Towards a Learning Perspective on Knowledge/Technology Transfer through Corporate Acquisitions

Marleen Huysman  
Vrije Universiteit Amsterdam  
Mhuysman@fewec.vu.nl

Dorothy Leonard  
Harvard Business School  
Dleonard@hbs.edu

Allison Nicolle  
Harvard Business School  
Allisonnicolle@mindspring.com

Abstract

Although corporate acquisitions are on the rise, not much is known about the micro processes of knowledge and technology transfer after the deal is closed. The goal of this present research is to add to this knowledge by reviewing the literature while addressing two questions: ‘what enables knowledge transfer in acquisitions’ and ‘what can organizations do to manage the knowledge transfer more successfully?’. The paper presents an organizational learning perspective on corporate acquisitions and discusses how organizations could learn from past and present acquisitions.

1. Introduction

Corporate acquisitions have become an increasingly important way for companies to gain access to new knowledge and capabilities. Huber [1] refers to this type of organizational learning through acquisition as ‘grafting’. Grafting is a form of external learning or learning from others and relates to knowledge acquisition through access to new members. Or in the words of Huber: “organizations frequently increase their store of knowledge by acquiring and grafting on new members who possess knowledge not previously available within the organization. Sometimes grafting-on of carriers of new knowledge is done on a large-scale basis, as in the case of the acquisition of a whole organization by another. For acquiring complex forms of information or knowledge, grafting is seen to be faster than (knowledge) acquisition through experience and more complete than (knowledge) acquisition through imitation”. Not all corporate acquisitions are meant to support organizational learning through grafting. A company’s acquisition motive might also be to enlarge their client base, increase the number of eye balls on their website, to gain access to distribution channels, to gain entry into new market, to obtain financial synergy or market power or to expand globally. Particularly in knowledge intensive and high-tech industries, companies buy other, often smaller companies in order to gain new knowledge capabilities. The most cited and well-known firms that have a track record of buying for knowledge assets are companies such as Cisco, HP, Lucent, Nortel Networks, etc. Although lately these companies have reduced their R&D acquisitions, in knowledge intensive areas other then the computer hardware industry, companies increasingly engage in acquisitions in order to gain new knowledge that they themselves do not have [2]. A great deal of acquisition activity is occurring today in the computer software industry, in the biotech industry and in the pharmaceutical industry. It has also been speculated that the number of acquisitions will rise because bigger companies are now starting to buy internet-related companies as a way to enter this field of knowledge.

Although acquisitions are on the rise, practice shows that most acquisitions fail to meet expectations. Apparently, acquiring a firm with valuable knowledge does not guarantee that the knowledge will be successfully transferred to or combined with the resources of the acquirer. Various reports have been published which estimate failure rates at anywhere from 60 to 80% [3]. These numbers would suggest an urgent need to gain further insight into how to manage and structure learning though acquisition. Moreover, given that many larger organizations make multiple acquisitions, this rate of failure suggests that these organizations are not effectively learning from their past experiences. It is therefore surprising to note that research into the micro processes of knowledge transfer through acquisition is strikingly limited. In the following, we will review the literature in order to assess what is already known about knowledge transfer as a result of acquisition. We will address the
question of what modes of knowledge transfer are and should be used to enhance value creation through acquisition. Based on this analysis we present an organizational learning model that we believe is useful for organizations that want engage in corporate acquisitions. The model incorporates pre-conditions and modes of learning through grafting and also acknowledges managerial intervention as an expression of past learning. The model can also be used as a research model to test its basic ideas with empirical data.

The purpose of the research is to contribute to a more detailed understanding of how, when and why knowledge is transferred such that we can derive ideas about how to manage and learn from it. Its major purpose is to introduce possible knowledge management tools and strategies to improve future knowledge transfer strategies.

2. Knowledge transfer through acquisitions

In a very simplified manner, acquisition processes can be portrayed as such:

Decision making before acquisition → Knowledge transfer → Creating value

Figure 1. Simple process model of acquisitions

The figure says that acquisitions create value through the transfer of knowledge and that this knowledge transfer is influenced by the decision making process that takes place before the deal is closed. In line with Haspeslagh and Jemison [4], by value creation we mean that acquisitions create value when the competitive advantage of one firm is improved through the transfer of strategic capabilities. Typically, value creation is measured by an increase of patented products or increased ROI as an indicator of successful assimilation of external knowledge.

In this paper, we will open up the black box of knowledge transfer in order to analyze what conditions are necessary to improve knowledge sharing so that value is created. Although we focus on knowledge transfer explicitly, we first briefly discuss the decision making process before acquiring a company, as these decisions influence later knowledge transfer activities.

Although many of the deals are believed to be lucrative to the companies involved, it does not necessarily follow that everyone in the organization is motivated to learn new knowledge or to teach their knowledge to others. Knowledge transfer after acquisitions is contingent upon the two partners - the target and the parent - being motivated to work together [8]. Without this intent, a deal can be closed but knowledge will not be transferred. In section 2.2, we will discuss four general pre-conditions for knowledge transfer that we believe influence the actual process of knowledge transfer. This will be followed by a discussion in section 2.3 of possible knowledge management tools to improve knowledge transfer.

2.1 Decision making before acquisition

During the early decision making stage before the deal is closed, organizations analyze the feasibility of the acquisition. This stage is also referred to as the stage of ‘due diligence’. Haspeslagh and Jemison [4] discuss four problems inherent in the acquisition decision making process that negatively influence the ability to develop a good justification for an acquisition: fragmented perspectives, increased momentum, ambiguous expectations, multiple motives.

Because so many specialists are involved, fragmented perspectives on the analysis and decision making severely limits a rich and in-depth overview of the feasibility of the possible acquisition. What Haspeslagh and Jemison also encountered in their detailed research on acquisitions is the consequence of ‘increased momentum’. Most of the time due diligence is characterized by faced-paced, hectic and frenetic activities. As a result, participants in the process do not allow for reflection time to think their actions through. They also found ambiguous expectations from both sides. In a way, parties implicitly agree not to discuss these ambiguities during the process of due diligence as this might jeopardize the successful completion of the deal. While this ambiguity helps to speed up the decision process, these unresolved issues often become major problems after the deal is closed. These issues range from operational conflicts to power struggles such as who will be the chairperson. Another major source of ambiguity that often leads to post acquisition problems and consequently impedes knowledge transfer is conflicting motives. Any acquisition involves multiple stakeholders with differing priorities. In order to overcome possible hurdles, different views of the acquisition may be ‘sold’ to different parties. Of course, after the deal is closed these multiple motives become a source of disagreement, and often lead to an unwillingness to cooperate.

2.2 Pre-conditions for effective knowledge transfer

We discern four general pre-conditions that influence knowledge transfer during acquisitions. They are derived from an extensive literature review, using literature on merger and acquisitions, organizational learning, strategic alliances, and technology transfer. As part of our inductive
research, we also made use of expert knowledge of people who are or have been involved in corporate acquisitions.

2.2.1. Degree of integration
The extent to which the acquired company is integrated into the parent company is as much an art as it is a science. The continuum ranges from complete assimilation to a completely autonomous approach. The more completely the acquired firm is integrated into the acquiring company the more effectively knowledge can be transferred. However, too much integration too quickly will change the identity of the acquired company thus increasing the likelihood of employee attrition, taking valuable knowledge with them. Conversely, a more hands-off approach will hinder knowledge transfer, particularly in the domain of tacit knowledge which requires close cooperation and proximity.

Several studies argue that co-location enables knowledge transfer [3]. The closer the target is to the parent, the more easily the knowledge flows. This is especially important when the knowledge is highly ambiguous; an aspect we will discuss in more detail below.

Although full integration may seem desirable at first, it often destroys the inherent properties of the acquired firm that allowed it to create knowledge in the first place. This phenomenon is also referred to as the ‘goose or the golden egg’ phenomenon [6]. By integrating the target into the parent company, companies run the risk of killing the goose that lays golden eggs. This relates to the difference between technological capabilities and dynamic capabilities [9] as well as the difference between human capital and social capital. Companies acquire whole entities instead of hiring one key person or the technology only. They do this because the knowledge lies in the dynamic capabilities and the social networks of the companies and not in a single technology nor in a single head [9]. This is the purest instance of grafting of capabilities. The benefits of an acquisition depend on if and how the acquirer is able to integrate the acquired knowledge with its own [4]. This paradoxical nature of grafting knowledge through acquisition is often discussed in popular press and also accepted among practitioners in the field of strategic alliances and mergers and acquisitions [15,16].

2.2.2. Degree of similarity
The degree of similarity between the acquiring and acquired company also influences knowledge transfer. In general it can be said that the greater the degree of similarity, the easier knowledge is transferred. However, while too much similarity makes one a less attractive candidate to be bought, dissimilarity implies a lack of absorptive capacity. In our literature review we found several areas in which similarity between the target and the parent plays a role: similarity in knowledge, size, organizational context, culture and IS/networks.

A certain degree of overlap in knowledge bases between the acquired and acquiring company will facilitate learning (e.g. 8,12,13). Overlap will create receptivity the capacity, desire and opportunity of organizations to learn from their partners [14]. The closer the new knowledge is to its own knowledge base, the easier it will be for the firm to identify, understand and use the new knowledge [13]. This notion of Absorptive Capacity [13] is widely acknowledged and appeals to many researchers and practitioners in the field of strategic alliances and mergers and acquisitions [15,16].

The basic idea is “what can be learned is crucially affected by what is already known” [17, p. 120]. This breadth of knowledge is important for three stages: selection, collaboration and integration of external knowledge with the proprietary knowledge of the firm.

Literature on ‘absorptive capacity’ [13] states that experience in related technical fields (in-house knowledge) and complementarity of assets positively affects a firm’s capability to assimilate new information from its alliance partners. Similarity between partners thus positively influences knowledge transfer.

Extreme similarity and dissimilarity are not fruitful but knowledge bases with moderate degrees of relatedness provide the ‘benefits of enhancing the variety of possible combinations that the firm can use, while maintaining the elements of commonality that facilitate interaction [18]. However, firms with dissimilar knowledge bases may still be able to learn from each other if they are similar on other dimensions. Lane and Lubatkin [15] for example argue that contextual features such as formalization, centralization and compensation practices can mediate and improve knowledge transfer. Lane and Lubatkin also found a positive relationship between the similarity of
organizational context such as governmental structure and the success of acquisition. The idea is that a certain degree of similarity must exist in terms of the two organizational contexts, in order to transfer knowledge.

Next to organizational context, the relative size of the knowledge base has been a topic of concern. Some authors have found a positive relationship between the relative size of the knowledge base and the success of the acquisition [6,18]. The underlying rationale is that if the acquired firm’s knowledge base is small relative to the acquirer, the modifications required are likely to be minor [18]. Likewise, if the acquired firm’s knowledge base is large relative to the acquiring firm, fairly major changes would have to be made in the acquiring firm, leading to a significant disruption of existing processes. Thus the larger the knowledge base in comparison to the knowledge base of acquiring firm, the more difficulty organizations have integrating the knowledge.

Some degree of similarity in organizational culture has also been proposed as an important ingredient to successful knowledge transfer. Organizational culture involves the shared meaning, norms and values that have been collectively constructed over the years. It is highly implicit and very difficult to change. As a result, it is better to acquire companies that do not differ greatly in terms of culture. Of course, striving for similar organizational cultures is a mission impossible as by definition organizational cultures are unique. What is possible however is to strive for an understanding of each other’s culture, and for this, some similarity is needed [4]. Based on field practice, Buono and Bowditch [19] argue that cultural differences are one of the main reasons why many acquisitions don’t last. Puranam bases similar arguments on in-depth research at Cisco. Ernst and Vitti [20] argue however that small cultural differences remain important to enhance performance.

Finally and related to culture is the need for similarity in Information systems and networks. Problems resulting from systems incompatibility have often been reported in the literature [21]. But also electronic networks that support knowledge exchange should be compatible [21]. Most of the knowledge that is meant to be acquired, is however of a tacit nature. Electronic networks are less helpful as tools to support its transfer. For this purpose organizations rely on informal networks and ties. Making these personal networks compatible is perhaps even more important given the dominance of the tacit dimension of the knowledge to be transferred [12,22]. After having discussed the nature of knowledge in more detail, we return to the importance of these components of social capital.

2.2.3. Degree of knowledge ambiguity

Many authors from various traditions have warned that knowledge cannot be transferred easily from one company to the other (e.g. [23,24,25]). Simonin [25] argues that this difficulty in learning from others relates to the degree of knowledge ambiguity. Knowledge ambiguity refers to the underlying notion of knowledge transferability. A high degree of knowledge ambiguity means a lack of understanding of logical linkages between action and outcomes, inputs and outputs and causes and effects that are related to technological or process knowledge. Many authors have concentrated their research on dimensions of knowledge that foster or impede transferability [23,25,26]. Simonin [25] postulated that tacitness of knowledge, specificity of knowledge and complexity of knowledge will increase knowledge ambiguity and therefore will cause problems of knowledge transfer. His empirical study showed that this was only significantly true for degree of tacitness.

Transfer of technology knowledge after acquisition cannot rely on codified knowledge only. Often team-based implicit knowledge needs to be transferred [27]. Spender [28] refers to this type of knowledge as “collective knowledge”; embedded knowledge in the form of social and institutional practices residing in tacit experiences of a collective, such as routines. Transfer of this type of knowledge is a slow process and is seldom effected by formal mechanisms such as reports and memoranda [27].

In general, it is argued that the higher the perceived knowledge ambiguity the lower the possibility for knowledge transfer. Here again we touch upon a paradox; the more knowledge can be expressed in words and thus codified, the less important it is for an organization to buy a whole organization as they can rely on alternatives, for example by buying the codified knowledge stored in manuals or patents. Mostly, companies acquire other companies because of the capabilities that are shared by the team and that are very difficult to express.

Knowledge ambiguity also relates to the speed of learning. The more strategic the skills, the more difficult it will be to transfer them and the slower the learning will be. Strategic capabilities are difficult to imitate because they are embedded in the skills of a group of individuals and in the procedures and cultures of a firm [4,24,29]. Because of this need for slow learning, autonomy for the acquired firm is needed in the beginning where both firms begin to learn from each other and eventually transfer resources [4,7].

2.2.4. Degree of shared social capital

Alliances that result from acquisition vary in their level of social capital. With social capital, reference is made to that part of the intellectual capital of the firm that is generated
by knowledge shared in networks of individuals. Whereas the other part of intellectual capital: human capital refers to individual knowledge. It can be argued that alliances high on shared social capital are best suited for knowledge transfer [35]. Again the match should be balanced: very high degrees of social capital will make the acquisition inefficient because the existence of shared high levels of social capital already provides enough trust and continuity to learn from each other. In fact, the mere act of acquiring each other in communities very high on social capital might even be counter productive. On the other hand, alliances that are very low on social capital will not provide enough trust, mutuality and continuity to stimulate knowledge transfer.

Socio-psychological factors such as trust, corporate commitment, motivation and social controls have been discussed in the literature on acquisitions [44]. Only sporadically is the concept of social capital used to refer to the enabling or hindering factors in organizational learning through acquisitions. Because the idea of social networks as the most suitable mode to transfer tacit knowledge is increasingly accepted, the literature on strategic alliances will probably use the notion of social capital more frequently in the near future. Social capital has been classified by Nahapiet and Goshal [31] into three dimensions: a structural dimension, relating to the network ties and configurations; a cognitive dimension, relating to shared codes, language and narratives; and a relational dimension, relating to trust, norms, obligations and identification. If the alliance is high on the structural dimension of social capital, this would mean that the target and partner share informal networks and ties through which knowledge may easily flow. The structural dimension of social capital focuses mainly on the density of networks [32,33]. Density of a network refers to the extent to which actors of a network are interconnected. Density in relation to corporate acquisitions is especially relevant for the search of potentially interesting future targets.

The social capital’s cognitive dimension may enable knowledge transfer in the sense that shared language, customs, and traditions can make communication between organizations less difficult. The “communicative capacity” of the partners is thus an important factor for the transparency of knowledge [34].

If an alliance is high on the relational dimension of social capital, this would mean that the target and partner share norms and a sense of mutual trust and reciprocity. In contrast to the structural ‘density’ aspects of networks, the relational aspects are referred to by the concept of ‘strength of strong or weak ties’ [35]. Strong ties are important for acquisitions because they ease the knowledge transfer after the deal is closed. Strong ties imply a high degree of trust, which makes the entire process flow more smoothly. It is generally accepted that mutual trust positively influences the possibility of knowledge transfer (e.g. [36]). Trust is needed to safeguard against opportunism [37]. Trust between partners is needed not only because a large dimension of the knowledge that is to be shared is of a tacit nature. Trust is also needed because a lot of this knowledge is proprietal [14,34,36]. Alliances high on the relational dimension also share a sense of mutuality, meaning that people not only want to learn themselves but also want to help others to learn. According to Haspeslagh and Jemison [4] this willingness to transfer knowledge also depends on the size of the company and the differences in culture. E.g. larger firms tend to be less willing to teach. Besides size, this aspect of organizational teaching in business relationships depends also on the arrogance of the firm and other power issues [38]. The degree of mutual trust and the level of protectionism also influences knowledge transfer.

In general however most alliances are not built on existing social structures, let alone structures that have a high degree of social capital. Because of the self-reinforcing and emergent nature of social capital [39], it is difficult to stimulate or invest in social capital as a re-active management tool. Implications for management point to more pro-active measures such as including a degree of shared social capital as a condition of the search process that proceeds the actual acquisition. We will return to this in section 4.

2.3. Knowledge management tools

There are various knowledge management tools that support the transfer of knowledge after acquisition. Table two shows two major areas of intervention and their related ‘knowledge management’ tools

<table>
<thead>
<tr>
<th>Areas of interventions</th>
<th>Knowledge management Tools</th>
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<tr>
<td>Mutual communication</td>
<td>Create encounters, networks, training, mutual understanding, stimulate grassroots interactions, job rotation, site visits</td>
</tr>
<tr>
<td>Retention strategies</td>
<td>Earn-outs, team-buddy, sandboxes, status, options, etc.</td>
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2.3.1. Mutual communication

Knowledge transfer will be facilitated when attention is paid to the communication infrastructure that enables knowledge sharing. We could think of electronic networks
such as email and Intranets, and non-electronic networks, based on individual interactions. Electronic networks only convey explicit knowledge, whereas non-electronic interactions may also convey tacit knowledge. Given that in case of acquisitions, the knowledge that is meant to be transferred is usually of a highly ambiguous nature, personal interactions are extremely important in the post-acquisition phase [7].

Because individual knowledge and perspectives remain personal unless they are amplified and articulated through social interaction [12], organizations should stimulate the occurrence and need for such interactions. By creating the opportunity for knowledge connections, social interactions between the acquired and acquiring company provide the foundation for evolving communities of practice [40]. Knowledge connections are formed through formal and informal relationships between individuals and groups and are driven by the belief that the transfer of tacit knowledge is best achieved through “mutual adaptation among members with common knowledge and shared implicit coding schemes accumulated through group interactions” ([41], pp. 978).

Examples of such knowledge connections are team buddy situations where a new employee is paired with the acquirer’s personnel on a one to one basis. Knowledge connections can also be created through site visits and tours, and formal and informal meetings between parent and target organization [22].

The literature on acquisitions is rather ambiguous about the benefits of job rotation and personnel transfers during acquisition. While job rotation is a strategy that is often adopted in order to stimulate learning from new comers, research is unclear regarding its tangible benefits. Job rotation is often mentioned as a facilitating mechanism, because it is believed to ensure that resources and routines acquired in the alliance are transferred back to the parent firm. However, it can have a negative effect when the rate of rotation is too high [22,42]. When time spent in contact with the partner is reduced because of high rotation rate, no learning will occur, especially when resources are tacit. Chakrabarti [27] found that although many companies used job rotation as a way to improve linkages, the empirical test shows almost no significant correlation with performance.

From the organizational behavior school, the suggestion is made to stimulate mutual communication not only after the acquisition, but also ex ante in order to prepare the people involved. The idea is that through training sessions, visits, tours, etc. appreciation for each others culture is created which will benefit knowledge transfer after the deal is closed [19]. Buono and Bowditch [19] thereby argue for a more dominant role of Human Resource Development managers in bridging cultural differences.

2.3.2. Retention strategies

Given that people, and especially teams are the carriers of the knowledge that is meant to be transferred, it is taken for granted that organizations should prevent the inevitable turnover of people that occurs after a deal is closed. Although most of the empirical data on the relation between turnover and performance show a negative correlation, the results are still mixed. Chakrabarti [27] found a negative relation between turnover of senior technical people and performance. Based on extensive quantitative research Ranft and Lord [21] found however that the turnover of top management has a less negative impact on performance than the turnover of middle management and R&D people. Retention strategies are thus needed as mechanisms to cope with this problem. A very well known retention strategy is the use of contractual ‘earn outs’, including options for employees tied to performance milestones. The question is whether these ‘golden handcuffs’ that create financial hostages, will indeed stimulate knowledge transfer. No clear empirical evidence has been found to support the notion that financial incentives benefit the flow of knowledge. Although in the field of global strategic alliances some evidence was found that financial incentives do not result in retention [43,44].

Other studies on acquisitions show that providing status [7] or prestige [45] seems to be more important retention strategies than financial incentives. Puranam and Sigh [3] found that in the case of high tech R&D acquisitions, other retention strategies were possible, such as providing access to capital-intensive equipment or ‘sandboxes’. Clearly much more empirical research is needed on managing knowledge transfer after acquisitions. Up to now, the sporadic literature is very limited and even contradictory.

3. Towards a learning perspective on corporate acquisitions

There are two reasons why research on knowledge transfer through corporate acquisition would benefit from an organizational learning perspective. First, as noted earlier, the acquisition of a company for the purpose of grafting technologies should be studied as a process of organizational learning. Secondly, as many companies are becoming frequent buyers, learning not only takes place during the process of knowledge transfer but also as a process of knowledge re-use.
In other words, companies learn from others in order to incorporate external knowledge and learn from themselves by incorporating past experience into their future strategy and management of acquisitions. Below we will discuss the two aspects of learning in more detail with the help of a learning model of corporate acquisitions as shown in figure 2.

![Figure 2. A learning model of corporate acquisitions](image)

### 3.1. Learning from others

As mentioned in section 2, research on acquisitions can be divided into various schools. We believe that a combination of these schools provide more useful insight into the concept of corporate acquisitions. More specifically, combining an organizational behavior perspective with a process perspective yields greater insight into the strategic aspects of acquisitions. This paper takes a step in that direction. We argue that individuals and groups, through the process of knowledge transfer, have a strategic impact. By perceiving knowledge transfer after acquisitions as a process of learning through grafting, we assume that through knowledge sharing, individuals have an impact on the process of acquisition and as a result, effect the outcome. This organizational learning approach and the influence of human aspects is even further supported by the introduction of the concept of social capital as an important pre-condition to knowledge transfer and its influence on value creation.

Thus, the process of learning through grafting seems to be not only “a potentially important determinant of acquisition outcomes” [5], but of strategic importance. Increasingly, research is being conducted on how the process of knowledge transfer affects final outcomes. These researchers believe that, as a result of impediments to learning, many acquisitions fail. Although clearly much more research is needed to support this argument, literature in strategic alliances other than acquisitions, have already pointed to the strategic impact of knowledge transfer by knowledge sharing individuals [22,23,34].

### 3.2. Learning from the past

For many companies, acquiring a company is not a single unique event. In fact large companies particularly in the high tech area such as Lucent, HP, Cisco, Nortel, etc. have a track record of buying more than one firm a year. To them, these interventions could be a product of organizational learning. Organizations learn from their past through feedback information. There are various authors who have proposed such a systems dynamics approach to organizational learning (e.g. [46,47,48,49]). Argyris and Schon [46], following Bateson [49] have introduced two ways in which organizations learn from feedback information: single loop learning and double loop learning. Single loop learning happens when an organization reacts to information regarding the results of organizational actions, by adjusting its future actions. In general, organizations tend to do reasonably well as single loop learners. Double loop learning occurs when organizations react to feedback signals by reflecting first on the governing variables such as the hidden norms and values that trigger the actions. Organizations in general are not very good in double loop learning [46]. As discussed below, we believe that this also applies to learning from past acquisitions, although more research is needed to support this impression. While single loop learning happens through adapting actions to experiences with previous acquisitions, double loop learning happens when previous experiences are taken into account in the decision making prior to the deal. Learning from past acquisitions by introducing knowledge management tools to foster knowledge transfer can be seen as an act of single loop learning. The organization learns by adjusting action strategies but leaves governing variables untouched [46]. Single loop learning happens through ex-post interventions: knowledge management tools to improve knowledge sharing. These concern interventions to improve knowledge transfer after the deal is made. In section 3 we already discussed several knowledge management tools that can be used to support knowledge transfer after acquisition.

Learning from past experiences can also be supported by codifying the lessons learned and storing them in manuals, knowledge databases etc. This strategy represents one of the most traditional knowledge management tools. Experience with knowledge management in organizations indicates however that codifying past experience in order to support knowledge re-use has its problems. For example, people have difficulty contributing to a re-use policy, for several reasons: their knowledge cannot easily be expressed in words, they do not benefit from it, they do not spend time reflecting on past experiences, an
unwillingness to use knowledge of others, or just because these past experiences do not fit the present situation [50]). These experiences might imply that codifying past experience is not a viable option or that other media should be used, such as for example videos.

Double loop learning sets in when companies already think about and create favorable conditions for knowledge transfer before the deal is closed. Double loop learning happens through ex-ante interventions, by including knowledge audits in due diligence. These concern interventions to improve knowledge transfer before the deal is made. Rivera et al [42] proposes the introduction of an interface or organizational structure in charge of dealing with gathering experiences from previous alliances in order to support subsequent alliances. Such an interface can be centralized: just one structure or team supervising the alliance operation, or decentralized: no central structure, each alliance is supervised and managed independently. Centralization can both facilitate and hinder learning. Facilitate as it can build on past experience, hinder as there is a danger for path-dependency in the identification process. It would therefore be more efficient when the centralized interface captures the diversity of the group of employees as to recognize and understand the target-knowledge.

During the due diligence stage the feasibility of the deal is assessed and analyzed. One would suggest that during this stage attention is given to questions like what and whose knowledge needs to be transferred and how shall we transfer this knowledge. Most often, these “knowledge audits” do not occur or occur sporadically or superficially. With knowledge audits we refer to strategies or mechanisms that can be used to improve the selection of potentially successful targets. Knowledge audits are meant to reflect on the question “how can we more accurately identify the most critical knowledge to be shared before the deal is closed?”. The pre-conditions for effective knowledge transfer, as discussed in section 3.2 of this paper, could be the focus of knowledge audits. For example, the acquirer should analyze the various degrees of similarities with the target, such as the degree of similar knowledge base, similar size, similar culture, information systems etc. [16].

An interesting question for further research would be if and in what way the notion of social capital can help to analyze and assess the viability of possible future acquisitions. The likelihood of knowledge transfer and collaboration increases as firms with strong ties develop norms and sanctions and clarify expectations and obligations [31]. Because of mutual understanding and trust, open exchange and interaction is promoted. The less skeptical firms are about each other’s intentions and actions, the more likely they will exchange knowledge. As interactions and collaborations increase, firms develop similarity of views which enable them to exchange richer and complex information and therefore transfer tacit knowledge.

4. Concluding remarks

The literature on the post-acquisition knowledge transfer process is surprisingly sparse given that acquisitions are on the rise and that results often do not match expectations. In fact, by reviewing the literature on the topic of knowledge transfer through corporate acquisitions, we found that not only is the literature very limited, there are contradictory findings, observations and assumptions. Clearly, there is a need for systematic research on knowledge transfer through corporate acquisition [1,6]. Although this present paper has not satisfied this need, we hope it has set a foundation for future research by synthesizing the literature in the area, pointing to contradictions and synergies.

Specifically, we proposed that the relationship between successful knowledge transfer after an acquisition and its pre-conditions: degree of similarity, knowledge ambiguity, social capital and integration, is curvilinear. This would be an interesting field for further research as it differs from prior literature findings and might help to explain the relationship between knowledge transfer and outcomes. Most researchers have assumed a monotonic relationship, or have come to contradictory conclusions based on these monotonic relationships. Because of these contradictions in prior literature, we believe that our suggestion of curvilinearity is worth exploring further.

Contradictory and superficial findings in the literature could also be a result of the idiosyncratic nature of the topic discussed. I maybe that corporate acquisitions are inherently too situation-specific as to provide a general causal explanation. We are aware that we have entered an area that should be treated carefully with respect for organizational idiosyncrasies. The way companies acquire other companies and how the knowledge transfer between the two companies is supported depends to a large extent on the uniqueness of the particular situation. What works well in one organization will not necessarily work in another organization. This also has implications for the way organizations can intervene in the process of knowledge transfer. Since merely increasing communication and trying to retain people is not enough, we suggest that organizations should use the lessons learned from their own past experience, to improve future knowledge transfer. Clearly, the value of the model
introduced in this paper and based on this organizational learning perspective needs to be validated by future empirical research.

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