the outside and has therefore a stronger potential to generate distinctive competitive positions abroad. However, it is precisely tacit knowledge that is difficult to transfer particularly when the knowledge overlap between the source and recipient is limited (Szulanski, 1996).

Kogut & Zander (1992, p. 386) employ a similar distinction. They use the terms 'know-what' for relatively articulable knowledge, (i.e. explicit knowledge or information), and 'know-how' for 'the accumulated practical skill or expertise that allows one to do something smoothly and efficiently' (i.e. tacit knowledge). Gupta & Govindarajan (2000) have further elaborated this distinction by viewing 'know-how' as 'procedural' types of knowledge including: (i) marketing know-how, (ii) distribution know-how, (iii) packaging-design technology, (iv) product designs, (v) process designs, (vi) purchasing designs, and (vii) management systems and procedures. These contrast with 'declarative' types of knowledge such as monthly financial data. The focus of this paper is effectively on these forms of 'procedural' or 'know-how' types of knowledge.

As for the concept of transfer, in line with Bresman *et al.* (1999), we will use the concept of transfer of knowledge to refer to the accumulation or assimilation of new knowledge in the receiving unit. However, like Minbaeva *et al.* (2003, p. 587), we would also specify that:

'The key element in knowledge transfer is not the underlying (original) knowledge, but rather the extent to which the receiver acquires potentially useful knowledge and utilizes this knowledge in its own operations.'

In other words for transfer to have taken place some change in knowledge or performance in the recipient unit must be involved (Inkpen & Tsang, 2005).

Social capital: the relational and cognitive dimensions

Theorization on the determinants of knowledge transfer in MNCs has focussed both on the MNC's external environment and on its internal environment. In terms of the latter, building on existing knowledge-based theories of the firm, Nahapiet & Ghoshal (1998) argue that social capital theory provides a sound basis for identifying the capabilities organizations are uniquely equipped to develop for the sharing of knowledge. Social capital, they contend, increases the efficiency of knowledge transfer because it encourages cooperative behaviour. They propose that differences between firms in terms of knowledge transfer may represent differences in their ability to create and exploit social capital. They distinguish three dimensions of social capital: the relational, the cognitive and the structural.

The relational dimension of social capital refers to such facets of personal relationships as trust, obligations, respect and even friendship, which together increase the motivation to engage in knowledge exchange and teamwork. The significance of this dimension of social capital as drivers of knowledge flows has received empirical support through case studies conducted by Bresman *et al.* (1999) of three MNCs that had acquired companies with the main objective of gaining access to and utilizing the acquired companies R&D knowledge. Their analysis indicates that in the early stages of an acquisition the lack of personal relationships between acquirer and acquisition made it very difficult for either party to trust in the abilities of the others. In this phase, knowledge transfer is limited to imposed, unidirectional knowledge transfer of a 'know-what' type from the parent to the subsidiary. It is not until the acquired company is fully integrated in the sense that trust has been established and that there is therefore a perception that 'the risk of opportunistic behaviour is low' (1999, p. 442) that a high level of reciprocal knowledge flow of a 'know-how' variety occurs. This clearly underscores the significance of the relational dimension of social capital for knowledge transfer. Using data from the subsidiary units of a large multinational electronics company, Tsai & Ghoshal (1998) also indicate support for this relationship. Finally, Hansen & Løvås's (2004) research on knowledge transfer from new product development teams situated in a focal subsidiary of a large U.S. high-technology MNC supports the notion that good informal relations are of critical importance for these teams to engage in competence transfers with subsidiaries without related competences.

Proposition 1 *The greater the degree of relational social capital that has been developed between*

MNC parent and subsidiary, the greater the degree of knowledge transfer between them.

The cognitive dimension refers to shared interpretations and systems of meaning, and shared language and codes that provide the foundation for communication. Tsai & Ghoshal (1998) found empirical support for that the role of the cognitive dimension of social capital lies in effectuating the development of the relational dimension of social capital rather than directly on knowledge transfer. In other words sharing 'a view of the world' is a necessary prerequisite for sufficient levels of trust to be developed that in turn stimulates knowledge exchange.

Proposition 2 *The greater the degree of cognitive social capital that has been developed between MNC parent and subsidiary, the greater the degree of relational social capital between these units.*

Social capital: the structural dimension

Nahapiet & Ghoshal's (1998) concept of social capital contains a third dimension, that of structural capital. The structural dimension of social capital refers to the presence or absence of specific network or social interaction ties between units of the MNC and the overall configuration of these ties. As such it is not directly associated with the transfer of knowledge. Instead its significance for the transfer of knowledge is through the ways in which it 'influences the development of the relational and cognitive dimensions of social capital' (1998, pp. 251–252). Network ties facilitate social interaction, which in turn stimulates the development of the cognitive and relational dimensions of social capital. Thus a precondition for the development and maintenance of relational and cognitive dimensions of social capital is that of sustained social interaction. Moreover, particularly rich patterns of interaction are important when the knowledge to be transferred is not codified.

Empirical support for the importance of social interaction ties can be found in Bresman *et al.*'s (1999) case studies referred to above. They observed that visits and transfers are highly important mechanisms for achieving a common set of beliefs that they perceived as giving rise to an overarching 'social community'. In other words the structural dimension of social capital is a necessary prerequisite for the emergence of the cognitive dimension of social capital, which in turn facilitates the development of the relational dimension of capital, which leads to the transfer and exchange of 'know-how'. This finding was further supported by an empirical analysis of a larger sample of acquisitions which Bresman *et al.* (1999) also conducted. They found that technological know-how is best transferred through intensive communication, with many visits and meetings because it facilitates the development of a common set of beliefs and values. In other words, social interaction is a key mechanism for the leveraging of knowledge because it effectuates the development of the cognitive and

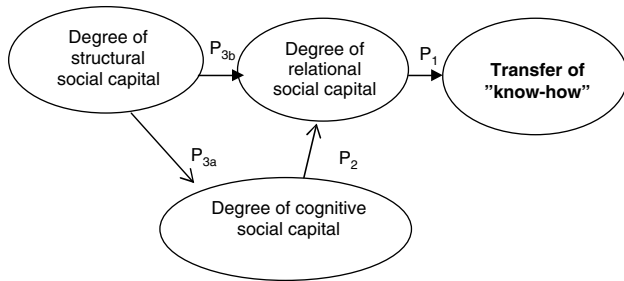


Figure 1 Social capital determinants of knowledge transfer in MNCs.

relational dimensions of social capital. It should, however, be noted that while Tsai & Ghoshal (1998) found support for the influence of social interaction ties on the relational dimension of social capital, their study failed to find support for its influence on the cognitive dimension of social capital. Nevertheless, in line with Nahapiet & Ghoshal's (1998) theorization, we propose that:

Proposition 3 *The greater the degree of structural capital that has been developed between MNC parent and subsidiary, the greater the degree of both cognitive (3a) and relational social capital (3b).*

Propositions 1–3b are summarized in Figure 1.

If it is the case that sufficient degrees of relational social capital must be in place to enable the transfer of 'know-how' and that this is dependent on a sufficient degree of cognitive social capital and structural social capital, the issue is then how best to develop these two latter forms of social capital. However, prior to examining this issue let us consider the impact of the external environment on the formation of these two forms of social capital.

The external environment of the MNC

In terms of the *external environment* Ghemawat's (2001) CAGE distance-framework distinguishes various dimensions that impact on the formation of inter-unit MNC social capital including geographic distance, cultural distance and economic distance. Hansen & Løvås's (2004) study referred to above does indeed confirm that large spatial distance reduces the tendency for the facilitation of competence transfers even when the transferor and the receiver have related competences. Hansen and Løvås's findings suggest that this is because spatial distance curtails opportunities for social interaction.

Proposition 4 *The greater the spatial distance between MNC parent and subsidiary, the weaker the degree of structural social capital.*

Cultural distance, in the sense of a common language and a common administrative heritage (colony/colonizer), is also reported as a critical dimension for cross-border economic activity (Ghemawat & Mallick, 2003).

In other words there are initial steep costs involved in moving out of one's culturally proximate area because of the difficulties in creating a common language and shared interpretations. Thus, Bresman *et al.* (1999) found that in the early stages of an acquisition that the lack of cognitive social capital is accentuated by cultural distance. For U.S. MNCs the costs in terms of performance stemming from cultural distance appear to manifest themselves as an inverted J-curve (Gomes & Ramaswamy, 1999). This is because while initially U.S. MNCs tend to locate foreign activities in Canada, the U.K. and Australia, that is culturally proximate areas, a performance decline sets in when they move outside of these areas. The curve appears to be different for Western European MNCs in that recent work by Ruigrok & Wagner (2003) indicates a U-form in terms of performance for German MNCs. German firms have only very limited culturally proximate areas to move into (Austria and parts of Switzerland) and are therefore immediately confronted by cultural non-proximity when engaging in foreign activities. Effort is required to develop a shared language and shared experiences regardless of setting (McFadyen & Cannella, 2004). However, as cultural distance increases the formation of these facets of cognitive social capital becomes increasingly challenging.

Proposition 5 *The greater the cultural distance between MNC parent and subsidiary, the weaker the degree of cognitive social capital.*

Economic distance also appears to play a significant role in regard to the formation of cognitive social capital. Gupta & Govindarajan's (2000) investigation of parent-subsidiary knowledge flows suggests that effectuating the flow is significantly more challenging when the subsidiary is an acquisition in a country with a relatively high per capita income. However, we might speculate that given that high per capita income is usually associated with high educational levels it may be the latter rather than the former that is decisive for parent-to-subsidiary knowledge flows. In other words, it may be the case that the 'not-invented-here' syndrome kicks in when the subsidiary views itself as on par in educational terms with the parent. This would have particular implications for subsidiaries in Central and Eastern European countries, which are characterized by low per capita income but relatively high levels of education.

Proposition 6a *The less the economic distance between MNC parent and subsidiary, the weaker the degree of cognitive social capital.*

Proposition 6b *The less the educational distance between MNC parent and subsidiary, the weaker the degree of cognitive social capital.*

The role of management-initiated practices

Given the impact of the external environment on inter-unit social interaction and the formation of cognitive

social capital, having dynamic capabilities in the form of routines and practices that negate the impact of the external environment and which promote the development and maintenance of social interaction and the cognitive facets of social capital is critical. Without such well-established practices the new resource configurations that emerge as knowledge is transferred and exchanged between units in the MNC will be difficult, if not impossible to achieve (Eisenhardt & Martin, 2000; Nonaka *et al.*, 2000). Indeed both Reger's (1997) and De Meyer's (1995) research indicated a considerable amount of effort in developing mechanisms and practices that facilitate social interaction and the development of common sets of meaning. Taken together the research on knowledge transfer within MNCs suggests three sets of practices or mechanisms that may be applied: transmission channels, motivational mechanisms and socialization mechanisms. All of three depend on active MNC management.

The first set of practices, transmission channels, features prominently in Gupta & Govindarajan's (2000) study of knowledge flows within MNCs and is of primary importance for social interaction. By transmission channels they mean formal integrative mechanisms such as liaison personnel, inter-unit task forces and permanent international committees. Using the concept of formal proximity in the sense of units being formally grouped together and reporting to the same business or divisional manager, Hansen & Løvås's (2004) study also supports the significance of transmission channels in generating social interaction in the face of spatial distance.

Additionally one may observe the increasing use and significance of intranet systems as transmission channels. Teigland's (2000) study of a multinational IT company noted the importance of intranet 'communities' as sources of knowledge for technical employees. He records that: 'this is a curious discovery because these 'communities' exhibit many of the characteristics of communities of practice – reciprocity, identity, and so on – but the individuals have typically never met' (2000, p. 143). The emergence of the intranet as a transmission channel has also been documented by IBM (IBM, 2004). In 2003, 71% of IBM's employees regarded the IBM corporate intranet, 'w3', as vital to their jobs as opposed to only 28% in 1997 (IBM, 2004). One effect of 'w3' is that it has spawned 'communities of practice', that is global communities of IBM professionals centred on particular domains of knowledge and focussed on sharing both 'know-what' and 'know-how' across organizational boundaries. These are supplemented by 'BluePages' that list employees worldwide and their areas of expertise, 'World Jam Sessions' (virtual brain-storming events centred around a selected topic over a 72h period which employees are obliged to participate in), 'Buddy Networks' (virtual social communities), e-mail and telephone conferences. IBM also employs a number of more traditional communication channels such as global forums, face-to-face meetings and workshops.

Proposition 7 *The greater the magnitude of transmission channels between MNC parent and subsidiary, the greater the degree of structural social capital between them.*

We have in proposition 3a proposed that the structural social capital dimension influences the cognitive dimension of social capital. However, we also noted that the empirical support for this proposition is mixed. Social interaction ties may not be sufficient for a shared language and shared systems of meaning to emerge. The implication is that the development of the cognitive dimension of social capital requires particular attention by MNC managers. A number of researchers have observed the importance of mechanisms that promote the internalization of MNC-wide shared goals and mutual understandings. These socialization mechanisms have to be achieved despite the impact of cultural distance and the 'not-invented-here' mentality MNCs may confront. A key driver of cognitive social capital is therefore mechanisms that effectively address the cultural diversity of the MNC as well as the parochialism found across its units by stimulating the creation of a corporate culture that is embraced by employees regardless of cultural, economic or educational background. One approach is to organize diversity training designed to help employees work effectively with a diverse workforce, to become aware of group-based differences among employees, and to decrease negative stereotyping and prejudice. Another involves training key employees in all host countries in the common language of the company (Caligiuri *et al.*, 2005). Gupta & Govindarajan's (2000) identify vertical mechanisms such as job transfers to corporate headquarters and participation in corporate mentoring programmes as playing an important role in employee socialization into the MNC corporate culture. Tsang's (2001) case studies of Singapore owned operations in China indicated the importance of Chinese managers not only spending time at corporate headquarters but also in other parts of the MNC. Supplementing these training initiatives is the design of performance appraisal that enables individuals to reflect on behaviours that are inconsistent with the shared corporate goals (Minbaeva *et al.*, 2003; Björkman *et al.*, 2004). Early mentoring of new employees by experienced veterans of the firm is also used by for example IBM.

Kyriakidou (2005, p. 112) cautions that:

'Developing integrating competencies and skills in a diverse group should not be an attempt to make it more homogeneous; rather these capacities should create a mechanism where individuals can retain their dimensions of diversity (which are inherently valuable for a variety of group tasks), while at the same time avoiding such damaging processes as dysfunctional interpersonal conflict, miscommunication, higher levels of stress, slower decision-making and problems with group cohesiveness.'

Proposition 8 *The greater the use of socialization mechanisms by MNCs, the greater the degree of cognitive social capital.*

Motivational mechanisms may be distinguished from socialization mechanisms in that they comprise tangible incentives. By rewarding those types of behavioural outcomes that enhance knowledge sharing, be it the transfer or integration of knowledge, an MNC both underscores and objectifies the vision it is attempting to foster and sustain. Motivational mechanisms may thus be regarded as representing an additional source of impetus in the formation of the cognitive dimension of social capital. Two recent studies provide some empirical support for this notion of the role of motivational mechanisms in promoting the cognitive dimension of social capital in the sense of a knowledge-sharing ethos (Gupta & Govindarajan, 2000; Minbaeva *et al.*, 2003).

Proposition 9 *The greater the use of motivational mechanisms designed to promote knowledge sharing between MNC parent and subsidiary, the greater the degree of cognitive social capital.*

Conceptual model

Figure 2 provides a graphical representation of the proposed conceptual model for MNC parent and subsidiary knowledge transfer. Although the model is conceived in linear terms, this is obviously somewhat simplistic. Undoubtedly one could posit a bi-directional effect between for example the transfer of ‘know-how’ and the degree of relational social capital and between the degree of cognitive social capital and the degree of relational social capital.

The model proposes that successful leveraging of ‘know-how’ through its transfer across MNCs is directly dependent on the development of the relational dimension of social capital characterised not least by trust between units. The model further proposes that this relational dimension of social capital is in part a product of the degree of structural social capital and cognitive social capital that have been developed. In the main this is congruent with the work of Nahapiet & Ghoshal (1998) and Tsai & Ghoshal (1998). However, our model additionally takes into account the impact of the external environment in relation to the formation of structural and cognitive social capital. Finally, our model also specifies a number of practices that can be developed

Enhancing knowledge transfer in MNCs

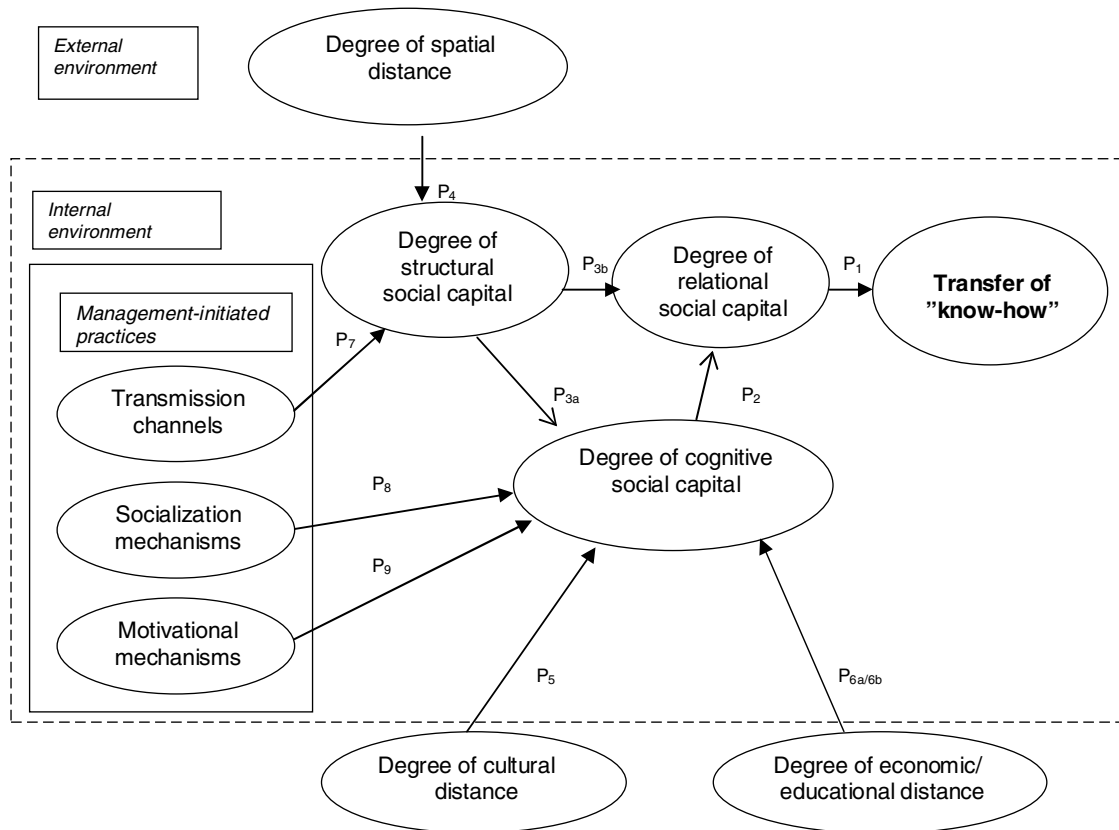


Figure 2 A dynamic capabilities driven conceptual model of the determinants of knowledge transfer in MNCs.

and applied by managers in order to develop the dynamic capabilities required for the augmentation of the structural and cognitive dimensions of social capital. Thus, whereas the degree of parent-subsidiary cultural, spatial and economic distance is fixed, the model proposes that the selection and application of transmission channels, socialization mechanisms and motivational mechanisms are factors that can be influenced by managers. Not only can they determine the degree of social interaction and the development of a common language and set of meanings, they can also indirectly mitigate the impact of parent-subsidiary cultural, geographic and economic distance. Thus at the core of our research model of the leveraging of 'know-how' is a management perspective in the sense that it is the purposeful design, selection and combination of transmission channels, socialization mechanisms and motivational mechanisms that are the key to developing the various dimensions of social capital that are key to knowledge transfer.

In terms of testing the model in Figure 2 we envisage two phases. The first phase would be a validation exercise and would be designed to build on and extend the empirical approach used by for example Tsai & Ghoshal (1998) who tested P1-P3b (see Figure 1) using data from a large MNC. Given that this testing results in a successful validation, the model should thereafter be further explored using qualitative data. In other words observing that various socialization mechanisms significantly impact the degree of cognitive social capital should be further explored in order to identify particularly successful variants of these mechanisms.

From a practitioner perspective the model may, in an initial phase, be used as a means to identify and calibrate existing management-initiated practices aimed at creating the foundation for the transfer of 'know-how'. Thereafter, it can be used by practitioners to guide them in their future efforts and investments for the achievement of those social capital foundations that extant research clearly indicates are of consequence for knowledge transfer within MNCs. This latter use of the model means that it has the added potential to function as a decision-making tool in relation to the acquisition of knowledge-rich subsidiaries by clarifying the initiatives required for knowledge synergies.

Limitations

This model is not without its limitations. One aspect to the model that should be noted is its ambition. Although multi-directional or heterarchical knowledge flows have achieved theoretical status none of the previous studies we have reported have attempted a network or systemic level of investigation of MNC knowledge flows. Similarly we believe that the most fruitful starting point for future research is that of dyadic investigations into knowledge flows, i.e. the parent-subsidiary bilateral relationship. In part this is because this is empirically the most important relationship in terms of knowledge flows (Gupta & Govindarajan, 2000) and in part because of the complex-

ity represented by systemic-level research. It should be emphasized that dyadic investigations in themselves represent an advance on many previous research strategies which have gathered their data from one source only (Gupta & Govindarajan, 2000). In this way, the proposed model seeks not only to explore the issue of how HRM influences internal knowledge flows from a corporate headquarters' point of view, but is also aligned with an important emerging literature that takes a 'subsidiary view' (Birkinshaw & Hood, 1998; Holm & Pedersen, 2000; Moore, 2001; Frost *et al.*, 2002). Thus our proposed conceptual model is concerned with both headquarters and subsidiary perspectives thereby addressing a pervasive weakness in which much previous research adopts either the one or the other perspective.

We must also express some words of caution in relation to a core feature of the model, namely social capital. First, Inkpen & Tsang (2005) draw attention to the risk associated with developing social capital. Although it generally has a positive influence on knowledge transfer, the ties involved are, as Hansen's (2002) research on knowledge sharing in intracorporate networks shows, costly to maintain. It would appear that the maintenance costs involved in sustaining social capital are such that they should only be developed when units need to deal with demanding transfer situations involving 'know-how'. Thus: 'When the transfer is not difficult, the ties are likely to be harmful for unit effectiveness because of their maintenance costs' (Inkpen & Tsang, 2005, p. 162). Second, as Morgan (2005, p. 571) points out, particularly the cognitive and relational aspects of social capital are problematic to develop because of the fundamental instability of the multinational form itself. MNCs are regularly involved in disposing of subsidiaries when circumstances require it. The result is that the subsidiary is bound to live 'in a state of permanent insecurity' which in turn undermines attempts to create the necessary cognitive and relational forms of social capital necessary for knowledge sharing (Gooderham & Ulset, 2002).

Conclusion

The primary aim of this paper has been to develop an empirically verifiable model that explains key sources of variation in the ability of MNCs to transfer know-how in the face of spatial, cultural, economic and educational distance. The model goes beyond previous efforts by not only considering the relationship between the three dimensions of social capital but also by delineating the dynamic capabilities that condition the development of a social context that promotes knowledge transfer. The development of these dynamic capabilities is dependent on purposeful action and investment not least on the part of MNC managers. Thus the model is not only a response to the need to understand variations in knowledge transfer but also a response to practitioner needs to augment their understanding of those organizational mechanisms and practices that enhance the efficient intra-MNC transfer of knowledge.

References

- BARTLETT CA and GHOSHAL S (1989) *Managing across Borders*. Harvard Business Press, Boston.
- BARTLETT CA and GHOSHAL S (1995) *Transnational Management*. Irwin, Chicago, 2nd edn.
- BIRKINSHAW J (1997) Entrepreneurship in multinational corporations: the characteristics of subsidiary initiatives. *Strategic Management Journal* **18**(3), 207–229.
- BIRKINSHAW J and HOOD N (1998) Multinational subsidiary evolution: capability and charter change in foreign-owned subsidiary companies. *Academy of Management Review* **23**(4), 773–785.
- BJÖRKMÄN I, BARNER-RASMUSSEN W and LI L (2004) Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms. *Journal of International Business Studies* **35**(5), 443–455.
- BRESMAN H, BIRKINSHAW J and NOBEL R (1999) Knowledge transfer in international acquisitions. *Journal of International Business Studies* **30**(3), 439–462.
- BUCKLEY PJ and CASSON MC. (1976) *The Future of the Multinational Enterprise*. Macmillan, London.
- CALIGIURI P, LAZAROVA M and TARIQUE I (2005) Training, learning and development in multinational organizations. In *International Human Resource Management: A Critical Text* (SCULLION H and LINEHAM M, Eds), pp 71–90, Palgrave, Basingstoke.
- CANTWELL J (1989) *Technological Innovation and Multinational Corporations*. Blackwell, Oxford.
- CANTWELL J (1994) Introduction: transactional corporations and innovative activities. In *Transactional Corporations and Innovative Activities* (CANTWELL J, Ed), Routledge, London.
- CAVES RE (1996) *Multinational Enterprise and Economic Analysis*. Cambridge University Press, Cambridge.
- COHEN WM. and LEVINTHAL DA (1990) Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly* **35**, 128–152.
- DAVIS LN and MEYER KE (2004) Subsidiary research and development, and the local environment. *International Business Review* **13**(2), 359–382.
- DE MEYER A (1995) Tech talk. In *Readings in International Enterprise* (Drew J, Ed), pp 179–195, Routledge London.
- DUNNING JH (1977) Trade location of economic activity and the MNE: a search for an eclectic approach. In *The International Allocation of Economic Activity* (OHLIN B, HESSELBORN P-O and WIJKMAN PM, Eds), Macmillan Press, London.
- DUNNING JH (1993) *Multinational Enterprises and the Global Economy*. Addison-Wesley, Reading MA.
- DUNNING JH (1997) The sourcing of technological advantage by multinational enterprises. In *Global Business in the Information Age* (MACHARZINA K, OESTERLE M-J and WOLF J, Eds), pp. 63–101, Proceedings of the 23rd Annual EIBA Conference, Stuttgart.
- EISENHARDT K and MARTIN JA (2000) Dynamic capabilities: what are they? *Strategic Management Journal*, Special Issue **21**(10/11), 1105–1122.
- FOSS NJ and PEDERSEN T (2004) Organizing knowledge processes in the multinational corporation: an introduction. *Journal of International Business Studies* **35**(5), 340–349.
- FROST TS, BIRKINSHAW JM and ENSIGN PC (2002) Centers of excellence in multinational corporations. *Strategic Management Journal* **23**, 997–1018.
- GHEMAWAT P (2001) Distance still matters: the hard reality of global expansion. *Harvard Business Review* **79**(8), 137–147.
- GHEMAWAT P and MALICK R (2003) *The Industry-Level Structure of International Trade Networks: A Gravity-Based Approach*. HBS Working Paper, February 2003.
- GOMES L and RAMASWAMY K (1999) An empirical examination of the form of the relationship between multinationality and performance. *Journal of International Business Studies* **30**, 173–188.
- GOODERHAM PN and ULSET S (2002) 'Beyond the M-form': towards a critical test of the new form. *The International Journal of the Economics of Business* **9**(1), 117–138.
- GUPTA AK and GOVINDARAJAN V (2000) Knowledge flows within multinational corporations. *Strategic Management Journal* **21**(4), 473–496.
- HANSEN MT (2002) Knowledge networks: explaining effective knowledge sharing in multiunit companies. *Organizational Science* **13**(3), 232–248.
- HANSEN MT and LØVÅS B (2004) Leveraging technological competencies. *Strategic Management Journal* **25**(8–9), 801–822.
- HEDLUND G (1986) The hypermodern MNC – A heterarchy. *Human Resource Management* **25**, 9–36.
- HOLM U and PEDERSEN T (Eds) (2000) *The Emergence and Impact of MNC Centers of Excellence: A Subsidiary Perspective*. Macmillan, Basingstoke.
- IBM (2004) *Corporate Responsibility Report*. <http://www.ibm.com/ibm/responsibility> (Accessed 01 August 2006).
- INKPEN AC and TSANG EWK (2005) Social capital, networks and knowledge transfer. *Academy of Management Review* **30**(1), 146–165.
- KENNEY M and FLORIDA R (1993) *Beyond Mass Production: The Japanese System and Its Transfer to the US*. Oxford University Press, New York.
- KOGUT B and ZANDER U (1992) Knowledge of the firm, combinative capabilities and the replication of technology. *Organization Science* **3**(2), 383–397.
- KOGUT B and ZANDER U (1993) Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies* **24**, 625–645.
- KOGUT B and ZANDER U (1996) What do firms do? Coordination, identity and learning. *Organization Science* **7**, 502–518.
- KUEMMERLE W (1997) Building effective R&D capabilities abroad. *Harvard Business Review* March–April 61–70.
- KYRIAKIDOU O (2005) Operational aspects of international human resource management. In *International Human Resource Management: Theory and Practice* ÖZBILGIN M (Ed), Palgrave, Basingstoke.
- MARTIN X, MITCHELL W and SWAMINATHAN A (1995) Recreating and extending Japanese automobile buyer-supplier links in North America. *Strategic Management Journal* **16**(8), 589–620.
- MARTIN X and SALOMON R (2003) Knowledge transfer capacity. *Journal of International Business Studies* **34**(4), 356–373.
- MCFADYEN MA and CANNELLA AA (2004) Social capital and knowledge creation: diminishing returns of the number and strength of exchange relationships. *Academy of Management Journal* **47**(5), 735–746.
- MINBAEVA D, PEDERSEN T, BJÖRKMÄN I, FEY C and PARK HJ (2003) MNC knowledge transfer, subsidiary absorptive capacity, and HRM. *Journal of International Business Studies* **34**(6), 586–599.
- MOORE KJ (2001) A strategy for subsidiaries: centers of excellence to build subsidiary specific advantages. *Management International Review* **41**(3), 275–290.
- MORGAN G (2005) Understanding multinational corporations. In *The Oxford Handbook of Work and Organization* (ACKROYD S, BATT R, THOMPSON P and Tolbert PS, Eds), pp 555–576, Oxford University Press, Oxford.
- NAHAPIET J and GHOSHAL S (1998) Social capital, intellectual capital and the organizational advantage. *Academy of Management Review* **23**(2), 242–266.
- NONAKA I (1994) A dynamic theory of organizational knowledge creation. *Organization Science* **5**(1), 14–37.
- NONAKA I, TOYAMA R and NAGATA A (2000) A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and Corporate Change* **9**(1), 1–20.
- POLYANI M (1962) *Personal knowledge: Towards a post-critical philosophy*. Routledge and Kegan Paul, London. First published in 1958.
- PORTER ME (1990) *The Competitive Advantage of Nations*. Free Press, New York.
- REGER G (1997) Internationalization and coordination of R&D of western European and Japanese multinational corporations. In *Global Business in the Information Age* (MACHARZINA K, OESTERLE M-J and WOLF J, Eds), Vol. 2, pp 573–604. Proceedings of the 23rd Annual EIBA Conference, Stuttgart, December 14–16, 1997.
- RUGMAN AM and VERBEKE A (2003) Extending the theory of the multinational enterprise: internalization and strategic management perspectives. *Journal of International Business Studies* **34**(2), 125–137.
- RUIGROK W and WAGNER H (2003) Internationalization and performance. *an organizational learning perspective*. *Management International Review* **43**(1), 63–83.
- SZULANSKI G (1996) Exploring internal stickiness: impediments to the transfer of best practice within the firm. *Strategic Management Journal* **17**(special issue), 27–43.

TEECE DJ (1977) Technology transfer by multinational corporations: the resource cost of transferring technological 'Know-how'. *Economic Journal* **87**, 242–261.

TEIGLAND R (2000) Communities of practice. In *The Flexible Firm* (BIRKINSHAW J and HAGSTRÖM P, Eds), Oxford University Press, Oxford.

TSAI W and GHOSHAL S (1998) Social capital and value creation: the role of intrafirm networks. *Academy of Management Journal* **41**, 464–476.

TSANG EWK (2001) Managerial learning in foreign-invested enterprises of China. *Management International Review* **41(1)**, 29–51.