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Antecedents of knowledge transfer in acquisitions

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Introduction

The role of knowledge as a strategically important organizational resource has been widely recognized in contemporary strategy literature. A firm has been described as an efficient generator, repository and integrator of knowledge that contributes to gaining and sustaining a competitive advantage (Kogut and Zander, 1992; Grant, 1996a). Firms can generate new knowledge internally but they may also access it from external sources through mergers and acquisitions, strategic alliances, joint ventures and other collaborative agreements (Grant and Baden-Fuller, 2004; Inkpen *et al.*, 2000; Ranft and Lord, 2002). In this study I explore the process of knowledge transfer in acquisitions which I define as acquisition and utilization of new sets of knowledge-based resources from the partner to acquisition (Bresman *et al.*, 1999; Ranft and Lord, 2002).

Empirical findings show that many acquisitions are motivated by the need to obtain new technologies and capabilities from the target in order to compete and sustain growth in rapidly changing business environments (Haspeslagh and Jemison, 1991; Håkåson, 1995; Capron *et al.*, 1998; Bresman *et al.*, 1999; Ranft and Lord, 2002, Graebner, 2004, Ranft and Marsh, 2008). It is not surprising since acquisitions have a unique potential for contributing to the renewal of the firm. *First*, through acquisitions firms can get rapid access to specific knowledge assets and capabilities that may have already been developed in the target (or acquiring) firms, thus overcoming some of the disadvantages of time compression diseconomies (Ranft and Marsh, 2008). *Second*, differently from strategic alliances and other collaborative agreements acquisitions provide the advantage of gaining ownership and direct control over unique knowledge-based resources that are possessed by the target firms (Ranft and Lord, 2002). *Third*, acquisitions may serve as the most appropriate way to obtain tacit, socially complex and institutionally embedded knowledge assets and capabilities that are integrated into an inseparable part of an organization (Jemison and Sitkin, 1986; Haspeslagh and Jemison, 1991; Ranft and Marsh, 2008). A number of research findings witness that for many acquirers knowledge transfer remains a key acquisition objective (Bresman *et al.*, 1999; Ranft and Lord, 2001, 2002).

Notwithstanding a unique potential of acquisitions to transform the firm through renewal of its knowledge base, successful transfer of knowledge usually falls short of most acquirers' expectations (Håkåson, 1995; Bresman *et al.*, 1999; Schoenberg, 2001). In one of the highly cited

works Szulanski (1996) has established empirically that there are three major barriers to knowledge transfer within a firm: knowledge ambiguity, lack of absorptive capacity on behalf of the recipient, and arduousness of relationship between the source and recipient of knowledge. Acquisition researchers acknowledge that all of these barriers may be present in the acquisition context (Bresman *et al.*, 1999; Bjorkman *et al.*, 2007; Schoenberg, 2001), yet no comprehensive study of their relevance has been conducted. Given that acquisitions have features of intra- and inter-firm knowledge transfer and represent unique dynamics of their own (Ranft and Lord, 2002), studying the relevance of these barriers becomes even more pertinent.

Through extensive review and consolidation of the current body of research on knowledge transfer in acquisitions, this article aims to disclose the role of knowledge-specific, organizational and inter-organizational antecedents of transfer. A study gives special attention to the intrinsic nature of knowledge, absorptive capacity of the acquirer and acquiree, and inter-firm relationships as key antecedents of transfer. Theoretical findings are anchored with illustrative case study examples from prior research.

The structure of this paper is as follows. In the first part, the underlying concepts of ‘knowledge-based resource’, ‘absorptive capacity’ and ‘post-acquisition integration’ are described. The role of knowledge ambiguity, absorptive capacity and arduous relationship between acquisition partners is examined in the second part of the paper. A critical review of knowledge-related, organizational and inter-organizational antecedents of transfer in acquisitions witnesses a number of managerial implications and openings for further research that are briefly discussed in a concluding part of the paper.

Conceptual foundations

Knowledge-based resources

In the early 1990s a fundamental discussion about *what the firm is* was brought back by the knowledge-based view of the firm (Kogut and Zander, 1992; Nonaka, 1994; Grant, 1996a; Spender, 1996; Conner and Prahalad, 1996). An underlying assumption was that distinctly from the markets firms are able to create and utilize knowledge for enhanced value creation (Kogut and Zander, 1992; Nonaka, 1994). Scholars broadened the definition of a ‘resource’ to include not only physical and financial capital but also human capital and knowledge. To develop a theory where knowledge creation, transfer and application is the reason why firms exist, researchers engaged in a debate

about what types of knowledge-based resources are, how these resources are obtained and developed, and how they contribute to gaining a sustainable competitive advantage.

Knowledge-based resources differ from other firm's resources in several ways which make their integration, development and transfer difficult. *First*, knowledge may be difficult to codify and articulate as it is accumulated in the minds of individuals, developed through experience, and refined by practice (Nonaka, 1994 Grant, 1996a). Tacit nature of knowledge-based resources is also reflected in collective action that is governed by organizational routines, structures and cultures (Polanyi, 1962; Nelson and Winter, 1982; Zander and Kogut, 1995). Because tacit knowledge cannot be written down or captured in explicit form, it creates ambiguity as to what causal connections between actions and outcomes are (Lippman and Rumelt, 1982). Ultimately, ambiguous nature of knowledge inhibits the abilities of a recipient to acquire and utilize it (Szulanski, 1996; Simonin, 1999). *Second*, knowledge-based resources are subject to high level of social complexity. They reflect a system of many unique and interdependent technologies, individual and team-based experiences, and organizational routines that are combined for the development of organizational capabilities (Reed and DeFillippi, 1990; Kogut and Zander, 1992). Moreover, organizational knowledge resides in the communities of practice and relationships between (and among groups of) individuals (Brown and DuGuid, 1991). *That* hinders comprehension of a totality of an asset and, subsequently, prevents its transferability (Simonin, 1999; Chakravarthy *et al.*, 2003). *Third*, organizational knowledge is embedded in broader institutional context (Kostova, 1999). It reflects a particular set of shared norms, beliefs and 'ways of doing things' that pose "unlearning barriers" to the recipient, primarily due to its unwillingness to abandon existing organizational practices and acquire new ones (Szulanski, 2000; Kostova and Zaheer, 2001). Furthermore, knowledge-based resources are often embedded in idiosyncratic networks of internal and external relationships that form an inseparable part of a firm's resource base and, as a result, becomes difficult to transfer (Reed and DeFillippi, 1990; Simonin, 1999; Chakravarthy *et al.*, 2003). Acquiring tacit and socially complex knowledge is also subject to time compression diseconomies (Dierickx and Cool, 1989). Knowledge-based resources are built over time and through repeated action, therefore, accelerated learning is difficult, if ever possible, regardless of the efforts devoted to this purpose. Overall, tacit, socially complex and institutionally embedded knowledge-based resources contribute to gaining a sustainable competitive advantage as they are highly inimitable and non-substitutable (Reed and DeFillippi, 1990; Kogut and Zander, 1992). However, their ambiguous nature constrains the ultimate success of knowledge transfer within and beyond organizational boundaries (van Wijk *et al.*, 2008).

Absorptive capacity

Organizational learning literature went beyond explaining what types of knowledge-based resources are and how they can contribute to achieving a sustained competitive advantage but rather how knowledge is acquired, retained, transferred and applied (Argote *et al.*, 2003). The focus shifted from analyzing knowledge as an asset or stock to analyzing dynamic capabilities that generate new knowledge and integrate it with other resources for creating and sustaining a competitive advantage (Kogut and Zander, 1992; Grant, 1996b). Following organizational learning perspective, knowledge transfer is by no means an assured outcome – firms need to develop a set of capabilities to acquire and utilize new knowledge.

A construct of *absorptive capacity* has been widely discussed in the literature and considered as one of the key antecedents of knowledge transfer within a single firm (Van den Bosch *et al.*, 1999; Minbaeva *et al.*, 2003; Easterby-Smith *et al.*, 2008) and between firms within strategic alliances and joint ventures (Mowery *et al.*, 1996; Lane and Lubatkin, 1998; Lane *et al.*, 2001; Kim and Inkpen, 2005). Absorptive capacity is defined as the firm's ability to "recognize value of new, external knowledge, assimilate it and apply it to commercial ends" (Cohen and Levinthal, 1990: 128). It is contingent upon the extent of prior related knowledge, motivation to absorb knowledge by the recipient (Cohen and Levinthal, 1990; Minbaeva *et al.*, 2003) and relatedness of knowledge between the source and recipient of knowledge (Lane and Lubatkin, 1998). Due to causal ambiguity in the use of knowledge by the source, it may be difficult for the recipient to acquire and apply that knowledge to commercial ends (Lane and Lubatkin, 1998). Related to that, researchers emphasize the role of organizational mechanisms associated with combinative capabilities that facilitate firm abilities to absorb tacit, socially complex and institutionally embedded knowledge-based resources (Kogut and Zander, 1992; Grant, 1996a; Inkpen and Dinur, 1995; Van de Bosh *et al.*, 1999; Jansen *et al.*, 2005). Firms attempt to integrate knowledge either formally through coordination, formalization and routinization mechanisms, or informally through socialization process (Zahra and George, 2002; Minbaeva *et al.*, 2003; Jansen *et al.*, 2005; Todorova and Durisin, 2007).

Absorptive capacity literature also distinguishes between knowledge creation and knowledge utilization capabilities (Cohen and Levinthal, 1990; Lane *et al.*, 2001; Zahra and George, 2002; Todorova and Durisin, 2007). Knowledge creation capabilities are associated with acquisition and assimilation of new external knowledge that lead to renewal of the firm's knowledge stock (Zahra and George, 2002). Firm abilities to apply newly acquired knowledge are linked to realization of organizational outcomes in the form of new technologies, products and processes (*ibid*). Firms that are successful in acquiring and assimilating new knowledge are more likely to *sustain* their

competitive advantage, whereas highly developed transformation and exploitation capabilities lead to *gaining* a competitive advantage [*italics added*] (Zahra and George, 2002).

Post-acquisition integration

Post-acquisition integration literature primarily deals with value creation processes in acquisitions through integration of diverse organizational routines, structures, systems, and cultures of the combining organizations (Jemison and Sitkin, 1986; Haspeslagh and Jemison, 1991; Zollo and Singh, 2004). Post-acquisition integration is largely perceived as an adaptive process through which the acquired and acquiring firms learn from each other and work together towards reaching the goals of acquisition (Haspeslagh and Jemison, 1991). Researchers emphasize that gaining new technologies and capabilities through acquisitions is a challenging task, primarily due to many issues and dilemmas that post-acquisition integration process encounters (Haspeslagh and Jemison, 1991; Ranft and Lord, 2002). For the purpose of this study, several useful insights are highlighted.

First, acquisition managers deal with integration speed and autonomy dilemma (Haspeslagh and Jemison, 1991; Håkåson, 1995; Ranft and Lord, 2002; Puranam *et al.*, 2006). Granting high level of autonomy to the acquired firm increases the chances of preserving its most valuable tacit and socially complex knowledge. However, greater autonomy can also diminish or eliminate essential integration and recombination of different sets of knowledge of the acquired and acquiring firms. *Second*, during early stages of post-acquisition integration one can observe a decline in organizational and individual productivity, the so called “post-merger drift” situation, which may reduce motivation of both partners to work together and learn from each other (Ranft and Lord, 2002). *Third*, asymmetric power relationships and lack of organizational “fit” between the acquiring and acquired firms may lead to dysfunctional tensions and conflicts, and, subsequently, make the knowledge transfer and acquisition complicated (Jemison and Sitkin, 1986; Inkpen *et al.*, 2000; Schoenberg, 2001; Ranft and Lord, 2002; Castro and Neira, 2005; Bjorkman *et al.*, 2007). *Last but not the least*, many acquisitions result in a reduction of relative standing of the acquired employees which may lead to their voluntary and involuntary departures (Hambrick and Cannella, 1993; Very *et al.*, 1997). Loosing highly experienced and skilled employees in the acquired firm may subsequently lead to lower post-acquisition performance (*ibid*).

Two important implications may be drawn from post-acquisition integration studies: *first*, the very act of ‘integration’ creates tensions in relationship between the acquired and acquiring firm, and requires a great deal of time, efforts and managerial abilities of both partners to acquisition to build the ‘intimacy’ of relationship. *Second*, the importance of knowledge-related, organizational and

inter-organizational antecedents of transfer is relevant in acquisition context since patterns of transfer change over the course of post-acquisition integration (Bresman *et al.*, 1999).

Drawing on the knowledge-based view, absorptive capacity and post-acquisition integration literatures, the author considers (1) the *nature of knowledge*, (2) *absorptive capacity of the acquirer and acquiree*, and (3) *communication and relationship* between the acquirer and acquiree as key antecedents of knowledge transfer in acquisitions (see Figure 1). Accordingly, the author consolidates prior related research in an integrative framework of knowledge-related, organizational and inter-organizational antecedents of transfer that are examined in the following sections below.

/insert Figure 1 here/

Knowledge-related antecedents of transfer: nature of knowledge

Acquisition researchers acknowledge that tacit and socially complex knowledge creates causal ambiguity and, therefore, is difficult to transfer. Yet, knowledge integration and recombination is critical to the success of acquisition (Haspeslagh and Jemison, 1991; Håkånsen, 1995; Bresman *et al.*, 1999). Several studies of high-technology acquisitions in US and Spain witness that the most valuable organizational knowledge is embedded in technical skills of the acquired employees and complex interactions of functional teams which is the most difficult to evaluate, assimilate and apply to commercial ends by the acquirers (Ranft and Lord, 2001; 2002; Castro and Neira, 2005).

Differences in cognitive and normative institutional environments of the two combining organizations increase knowledge ambiguity and result in perceptual differences between partners regarding the process of transfer. This is particularly evident in cross-border acquisitions where national and corporate cultures affect the patterns of transfer and make this process far from easy (Bjorkman *et al.*, 2007). Exploratory case study of cross-border acquisition between British and Swedish consultancy firms illustrates how national and corporate cultures affect partner perceptions of barriers to knowledge transfer (Brochner *et al.*, 2004). Researchers found that British managers were less prone to identify barriers than their Swedish peers and regarded email, telephone and joint customer meetings as more facilitating mechanisms of transfer (*ibid*). Data from British cross-border acquisitions in Europe operating in broad range of manufacturing and service industries shows that acquirers failed to achieve the desired level of knowledge transfer within marketing, distribution, customer service and strategic planning domains (Schoenberg, 2001). These study findings confirm that marketing expertise, managerial approaches and organizational routines are

institutionally embedded forms of knowledge that are particularly difficult to transfer across borders (Szulanski, 2000; Lane *et al.*, 2001; Steensma *et al.*, 2005). International business scholars suggest that cognitive and normative legitimacy of knowledge decreases with the increasing institutional distance between parent headquarters and their subsidiaries (Kostova, 1999; Kostova and Zaheer, 1999). Following this view, the two merging firms operating in substantially different institutional environments may not be willing to abandon existing routines and obtain new practices from each other (Szulanski, 2000).

Through acquisitions firms can get rapid access to specific knowledge assets and capabilities that may have already been developed in the target firm, thus overcoming some of the disadvantages of time compression diseconomies (Ranft and Lord, 2002; Ranft and Marsh, 2008). However, the acquirer's desire to integrate the target firm's knowledge may be complicated by dangers of damaging or even losing most valuable expertise and relational sets of knowledge, such as high-functioning teams and customer relationships (Hambrick and Cannella, 1993; Very *et al.*, 1997; Ranft and Lord, 2001, 2002; Inkpen *et al.*, 2000). A study of 430 top executives in 97 acquired firms in the US indicates that acquisitions result in reduced relative standing of the acquired executives that increases their propensity to depart (Hambrick and Cannella, 1993). *et al* Loosing key employees in the acquired firm may lead to more departures and result in a decline of post-acquisition performance (Castro and Neira, 2005; Very *et al.*, 1997). In order to prevent this, it may be necessary for the acquirer to engage in post-acquisition process of gradual learning and grant a relatively high level of autonomy to the acquiree (Haspeslagh and Jemison, 1991; Ranft and Lord, 2002). However, empirical studies witness that granting more autonomy to the acquired firm promotes exploration at the expense of exploitation that may result in limited access and utilization of the partner's knowledge, prevent realization of synergies and generally inhibit the abilities of the two merging organizations to work together (Håkåanson, 1995; Ranft and Lord, 2002; Castro and Neira, 2005; Puranam *et al.*, 2006). Paradoxically, although granting more autonomy to the acquired firm may help to prevent the loss of most valuable knowledge and reduce feelings of uncertainty and job insecurity, it can also inhibit integration and recombination of different sets of knowledge in a newly merged firm (Kogut and Zander, 1992).

Acquisition researchers also acknowledge that face-to-face interactions facilitate transfer of more tacit and socially complex forms of knowledge. A study of cross-border technology acquisitions of Swedish multinationals (Bresman *et al.*, 1999) shows that rich media (e.g. visits and meetings) increases the extent of technological know-how transfer between acquisition partners. Person-to-person interactions in joint projects was also found to be the most effective tool of communication

in acquisitions of professional service firms (Brochner *et al.*, 2007). Yet, face-to-face interactions did not facilitate knowledge transfer in European acquisitions of Silicon-Valley firms, which might be explained by high institutional distance and low level of integration between the acquiring and acquired firms (Inkpen *et al.*, 2000). Indeed, many acquisition researchers emphasize that relative importance of face-to-face interactions increases when the target becomes more integrated (Bresman *et al.*, 1999; Ranft and Lord, 2002; Castro and Neira, 2005). During early stages of post-acquisition integration a primary focus often rests upon the need to extract value from more codified forms of knowledge (e.g. patents, marketing databases) where personal interaction plays a minor role in facilitating the transfer (Bresman *et al.*, 1999).

To conclude, tacit, socially complex and institutionally embedded knowledge of the acquiring and acquired firm represents high level of knowledge ambiguity and makes transfer of knowledge between the two partners exceptionally difficult. These findings seem to resonate with Szulanski's (1996) argument about ambiguous nature of knowledge as a key barrier to knowledge transfer within a firm. Yet, differently from the firm-level observations, institutionally embedded knowledge is conceptualized as another source of causal ambiguity which is of high relevance in acquisition context. Moreover, the ease of transfer of tacit, socially complex and institutionally embedded knowledge in acquisitions is contingent upon post-acquisition integration dynamics. For better revealing the changing patterns of knowledge transfer in acquisitions, longitudinal study designs (rather than cross-sectional analyses) may be more relevant.

Organizational antecedents of transfer: absorptive capacity of the acquirer and acquiree

Most of knowledge transfer studies in acquisitions primarily focus on transfers of new technologies and capabilities from the target to acquiring firms (e.g. Bresman *et al.*, 1999; Birkinshaw *et al.*, 2000; Inkpen *et al.*, 2000; Ahuja and Katila, 2001). Paradoxically, although in these analytical frameworks the acquiring firm is perceived as a recipient of knowledge, its absorptive capacity has not received as much research attention as other antecedents of knowledge transfer. This lack of attention might be due to an overestimated buyer's perspective in prior research that considers the acquirer as decision maker of importance (Graebner, 2004; Graebner and Eisenhardt, 2004). The acquirer's absorptive capacity is conceptualized as relatively static phenomenon and in isolation from the target's contributive capacity to value creation during post-acquisition integration (Colman and Lunnan, 2010).

The role of the target's absorptive capacity has also been under-explored. It is quite surprising given the fact that, for example, in many Continental European target firms which typically represent owner-managed businesses with relatively low turnovers, the issue of absorbing functional know-how from large multinationals is particularly salient (Schoenberg, 2001). Target firms may be at an early position within their corporate life cycles and therefore without necessary corporate systems, structures and managerial resources to facilitate the absorption of specialist functional knowledge (ibid). In these "elephant-mouse" type of acquisitions (Austin and Leonard, 2008) low level of absorptive capacity on behalf of the acquired firm may act as a key barrier to knowledge transfer. The issue of the target's absorptive capacity becomes even more prominent in the context of transition economies where many relatively small and under-developed firms have been acquired by large multinationals (Meyer and Estrin, 2001). Within these contexts, transferring unique knowledge assets and capabilities possessed by the target firms are often of marginal value and few of them usable without major "investments" by the acquiring firms (Yang *et al.*, 2008). Empirical studies show that transition economy subsidiaries transplant general and project management skills, marketing expertise and manufacturing process knowledge through developing absorptive capacities relative to the knowledge base of their parent firms (Lane *et al.*, 2001; Steensma *et al.*, 2005; Yang *et al.*, 2008). Yet, as the target's knowledge stock increases and capabilities are developed over time, the role of its contributive capacity (Coleman, 2009) and the acquirer's absorptive capacity may become more critical for the success of knowledge transfer in acquisitions.

Researchers also acknowledge that the potential for value creation in acquisitions increases with transfer of complementary capabilities that does not entail a perfect replication of knowledge in the recipient firm but rather a transformation and exploitation of newly acquired knowledge to commercial ends (Bjorkman *et al.*, 2007). This argument is congruent with the assumption that firms with highly developed knowledge transformation and exploitation capabilities are more likely to gain a *realized absorptive capacity* – i.e. achieve a competitive advantage through innovation and product development (Zahra and George, 2002). However, acquiring knowledge from acquisition partner is far from easy. A few case studies of high-technology acquisitions show that lack of prior related knowledge on behalf of the acquirer makes it difficult to appropriate most valuable knowledge assets and capabilities from the target (Inkpen *et al.*, 2000; Ranft and Lord, 2002). Since most valuable knowledge is often tacit, socially complex, institutionally embedded and constantly evolving, the firm's ability to acquire and utilize it becomes even more complicated (Bresman *et al.*, 1999; Ranft and Lord, 2002; Castro and Neira, 2005).

Some key challenges and dilemmas associated with post-acquisition integration make knowledge absorption process even more problematic. Lack of organizational “fit” between the two combining organizations reduces their abilities to understand, assimilate, transform and utilize new knowledge to commercial ends (Schoenberg, 2001; Brochner *et al.*, 2004; Bjorkman *et al.*, 2007). Moreover, early stages of post-acquisition integration usually witness high level of organizational instability that may result in productivity decline (Ranft and Lord, 2002). During early phases of transition employees often feel uncertain about their future roles in a newly merged firm which may erode their job satisfaction, commitment to work and motivation to collaborate with acquisition partners (Ranft and Lord, 2001). All these tensions may aggravate resistance to change and subsequently reduce capabilities of the acquiring and acquired firms to transfer and absorb knowledge from each other.

To conclude, high level of absorptive capacity on behalf of the recipient of knowledge is critical for the success of knowledge transfer in acquisitions, which echoes research findings at the firm level (Szulanski, 1996). However, in acquisition context, ‘absorptive capacity’ has higher explanatory power when it is conceptualized as a dyadic concept and more dynamic phenomenon which co-evolves with the partner’s contributive capacity and is contingent upon post-acquisition integration dynamics.

Inter-organizational antecedents of transfer: communication and relationship between the acquirer and acquiree

Joining different organizations that do not share a common history, strategy and culture often leads to the ‘us vs. them’ thinking with a tendency to exaggerate differences rather than find similarities between the combining organizations (Bjorkman *et al.*, 2007). It is particularly common for the acquiring firm managers to exhibit interpersonal, cultural and managerial arrogance to the detriment of cooperative relationship with the acquired firm employees (Jemison and Sitkin, 1986). An attitude that ‘since we acquired you, we are smarter than you’ is often accompanied by a belief that parent firm values, administrative systems and other resources are superior to those of the subsidiary and, therefore, should be imposed (Jemison and Sitkin, 1986). All *this* creates a climate of distrust, acrimony and hostility that ultimately removes all willingness to collaborate and learn from the acquirer. Ironically, exhibiting various forms of organizational chauvinism may not only lead to misapplication of the acquiring firm’s knowledge but also dismiss the unique knowledge assets and capabilities of the target that are needed for the acquirer.

Differences in national and corporate cultures of the acquiring and acquired firms may lead to miscommunication and misunderstandings between partners and further impede the creation of positive relationships (Schoenberg, 2001; Brochner *et al.*, 2004; Bjorkman *et al.*, 2007). The prevailing work practices and codes of conduct in the two merging firms are embedded in cognitive and normative institutional environments that define the “correct” and “professional” behaviour. Ultimately, transfer of new (different) organizational practices from the acquirer to acquiree may encounter high resistance to change, particularly in early stages of acquisition implementation (Håkånsen, 1995). High level of defensiveness may result in the attempts to idealize the target at the expense of the acquirer, so that a more cohesive unit is created in response to the perceived external threat (Bjorkman *et al.*, 2007). Fundamentally different values and beliefs regarding the appropriate organizational practices may also lead to covert and overt political struggles (Vaara, 2003). All *this* may aggravate tensions between the two merging organizations and impede transfer of knowledge. Responding to that, many researchers admit that success of knowledge transfer in acquisitions may be achieved only if a trusting relationship between the two partners is created and a proper balance between transfer of new knowledge and preservation of existing knowledge is reached (Håkånsen, 1995; Inkpen *et al.*, 2000; Birkinshaw *et al.*, 2000; Bjorkman *et al.*, 2007).

As mentioned above, it is fairly common that after being acquired many top management personnel, professional and technical staff find their relative standing reduced (Hambrick and Cannella, 1993; Very *et al.*, 1997). Usually, the acquirers see them as inferior and themselves as superior, the target’s autonomy is removed, status is stripped off, and a climate of acrimony prevails, all of which that increases the difficulty of communication and arduousness of relationship between the two combining organizations. The acquired employees may leave the newly merged firm or shirk their responsibilities, reduce commitment to the job, behave belligerently and have low motivation to transfer and acquire knowledge from the acquirer (Very *et al.*, 1997). Given that most valuable knowledge is embedded in individual skills and complex interactions within and among groups of individuals (Ranft and Lord, 2001), retaining key employees throughout the acquired organization is a critical prerequisite for the success of knowledge transfer in acquisitions. A survey data from high-technology acquisitions in the US shows that higher retention of professional and technical employees in the acquired organizations resulted in significantly greater transfer of technologies and capabilities to the acquirer (Ranft and Lord, 2001; 2002). Regardless of the nature of knowledge, retaining the management team and key specialists from the acquired firms was seen as a high priority in high-tech acquisitions in Spain (Castro and Neira, 2005). Research findings confirm that higher volume of employee retention during the first post-acquisition year led to higher extent of knowledge acquisition and utilization by the acquiring firms (*ibid*). Most recently,

researchers have shown that the acquired leaders can also take active cross-organizational roles and perform mitigating and mobilizing actions (Graebner, 2004; Colman and Lunnan, 2010). They can alleviate negative emotions and reduce turnover of the acquired employees, encourage acquisition and utilization of the parent's knowledge and promote realization of synergies by accelerating coordination between the acquired and acquiring firms.

Enthusiasm about collaboration and integration of the two combining organizations can be enhanced by extensive and intensive face-to-face interaction (Håkånsen, 1995; Bresman *et al.*, 1999; Brochner *et al.*, 2004). Face-to-face communications and more protracted forms of interaction, such as extended visits, joint training programs, cross-functional teams and social events may alleviate anxiety and ensure that decision making process is explicit and transparent (Haspeslagh and Jemison, 1991; Håkånsen, 1995; Bresman *et al.*, 1999; Govindarajan and Gupta, 2000; Inkpen *et al.*, 2000; Ranft and Lord, 2002; Brochner *et al.*, 2004; Castro and Neira, 2005).

Patterns of knowledge transfer in acquisitions can be best explained by evolutionary dynamics of the post-acquisition integration process. As shown in the case study of Swedish multinational corporations operating in automotive, paper chemicals and decanter industries, the ease of communication and the intimacy of relationship between the acquirer and acquiree changes over the course of post-acquisition integration (Bresman *et al.*, 1999). In early stages of integration, knowledge transfer is mostly one-way, i.e. from the acquirer to acquiree, and typically imposed. As integration unfolds, more extensive collaboration between the two firms and reciprocal knowledge flows are observed (*ibid*). A shift to reciprocal knowledge exchanges can be attributed to the emergence of a "social community" that has a common set of values and beliefs as to what things are and should be (Kogut and Zander, 1992). Yet, research on knowledge transfer in cross-border acquisitions of professional service firms confronted these findings. Scholars have shown that reciprocal transfer of knowledge may occur already in early stages of post-acquisition integration (Brochner *et al.*, 2004). One plausible explanation might be attributed to a specific nature of value creation processes in professional service firms (Løwendahl *et al.*, 2001). In these firms knowledge and learning is nested within value creation which is driven by of the need to continuously increase the breadth and depth of professional expertise in order to meet (and create) new customer needs. Accordingly, the target's (and acquirer's) motivation to share knowledge might be high in acquisitions of professional service firms already in early stages of acquisition implementation.

To conclude, similarly to firm-level observations (Szulanski, 1996), the difficulty of communication and arduous relationship between the source and recipient of knowledge constitute key barriers to

knowledge transfer in acquisitions. In this context their relevant importance seems to be even higher. Although a dominant logic of *integration* (Grant, 1996a) underlies the success of knowledge transfer within a firm and between firms in an acquisition, yet, a boundary of a business unit within a single firm seems to be more permeable than organizational boundary in an acquisition (Easterby-Smith *et al.*, 2008). There is lack of a “social fabric” (Kogut and Zander, 1992) or “common code” (Arrow, 1974) in the latter that could ease communication, support learning and enhance intimacy in the overall relationship between partners. Moreover, differently from firm-level studies, ‘arduousness of relationship’ between the source and recipient of knowledge is perceived as a much broader concept in acquisition research that includes power asymmetries, institutional distance, boundary-spanning and gate-keeping roles. Furthermore, inter-firm relationships are conceptualized as rather dynamic (emergent) phenomenon. The ease of communication and intimacy of relationship between acquiring and acquired firms are contingent upon post-acquisition integration process and all challenges that it encompasses. A great deal of time, efforts and managerial abilities are required to balance autonomy and integration, exploration and exploitation objectives, build trust and a sense of shared understanding between the two firms.

In lieu of conclusion: managerial implications and recommendations for further research

An extensive literature review of the antecedents of knowledge transfer in acquisitions witnesses that knowledge ambiguity, lack of absorptive capacity on behalf of the recipient and arduous relationship between the source and recipient of knowledge constitute major barriers to knowledge transfer. These observations correspond with Szulanski’s (1996) findings about key barriers to knowledge transfer at the firm level. However, the process of knowledge transfer in acquisitions has characteristics of its own. *First*, beyond tacitness and social complexity of knowledge, acquisition scholars consider institutional embeddedness as a key source of knowledge ambiguity that hinders the success of knowledge transfer in acquisitions. *Secondly*, in acquisition context ‘absorptive capacity’ of the recipient of knowledge has higher explanatory power when it is conceptualized as a dyadic concept that co-evolves with the partner’s contributive capacity. *Third*, differently from firm-level studies, ‘arduousness of relationship’ between the source and recipient of knowledge is perceived as a much broader concept by acquisition scholars that can be examined at multiple levels of analysis. *Last but not the least*, the role of antecedents of knowledge transfer is relevant in acquisition context. The difficulty (and the ease) of transferring tacit, socially complex and institutionally embedded knowledge, absorptive capacity of the recipient, communication and relationship between the source and recipient of knowledge is contingent upon post-acquisition integration dynamics.

Managerial implications

Based on theoretical considerations and illustrative case study examples, this study provides managers with several suggestions about how to manage knowledge transfer process successfully during post-acquisition integration.

First, given profound differences in strategy, organizational structure and culture of the two combining firms, top managers of the acquiring and acquired firms should clearly communicate the goals of acquisition and expected changes to existing organizational routines and daily work practices. Written and/or verbal communications on the part of the buyer typically have less impact on the perceptions of the acquired employees if they are not followed by concrete actions (e.g. investments in human capital or R&D, cost-cutting). Moreover, top managers from the acquiring and acquired firms should openly convey messages about the objectives and progress of integration that is particularly relevant in situations of high market uncertainty and job insecurity.

Secondly, the form and frequency of communications should be selectively used depending on the type and nature of knowledge being transferred. Face-to-face interactions and more protracted forms of communications seem to be the most effective tools for transferring tacit, socially complex and institutionally embedded sets of knowledge, such as technological know-how, marketing expertise and managerial practices. The use of rich media is particularly relevant for acquisitions that are primarily driven by strategic goals to appropriate R&D resources from the targets and exploit market-based synergies as well as for acquisitions that operate in professional service industries.

Thirdly, based on empirical observations and theoretical reasoning the author calls integration managers to implement acquisitions slowly through gradual and reciprocal learning between the parties. The ambiguous nature of most valuable knowledge and all challenges associated with post-acquisition integration requires lengthier periods of learning during which knowledge can be cumulatively integrated into a newly merged firm. Granting more autonomy to the acquired firm may alleviate tensions, facilitate interactions and, consequently, increase flows of knowledge between the two merging organizations. However, acquisition managers should constantly strike for a balance between autonomy and integration since granting too much autonomy to the acquired firm may prevent realization of synergies between acquisition partners.

Last but not the least, regardless of the type of acquisition (e.g. domestic or international, market-entry or technology-driven, manufacturing or service industry acquisition) retaining key employees throughout the acquired firm is critical for the success of knowledge transfer. The most valuable knowledge is embedded in the minds of individuals, complex interactions of functional teams, and is context-specific. Accordingly, retaining professional and technical staff and managerial teams in the acquired firms should be a strategic objective of the top management of the acquiring firms. Financial incentives might not be particularly effective for doing that, and the acquirers should devote more efforts to preserving autonomy, social status and commitment of the acquired employees during acquisition implementation.

Recommendations for further research

Although our understanding of the antecedents of knowledge transfer in acquisitions has increased substantially over the past decade or so, there remain a number of gaps and openings for further research that are summarized below:

1. Prior research is rather limited in explaining the role of dynamic nature of knowledge in the process of transfer. Knowledge is understood as rather inert and monolithic phenomenon. With several exceptions (notably, Bresman *et al.*, 1999), no explicit analysis is given as to how knowledge evolves over time alongside post-acquisition integration. When assuming that knowledge creation embodies a continuous interaction between tacit and explicit forms (Nonaka, 1994) and results in cognitive and behavioural changes (Inkpen and Dinur, 1995), it is worth of examining how attributes of knowledge affect the target's and acquirer's absorptive capacity. Absorptive capacity research seems to be a promising avenue (Cohen and Levinthal, 1990; Zahra and George, 2002; Todorova and Durisin, 2007). Yet, researchers almost implicitly assume that path dependency logics and knowledge relevance determine the degree of firm's absorptive capacity (Cohen and Levinthal, 1990; Lane and Lubatkin, 1998). The role of knowledge ambiguity, particularly, high level of tacitness, social complexity and institutional embeddedness, has been largely underestimated. When assuming that knowledge-based resources generate "inherent uncertainty" as to what causal connections between actions and outcomes are (Lippman and Rumelt, 1982), identification and assimilation of the "relevant" knowledge from acquisition partner might be problematic. By contrast, the intrinsic nature (or the "qualities") of knowledge rather than the amount and relatedness of accumulated experience (or the "quantities" of knowledge) may better explain dynamic capabilities of the two merging organizations to absorb knowledge from each other. Overall, conceptualization of 'knowledge'

as a dynamic process of *knowing* (Vera and Crossan, 2003) seems to better reveal diverse patterns of knowledge transfer during acquisition implementation.

2. Notwithstanding our increased understanding of knowledge taxonomies as key antecedents of transfer, current body of research tends to avoid linking them to learning outcomes and firm performance results. Instead, the focus is given on analyzing linkages between ambiguous nature of knowledge and its transferability. Success of knowledge transfer in acquisitions is largely defined in terms of efficiency (intensity and speed) of transfer (Bresman *et al.*, 1999), replication capabilities (Winter and Szulanski, 2001), and sustainability of competitive advantage (McEvily and Chakravarthy, 2002). To the author's knowledge, only a few studies have empirically tested the relationship between knowledge characteristics, learning outcomes and firm performance results (e.g. Lane *et al.*, 2001; Steensma *et al.*, 2005). As pointed by Løwendahl *et al* (2001), although organizational learning processes are largely covered in strategy research, systemic analysis of strategic knowledge development processes for enhanced value creation are left out.
3. Although implicitly, researchers argue that the direction of knowledge flows, the nature of knowledge, the form and intensity of communications and the quality of relationship between the acquiring and acquired firms is contingent upon the type and primary motive for acquisition (Shoenberg, 2001; Capron and Pistre, 2002; Ranft and Lord, 2001; Ranft and Marsh, 2008). However, most of the conceptual frameworks and empirical studies on knowledge transfer do not isolate nor compare acquisitions of particular types. Future research may benefit from comparing different types of acquisitions (e.g. horizontal vs. vertical, technology-driven vs. market-entry, manufacturing vs. service industry-based) as it may explore different patterns of knowledge transfer across different types of acquisitions.
4. Many unresolved methodological difficulties inform knowledge transfer research in acquisitions. Problems are primarily associated with latent and lagged effects of learning that make the measurement of knowledge transfer problematic. Since knowledge is stored in the minds and actions of individuals, organizational routines, structures and cultural systems, and is accumulated over time, it becomes difficult to measure the antecedents of knowledge transfer in retrospect at a given point of time. Responding to that, the author calls future studies to use more direct observations, longitudinal data and multiple case study methods, so that dynamics and complexity of the knowledge transfer process in acquisitions is better revealed.

To *summarize*, shortcomings in our understanding about antecedents of knowledge transfer in acquisitions are primarily associated with: 1) underestimated role of ambiguous and dynamic nature of knowledge in conceptual frameworks of knowledge transfer; 2) implicit simplifying assumptions about the role of dynamic capabilities of the two combining organizations to absorb knowledge; 3) lack of systemic analysis of antecedents, learning processes and performance outcomes of knowledge transfer, and 4) lack of comparative analysis of acquisitions of different types that may reveal diverse patterns of knowledge transfer. These gaps in our understanding imply that knowledge transfer in acquisitions should be conceptualized as a dynamic process of learning that is aimed at value creation through post-acquisition integration. It is contingent upon the nature of knowledge, absorptive capacity of the acquiring and acquired firm and the quality of relationship between the two combining organizations.

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Figure 1: Knowledge-related, organizational and inter-organizational level antecedents of knowledge transfer in acquisitions

