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High-Technology Acquisitions: An Inquiry Toward the Microfoundations of a Grafting Capability

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CHAPTER ONE

GENERAL INTRODUCTION

INTRODUCING THE TOPIC

During recent decades, mergers and acquisitions have been an important strategic vehicle for firms in their quest to gain competitive advantages. In 2011, the worldwide volume of mergers and acquisitions reached \$2.6 trillion (Thomson Financial, 2011). With slightly more than 40,000 deals announced in 2011—of which almost 30,000 were completed in the same year—mergers and acquisitions continue to have an important role in today’s firms’ strategic landscape in various industries.

Among all industries, high-technology industries¹ are one of the most prolific ones in undertaking mergers and acquisition. In 2011, high-technology industries were even the most active in the Americas, with a total of 1,557 deals (Thomson Financial, 2011). In fact, the total deal value in high-technology industries in the United States even increased from \$107 billion in 2010 to \$125 billion in 2011, figures that indicate the increasing importance of mergers and acquisitions activity in these industries (PriceWaterhouseCoopers, 2012).

Firms in high-technology industries often acquire other, smaller firms to gain access to strategic capabilities that they themselves do not possess (hereafter, “capability-based acquisitions”) (Ranft & Lord, 2002). The constant development of technology, fast-paced change of customers’ tastes, and high pressure from rivals to release the most innovative products force these firms to acquire new capabilities that they cannot develop on their own (e.g., Makri, Hitt, & Lane, 2010; PriceWaterhouseCoopers, 2012; Valentini, 2012). The capabilities for which a firm is acquired represent a part of its collective knowledge that gives it a competitive advantage. This is why firms acquire an entire company instead of just hiring individual skilled experts or buying patents; such capabilities transcend the level of the individual employee, are embedded in firms’ routines and social capital, and thus are embedded in practice (e.g., Ranft, 2006). Therefore, it is usually acquisitions that high-technology firms² get involved in. Pfizer Inc.’s acquisition of Icaegen Inc., in 2011 for approximately \$56 million, is an example of such deals in the high-technology industries. Another example is Cisco, which has a track record of capability-based acquisitions. In the 1990s, Cisco spent \$18.8 billion acquiring 42 smaller firms to gain access to their capabilities

¹See Chapter 2 for the definition of “high-technology industries.”

²A definition of “high-technology firms” appears in Chapter 2.

(Ranft & Lord, 2002). Along the same lines, in 2000 Intel allocated \$8 billion—twice the amount that it spent on R&D—to acquisitions (Ranft & Lord, 2002). Walt Disney’s \$7.4 billion acquisition in 2006 of Pixar—a company operating at the intersection of creativity and technology and owned by the late Apple CEO Steve Jobs—to “learn from it” is another example of such capability-based acquisitions (Isaacson, 2011, p. 443).

Regardless of their popularity in practice, however, research has shown that acquisitions in general do not create value (Bresman, Birkinshaw, & Nobel, 2010; Heimeriks, Schijven, & Gates, 2012; Hitt et al., 2009; King, Dalton, Daily, & Covin, 2004). This contradiction has led strategic management scholars to try to understand how to enhance acquisition performance. Since the 1980s, strategy scholars have focused on the importance of selecting the right targets and thus ensuring a strategic fit. However, the focus has shifted recently toward the importance of integration and thus, creating organizational fit, post-acquisition (Barkema & Schijven, 2008). This is because post-acquisition integration problems have been mentioned as one of the main reasons for acquisition failure (Heimeriks et al., 2012; Puranam, Singh, & Zollo, 2003; Vermeulen & Barkema, 2001). In other words, the success of acquisitions depends largely on post-acquisition integration (Heimeriks et al., 2012; OECD, 2005). This has led scholars in this field pursuing a more refined question of how to enhance post-acquisition performance. Especially when capability-based acquisitions are involved, post-acquisition integration presents tremendous challenges for firms (Puranam, Singh, & Chaudhuri, 2009). Research has revealed that 60 percent of capability-based acquisitions have post-acquisition integration problems (Puranam et al., 2003). In other words, acquiring firms have severe problems when attempting to transfer targets’ capabilities post-acquisition.

Given that acquisitions are usually part of a broader corporate strategy involving a series of acquisitions, it is surprising that firms do not learn how to undertake acquisitions (Barkema & Schijven, 2008). In high-technology industries, acquisitions have been reported to have a failure rate of 60 to 80 percent, figures that indicate an absence of organizational acumen (Puranam et al., 2003). One might expect that serial acquirers would learn—develop a capability—to undertake acquisitions more successfully. Thus, the general assumption would be that “practice makes perfect”—or at least, “practice makes better.” Although this seems to be true for some companies such as Cisco (Heimeriks et al., 2012), this is apparently most of the times not the case. Why not?

The answer is probably that capability-based acquisitions aim at getting access to highly complex and tacit capabilities embedded within the acquired firm's organizational routines and social capital. Integrating such capabilities therefore requires leaving intact the existing social structures and routines that have enabled the acquired firm to develop its capability in the first place and giving it the autonomy it needs. To create value post-acquisition, however, firms need to integrate the acquired company somehow and hence, face a dilemma of autonomy vs. integration (Haspeslagh & Jemison, 1991; Puranam et al., 2009). Acquisitions with other types of motives, in contrast, do not involve this dilemma, because the acquirer does not have to preserve the target's capabilities and thus can totally integrate the acquired firm if necessary.

For example, when acquiring a firm to gain market share by means of getting access to a broader customer base, the acquirer could choose to integrate the acquired firm without being concerned about a certain, highly tacit capability (e.g., Calipha, Tarba, & Brock, 2010; Valentini, 2012). The same would hold when acquiring for economies of scale by means of, for example, using a common manufacturing facility. In this case, the acquirer could integrate the target without preserving the target's capabilities, because the manufacturing process is probably well known to the acquirer. Thus, the acquiring firm does not have to be cautious about a highly tacit and complex capability that it does not understand (e.g., Calipha et al., 2010; Valentini, 2012). Similarly, when aiming to acquire for economies of scope—such as by means of resource redeployment to enable a firm to provide a more profitable portfolio of products—the acquiring firm could integrate the target without concern about disrupting the routines and social relationships that have created a highly tacit capability in the first place (e.g., Calipha et al., 2010; Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Of course, this potential holds only when the development of the complementary products of the target do not involve highly complex and tacit capabilities that are difficult for the acquirer to grasp. In addition, when acquiring for geographical expansion to gain access to territories where the acquirer is not yet present, the same would hold true, because the acquiring firm is already in the same business and just wants to expand its area of operation (e.g., Calipha et al., 2010; Valentini, 2012).

However, as mentioned, this line of argument does not hold for capability-based acquisitions because of the autonomy vs. integration dilemma the acquirers face. Consequently, it seems not beyond imagination to posit that capability-based acquisitions, because of their focus on transferring highly tacit strategic capabilities, require a different

ability from firms—than all other types of acquisitions—in order to be undertaken successfully.

Following this line of reasoning, in this dissertation, four studies are provided that build on this premise. By means of insights gained from the knowledge-based view of the firm, organizational learning, and practice-based literature, I aim to contribute to a growing body of recent research that treats learning as an essential part of strategy that firms can manage (Schijven, 2008). In so doing, I elaborate on how firms can develop a specific capability for undertaking capability-based acquisitions and, thus, how firms can enhance learning from such strategic events. More specifically, given that the strategic capabilities that firms aim to acquire by means of such acquisitions are highly tacit and embedded in practice, I extend existing theories on post-acquisition management by using insights from practice-based literature. I posit that even though transferring capabilities post-acquisition is a difficult task, having a specific capability could enhance this process. In building such a capability, scholars in this field need to take into account a different approach than they traditionally have.

THEORETICAL FOUNDATION AND RELEVANCE

How can the difficulties of transferring such highly tacit capabilities be theoretically explained? The knowledge-based view of the firm, organizational learning, and practice-based literature provide an explanation for such transfer difficulties. The knowledge-based view of the firm argues that given the increasingly important role that knowledge-based resources have, they have become the most strategically important resources underlying firms' capabilities that provide a competitive advantage (e.g., Bresman et al., 2010; Grant, 1996). Knowledge—especially tacit knowledge—is idiosyncratic, hard to imitate, and not easy to transfer (e.g., Grant, 1996). This characteristic of knowledge that underlies firms' capabilities is what makes it hard for competitors to imitate these capabilities, leading to acquisitions becoming an important vehicle for gaining access to such capabilities and thus gain a competitive advantage. However, the same reason for which capability-based acquisitions are conducted is what leads to transfer difficulties post-acquisition, namely the tacit and complex nature of the capability in question.

Organizational learning literature recognizes that the transfer of capabilities post-acquisition is neither immediate nor easy, because it requires that employees learn from each other (Bresman et al., 2010; Graebner, Eisenhardt, & Roundy, 2010; Haspeslagh & Jemison, 1991; Ranft & Lord, 2002). The more strategic the capabilities in question, the more difficult

this process of learning will be, because such capabilities are not easy to imitate (Haspeslagh & Jemison, 1991). Therefore, firms aiming to undertake capability-based acquisitions need to learn—develop a capability to know—how to enhance the transfer of such capabilities post-acquisition. In other words, firms involved in capability-based acquisitions need to learn the target’s capability and how to conduct capability-based acquisitions. As a result, in the context of capability-based acquisitions, there are two types of capabilities. On the one hand, there is the capability for which the acquired firm has been acquired—that is, the target firm’s strategic capability, which is defined as “the skills or knowledge sets of how to manage and combine other resources available to the firm to create competitive advantage” (Ranft, 2006, p. 53). On the other hand, there is the capability that enables the acquiring firm to carry out post-acquisition activities of capability-based acquisitions successfully, which I call a “grafting capability” in this study.

The practice-based literature argues that given that firms’ strategic capabilities are highly tacit and embedded in employees’ routines and thus reside in the heads of employees, learning from each other to transfer capabilities is most effective when employees are involved in the actual practice (Cook & Brown, 1999; Gherardi, 2000; Orlikowski, 2002; Tsoukas, 1996). In other words, it is in the actual practice that one can understand the complexity of the capability in question because that is how the capability is built. To be able to transfer the capability in question and develop a grafting capability, acquiring firms need to take into account the importance of being involved in the actual practice. As a result, the subtleties, nuances, and all the micro-level details involved in the activities that employees carry out are vital for transferring capabilities post-acquisition, in that such details represent what employees actually do in practice.

Regardless of the importance of transferring such capabilities and the various challenges firms face in this process, an understanding of how such capability transfer processes actually take place on a micro-level, and thus how firms can learn to transfer such capabilities post-acquisition, is still missing in the literature (e.g., Bresman et al., 2010; Felin & Foss, 2005, 2009; Foss, 2007; Foss, Husted, & Michailova, 2010; Helfat, et al., 2007). Therefore, the aim of this study is to shed light on these issues. In line with this, more specifically, the key research question that has guided this research is, “How does post-acquisition capability transfer take place on a micro-level?” This question aims to reveal how firms can learn to manage this process more successfully and build a grafting capability. Therefore, the studies included in this dissertation provide an inquiry into the nature of the two types of

capabilities—the target’s strategic capability and the acquirer’s grafting capability—mentioned, to help explain how to enhance the post-acquisition performance of such capability-based acquisitions.

CHAPTERS’ OVERVIEW

The following chapters provide four different studies on the subject matter of this dissertation and a final general chapter aiming to answer the overall research question, which are depicted in Table 1. First, Chapter 2 provides a conceptual model for developing an acquisition-specific capability for capability-based acquisitions—that is, a grafting capability—based on existing literature. By means of strategic management literature in general and organizational learning literature in particular, various activities—mechanisms, practices, and functions—that enhance knowledge sharing and thus capability transfer during the post-acquisition phase, are discussed. In addition, ideas on how to develop an acquisition-specific capability for capability-based acquisitions by means of these activities, are provided.

Consequently, Chapter 3 aims to test—a somewhat adjusted version of—the conceptual model described in Chapter 2. In this endeavor, Chapter 3 moves beyond the findings of Chapter 2 by explaining which of the previously assumed activities seem to be the most significant ones, based on empirical data from the biotechnology industry. More specifically, it is argued that search activities—that is, ad-hoc problem solving—that encourage employees to search for solutions together are the most important ones for transferring capabilities post-acquisition. In addition, it is found that having common knowledge increases the effect of such search activities, because firms are better able to understand each other and thus enhance the post-acquisition capability transfer process. Both implications of the findings as well as a discussion of why certain activities seem to be more sound in the context of high-technology industries, are provided in this chapter.

Thereafter, Chapter 4 aims to reveal what makes targets’ capabilities so complex, requiring acquirers to invest in search activities. To explain this complexity, Chapter 4 focuses on the microfoundations of such capabilities. By means of a micro-level analysis based on a longitudinal case study—during the first year of a capability-based acquisition—in the IT industry, this chapter provides a deeper understanding of the phenomenon under study and elaborates on the transfer implications that the nature of such capabilities create. In other words, Chapter 4 provides deeper insight into why such capabilities are so different and

require a specific integration approach post-acquisition. In line with this, the importance of clusters of interdependent routines that function as the micro-foundations of the capability in question and are interwoven with firms' operating activities, are recognized. This chapter illustrates that understanding the ecology of such clusters of routines is fundamental for improving firms' abilities to transfer capabilities post-acquisition.

Having a mere understanding of the ecology of such clusters of routines that function as the microfoundations of the capability in question, however, is not enough for having a successful capability transfer. Therefore, Chapter 5 aims to reveal—given the knowledge of the previous chapter on the complexity of the capability in question—how a successful capability transfer is achieved on a micro-level. In other words, Chapter 5 focuses on the micro-level activities that lead to successful transfers of such clusters of interdependent routines. The findings of this chapter are based on the same organization as in Chapter 4. However, for this chapter additional data has been gathered in order to cover a longer period of post-acquisition capability transfer. The focus of this chapter is on a two-year post-acquisition period instead of a one-year period. By taking a two-year period into account, this chapter provides insights into how the microfoundations of the capability in question—clusters of interdependent routines—can be transferred, while using the practice-based literature as an analytical lens to study the post-acquisition process. Specifically, the important role of boundary spanners as informal leaders of the post-acquisition process is discussed in this chapter. It is argued that these leaders can help create a vital, strategic vehicle for capability transfer, namely, a post-acquisition community, which can lead to successful transfer of the capability in question. Finally, Chapter 6 provides general conclusions of the four previous chapters, aiming to answer the overall research question that has been provided at the outset of this book.

Table 1. Overview of chapters

Chapter	Aim	Research Question	Context	Method	Data Source	Key Findings	Status
1	General Introduction	—	—	—	—	—	—
2	Conceptual Study	Which activities enhance capability transfer and enable the creation of a grafting capability?	All high-technology industries	Literature review	Existing literature	Deliberate learning mechanisms and interaction-based practices as microfoundations of a grafting capability	Published in European Journal of Innovation Management
3	Empirical Study	What are the microfoundations of a grafting capability?	Biotech industry	-Quantitative research -Additional interviews	-Survey of senior R&D managers -Interviews with managers and acquisition experts	Search activities and common knowledge crucial for developing a grafting capability.	Accepted for OLKC 2012 conference and submitted to the Academy of Management Journal.
4	Empirical Study	How does post-acquisition capability transfer take place on a micro-level?	IT industry	Qualitative research	-Interviews -Observations -Archival data -Episodic records	Interdependencies of clusters of routines that function as the microfoundations of the capability in question are crucial for capability transfer	Presented at SMS 2011 Conference.
5	Empirical Study	What are the dynamics of post-acquisition boundary spanning?	IT industry	Qualitative research	-Interviews -Observations -Archival data -Episodic records	Boundary spanners as informal leaders who enhance the development of a post-acquisition social community that is an important strategic vehicle for capability transfer	Submitted to AOM 2013 Conference.
6	General Discussion	—	—	—	—	—	—

REFERENCES

- Barkema, H., & Schijven, M. 2008. Toward unlocking the full potential of acquisitions: The role of organizational restructuring. *The Academy of Management Journal*, 51(4): 696–722.
- Bresman, H., Birkinshaw, J., & Nobel, R. 2010. Knowledge transfer in international acquisitions. *Journal of International Business Studies*, 41(1): 5–20.
- Calipha, R., Tarba, S., & Brock, D. 2010. Mergers and acquisitions: A review of phases, motives, and success factors. In & C. L. Cooper & S. Finkelstein (Eds.), *Advances in mergers and acquisitions*, vol. 9: 1–24. Bingley, UK: Emerald Group Publishing Limited.
- Cook, S. D. N., & Brown, J. S. 1999. Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. *Organization Science*, 10(4): 381–400.
- Felin, T., & Foss, N. J. 2005. Strategic organization: A field in search of micro-foundations. *Strategic Organization*, 3(4): 441–455.
- Felin, T., & Foss, N. J. 2009. Organizational routines and capabilities: Historical drift and a course-correction toward microfoundations. *Scandinavian Journal of Management*, 25(2): 157–167.
- Foss, N. J. 2007. The emerging knowledge governance approach: Challenges and characteristics. *Organization*, 14(1): 29–52.
- Foss, N. J., Husted, K., & Michailova, S. 2010. Governing knowledge sharing in organizations: Levels of analysis, governance mechanisms, and research directions. *Journal of Management Studies*, 47(3): 455–482.
- Gherardi, S. 2000. Practice-based theorizing on learning and knowing in organizations. *Organization*, 7(2): 211–223.
- Graebner, M. E., Eisenhardt, K. M., & Roundy, P. T. 2010. Success and failure in technology acquisitions: Lessons for buyers and sellers. *Academy of Management Perspectives*, 24(3): 73–92.
- Grant, R. M. 1996. Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science*, 7(4): 375–387.
- Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. 2009. Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, 35(3): 469–502.
- Haspeslagh, P. C., & Jemison, D. B. 1991. *Managing acquisitions: Creating value through corporate renewal*. New York: The Free Press.
- Heimeriks, K. H., Schijven, M., & Gates, S. 2012. Manifestations of higher-order routines: The underlying mechanisms of deliberate learning in the context of postacquisition integration. *Academy of Management Journal*, 55(3): 703–726.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M. A., Singh, H., Teece, D. J., Winter, S. (Eds.). 2007. *Dynamic capabilities: Understanding strategic change in organizations*. Malden, MA: Blackwell Publishing.
- Hitt, M. A., King, D. R., Krishnan, H., Makri, M., Schijven, M., Shimizu, K., Zhu H. 2009. Mergers and acquisitions: Overcoming pitfalls, building synergy and creating value. *Business Horizons*, 52(6): 523–529.
- Isaacson, W. 2011. *Steve Jobs*. New York: Simon and Schuster.
- King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. 2004. Meta-analyses of post-acquisition performance: Indications of unidentified moderators. *Strategic Management Journal*, 25(2): 187–200.

- Makri, M., Hitt, M. A., & Lane, P. J. 2010. Complementary technologies, knowledge relatedness, and invention outcomes in high technology mergers and acquisitions. *Strategic Management Journal*, 31(6): 602–628.
- OECD. 2005. Measuring globalisation: *OECD handbook on economic globalisation indicators*. Paris: OECD Publishing.
- Orlikowski, W. J. 2002. Knowing in practice: Enacting a collective capability in distributed organizing. *Organization Science*, 13(3): 249–273.
- PricewaterhouseCoopers. 2012. *US technology M&A insights: Analysis and trends in US technology M&A activity 2012*. New York: PwC.
- Puranam, P., Singh, H., & Chaudhuri, S. 2009. Integrating acquired capabilities: When structural integration is (un)necessary. *Organization Science*, 20(2): 313–328.
- Puranam, P., Singh, H., & Zollo, M. 2003. A bird in the hand or two in the bush?: Integration trade-offs in technology-grafting acquisitions. *European Management Journal*, 21(2): 179–184.
- Ranft, A. 2006. Knowledge preservation and transfer during post-acquisition integration. *Advances in Mergers and Acquisitions*, 5: 51–67.
- Ranft, A., & Lord, M. D. 2002. Acquiring new technologies and capabilities: A grounded model of acquisition implementation. *Organization Science*, 13(4): 420–441.
- Schijven, M. 2008. *Acquisition capability development: Behavioral and cognitive learning perspectives*. Tilburg, Netherlands: Tilburg University.
- Thomson Financial. 2011. *Mergers and acquisitions review*. Available at www.thomson.com.
- Tsoukas, H. 1996. The firm as a distributed knowledge system: A constructionist approach. *Strategic Management Journal*, 17: 11–25.
- Valentini, G. 2012. Measuring the effect of M&A on patenting quantity and quality. *Strategic Management Journal*, 33(3): 336–346.
- Vermeulen, F., & Barkema, H. 2001. Learning through acquisitions. *The Academy of Management Journal*, 44(3): 457–476.