

The Role of Strategic Agility in Acquisitions

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Abstract:

The aim of the present study is to examine the role of strategic agility as a component of the acquisition process by investigating its constituent elements and effects on knowledge transfer in the context of acquisitions. The study also elaborates on the relationship between knowledge transfer and performance in acquisitions. We test our theoretical model on a quantitative data set of acquisitions conducted by Finnish companies.

Keywords: acquisitions | knowledge transfer | strategic agility | performance

Article:

INTRODUCTION

Acquisitions are a popular means for firms to increase profitability and growth (Teerikangas, Very and Pisano, 2011). But more than half of all acquisitions result in failure (King et al., 2004; Papadiakis and Thanos, 2010; Schoenberg, 2006; Thanos and Papadiakis, 2012). To improve the performance of acquisitions, considerable research effort has been expended in an attempt to identify the key drivers of acquisition outcomes (Haleblian et al., 2009; King et al., 2004). These explorations have been founded increasingly on resource and knowledge-based arguments, according to which the characteristics of the firm resources in general, and of its knowledge in particular, determine value creation in acquisitions. These arguments have been complemented by dynamic capability-based arguments that emphasize the role of the post-merger integration (PMI) process in acquisitions. As a distinctive organizational change process, PMI is a dynamic capability of the firm by which resource renewal in acquisitions takes place (Haspeslagh and Jemison, 1991; Ranft and Lord, 2000, 2002). The PMI process involves operational and sociocultural processes (Birkinshaw, Bresman and Håkanson, 2000; Björkman, Stahl and Vaara, 2007; Pablo, 1994; Vaara et al., 2012). A large part of the work on PMI combines the dynamic

capability perspective with arguments originating in the knowledge-based view by proposing that an important aim of PMI is to facilitate knowledge transfer between the firms for the creation of synergies (Ambrosini, Bowman and Schoenberg, 2011; Lakshman, 2011; Ranft, 2006; Ranft and Lord, 2000, 2002).

Nevertheless, important gaps remain in the acquisition literature. Haleblan et al. (2009) called for greater attention to PMI and a more detailed identification of organizational processes that explain how resources are transferred between the combined firms. Although flexibility (Sarala et al., 2014) and adaptability (Gates and Very, 2003) have been flagged as important characteristics of the dynamic PMI process, prior work has not applied the concept of strategic agility to the management of the acquisition process. Agility represents a key dynamic capability of the firm, however, particularly in changing environments (e.g. Goldman, Nagel and Preiss, 1995; Goldman et al., 1991; Grewal and Tansuhaj, 2001; Judge and Miller, 1991; Lin, Chiu and Chu, 2006; Weber and Tarba, 2014). Strategic agility is defined as the ability of the organization to renew itself and stay flexible without sacrificing efficiency (Doz and Kosonen 2008a, 2008b, 2010). Drawing on Doz and Kosonen (2008a, 2008b, 2010), we understand strategic agility in acquisitions as consisting of the organizational processes of strategic sensitivity, resource fluidity and collective commitment, which together enable the firm to take on new strategic commitments while remaining nimble and flexible. We elaborate on these strategic agility components in acquisitions and argue that they are critical for PMI knowledge transfer. Thus, the present paper examines the role of strategic agility as a constituent element of the acquisition process by investigating its components and effects on knowledge transfer in the context of acquisitions.

We further examine various directions of knowledge transfer as processes by which value is created in acquisitions (Haleblan et al., 2009). Although the dominant view in the more general knowledge transfer literature is that knowledge transfer contributes to firm performance (e.g. Lane, Salk and Lyles, 2001; Van Wijk, Jansen and Lyles, 2008; Wang et al., 2009), the relationship between knowledge transfer and performance in acquisitions is not clear. Many key studies on knowledge transfer have been theoretical (Björkman, Stahl and Vaara, 2007; Sarala et al., 2014), whereas the empirical ones have failed to examine the performance outcomes of knowledge transfer (Bresman, Birkinshaw and Nobel, 1999; Ranft, 2006; Ranft and Lord, 2000, 2002; Sarala and Vaara, 2010; Vaara et al., 2012), or have not distinguished between the directions of the knowledge transfer (e.g. Ambrosini, Bowman and Schoenberg, 2011). As a result, empirical evidence on the effect of post-acquisition knowledge transfer on performance remains scarce (for notable exceptions, see Ahammad and Glaister, 2011; Capron, 1999), and the relative importance of acquirer versus target knowledge transfer is not completely clear (Capron, 1999). Furthermore, Van Wijk et al. (2008) point to the need for additional theoretical and methodological development of the knowledge transfer construct. We argue that in acquisition research, this has to do with the tendency of empirical studies to consider knowledge transfer without distinguishing the direction of the transfers that take place (e.g. Ahammad and Glaister, 2011; Ahuja and Katila, 2001; Sarala and Vaara, 2010). We therefore contribute to the acquisition literature by further elaborating on the relationship between knowledge transfer and performance in acquisitions.

The present study is structured as follows. We begin by reviewing the literature on acquisitions and on strategic agility. Next, we develop our hypotheses concerning the role of strategic agility in PMI knowledge transfer, and the relationship between PMI knowledge transfer and performance, which are tested on a quantitative data set of acquisitions conducted by Finnish companies. We conclude with reflections on the theoretical and managerial implications of strategic agility in acquisitions. We expand and build on a study of knowledge transfer by Junni and Sarala (2012), and use the same dataset as their study.

ACQUISITION RESEARCH

The resource-based view conceptualizes firms as bundles of heterogeneously distributed resources and capabilities (Barney, 1991; Barney, Wright and Ketchen, 2001; Wernerfelt, 1984). Competitive advantage is achieved through resources and capabilities that are valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991; Barney, Wright and Ketchen, 2001). Resources and capabilities are combinations of various tangible and intangible assets, which include information and knowledge that the firm possesses, the organizational processes and routines that the firm uses, and the managerial skills that the firm has at its disposal (Barney, Wright and Ketchen, 2001). Thus, the resource-based view focuses on the internal capabilities and organization of the firm, rather than on external factors; this perspective separates it from earlier theoretical frameworks, such as the positioning perspective of Porter (1980), which focuses on industry structure and the positioning of the firm within that structure as main determinants of performance (Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000). The resource-based view is reflected in an increased emphasis placed by the acquisition research on resource bases as the main determinants of strategic fit in acquisitions. From the resource-based perspective, strategic fit reflects the strategic compatibility of the resources of the acquirer and the target (Bauer and Matzler, 2014; Larsson and Finkelstein, 1999; Zaheer, Castañer and Souder, 2013). In their ground-breaking study, Harrison et al. (2001) found that firm resources and their characteristics from the point of view of resource complementarity contributed to acquisition performance. Complementarities make possible unique combinations of resources specific to the acquirer and to the target firm, which are more difficult for the competitors to imitate. The importance of complementarities for value creation is emphasized in more recent acquisition studies (Bauer and Matzler, 2014; Björkman, Stahl and Vaara, 2007; Kim and Finkelstein, 2009; Makri, Hitt and Lane, 2010; Zaheer, Castañer and Souder, 2013).

The knowledge-based view is a further development of the resource-based view: it applies the arguments of the resource-based view to the specific context of knowledge as a key resource of the firm (Grant, 1996, 1997; Kogut and Zander, 1992, 1993). Consequently, the firm is conceptualized as a social community for the purposes of knowledge transfer, and the research focus is on the coordination mechanisms by which knowledge transfer takes place (Grant, 1996, 1997; Kogut and Zander, 1992, 1993; Ranft and Lord, 2002). 'Knowledge transfer' refers to the use by the receiving firm of the sending firm's knowledge (Minbaeva et al., 2003), and consists of knowledge flows in different directions (Bresman, Birkinshaw and Nobel, 1999; Capron, 1999; Gupta and Govindarajan, 2000). The knowledge-based view has become increasingly popular in acquisition research. In acquisitions, knowledge transfer consists of three types of flows: from the acquirer to the target (acquirer knowledge transfer); from the target to the acquirer (target knowledge transfer); and a combination of the two (mutual knowledge transfer).

Consistent with the knowledge-based arguments, researchers have focused on explaining the antecedents of knowledge transfer in acquisitions (Lakshman, 2011; Ranft, 2006; Ranft and Lord, 2000, 2002; Sarala et al., 2014), with less focus on whether and how different types of knowledge flows contribute in practice to acquisition outcomes (for a notable exception, see Capron, 1999).

Another extension of the resource-based view is the dynamic capability perspective, which focuses on identifying the sources and mechanisms of superior performance for firms that operate within dynamic environments (Eisenhardt and Martin, 2000; Teece, Pisano, and Shuen, 1997). Although the resource-based view acknowledges the organizational and managerial processes of the firm, (Barney, Wright and Ketchen, 2001), these are more clearly at the centre of the dynamic capability perspective, according to which it is through these processes that the firm shapes its resource positions and path dependencies, allowing the firm to adapt to dynamic market conditions (Teece, Pisano, and Shuen, 1997). Identifying new opportunities and embracing them through effective and efficient organizational processes is the focus of the dynamic capability perspective (Teece, Pisano, and Shuen, 1997). We maintain that much of the acquisition literature on PMI is explicitly or implicitly based on the dynamic capability perspective. According to the 'process perspective' of Haspeslagh and Jemison (1991), even if the synergy potential is sound, the expected synergies need to be realized during PMI. Thus, consistent with the dynamic capability perspective, Haspeslagh and Jemison (1991) present PMI as a distinctive organizational change process by which resource renewal takes place. Most commonly, researchers have distinguished between the operational and sociocultural dimensions of PMI as mechanisms for achieving coordination in acquisitions (Birkinshaw, Bresman and Håkanson, 2000; Björkman, Stahl and Vaara, 2007; Pablo, 1994; Puranam, Singh and Chaudhuri, 2009; Vaara et al., 2012). Operational integration generates a powerful effect between acquiring and target firms when resource interdependences are present (Puranam, Singh and Chaudhuri, 2009). But neglecting the sociocultural aspects of integration can have negative consequences (Birkinshaw, Bresman and Håkanson., 2000), such as increased employee turnover (Ranft and Lord, 2000) and social conflict (Björkman, Stahl and Vaara, 2007; Vaara et al., 2012). Indeed, it has been suggested that common ground (Puranam, Singh and Chaudhuri, 2009), strong ties (Ranft and Lord, 2000, 2002), cultural understanding (Birkinshaw, Bresman and Håkanson, 2000; Schweiger and Goulet, 2005), flexible human resources (Sarala et al., 2014), leadership style (Zhang et al., 2014), and employee attitudes and motivation (Colman and Lunnan, 2011; Graebner, 2004; Graebner and Eisenhardt 2004) are critical for PMI. These types of sociocultural aspects contribute to informal control, which can complement or even substitute formal control in acquisitions (Puranam, Singh and Chaudhuri, 2009). Furthermore, the extent to which the firms make efforts to learn about and understand each other's cultures after the acquisition affects the willingness of firm members to collaborate (Birkinshaw, Bresman and Håkanson, 2000; Schweiger and Goulet, 2005; Zueva-Owens, Fotaki and Ghauri, 2012).

Although we have presented studies on the PMI process to stem theoretically from the dynamic capability perspective, a large portion of them combine arguments from the dynamic capability perspective with those stemming from the knowledge-based view by proposing that the aim of PMI is to facilitate in particular the transfer of the complex and socially embedded organizational knowledge by which synergies can be created (Lakshman, 2011; Ranft, 2006; Ranft and Lord, 2000, 2002). Therefore, this work has examined both knowledge characteristics (e.g. Bresman,

Birkinshaw and Nobel, 1999; Ranft, 2006; Ranft and Lord, 2002) and the PMI process (e.g. Björkman, Stahl and Vaara, 2007; Ranft and Lord, 2002; Vaara et al., 2012) as antecedents to knowledge transfer in acquisitions, but to date no research considers strategic agility in a similar way. Below we discuss research on strategic agility and apply it to the acquisition context.

STRATEGIC AGILITY

Agility refers broadly to the firm's ability to adapt continuously to changing and uncertain environments (e.g. Goldman, Nagel and Preiss, 1995; Lin, Chiu and Chu, 2006), where competitive advantage is often temporary and frequent strategic moves are required (Chen, Katila, McDonald and Eisenhardt, 2010). Agility is particularly important in environments characterized by high competitive intensity (Grewal and Tansuhaj, 2001). Thus, from the dynamic capability perspective, agility can be understood as a key capability of the firm in dynamic environments (Fourné, Jansen and Mom, 2014; Weber and Tarba, 2014). Agile firms are able to create dynamic portfolios of products, services or business models in order to outmanoeuvre competitors (Dyer and Ericksen, 2005). Agile firms also integrate knowledge from around the world to fuel continuous innovation (Wilson and Doz, 2011), which links agility to the knowledge-based view.

Agility requires the ability to make fast decisions by simultaneously considering as many alternatives as possible (Judge and Miller, 1991). Agility also requires the ability to undertake fast and smooth transformations in the configuration of the firm (Dyer and Ericksen, 2005; Shafer et al., 2001), which can take place in different firm activities, including strategy (e.g. Brannen and Doz, 2012), innovation and knowledge sharing (Wilson and Doz, 2011), leadership (Lewis, Andriopoulos and Smith, 2014; McKenzie and Aitken, 2012), organization (Brueller, Carmeli and Drori, 2014; Goldman, Nagel and Preiss, 1995; Morgan and Page, 2008), manufacturing (e.g. Goldman et al., 1991), supply chains (Lin, Chiu and Chu, 2006), information systems (Tallon and Pinsonneault, 2011; Sarker and Sarker, 2009; Weill, Subramani and Broadbent, 2002) and human resources (Dyer and Ericksen, 2005; Shafer et al., 2001). Transformations also take place in different firm units (Fourné, Jansen and Mom, 2014) or across organizational boundaries through different types of inter-organizational relationships (Im and Rai, 2008; Kauppila, 2010; Preiss, Goldman and Nagel, 1996).

Doz and Kosonen (2008a, 2008b, 2010) were among the first strategy researchers to comprehensively apply the concept of agility to strategy research. They described strategic agility as the ability of the organization to renew itself and remain flexible without sacrificing efficiency. Furthermore, they described three meta-capabilities required for strategic agility. First, to be strategically agile, the firm needs strategic sensitivity, which has to do with its ability to become aware of market trends and converging forces in order to quickly take advantage of new opportunities (Doz and Kosonen, 2010). Second, strategic agility requires resource fluidity, that is, the capability to rapidly redeploy resources and reconfigure business systems (Doz and Kosonen, 2010). Resource fluidity allows the firm to respond quickly to market changes and to

stay ahead of the competition. Finally, strategic agility requires collective commitment,¹ so that the firm can profit from arising opportunities without being slowed down by internal disagreements and conflict (Doz and Kosonen, 2010).

Drawing on the work of Doz and Kosonen (2008a, 2008b, 2010), we proceed to examine the role of strategic agility as a component of the acquisition process. We propose that strategic agility in acquisitions is a dynamic organizational process that functions as a coordination mechanism in support of knowledge transfer. This view of strategic agility as a dynamic coordination mechanism for knowledge transfer combines both the dynamic capability perspective and the knowledge-based view: the dynamic capability perspective emphasizes that coordination mechanisms are dynamic organizational and managerial processes; the knowledge-based view focuses on the role of knowledge and knowledge transfer in these organizational and managerial processes.

THE ROLE OF STRATEGIC AGILITY IN ACQUISITIONS

Strategic sensitivity in acquisitions as a determinant of knowledge transfer: identifying asymmetric and complementary knowledge

The first component of strategic agility is strategic sensitivity, which relates to the ability of the firm to become aware of strategic developments that allow for its renewal and transformation (Doz and Kosonen, 2010). Applied to the acquisition context, strategic sensitivity relates to the acquirer's ability to identify targets that help the merging firms to renew or transform their resource bases (Doz and Kosonen, 2008b, 2010). As discussed in the review of the acquisition literature, firm resources and their characteristics are central for acquisition value creation (Bauer and Matzler, 2014; Larsson and Finkelstein, 1999; Harrison et al., 2001; Zaheer, Castañer and Souder, 2013). Complementarities make possible unique resource combinations that are specific to the combination of acquirer and target resources and, as such, quite difficult for the competitors to imitate (Bauer and Matzler, 2014; Zaheer, Castañer and Souder, 2013). We propose that, in addition to complementarities, asymmetry is an important resource characteristic for acquisition value creation, because combining a firm that has weak resources with one that has stronger resources allows the weaker firm to upgrade its resource base (Capron, Dussauge and Mitchell, 1998; Capron, Mitchell and Swaminathan, 2001). We maintain that complementarities and asymmetries are two key resource characteristics in acquisitions, because they provide the basis for idiosyncratic bilateral synergy, producing enhanced value from an acquisition that is idiosyncratic to the combined resources of the acquiring and target firms (Eschen and Bresser, 2005; Mahoney and Pandian, 1992). Therefore, we propose that strategic sensitivity in acquisitions refers to identifying successfully target firms with complementary or asymmetric resource bases. Consistent with the knowledge-based view that considers knowledge as the most important resource of the firm (Grant, 1996, 1997; Kogut and Zander, 1992, 1993; Ranft and Lord, 2002), we focus specifically on complementary and asymmetric knowledge.

¹ The terms 'collective commitment' and 'leadership unity' have been used interchangeably (Doz and Kosonen (2008a, 2008b; Doz and Kosonen, 2010). We use the term 'collective commitment' because it is broader: in their article, Doz and Kosonen (2010, p. 381) wrote that leadership unity is only one determinant of 'a top team's ability to reach collective commitments' [emphasis added].

Complementary knowledge refers to the target firm's knowledge that is different from that of the acquirer firm, but that can be combined with the acquirer's knowledge to allow new and unique knowledge combinations (Björkman, Stahl and Vaara, 2007). Complementary knowledge contributes to knowledge transfer by increasing the potential for knowledge transfer in acquisitions (e.g. Bauer and Matzler, 2014; Björkman, Stahl and Vaara, 2007; Kim and Finkelstein, 2009). Asymmetric knowledge is expressed in one partner having a considerably stronger knowledge base than the other (Capron, Dussauge and Mitchell, 1998; Capron, Mitchell and Swaminathan, 2001). Asymmetric knowledge increases knowledge transfer, as the firm with a weaker knowledge base learns from the one with a stronger knowledge base (Capron, Dussauge and Mitchell, 1998; Capron, Mitchell and Swaminathan, 2001). Table 1 provides illustrations of how strategic sensitivity, in the form of identifying knowledge complementarities or knowledge asymmetries, facilitated knowledge transfer in acquisitions conducted by Danone, P&G and Cemex. Thus, we propose the following:

H1:

Strategic sensitivity, that is, a successful identification of targets with complementary or asymmetric knowledge bases, is positively associated with post-acquisition knowledge transfer.

Resource fluidity in acquisitions as a determinant of knowledge transfer: a high degree of integration

The second component of strategic agility is resource fluidity, which refers to the ability of the firm to rapidly redeploy resources and reconfigure operations (Doz and Kosonen, 2010). Thus, from the dynamic capability perspective, resource fluidity can be seen as a distinctive organizational and coordinative capability created through management-controlled organizational processes (Eisenhardt and Martin, 2000; Teece, Pisano, and Shuen, 1997). We suggest that resource fluidity in acquisitions is manifested through a high degree of integration between the acquiring and target firms,² by which the two firms are consolidated into a functioning combined organization (Pablo, 1994), so that managers can more effectively redeploy and reconfigure the resources and operations of both firms (Puranam, Singh, and Zollo, 2006). We further suggest that a high degree of integration enhances the realization of interdependence-based synergies between the firms (Pablo, 1994), including knowledge transfer. Increased interaction between the firms as a result of integration allows the partner firms to gain easier access to each other's knowledge bases (Ranft and Lord, 2000, 2002). A high degree of integration also makes it easier for firm members to identify and understand potentially valuable knowledge that could be transferred to the other firm (Gupta and Govindarajan, 2000; Zollo and Singh, 2004). Furthermore, a high degree of integration aligns the systems and procedures between the firms, producing a coordination platform on which knowledge transfer takes place (Jansen, Van Den Bosch and Volberda, 2005; Van den Bosch, Volberda and de Boer, 1999). Table 1 includes the acquisitions by Cemex and Cisco as examples of how a high degree of integration enhanced knowledge transfer. Accordingly, we suggest the following:

² Resource fluidity, in the form of a high degree of integration, may result from changes in one organization or both. Whereas 'absorption' acquisitions typically result in the target adjusting to the acquirer, 'symbiosis' acquisitions require mutual adjustment between the acquiring and the target firms (Haspeslagh and Jemison, 1991; Pablo, 1994).

Table 1. Illustrations of suggested relationships

Suggested relationship	Example
Strategic sensitivity – identifying targets with complementary or asymmetric knowledge – as a determinant of knowledge transfer	<ul style="list-style-type: none"> • Danone demonstrated strategic sensitivity by identifying Stonyfield as a target with complementary knowledge: Danone had a clear gap in its knowledge of the dairy market in the area of organic food products, which was Stonyfield's strength. This complementary knowledge was the basis for subsequent knowledge transfer (Austin and Leonard, 2008; Mirvis, 2008). • P&G showed strategic sensitivity by carefully mapping the processes of both P&G and Gillette, in order to identify complementary knowledge embedded in the best practices of both firms (Kanter, 2009). Knowledge transfer took place through the combination of complementary best practices of both firms (Kanter, 2009). • Cemex manifested strategic sensitivity by identifying RMC's troubled cement plant in the UK as a target that could be turned around with Cemex's asymmetric knowledge. Knowledge transfer resulted from implementing the superior global standards, processes, and practices of Cemex at the RMC plant (Kanter, 2009).
Resource fluidity – implementing a high degree of integration – as a determinant of knowledge transfer	<ul style="list-style-type: none"> • When Cemex acquired the RMC plant, resource fluidity was achieved by tightly integrating RMC's processes and practices with those of Cemex. The increased interaction that resulted from tight integration, together with the training that the employees of the RMC plant received in Cemex practices and standards as part of the integration efforts (Kanter, 2009), supported the transfer of knowledge from Cemex to RMC. • In Cisco's acquisition of Grand Junction, resource fluidity was obtained by combining the key functions of both firms (Chaudhuri, 2005). For instance, engineers from both firms worked on joint projects, making possible mutual knowledge transfer as they solved problems together and shared their knowledge of how each firm worked.
Collective commitment – generating acceptance of the partner's culture or cultural learning – as a determinant of knowledge transfer	<ul style="list-style-type: none"> • The importance of cultural perceptions for building collective commitment can be seen in the acquisition of RMC by Cemex. Consistent with a conceptualization of acquisitions as courtship (Graebner and Eisenhardt, 2004), the target was 'pulled' toward the acquisition by the attractive high-performance culture of Cemex: members of the target firm realized that without Cemex the RMC plant would be unlikely to survive, and they could see that Cemex was committed to upgrading the plant. Thus, cultural acceptance by the target firm helped build collective commitment around the acquisition. Collective commitment built through cultural acceptance (Kanter, 2009) supported knowledge transfer from Cemex to RMC because it helped RMC to perceive the value of the Cemex knowledge. Similarly, in Disney's acquisition of Pixar, in order to build collective commitment, Disney clearly communicated that it valued Pixar's innovative culture (Brooks, 2008). Collective commitment based on Disney's acceptance of Pixar's culture probably facilitated knowledge transfer from Pixar to Disney because it made the acquirer appear less threatening. • As an example of the importance of cultural learning for building collective commitment, Cemex was willing to invest time in learning about RMC's culture and consequently helped strengthen collective commitment. The collective commitment built through cultural learning (Kanter, 2009) supported knowledge transfer from Cemex to RMC because it increased Cemex's understanding of the cultural context of RMC and helped to alleviate employee fears. Similarly, in the Nordea merger, which combined several Nordic banks, cultural learning resulted in the creation of a new 'Nordic' identity that supported collective commitment to the new combined organization, and was essential for supporting mutual knowledge transfer between the combined units (Björkman, Tienari and Vaara, 2005).
Acquirer knowledge transfer as a determinant of performance Target knowledge transfer as a determinant of performance	<ul style="list-style-type: none"> • In the acquisition of RMC's plant by Cemex, knowledge transfer from Cemex led to quick productivity increases at the RMC plant (Kanter, 2009). • Disney benefited from making use of Pixar's knowledge in animations and storylines, which helped increase Disney's 'creative momentum', and it translated into an increasing number of blockbuster movies and increased operating profit (<i>The Economist</i>, 2008).
Mutual knowledge transfer as a determinant of performance	<ul style="list-style-type: none"> • When P&G acquired Gillette, mutual knowledge transfer based on the resources of both firms allowed the firm to jointly create new unique and difficult to imitate processes and methods, which benefited the performance of both firms (Kanter, 2009).

H2:

Resource fluidity, through a high degree of integration of the acquiring and target firm operations, is positively associated with post-acquisition knowledge transfer.

Collective commitment in acquisitions as a determinant of knowledge transfer: cultural acceptance and cultural learning

Finally, Doz and Kosonen (2008a, 2010) argued that strategic agility requires collective commitment in order for the firm to profit from arising opportunities. Collective commitment encompasses building common ground, common interest, empathy and trust in order to increase the engagement of organizational members (Doz and Kosonen, 2010). We conceptualize collective commitment as a sociocultural organizational process. From the dynamic capability perspective, collective commitment is related to an important role of organizational processes in supporting learning (Teece, Pisano, and Shuen, 1997). In the absence of collective commitment, disagreements and organizational conflict can slow down learning. Consistent with regarding collective commitment as a sociocultural process, we propose that, in acquisitions, it is determined by underlying cultural factors. Perceptions of the partner's organizational culture represent an important element that influences the nature of the subsequent organizational processes between the merging firms (e.g. Nahavandi and Malekzadeh, 1988; Sarala et al., 2014). More specifically, 'collective commitment' in acquisitions is determined both by perceptions of the partner firm's culture (Marks and Mirvis, 2011; Nahavandi and Malekzadeh, 1988; Sarala, 2010) and by post-acquisition efforts to learn more about that culture (Schweiger and Goulet, 2005). Concerning the former, 'cultural acceptance' refers to the extent to which the acquirer or target firm sees value in the partner firm's culture (Schweiger and Goulet, 2005). In the presence of cultural acceptance, building collective commitment is easier. As Nahavandi and Malekzadeh (1988) argued, culture functions as the bond that unites organizational members behind a common purpose. Concerning the latter, collective commitment is also more likely when the firms invest in cultural learning during the integration process. 'Cultural learning' results from implementing cultural integration activities, such as informal gatherings, cultural awareness seminars and culture building activities (Schweiger and Goulet, 2005). Cultural learning contributes to collective commitment by allowing the partners to examine and question each other's prevailing values, practices and assumptions (Schweiger and Goulet, 2005). This increases understanding of the partner's culture and makes it easier to see the common ground in the current values of the firms. It also makes it easier to identify opportunities for building a common ground through the introduction of new shared values and identity.

We suggest that collective commitment in acquisitions, resulting from pre-acquisition cultural acceptance or post-acquisition cultural learning, contributes to knowledge transfer by facilitating learning of the partner's knowledge. Consistent with Bresman, Birkinshaw and Nobel (1999) and Björkman, Stahl and Vaara (2007), we suggest that participation in knowledge exchange processes is contingent upon sharing a sense of identity and belonging with the acquisition partner. Learning processes are intrinsically social and collective (Teece, Pisano, and Shuen, 1997). Specifically, collective commitment increases the ability and motivation of the knowledge recipient to learn from the partner: when the knowledge is context-embedded, there is a need to understand knowledge in its original cultural context before transferring it to a different one (Wilson and Doz, 2011). Furthermore, the knowledge recipient is less likely to feel that the

partner's knowledge 'contaminates' its existing knowledge base (Empson, 2001) when the knowledge stems from a valued and trusted source. Collective commitment is also likely to increase the motivation of the knowledge sender. When the knowledge recipient is valued and trusted, employees are less likely to fear being exploited by the partner firm. Knowledge hoarding due to fears of knowledge exploitation has been found to be a key barrier to knowledge transfer in acquisitions (Empson, 2001; Junni, 2011). Moreover, cultural acceptance can make it easier to 'attract' knowledge, which is based on encouraging the knowledge holders to actively seek out recipients for their knowledge (Wilson and Doz, 2011). Finally, collective commitment based on common ground functions as an informal control mechanism that offers coordination benefits (Puranam, Singh and Chaudhuri, 2009) and may help to increase employee retention, which has been linked to knowledge transfer because of the retention of valuable tacit and socially complex knowledge embedded in the individual and collective human capital that is retained (Ranft and Lord, 2000). Table 1 illustrates the importance of collective commitment in knowledge transfer in deals conducted by Cemex, Disney and Nordea. Therefore, we suggest the following:

H3:

Building collective commitment through cultural acceptance and collective learning is positively associated with post-acquisition knowledge transfer.

Post-acquisition knowledge transfer as a determinant of acquisition performance

Knowledge transfer consists of several types of knowledge flows (Bresman, Birkinshaw and Nobel, 1999; Capron, 1999), which have the potential to contribute to post-acquisition performance. First, knowledge transfer takes place from the acquirer to the target firm (acquirer knowledge transfer) through, for example, the transfer of the acquirer's best practices and technological updates. It can contribute to performance through increased productivity and efficiency of operations (Haspeslagh and Jemison, 1991). Second, knowledge can be transferred from the target firm to the acquirer (target knowledge transfer). Target knowledge transfer can contribute to performance by upgrading the acquirer's knowledge base through the assimilation of the target's knowledge (Ahuja and Katila, 2001; Chaudhuri, 2005; Lane, Salk and Lyles, 2001). Finally, knowledge transfer can consist of the combined transfer of both the acquiring and target firms' knowledge (mutual knowledge transfer). Mutual knowledge transfer can contribute to the development of complex organizational capabilities that are particularly difficult for competitors to imitate, and thereby improves the competitive performance of the firm (Eschen and Bresser, 2005; Szulanski, 1996). Table 1 describes how different types of PMI knowledge transfers enhanced the performance of acquisitions conducted by Cemex, Disney and P&G. Based on the above arguments, we propose the following hypothesis:

H4:

Post-acquisition knowledge transfer, consisting of acquirer knowledge transfer, target knowledge transfer, and mutual knowledge transfer, is positively associated with acquisition performance.

Figure 1 depicts the model proposed in the hypotheses.

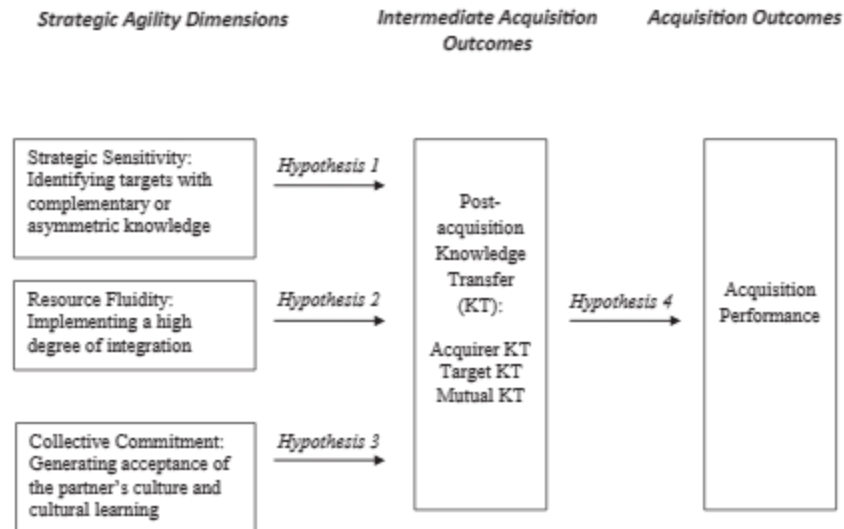


Figure 1. Strategic agility in acquisitions

METHOD

Data collection

We collected survey data on acquisitions conducted by Finnish companies between 2006 and 2010 based on acquisition deals reported in the Finnish ‘Talouselämä’ magazine. We excluded management buy-outs and purely financial acquisitions. The response rate was 17.5%, which is comparable with other acquisition studies using survey data (e.g. Capron, 1999; Morosini, Shane and Singh, 1998; Mukherjee, Kiymaz and Baker, 2004).

We received 87 responses from the acquiring firms and 36 responses from the targets; 93 of these were single responses and 19 multiple responses. The final data set included 123 responses from 104 acquisitions, after two cases were excluded because of low inter-rater reliability. International acquisitions represented 35% of the sample. Survey respondents were top executives with intimate knowledge of the acquisition.

We evaluated potential non-response bias by examining independent sample t-test results between the firms in our sample and in the rest of the population concerning elapsed time after the acquisition and the size of the target firm. Neither variable was significant, which suggests that non-response bias did not affect our data. To minimize common method variance, we emphasized study confidentiality to the respondents, used pre-validated measures and added several variables between the independent and dependent variables that were not part of this study (Chang, van Witteloostuijn and Eden, 2010).³

³ We also conducted statistical tests for common method variance. In Harman's single factor test, the first and second factors explained a small portion of the variance (19% and 13%) (Podsakoff and Organ, 1986). The partial least squares analyses showed high discriminant validity, which further alleviated concerns of common method variance.

Measures

Cronbach's alphas for all multi-item constructs were acceptable (above 0.70) and are listed in Table 2.

Table 2. Assessment of multi-item constructs^a

Construct	Cronbach's alpha	Composite reliability	Average variance extracted	Range of factor loadings
Acquisition performance	0.76	0.85	0.58	0.72–0.80
<i>Intermediate outcomes:</i>				
Acquirer knowledge transfer	0.85	0.89	0.57	0.69–0.83
Target knowledge transfer	0.83	0.88	0.54	0.69–0.81
<i>Strategic sensitivity:</i>				
Knowledge complementarity	0.72	0.83	0.62	0.55–0.91
<i>Resource fluidity:</i>				
Integration degree	0.87	0.91	0.66	0.67–0.86
<i>Collective commitment:</i>				
Target's acceptance of the acquirer's culture	0.86	0.91	0.76	0.79–0.92
Acquirer's acceptance of the target's culture	0.88	0.93	0.80	0.87–0.92
Cultural learning	0.79	0.86	0.61	0.74–0.82

^a Constructs that were formed as a product (mutual knowledge transfer) or as a relative average measure (knowledge asymmetry) are excluded from the table, because the reliability statistics are not applicable.

Acquisition performance

Based on prior work (Paruchuri, Nerkar and Hambrick, 2006; Very et al., 1997; Weber, Rachman-Moore and Tarba, 2012), we asked respondents how the performance of the acquiring and target firms has changed after the acquisition (from 1 = significantly declined to 7 = significantly improved) with respect to the following aspects: (a) operating profit of the acquiring company, (b) operating profit of the target company, (c) productivity of the acquiring company and (d) productivity of the target company. Financial statements available for 51 publicly listed companies (49% of the sample) confirmed the validity of the survey responses.

Acquirer knowledge transfer

Based on Capron (1999), we measured knowledge transfer from the acquirer to the target (from 1 = not at all to 7 = very much) in the following areas: (a) general management expertise; (b) product innovation capabilities; (c) know-how in manufacturing processes; (d) sales and marketing expertise; (e) supplier relations; and (f) distribution and logistics expertise.

Target knowledge transfer

This construct was similar to the construct above, but measured knowledge transfer from the target to the acquirer.

Mutual knowledge transfer

We formed this construct based on the interaction term (product) of the 'acquirer knowledge transfer' and 'target knowledge transfer' constructs.

Strategic sensitivity: knowledge complementarity

Based on Jap (1999), respondents assessed the level of complementarity between the acquirer's and target's knowledge bases by responding to the following statements (from 1 = strongly disagree to 7 = strongly agree): The acquirer and target (a) contribute different capabilities to the relationship, (b) have complementary strengths that are useful to the relationship and (c) have separate abilities that, when combined together, enable them to achieve goals beyond their individual reach.

Strategic sensitivity: acquirer knowledge asymmetry

Drawing on Capron, Mitchell and Swaminathan (2001), we measured the relative strength of the acquirer's knowledge compared with the target's knowledge in the same areas as in the knowledge transfer measures. We first measured the degree of expertise that the acquiring and target firms had in each area (from 1 = not at all to 7 = great expertise). Next, we subtracted the target's expertise from the acquirer's expertise in each area, and calculated the average value of the differences. Thus, our measure of knowledge asymmetry ranged from 'low' (indicating that the target possessed superior knowledge compared with the acquirer) to 'high' (indicating that the acquirer possessed superior knowledge compared with the target).

Resource fluidity: degree of integration

Building on Haspeslagh and Jemison (1991), we measured the level of integration (from 1 = no integration to 7 = total integration) in the following areas: (a) management and control; (b) sales and marketing; (c) production; (d) research and development; and (e) finance.

Collective commitment: target's acceptance of the acquirer's culture

Based on Schweiger and Goulet (2005), we measured the target's acceptance of the acquirer's culture by asking respondents to evaluate to what extent (from 1 = not at all to 7 = very much) the personnel of the target firm (a) think that the acquirer's culture has valuable aspects, (b) understand why their colleagues in the acquiring company are proud of their organizational culture, and (c) think that they like and would enjoy being part of the acquiring company's culture.

Collective commitment: acquirer's acceptance of the target's culture

This construct was similar to the one above, except that the questions concerned the acquirer's acceptance of the target's culture.

Collective commitment: cultural learning

Drawing on the study of Schweiger and Goulet (2005), we measured cultural learning as the extent (from 1 = not at all to 7 = very much) to which the acquirer and target arranged (a) for supervisors from the acquiring and target companies to introduce members of each company to each other, (b) informal gatherings (such as picnics, excursions and parties) for all employees from the acquiring and target companies, (c) cultural awareness seminars to explore cultural differences and their management, and (d) activities aimed at deciding which cultural attributes should be retained, eliminated or adopted, and how to integrate the cultures of the acquirer and of the target.

Control variables

Acquisition motives

Based on Haspeslagh and Jemison (1991), we asked respondents to indicate how important the following motives were in acquiring the target business (from 1 = not important to 7 = very important): (a) economies of scale; (b) expanding into a related business; (c) obtaining patents, R&D or technological knowledge from the target; and (d) obtaining other types of knowledge from the target (sales, management). Because we did not expect that the motives to obtain patents, R&D or technological knowledge would necessarily correlate with the motive to obtain other types of knowledge from the target firm, we constructed an index measure for the motive of obtaining knowledge from the target by summing items (c) and (d) above.

Target size

It has been argued that the integration of larger target firms affects acquisition performance negatively (Bower, 2001). Therefore, we controlled for the size of the target firm by including a measure of its net sales (millions of EUR) at the time of the acquisition.

Elapsed time

The amount of time that has elapsed after an acquisition can affect acquisition performance (Zollo and Meier, 2008). Therefore, we controlled for elapsed time by including a measure of the number of years that have passed after the acquisition (1–4 years).

International acquisitions

It has been argued that international acquisitions are more difficult to manage than domestic ones (Brock, 2005). We therefore created a binary variable to control for whether the acquisition was international (coded as 1) or domestic (coded as 0).

Service sector acquisitions

Drawing on Pablo (1994), we controlled for a possible service industry effect in acquisitions by constructing a binary variable (service industry = 1; non-service industry = 0).

RESULTS

We conducted a partial least squares (PLS) analysis with the SmartPLS program (Ringle, Wende and Will, 2005), a method commonly used in strategic management research in general (Birkinshaw, Morrison and Hulland, 1995; Cording, Christmann and King, 2008; Hair et al., 2012; Meznar and Nigh, 1995) and in acquisition research in particular (Bauer and Matzler, 2014; Homburg and Bucerius, 2005; Straub, Borzillo and Probst, 2013; Zollo and Meier, 2008). Partial least squares is well suited for analysing complex, multi-level models (Hair, Ringle and Sarstedt, 2012; Henseler, Ringle and Sinkovics, 2009). It is accurate for smaller sample sizes (Birkinshaw, Morrison and Hulland, 1995) and takes all path coefficients and item loadings into account, which reduces parameter estimate biases (Bagozzi, 1981; Cording, Christmann and King, 2008; White, Varadarajan and Dacin, 2003). Descriptive statistics and correlations are presented in Table 2.

Measurement model

In PLS, the measurement model is evaluated by calculating reliability and validity statistics, including Cronbach's alpha values, composite reliability, standardized factor loadings, average variance and cross-loadings (Gefen, Straub and Boudreau, 2000). All Cronbach's alpha values exceeded 0.7, the composite reliability for each construct was over 0.7, and the standardized factor loadings of most items exceeded 0.7, supporting the reliability of our constructs (Henseler, Ringle and Sinkovics, 2009). Convergent validity was supported by average variance values greater than 0.50 for all constructs (Fornell and Larcker, 1981). Additional details are provided in Table 3. Discriminant validity was established by the square root of average variance exceeding all corresponding correlations (Fornell and Larcker, 1981), and by cross-loadings showing that all items loaded highest on their respective constructs (White, Varadarajan and Dacin, 2003).

Structural model

In PLS, the overall fit of the structural model (Figure 2) is assessed by the level of variance explained (R²) by each construct (Gefen, Straub. and Boudreau, 2000). Furthermore, the significance of each structural path is established by a path beta coefficient and its corresponding t-statistic (p-value) and effect size (f²) (Gefen, Straub, and Boudreau, 2000). Regarding the overall fit of the structural model, the R² score of the acquisition performance construct was acceptable (0.29) (Henseler, Ringle and Sinkovics, 2009). R² scores for the acquirer knowledge transfer (0.49), target knowledge transfer (0.36) and mutual knowledge transfer (0.21) constructs were also acceptable. Taken together, these values suggest a good overall fit of the structural model.

We tested our hypotheses by analysing the significance of the structural model paths. First, we examined the effect of two distinct elements of strategic sensitivity – identifying targets with complementary or asymmetric knowledge – on post-acquisition knowledge transfer. Knowledge complementarity was positively related to both target knowledge transfer ($\beta = 0.362$, $p < 0.001$, $f^2 = 0.16$) and mutual knowledge transfer ($\beta = 0.216$, $p < 0.05$, $f^2 = 0.05$), but not to acquirer knowledge transfer. Knowledge asymmetry – measured as the acquirer having a stronger knowledge base than the target – was positively related to acquirer knowledge transfer ($\beta = 0.362$, $p < 0.001$, $f^2 = 0.22$), negatively related to target knowledge transfer ($\beta = -0.303$, $p < 0.01$, $f^2 = 0.09$), and weakly negatively related to mutual knowledge transfer ($\beta = -0.159$, $p < 0.1$, $f^2 = 0.03$). In a separate analysis, the reversed measure, i.e. the relative strength of the target's knowledge, was positively related to target knowledge transfer, negatively related to acquirer knowledge transfer, and weakly positively related to mutual knowledge transfer. Thus, Hypothesis 1 suggesting a positive relationship between strategic sensitivity, that is, a successful identification of targets with complementary or asymmetric knowledge bases and post-acquisition knowledge transfer was mainly supported. Next, we examined the effect of resource fluidity from the point of view of a high degree of integration on post-acquisition knowledge transfer. We found that a high degree of integration was positively related to acquirer knowledge transfer ($\beta = 0.374$, $p < 0.001$, $f^2 = 0.23$) and target knowledge transfer ($\beta = 0.178$, $p < 0.05$, $f^2 = 0.04$), but not to mutual knowledge transfer. This provided some support for Hypothesis 2, which posited a positive relationship. Furthermore, we tested the effect of collective commitment, that

is, acceptance of the partner's culture and cultural learning, on post-acquisition knowledge transfer. We found that the target's acceptance of the acquirer's culture was weakly positively related to acquirer knowledge transfer ($\beta = 0.107$, $p < 0.1$, $f^2 = 0.02$), weakly negatively related to mutual knowledge transfer ($\beta = -0.150$, $p < 0.1$, $f^2 = 0.02$), and unrelated to target knowledge transfer. The acquirer's acceptance of the target's culture was positively related to mutual knowledge transfer ($\beta = 0.168$, $p < 0.05$, $f^2 = 0.03$), but unrelated to acquirer or target knowledge transfer. Finally, cultural learning was positively related to acquirer knowledge transfer ($\beta = 0.260$, $p < 0.01$, $f^2 = 0.11$) and target knowledge transfer ($\beta = 0.159$, $p < 0.05$, $f^2 = 0.03$), but unrelated to mutual knowledge transfer. Thus, we found some support for Hypothesis 3. Finally, we examined the effect of post-acquisition knowledge transfer (acquirer knowledge transfer, target knowledge transfer and mutual knowledge transfer) on acquisition performance. Acquirer knowledge transfer ($\beta = 0.410$, $p < 0.001$, $f^2 = 0.15$) and mutual knowledge transfer ($\beta = 0.154$, $p < 0.05$, $f^2 = 0.02$) were positively related to acquisition performance, but the relationship between target knowledge transfer and performance was not significant. Thus, Hypothesis 4, suggesting a positive link between post-acquisition knowledge transfer and acquisition performance, was supported for acquirer knowledge transfer and mutual knowledge transfer, but not for target knowledge transfer. Of the control variables, only the size of the target firm was related to acquisition performance ($\beta = -0.232$, $p < 0.1$, $f^2 = 0.07$).

CONCLUSION

Although considerable research effort has been expended on identifying the key drivers of acquisition outcomes (Haleblian et al., 2009; King et al., 2004), prior work has not applied the concept of strategic agility to the management of the acquisition process. Our aim was to clarify the role of strategic agility as a component of the acquisition process by investigating its constituent elements and effects on knowledge transfer in the context of acquisitions. We also examined the effect of knowledge transfer on acquisition performance.

Regarding the effects of the components of strategic agility, we first examined the effect of strategic sensitivity in acquisitions (represented by identification of target firms with complementary or asymmetric knowledge bases) on PMI knowledge transfer. We found that complementary knowledge bases of the acquirer and the target enhanced target and mutual knowledge transfer, but not acquirer knowledge transfer. One reason for this could be that the complementarities were embedded primarily in the target's knowledge base, and therefore the emphasis was on leveraging the target's knowledge (Chaudhuri, 2005), either through transferring it on its own or in combination with the acquirer's knowledge. We found that asymmetric knowledge contributed to one-directional knowledge transfer, from the partner with a stronger knowledge base to the partner with a weaker one. This is consistent with the findings of Capron, Mitchell and Swaminathan (2001) showing that resources tend to flow from firms with stronger resource bases to those with weaker ones. But when the acquirer had a stronger knowledge base, mutual knowledge transfer decreased slightly. By contrast, mutual knowledge transfer increased slightly when the target had a stronger knowledge base. These findings indicate that acquisitions of weaker target firms increase acquirer knowledge transfer at the expense of mutual knowledge transfer, whereas acquisitions of stronger target firms increase both target knowledge transfer and mutual knowledge transfer.

Second, we examined the effect of resource fluidity in acquisitions, as captured by a high level of integration, on PMI knowledge transfer. The results showed that a high degree of integration supported one-directional knowledge transfer (acquirer knowledge transfer or target knowledge transfer). This is consistent with prior studies showing that increased coordination between the acquiring and target firms contributes to post-acquisition knowledge transfer (Bresman, Birkinshaw and Nobel, 1999; Puranam and Srikanth, 2007; Vaara et al., 2012). A high degree of integration, however, did not generate mutual knowledge transfer. Taken together, these results indicate that a high degree of integration supports primarily the leveraging of one partner's existing knowledge by the other firm (Puranam and Srikanth, 2007), rather than multidirectional flows.

Third, we tested the effect of collective commitment in acquisitions, as represented by cultural acceptance and cultural learning, on knowledge transfer. Regarding cultural acceptance, we found that the target's acceptance of the acquirer's culture slightly increased acquirer knowledge transfer, whereas the acquirer's acceptance of the target's culture increased mutual knowledge transfer. These findings are broadly consistent with the argument that positive attitudes can facilitate knowledge transfer (Empson, 2001; Junni, 2011). Acquirer knowledge transfer, however, was not affected by the acquirer's acceptance of the target's culture. Similarly, the acquirer's acceptance of the target's culture had no effect on target knowledge transfer. This indicates that one-directional transfers (acquirer knowledge transfer; target knowledge transfer) may be based primarily on strategic and operational considerations rather than on cultural attractiveness. The acquiring firm may have a clear understanding of how the target firm's knowledge can contribute to the acquirer's operations on its own (Eschen and Bresser, 2005), and this target knowledge is incorporated into the integration plan without much regard to cultural attractiveness. This is consistent with the finding that the target's acceptance of the acquirer's culture had no effect on target knowledge transfer either. Note, however, that the target's acceptance of the acquirer's culture slightly reduced mutual knowledge transfer. This suggests that the target's acceptance of the acquirer's culture may cause the target firm to assume the more passive role of knowledge recipient because of its admiration of the acquirer (Colman and Lunnan, 2011), which is however detrimental for mutual knowledge transfer, which requires the active participation of both partners. Concerning cultural learning, the dimension of collective commitment supported one-directional knowledge transfer (acquirer knowledge transfer; target knowledge transfer), but not mutual knowledge transfer. This is consistent with studies suggesting that cultural learning is important for creating a collaborative atmosphere between members of the merging firm and for reducing resistance to change (Schweiger and Goulet, 2005), which in turn can support post-acquisition knowledge transfer. But even deeper cultural interventions may be needed for supporting mutual knowledge transfer.

Table 3. Descriptive statistics and correlations

Constructs	Mean	SD	1	2	3	4	5	6	7	
1. Control: aim – achieve economies of scale	3.724	2.022	(1.000)							
2. Control: aim – expand into a related business	4.641	2.296	-0.190	(1.000)						
3. Control: aim – obtain knowledge from the target	7.353	3.063	-0.266	0.290	(1.000)					
4. Control: target firm size	31.058	76.345	0.059	-0.127	-0.001	(1.000)				
5. Control: elapsed time	2.394	1.018	0.062	-0.156	-0.107	0.016	(1.000)			
6. Control: international acquisitions	0.337	0.475	0.034	-0.097	0.117	0.094	0.064	(1.000)		
7. Control: service sector acquisitions	0.481	0.502	0.055	-0.098	-0.089	-0.116	0.157	0.007	(1.000)	
8. Strategic sensitivity: knowledge asymmetry	0.629	1.283	0.045	-0.085	-0.392	-0.253	-0.118	0.123	-0.013	
9. Strategic sensitivity: knowledge complementarity	5.322	1.172	-0.182	0.488	0.561	0.057	-0.362	-0.102	-0.143	
10. Resource fluidity: integration degree	5.338	1.290	0.299	-0.065	-0.058	0.039	0.003	-0.055	-0.009	
11. Collective commitment: target's acceptance of the acquirer's culture	4.781	1.161	0.169	0.055	-0.034	-0.084	-0.028	0.055	-0.035	
12. Collective commitment: acquirer's acceptance of the target's culture	4.511	1.262	0.054	0.145	0.173	0.143	-0.061	0.055	0.024	
13. Collective commitment: cultural learning	3.162	1.175	0.037	0.157	0.293	-0.012	-0.086	0.038	-0.054	
14. Intermediate outcome: acquirer knowledge transfer	4.515	1.353	0.269	-0.069	-0.202	-0.080	-0.079	-0.019	-0.146	
15. Intermediate outcome: target knowledge transfer	3.763	1.337	0.065	0.305	0.490	0.081	-0.137	-0.173	-0.087	
16. Intermediate outcome: mutual knowledge transfer	17.298	8.656	-0.171	0.116	0.244	0.092	-0.250	-0.123	-0.052	
17. Acquisition performance	4.479	0.990	0.187	0.097	-0.111	-0.269	-0.088	-0.159	-0.012	
Constructs	8	9	10	11	12	13	14	15	16	17
1. Control: aim – achieve economies of scale										
2. Control: aim – expand into a related business										
3. Control: aim – obtain knowledge from the target										
4. Control: target firm size										
5. Control: elapsed time										
6. Control: international acquisitions										
7. Control: service sector acquisitions										
8. Strategic sensitivity: knowledge asymmetry	(1.000)									
9. Strategic sensitivity: knowledge complementarity	-0.147	(0.789)								
10. Resource fluidity: integration degree	0.242	-0.060	(0.813)							
11. Collective commitment: acceptance of the acquirer's culture	0.116	0.002	0.204	(0.881)						
12. Collective commitment: acceptance of the target's culture	-0.178	0.236	-0.059	0.325	(0.897)					
13. Collective commitment: cultural learning	0.052	0.317	0.204	0.031	0.053	(0.783)				
14. Intermediate outcome: acquirer knowledge transfer	0.480	-0.069	0.538	0.253	0.004	0.333	(0.753)			
15. Intermediate outcome: target knowledge transfer	-0.319	0.471	0.117	0.075	0.252	0.301	0.195	(0.736)		
16. Intermediate outcome: mutual knowledge transfer	-0.269	0.314	-0.223	-0.142	0.211	0.118	-0.307	0.090	(1.000)	
17. Acquisition performance	0.289	-0.016	0.316	0.211	-0.023	0.215	0.418	0.114	-0.003	(0.763)

Numbers in parentheses denote the square root of the average variance extracted (all constructs are reflective). Values are based on standardized variables. N = 104.

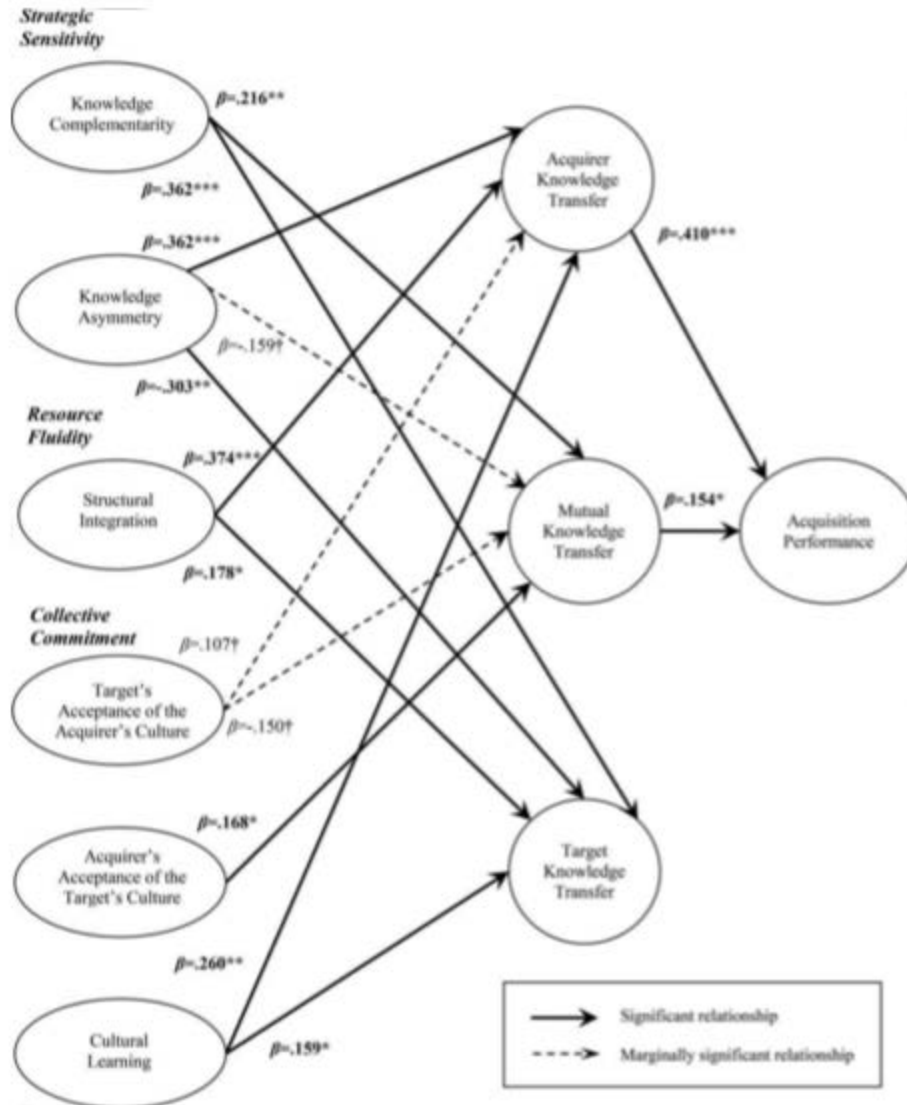


Figure 2. Results of the PLS analysis $\dagger p < 0.1$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$, $N = 104$; missing values replaced with mean, one-tailed tests. All continuous measures were standardized before entering them into the analysis. Non-significant relationships are included in the statistical model, but are excluded from this figure

We found that acquirer knowledge transfer contributed to performance following the acquisition. This provides empirical evidence for the substantial benefits of introducing the acquirer's knowledge in the target firm (Haspeslagh and Jemison, 1991). Most likely, these benefits are related to efficiency increases and cost savings resulting from the introduction of the acquirer's practices in the target firm (Ambrosini, Bowman and Schoenberg, 2011). Mutual knowledge transfer also contributed to performance. The benefits are likely to stem from the creation of complex knowledge combinations that amalgamate the acquirer's and target's knowledge through extensive multidirectional transfers. But the performance implications were not as strong as in the case of acquirer knowledge transfer, which suggests that mutual knowledge transfer, because of its complexity, may involve greater costs or fewer benefits than acquirer knowledge transfer.

In general, the positive effects of acquirer and mutual knowledge transfer on acquisition performance are consistent with prior studies suggesting that post-acquisition knowledge transfer can enhance acquisition performance (Ahammad and Glaister, 2011; Capron, 1999). But contrary to our expectations, target knowledge transfer did not affect acquisition performance. A possible explanation is that the target's knowledge is unique and valuable, not only to the acquirer but also to rival firms, which can lead to a bidding war that increases the acquisition premium (Eschen and Bresser, 2005) and makes it more difficult to profit from the acquisition. This is less likely to happen in mutual knowledge transfer acquisitions, where the target knowledge is unique and valuable only when it is combined in complex ways with specific knowledge from the acquiring firm, a situation that limits the number of potential bidders, because not all firms can benefit from the target's knowledge (Eschen and Bresser, 2005). An alternative explanation is that implementing the target firm's knowledge in the acquiring firm takes time and requires extensive resources, which can offset the benefits (Chaudhuri and Tabrizi, 1999). Overall, these findings suggest the need to distinguish carefully between different directions of knowledge transfer when examining their performance effects in acquisitions.

Our study has limitations that should be considered when interpreting the results. First, cross-sectional data cannot establish the direction of causality. Second, Finnish acquisitions may have unique characteristics related to small and open developed economies. Third, although perceptual measures have been commonly used in prior acquisition studies (Capron, 1999; Very et al., 1997; Zollo and Meier, 2008), and have been found to correlate with accounting measures (Papadakis and Thanos, 2010), it is possible that the results would differ if accounting or financial measures were used. Fourth, our survey captured the situation 1–4 years after the acquisition. Although we controlled for the time elapsed since the acquisition, it is possible that some acquisition benefits or costs take even longer to materialize. Finally, we focused on acquisitions in which at least some level of integration was intended. Knowledge transfer is likely to be less important in financial or holding types of acquisitions (Haspeslagh and Jemison, 1991), which were excluded from our sample. Future studies might use our framework on larger samples obtained from different socio-economic settings with external performance measures and longitudinal designs. It would also be beneficial to examine further the role of strategic agility in acquisitions by including additional variables in the model or by examining possible moderating effects.

The present study has important managerial implications. It is important for executives to be strategically sensitive in acquisitions, to identify and assess the knowledge of potential target firms and to use this information to analyse and screen potential candidates. Executives should also evaluate at the outset the difficulty of creating resource fluidity and collective commitment. Discussing these aspects during the negotiation stage and creating an integration plan together with target firm executives can help increase commitment to the post-acquisition integration stage. Finally, during the integration process, as well as after it is completed, it is useful to reassess whether the planned knowledge-based synergies have been achieved. This can help executives of the acquiring firm to improve both pre- and post-acquisition processes in future acquisitions. Further suggestions for executives are presented in Table 4.

Table 4. Managerial recommendations

Type of knowledge transfer	Managerial recommendations
Acquirer knowledge transfer	<ul style="list-style-type: none"> • Seek partners that allow leveraging the acquirer's superior knowledge, for example, through efficiency improvements in the target. • It is critical to achieve a high degree of integration with the target firm. • Invest in cultural learning. • Persuade the target that the acquirer has an attractive culture and a great deal to offer to the target. • Recognize acquirer knowledge transfer as an important value creation mechanism in acquisitions.
Target knowledge transfer	<ul style="list-style-type: none"> • Seek partners that have superior or complementary knowledge bases. • Invest in a high degree of acquisition integration. • Implement cultural learning. • Be extremely cautious about engaging in acquisitions in which the value creation rationale relies exclusively on target knowledge transfer.
Mutual knowledge transfer	<ul style="list-style-type: none"> • Seek targets with complementary knowledge bases. • Make sure that members of the acquiring firm understand that the target has a valuable culture. Reinforce the value of the target's culture. • Be aware of excessive admiration of the acquirer's culture by the target.

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