The function-specific microfoundations of dynamic capabilities in cross-border mergers and acquisitions

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Abstract

In mergers and acquisitions, the acquiring firm must combine two firms' resources and capabilities so that the outcome yields value. In individual firms, the marketing & sales, and R&D functions have typically developed intertwined and complex relationships over time. These multifaceted dependencies may obscure the integration of the firms and their functions. In order to reveal to what extent cross-functional relationships determine the success or failure of an acquisitions, we have made one of the first attempts to study merging firms' function-specific capabilities, underlying microfoundations, and their cross-functional relationships during the integration process—instead of focusing on acquisition capabilities as such. We use longitudinal data from two cross-border acquisitions between US and Finnish SMEs. Our results indicate that major differences between merging firms' cross-functional microfoundations—that is, their structures, processes, routines, and skills—might either enforce or erode the seemingly promising synergies at the product and market levels, depending on managerial awareness of their nature.

Keywords: M&A, cross-border acquisitions, R&D, marketing & sales, microfoundations of dynamic capabilities.

1. INTRODUCTION

Mergers and acquisitions (M&As) can take place in domestic as well as international contexts (Reynolds and Teerikangas 2016). Cross-border M&As provide firms with possibilities to expand businesses in foreign countries and acquire resources that would otherwise not be available to them (Buckley and Carter 1999; Anand and Delios 2002; Shimizu, Hitt, Vaidyanath, and Pisano 2004; Paruchuri and Eisenman 2012; Gomes, Angwin, Weber, and Yedidia Tarba 2013; Caiazza and Volpe 2015). In particular, small and medium sized enterprises (SMEs) typically have fewer resources than their larger counterparts and, consequently, have fewer possibilities to deviate from their existing businesses. For these firms, M&A deals may offer a departure from such path dependencies (Teece, Pisano, and Shuen 1997). Strategic fit, organizational fit, and resource relatedness—that is, the similarity between the merging firms' products, market positions, or strategies (Jemison and Sitkin 1986; Davis and Thomas 1993)—may facilitate the firms' M&A negotiations. Especially if M&A deals enable the merging firms to share at least some of their resources, M&As might provide firms with synergies that yield cost savings. In addition, resource complementarity—that is, mutually supportive differences between the merging firms' functional resources—provides the merging firms with a wider array of possibilities for value creation (Morosini, Shane, and Singh 1998; Kim and Finkelstein 2009; Bauer and Matzler 2014).

In M&As, the integration of separate resources and capability bases is seen as the key to generating superior performance (Zahra, Sapienza, and Davidsson 2006; Teece 2014a). The dynamic capabilities

literature generally implies that such resource and capability reconfiguration requires dynamic capabilities (Teece et al. 1997). Recent literature has looked at these issues more closely and has focused on the microfoundations of (dynamic) capabilities in an attempt to understand how firms' capabilities and dynamic capabilities emerge.

While previous studies have also addressed microfoundations in the context of M&As (see, e.g., Amiryany, Husman, de Man, and Cloodt 2012; Angwin, Paroutis, and Connell 2015; Hummel and Amiryany, 2015), they have mainly focused on managerial acquisition capabilities and their underlying microfoundations. Such capabilities build on prior M&A experiences and hence influence the M&A process in particular. Friedman, Carmeli, Tishler, and Shimuzu (2016) pay specific attention to the decision-making processes and their communication-related microfoundations in the various stages of M&As. Likewise, Angwin et al. (2015) point out that acquisition processes involve authorization routines that may either allow the M&A negotiations to continue or prevent deals from being realized. Certain mechanisms, practices, and specific acquisition functions support knowledge integration and, accordingly, accumulate as a managerial acquisition reconfiguration capability (Amiryany et al. 2012). The microfoundations of such acquisition capabilities are rooted in experiential learning, organizational structures, managerial skills, and knowledge transfer (Nummela and Hassett 2015).

However, acquisition capabilities are not the only ones that matter. The resources and capabilities of the two merging firms that the acquirer needs to be able to effectively combine (Gomes et al. 2013; Angwin and Meadows 2015; Grimpe 2007; Chen and Lin 2011)—and their microfoundations—are relevant too. Zander and Zander (2010) aptly note that the acquired firm is always, at least to some extent, a "grey box" with capabilities, social relationships, and underlying microfoundations that the acquirer is unable to perceive. In the integration, firm functions such as R&D, marketing & sales (M&S), and manufacturing (see Cording, Christmann, and King 2008; Contractor, Kumar, Kundu, and Pedersen 2010; Gottfredson, Puryear, and Phillips 2005; Håkanson 1995; Teerikangas and Thanos 2018) are more

crucial in terms of value creation than in terms of support functions. Capabilities develop in a firm's key functions—particularly in R&D and M&S (see King, Slotegraaf, and Kesner 2008; Danneels 2002; Ellonen, Jantunen, and Kuivalainen 2011)—and M&A integration and asset reorganization concretize in these functions (Zahra et al. 2006; Sinkovics, Jedin, and Sinkovics 2014; Teece 2014a; Teece 2014b). Moreover, R&D and M&S are both mutually dependent, and their interaction enhances innovativeness and thus overall firm performance (Maltz, Souder, and Kumar 2001). Therefore, attention should be turned to the microfoundations of dynamic capabilities that arise from distinct firm structures, functional processes, routines, and skills (Teece 2007; Foss 2011; Felin, Foss, and Ployhart 2015).

In this study, we focus particularly on these elements by examining R&D and M&S functions, and their interaction. Earlier studies have examined these two key functions separately (see, e.g., Dutta, Narasimhan, and Rajiv 1999; Haapanen, Juntunen, and Juntunen 2016; Knight, Koed Madsen, and Servais 2004; Kozlenkova, Samaha, and Palmatier 2014; Ruokonen, Nummela, Puumalainen, and Saarenketo 2008; Teerikangas and Thanos 2018). Yet, only some of these have discussed how these key functions and their underlying microfoundations interact, particularly in the cross-border M&A context (Szücs 2014; Sinkovics et al. 2014). Firm functions are not independent and the role of the microfoundations in the R&D and M&S functions changes during the integration process (see Paruchuri and Eisenman [2012] on the R&D function). This indicates that there is a need to study how firms coordinate the complementarities—in particular at the levels of resources, capabilities, and microfoundations (Tanriverdi and Venkatraman 2005)—throughout M&A processes. Furthermore, Zander and Zander (2010) and Friedman et al. (2016) call for more research in order to investigate the origins of the microfoundations—acknowledging the fact that getting access to rich M&A data is notably difficult.

In this study, we assume that the underlying microfoundations of functional capabilities and their interaction have an impact on how M&As succeed. In particular, we attempt to explicate how the

function-specific microfoundations of dynamic capabilities and their mutual dynamics (see Felin and Foss 2009)—and not just acquisition capabilities—may either hinder or enhance the post-acquisition integration processes. Our aim is to examine, using empirical evidence from two longitudinal cases, *how the function-specific microfoundations of dynamic capabilities affect post-acquisition integration in cross-border acquisitions.*

In the following, we start by introducing the theoretical background, considering the M&A context; we move from there to a discussion on dynamic capabilities and their microfoundations. While doing this, we keep the R&D and M&S functions as the focal points. We then turn to an empirical examination and present two longitudinal cross-border acquisition cases involving SMEs and describe the data collection and the method of analysis. In our data analysis, we follow the case study methods of Eisenhardt (1989), Ghauri (2004), and Davis and Eisenhardt (2011): First we examine cases individually and then we compare findings in cross-case analysis. Findings from the empirical study are then introduced, and concluding remarks on the theoretical contribution, managerial implications, limitations of the study, and future research avenues close the study.

2. THEORETICAL BACKGROUND

M&As provide firms with opportunities to obtain such resources and capabilities that would otherwise be unavailable to them (Makadok 2001), and thus, they are a plausible method with which firms can manage and optimize their resource and capability endowments (King et al. 2008). In general, the prevalent idea is that M&As yield scale benefits and respective cost savings in cases where merging firms can eliminate overlapping structures, processes, and resources (Davis and Thomas 1993; Szücs 2014). Scholars agree that in M&A deals, similarities in products and in market positions (external relatedness) bring synergies (Davis and Thomas 1993; Homburg and Bucerius 2006). At the same time,

internal relatedness—that is, the match between the administrative practices, cultural practices, and personnel characteristics of the merging firms—influences how smooth the integration process is (Jemison and Sitkin 1986; Homburg and Bucerius 2006).

Prior studies show that not only similarities, but also complementarities—mutually supportive differences—may create synergistic opportunities for value creation and thus have a positive influence on an M&A's outcome (Morosini et al. 1998; Larsson and Finkelstein 1999; Kim and Finkelstein 2009; Björkman, Stahl, and Vaara 2007; Bauer and Matzler 2014). Yet such differences are only valuable if the acquirer is able to exploit these complementarities. For example, King et al. (2008) showed that technologies, in particular, may act as substitutes for the acquirer's technology resources rather than as complementarities, and therefore entities with technological substitutions tend to end up decreasing their R&D after M&As (Cassiman, Colombo, Garrone, and Veugelers 2005). This is not without challenges, however, and different factors need to be acknowledged—like different (dynamic) capabilities and their microfoundations.

2.1. Integrating functions

Strategic management literature tends to juxtapose the degree of similarity (or complementarity) between the merging firms regarding the extent of the decision-making autonomy of the target firm. Results generally indicate that the greater the similarity between the merging firms, the higher the required level of integration and the lower the remaining autonomy of the target firm. Vice versa, with a high level of complementarity, there are lower levels of integration and higher levels of autonomy (Haspeslagh and Jemison 1991).

This is explained by dynamics related to post-merger integration. During integration processes, firms typically go through notable organizational changes (Paruchuri and Eisenman 2012). Especially

for firms that lose their autonomy, M&As often have a negative impact on organizational culture. The employees in an acquired firm may not be willing to make existing structures and relationships available to the employees of the acquirer (Stahl et al. 2013), and acquired firms may be able to resist change if they manage to maintain adequate control of critical operations and resources. A firm's market share, technical competence, or in some cases, a compelling need to retain senior management may yield resource-based power with which the target firm's key employees can negotiate desirable new positions in the new organization (Cooke and Huang 2011). Angwin and Meadows (2015) show that some degree of autonomy in target firm decision-making might mitigate the negative consequences and even enhance the deployment of new and unfamiliar resources from the acquired firm.

In addition to strategic fit, sociocultural variables, such as cultural fit and management style, influence the success of the integration process (Stahl et al. 2013). Similarities between norms and values have an impact on post-merger success (Shimizu et al. 2004); but particularly in cross-border M&As, merging firms often face differences in both organizational and national cultures (see, e.g., Stahl and Voigt 2008; Aybar and Ficici 2009). This double-layered acculturation makes knowledge transfer and management of the integration process typically more costly and challenging, and it calls for specific managerial capabilities (Barkema, Bell and Pennings 1996; Bresman, Birkinshaw, and Nobel 1999; Cartwright and Cooper 1993; Björkman et al. 2007; Slangen and Hennart 2008; Reus and Lamont 2009; Denison, Adkins, and Guidroz 2011; Zhu, Xia, and Makino 2015). Although cultural differences have also been found to have a positive influence on cross-border M&As (Chakrabarti, Gupta-Mukherjee, and Jayaraman 2009), Björkman et al. (2007, p. 661) propose that the presence of complementary capabilities mediates "the effect of cultural differences on the post-acquisition capability transfer." Merging firms may turn cultural differences into an advantage up to a point, given that the acquirer is able to capitalize on disparities as potentially valuable repositories of locally embedded capabilities, routines, and new ways of operating or learning (Morosini et al. 1998; Björkman et al. 2007).

A challenge is that in an M&A deal, the acquiring firm is not likely to be able to uncover or comprehend all the capabilities, social relationships, and underlying interdependencies of the acquired firm (Zander and Zander 2010). Due to such information asymmetry, the acquiring firm receives all the resources and capabilities, but information about the underlying cross-functional interdependencies often remains incomplete (Maritan and Peteraf 2011; Ahammad and Glaister 2013). Central functions in the search for the benefits from an M&A, the firms' R&D and M&S in particular, come with mutually supportive combinations of resources and capabilities, and these functions are often intertwined (Griffin and Hauser 1996; Olson, Walker, Ruekert, and Bonner 2001; Song and Parry 1997). Over time, cross-functional relationships develop between the structures, processes, routines, and skills of the two functions within firm boundaries. In the post-acquisition integration process, the two former firms, each with existing complex cross-functional relationships, are to be aligned. Ideally, complementary resources and capabilities between the two former firms' M&S functions, as well as between the two R&D functions, would yield unique combinations for value creation (Harrison, Hitt, Hoskisson, and Ireland 2001; Chatterjee and Brueller 2015; Junni, Sarala, Tarba, and Weber 2015). Scrutinizing of microfoundations of (dynamic) capabilities makes it more likely that these results can be achieved.

2.2. Firm functions and microfoundations

In the capability hierarchy, capabilities comprise a set of best practices, complex routines, and skills used to deploy and exploit resources in order to produce desirable outcomes, hence allowing products and services to be made and sold (Teece 2014a). The literature highlights the close linkage between marketing and R&D capabilities; they are seminal for creating innovations and bringing resulting products and services to market (Ellonen et al. 2011). These operational capabilities develop in firms' functions over time, and for this reason they are not freely available in the market (Amit and Schoemaker 1993).

Dynamic capabilities refer to the managerial ability to modify and reconfigure firm structures, functional resources, processes, routines, capabilities, and skills in order to maintain competitiveness, especially when a firm is facing unusual challenges like an M&A (Sapienza, Autio, George, and Zahra 2006; Teece et al. 1997; Teece 2007; Winter 2003). Dynamic capabilities can be decomposed to smaller entities. Teece (2007) implicitly suggests that the microfoundations of these capabilities—that is, micro-level phenomena involving structures, processes, routines, and skills (Felin, Foss, Heimeriks, and Madsen 2012; Felin et al. 2015; Felin and Powell 2016; Foss 2011; Teece 2007)—emerge in the key firm's functions.

The M&S function operates in close proximity to customers. A firm's ability to grasp, screen, and identify market opportunities is an obvious illustration of the microfoundations of such capabilities embedded in the M&S function (Felin and Powell 2016). In addition, an ability to collect, interpret, accumulate, filter, and process customer and competitor information (Teece 2007; Ellonen et al. 2011) manifests microfoundations. Danneels (2002) and Ellonen et al. (2011) further mention the governance of customer segments, loyalty, product offerings, distribution, sales and communication channels, and the management of a firm's brand and reputation as relevant microfoundations of the M&S function. Firms that succeed in identifying market needs have a comparative advantage over firms that are less successful in doing this (Beckenbach, Daskalakis, and Hofmann 2012).

In a well-working product design process, invaluable market information is further incorporated in the R&D function (Baregheh, Rowley, and Sambrook 2009; Garcia and Calantone 2002; Teece 2007; Harmancioglu, Droge, and Calantone 2009). In fact, the microfoundations of the dynamic capabilities that reside in the R&D function mainly seem to relate to the responsibility for executing innovation strategies and transferring recognized market opportunities into commercially successful products (Song and Parry 1997; Hauser, Tellis, and Griffin 2006; Ernst, Hoyer, and Rübsaamen 2010). Teece (2007) and Ellonen et al. (2011) suggest that the interpretation and filtering of technological information, product

designs, architectures, and specifications and the shaping of new products and process opportunities are all included among relevant microfoundations. Likewise, manufacturing and engineering expertise, quality assurance (Danneels 2002), production systems, and managerial systems with which to run development processes (Ellonen et al. 2011) are the microfoundations on which the R&D function's capabilities build. Innovativeness requires firms both to overcome the routine modes of acting and to set higher goals and aspiration levels (Beckenbach et al. 2012).

There is a link between R&D and M&S that also holds for their microfoundations. Danneels (2002) points out that new products that have a close match with existing R&D capabilities have better possibilities to succeed, while the developing and marketing of new products expand a firm's existing capability endowment. The diffusion of new products and innovations from R&D to consumers through the M&S function is time-consuming and depends on the competition, underlying technologies, environmental incentives, the characteristics of adopters, and available information (Beckenbach et al. 2012). Therefore, the interaction between R&D and M&S is highly important. The closer the cooperation, team interaction, and information sharing are between the functions, the more difficult it is for competitors to imitate the advantages and the better the possibilities are for products and services to succeed in the market (Cooper and Kleinschmidt 1995; Song and Parry 1997; Teece 1998; Garcia and Calantone 2002; Chen 2007; Bauer and Matzler 2014). In SMEs, the limited resources guide this interaction. The development of R&D-related capabilities is conditioned by the firm-level resource endowment (Wolff and Pett 2006; Kafouros, Buckley, Sharp, and Wang 2008; Lecerf 2012), which leads to more path-dependent routines and investment in incremental, competency-enhancing innovations (Teece 2007; Wolff and Pett 2006). Technological choices also influence the extent of potential customer segments, which in turn, leads to customer-related path dependencies (Danneels 2002). M&A deals may offer an opportunity to deviate from path dependency and to redirect internal R&D processes (Bertrand and Zuniga 2006).

2.3. Microfoundations in cross-border M&As

Competitive moves often require strategy and structure alignment (Felin & Powell 2016); and in particular, a cross-border M&A is an extraordinary event that calls for strong managerial capabilities (Trahms, Ndofor, and Sirmon 2013; Teece 2007). Firm management is not a function equal to R&D or M&S but a top-level factor that guides these functions and their interaction from a higher level (see Teece 2016). The microfoundations of managerial capabilities include the ability to adjust business models, new ventures, partnering, and firm boundaries; the management of structural rigidities; the redesigning of routines; leadership practices promoting new ways of allocating resources; adjusting complementarities; decentralization in decision-making; and the utilization of co-specialized assets (Teece 2007; Ellonen et al. 2011). In M&As, top management has the overall responsibility for aligning the R&D and M&S functions of the two firms, which requires outstanding managerial and collective organizational problem-solving skills (Schreyögg and Kliesch-Eberl 2007; Teece 2007; Augier and Teece 2009).

In top management, dynamic managerial capabilities develop through prior experiences (Adner and Helfat 2003). Individual managers with different backgrounds come with different dynamic managerial capabilities, and they differ in how they reconfigure firms' asset bases (Helfat and Martin 2015; Ritala, Heiman, and Hurmelinna-Laukkanen 2016). Thus, the heterogeneous microfoundations of dynamic managerial capabilities lead to heterogeneous firm performances (Elron 1997; Helfat and Peteraf 2015).

We summarize the microfoundations of dynamic capabilities from the above-described literature in Table 1, and we position them alongside the M&S and R&D functions and consider how they emerge in relation to the overarching management endeavors used to guide these functions. As we note above, function-specific microfoundations are embedded and emerge in firm *structures*, *processes*, *routines,*

and *skills* (Teece 2007; Katkalo, Pitelis, and Teece 2010). Management-related microfoundations at a different locus (as shown in the Table 1) guide and constrain functions' operations, enable effective coordination, determine the functional rigidity, and have an impact on individuals' performance (see, e.g., Felin et al. 2012). While we do not claim that Table 1 is exhaustive, we rely on this allocation of individual items as a useful basis for further empirical analysis.

Table 1. The microfoundations of dynamic capabilities in the existing literature.

The locus of microfoundations	**R&D**	**M&S**	***Management***
Structures	Quality assurance and production systems Formal structures (organization chart) and informal structures for innovation strategies and technological information management Innovations, exploration vs. exploitation	Formal structures (organization chart) and informal structures (e.g., the distinction between sales and marketing) used for market information management and the customer interface Publicly listed firm; reporting requirements–sales reports, turnover Brand-building	*The management of structural rigidities, business models and firm boundaries, new ventures, partnering* *The utilization of co-specialized assets* *Administrative structures for R&D (targets and aspiration levels, deviation from path dependencies) and M&S (targets, reporting guidelines)* *Policies for decision-making (e.g., legal issues, contracts)* *Distinction between the board and top management team*
Processes	Execution processes (product designs, architectures, and specifications) Modification processes (e.g., R&D, program and project supervision, management) Forecasting and reporting (e.g., according to SEC regulations) Reward processes	Customer knowledge processes (collecting, interpreting, accumulating, and filtering customer information) Competitor knowledge processes Sales, distribution, marketing, and communication processes Forecasting and reporting (e.g., according to SEC regulations) Reward processes	*Decentralization and delegation processes in decision-making* *Administrative R&D and M&S processes; resource allocation processes* *Complementarity adjustment and cooperation coordination processes (within and between the R&D and M&S functions)* *Managerial intervention processes*
Routines	Daily, repetitive actions, guided by R&D structures, processes, and policies Cooperation, communication, and information sharing within R&D and within other firm functions (e.g., monthly/weekly R&D project team meetings)	Daily repetitive actions, guided by M&S structures, processes, and policies Cooperation, communication, and information-sharing within M&S and within other firm functions (e.g., monthly/weekly sales team meetings)	*The monitoring of policies, guidelines, processes, practices* *The monitoring of achieving goals, and targets* *The redesign of function-specific and cross-function routines*

		Cooperation, communication, and information-sharing with customers, distribution channels, and other stakeholders (e.g., offers, contracts, marketing activities)	
Skills	Technology-related skills (e.g., manufacturing and engineering expertise, program and project management skills) Coping and cooperation skills (organizational, national cultures) The skills to govern product offerings	Customer relationship and other M&S-related skills (e.g., skills to identify market opportunities) Coping and cooperation skills (organizational, national cultures) The skills to govern customer segments and loyalty The skills to govern product offerings, brand, and reputation	*Administrative skills to overcome routine modes of acting* *Leadership skills* *The recognition and retention of functional skills and capabilities*

An M&A deal typically takes place between two firms, both having their specific characteristics of their key functions. Accordingly, we can justly assume that functional capabilities are a sum of underlying microfoundations, and since these microfoundations develop over time in firm functions, they become highly function specific. Therefore, M&As typically have somewhat asymmetric consequences on a functional level. For example, Bertrand and Zuniga (2006) and Szücs (2014) showed that, as a result of restructuring, the relative importance of an R&D function tends to decline if the focus on innovations decreases (Sinkovics et al. 2014). The challenge in an M&A is to combine these underlying microfoundations in a way that brings synergies. Particular challenges emerge from the fact that, over time, the M&S and R&D functions of an individual firm generate complex cross-functional relationships and in cross-border M&As the level of complexity easily increases as cultural differences are added to the equation.

Our attention in this study is on how the function-specific and cross-functional mechanisms affect the success of a cross-border M&A. In line with this, we first go beyond dynamic capabilities and evaluate how microfoundations emerge in firm management and in the key functions—that is, in M&S and R&D. We argue that in order to identify the possible value-creating or value-diluting mechanisms, we need to study the acquiring firm's and target firm's cross-functional microfoundations separately in

the pre-acquisition phase and study how these microfoundations are combined between and among functions during the post-acquisition integration phase.

3. METHODS AND DATA

The complexity of studying the dynamic capabilities that emerge in firm functions, particularly in the context of cross-border acquisitions, calls for an explorative method (Eisenhardt 1989). While the majority of the M&A studies use cross-sectional data, there have been calls for analyses that cover longer periods (Cartwright and Schoenberg 2006; Cooke and Huang 2011). For example, Stahl et al. (2013) ask for scholars to conduct more longitudinal studies, but they also acknowledge that it is very difficult, resource intensive, and costly to access such data, which are sensitive in their nature and surrounded by considerable secrecy.

Our study strives to overcome such challenges by relying on two factors. First, in this study, one author and one close collaborator (henceforth, *the informants*) had major managerial roles in two cross-border acquisitions that were selected for this study. Their access to unique materials allows for in-depth analyses throughout the acquisition process. Second, we selected two deals that took place within the same time period—from 2005 to 2007. The informants who participated in these two acquisitions argue that acquisitions provoke strong emotions. While examining past cases is not without challenges, we acknowledge that only a sufficient time distance ensures that such delicate and sensitive processes can be observed objectively. At the same time, examining acquisitions from the same time period, in the same countries, in firms of the same size (SMEs rather than large companies), and in the same industry ensures comparability. A practical issue in selecting past cases is that while we focus on examining specific deals, in both of the cases publicly listed North American multinational enterprises (MNEs) acquired the new entities later on, in 2010. Only a sufficient time lag allowed our informants to disclose

and utilize rich multifaceted data without breaching confidentiality requirements related to these later acquisitions.

3.1. Merging case firms

This study is conducted as a qualitative, comparative case study. Two similar cross-border acquisition cases provide us with the possibility to conduct a within-case analysis and compare these two cases in a cross-case analysis in order to confirm emerging findings (Eisenhardt 1989; Ghauri 2004; Davis and Eisenhardt 2011). Table 2 summarizes our research setting with the four high-technology SMEs in the two cross-border acquisitions.

Table 2. A description of the four case firms in the two cross-border acquisitions.

Cross-border acquisitions	Acquiring firm	Target firm
Acquisition 1	**Alpha (pseudonym)**	**Beta (pseudonym)**
	A privately-owned Finnish high-technology SME	A privately-owned US high-technology SME
	Designing, manufacturing, and selling protocol analyzers for GSM and 3G network equipment.	Designing, manufacturing and selling load testers for telecom network equipment
	Subsidiaries in Finland, Sweden, Germany, France, China, the USA, Singapore, Japan, and in the United Arab Emirates	Subsidiaries in Sweden and in India.
	Turnover: USD 20 million; employees: 200	Turnover: USD 10 million; employees:100
Acquisition 2	**Epsilon (pseudonym)**	**Kappa (pseudonym)**
	A publicly listed US high-technology SME	A privately-owned Finnish high-technology SME
	An internet-based software firm operating in the wired video technology industry	Designing and selling video technology for wireless devices.
	No subsidiaries	A subsidiary in the USA
	Turnover: USD 10 million; employees:100	Turnover: USD 10 million; employees:100

The four firms involved in the two acquisitions provided products and services in the telecommunication industry, an industry in which cross-border M&A deals have been frequent. A

common feature is that the consolidation of the firms' customers and the accelerating convergence of wireless and Internet protocol (IP) technologies jeopardized these firms' growth and consequently pushed these firms to merge. All the firms were SMEs (an aspect that holds potential for contribution in its own right), and both cross-border acquisitions took place between the USA and Finland. In fact, the mirror cases—where in one case the acquirer was headquartered in the USA and the target was a Finnish firm, and in the other the situation was reversed—provide us with an interesting and informative setting. The firms had limited resource endowments, although—in spite of their relatively small sizes—all four case firms were globally leading solution providers within their industries. Finally, the acquisitions had major impacts on the survival of these firms. Without the acquisitions, the firms would have been compelled to continue their businesses with incremental product updates. That is, limited resources imply path dependencies, and for these firms, not diversifying under the converging markets would have jeopardized their market shares. This setting provided us with an opportunity to examine how the firms' management, key functions, and the underlying microfoundations of (dynamic) capabilities influenced the post-acquisition integration processes.

In fact, we acknowledge here that managers need to be careful when they evaluate the consequences of an acquisition ex ante, not only at the firm level, but also at the function level. As discussed earlier, cross-border acquisitions require specific resources and capabilities that are typically scarce for SMEs. At the same time, the firms in these two cross-border acquisitions followed different strategies regarding how they integrated their M&S and R&D resources and capabilities. This offered us a favorable research setting in which we could focus on how the acquisitions emerged in the M&S and R&D functions and how the firms' management approached these. In the following, we start by describing how we collected and analyzed our data. Then, we present the two cases from the beginning of acquisition negotiations to the end of the post-acquisition integration processes. Throughout, we pay specific attention to each firm's

structures, functional processes, routines, and skills that cumulatively contributed to the outcomes of post-acquisition integration.

3.2. Data collections and sources

Our research materials and data reflect the setting wherein the already completed acquisitions are examined retrospectively. In the search for objectivity and to gain as accurate a picture of the acquisitions as possible, we relied heavily on the two informants' access to various documents, such as memos and reports drafted by numerous company representatives involved in the acquisition processes, firm-internal strategy reports, emails, and personal notes created at the time of the acquisitions. In other words, we had indirect access to the management teams in both acquisitions. We complemented this documentary data with publicly available materials, and discussions and interviews with our informants allowed us to gain good insight into the two acquisitions.

Regarding Acquisition 1, between the Finnish firm Alpha and US firm Beta (pseudonyms), we analyzed this data in a number of interviews and informal discussions with a business unit manager who worked for Alpha from 1993 until 2009. He was a member of the management team from 2000 to 2009 and highly involved in the examined acquisition. We also conducted an interview and subsequent discussions with an HR director who worked for Alpha from 1996 until 2006. In Table A in Appendix 1, we show the documentary materials and people involved in generating these in detail. The data cover details from pre-acquisition negotiations starting in 2004 to the end of post-acquisition integration in the year 2008, and it reflects the views, experiences, information, and knowledge of multiple people involved in the acquisition during this timeframe.

As in Acquisition 1, we also gathered data on Acquisition 2 (between Epsilon in the US and Kappa in Finland) from multiple sources. The documentary materials are shown in Table B (see

Appendix 1), which also indicates the timeframe during which the materials were produced, as well as how many people were involved in generating them. Like in the case of Acquisition 1, interviews with our informant—a member of the acquired firm's management board and the head of integration—were used to understand the case, in particular the functions' integration. Likewise, function-, firm-, and acquisition-level documentation and our informant's personal materials on the acquisition were carefully analyzed. The multifaceted materials cover plenty of details from pre-acquisition negotiations, starting in 2005, to the end of post-acquisition integration in 2010.

We agree with Angwin et al. (2015) that publicly available M&A data are often insufficient when aiming to reveal underlying constructs. Therefore, we consider that the triangulated longitudinal data (Ghauri and Grønhaug 2005) that our study utilizes provided us with insight into the two acquisitions as they unfolded. We acknowledge the potential bias of having informants from only one side of the acquisitions, but we also believe that our measures of relying on actual documentation and also considering public announcements, etc., mitigate this problem. Likewise, as our informants were responsible for carrying out the integration, we trust that we have gained insight into the managerial challenges related to this task in particular, and thereby can reveal important aspects of function-specific microfoundations, their integration, and their effects on acquisition success.

3.3. Data analysis

Our informants, who provided the data, were highly involved in the two acquisition deals. Due to limitations set by confidentiality issues, both of them were also engaged in the data analysis process carried out by the rest of the research team. To offset memory bias and to get a common overview of the two acquisitions, we started our data analysis by describing each firm's pre-acquisition situation individually, relying on the original documentation (created at the time of the acquisitions; see Appendix

1). We did this by analyzing original e-mails, firm-internal strategy documents, management board memos, due diligence reports, and the two informants' personal notes on the acquisitions. In particular, we focused on the function-specific microfoundations that support firm-level dynamic capabilities. Our reliance on conventional coding practices was limited because most of the data were highly confidential. While the authors were able to see the materials, we were not allowed to take the materials to different locations or save them. However, the case descriptions were used as guidelines and more concrete tools to analyze the details, and we reflected our findings against Table 1 in order to organize them based on their embeddedness in firm structures, functional processes, routines, or skills.

In the next phase, we presented the two individual acquisitions in chronological order. The informants who had been involved in these cases created timelines, paying specific attention to key functions and the firms' management. We made a distinction between how the M&S function, the R&D function, and a firm's top management reported the acquisitions, again utilizing the categorization depicted in Table 1. In addition, we analyzed how the cross-functional relationships regarding resources and capabilities had developed. We started to report differences and similarities in the merging firms' organization and functions, and we showed (in these two acquisitions separately) how these differences (and similarities) resonated with the post-acquisition integration processes. In order to evaluate the microfoundations of asset reconfiguration, we used our data to assess how structural rigidities, the redesign of routines, and the adjustment of the complementarity of product offerings were managed.

In the final phase, following Eisenhardt (1989), Ghauri (2004), and Davis and Eisenhardt (2011), we compared these two acquisitions in a cross-case analysis. When doing this, we iterated between the cases and relevant literature in order to confirm emerging findings, and finally made our conclusions. Throughout the data-gathering and analysis process, we compared the data on these two acquisitions in order to check that the level of analysis was the same. At the comparison stage, we utilized dialogue between the informants to widen our understanding and to fill in any missing information. We met

regularly to compare how the findings were similar or different in the two acquisitions. Based on the findings from each iteration round, we filled in the missing data by referring back to the documentation and interviews.

4. RESULTS

In the following, we first illustrate the two acquisitions and describe how the firms' function-specific microfoundations developed in the individual companies prior to the deals, as well as how they emerged in the integration. We pay specific attention to how the firms' top management reconfigured and redesigned the resource and capability bases of the new entities, paying attention to the underlying microfoundations that emerged in the firm functions.

4.1. Acquisition 1

Alpha: Background

The acquirer, privately owned Finnish firm Alpha (an SME), was established in the late 1980s. It had grown from a software subcontracting company to being one of three global firms providing GSM and 3G telecommunication network vendors with protocol analyzers and simulators. Alpha shifted its business from subcontracting to manufacturing and selling products in the early 1990s, and in 1999 the firm acquired a local firm to enable faster growth with more resources for new technologies. Although a business acquisition to enhance the product portfolio (to encompass load testing) had already been considered in 2002, the company did not see a realistic possibility to proceed actively then. Instead, Alpha's top management based the firm's 2004–2006 strategy on organic growth. Load testing remained the biggest area in its market segment that Alpha did not have an offering for. This issue came up yearly

during strategy updates. The firm management closely followed the sales reports, tended to lean heavily on existing strengths, and typically cut off the most rampant new product ideas. A member of the management board noted that "the main input came from existing customers … but the board trusted the statistics more." Other reasons were the turbulent market situation (due to license auctions reducing operators' investment capabilities) and the conservative cost culture that Alpha followed. A high profit level was preferred over searching for fast growth. In 2003, the company believed it had enough competence and resources to develop load testing, but no real action was taken. In 2004, a year before the acquisition of Beta, Alpha employed more than 200 persons in Sweden, Germany, France, China, the USA, Singapore, Japan, and the United Arab Emirates. At that time, Alpha's annual turnover was 22 million euros and the firm had a 28% market share in protocol analysis and a 5% market share in protocol simulation.

Alpha's M&S function had a continuous dialogue with its customers and thereby had a good grasp of the scanning and monitoring of their needs. A management board member noted, "[Alpha] had good visibility among customers and in its industry." The firm's top management scanned and transferred marketing information to product-related decisions. Alpha's product roadmap and R&D activity were the result of the firm's strategy process and typically covered a period of two to three subsequent years. The product roadmap reflected the firm's goals, and Alpha's strategy document stated that "[Alpha] will reach a leading position in the mobile protocol testing market … this will be done by [relying on] PC-based tools and value-added applications." Alpha executed a highly technology-oriented strategy; furthermore, the appointment of a new CEO cemented the firm structure as being product oriented. A management board member stated, "The organization was previously based on customer segments … the organization changed to a product-based business unit." This product strategy was derived from the firm's vision for the three upcoming years and was approved by firm management. Once the strategy was sealed, it only allowed minor deviations.

In telecommunication markets, major vendors were merging, and hence, the number of customers was continuously declining. The trend was eroding profitability. E-mail correspondence between the firm's key persons showed that "[Alpha] started to search actively for new product offerings in 2003. The main input came from existing customers. The salespeople and business units were the key sensors." For the first time, in 2004, Alpha recognized a realistic opportunity to expand its current offering from analyzers to include the load tester business, in which the target firm, Beta, was growing fast. In the end, Alpha's M&S function brought forward the idea of expanding the firm's product range, which resulted in the initiation of the acquisition negotiations. Alpha acquired Beta in 2005.

In Table 3, we illustrate the microfoundations of the dynamic capabilities that emerged in Alpha at the time of the examined acquisition. The microfoundations emerged both in interviews with the HR director and the management team member, and in their personal notes, emails, firm-internal strategy documents, and meeting minutes.

Table 3. The microfoundations of dynamic capabilities, embedded in Alpha's key functions and management.

The locus of microfoundations	**R&D**	**M&S**	***Management***
Structures	Audited quality systems for R&D Hierarchical structure (top management's and the CEO's insights into customers' needs guide the selection of the technologies)	A self-organizing structure (M&S function organizes itself and acts in order to meet the targets set by top management and the CEO)	*Headquartered in Finland* *Hierarchical structure (the CEO and management team are responsible for the strategy process; the product road map has a significant role in operational management; the board of directors accepts the budget)*
Processes	Formal and well-defined R&D processes Clear processes for change management A strong tendency towards generic products, but also differentiation with selected customer-specific product tailoring	Formal sales processes, including guidelines to making offers, communication, forecasting, and reporting Formal processes for collecting market information Reward processes (limited sales commissions based on deliveries).	*The formal strategy process* *The CEO and the top management filter market information and transfer this information as sales targets*

Routines	Continuous communication between R&D, top management, and the M&S function When necessary, R&D is capable of making changes to products and is flexible when doing so	Continuous dialogue with customers Salespersons make offers based on existing product features	*Limited bottom-up communication efficiency* *Top management is slow to react to customers' changing needs*
Skills	Strong technological competences (in the key persons) Technology evolution evaluation skills Good project management skills	Market information identification skills Market information processing skills	*Analytical skills (the firm is managed based on numerical targets)* *Incremental change skills*

Beta: Background

The target firm, Beta, a privately owned US high technology SME, had been developing load testers for telecommunication network vendors since 1996. Alpha and Beta were both operating in the same industry, and hence, the firms served the same customers with complementary product offerings. A year before the acquisition, Beta had an annual turnover of seven million USD, employed about 100 people in the USA and India, and had a distributor in both Sweden and Japan. However, at that time Beta had just delivered its first fully functional load testers to telecommunication network vendors, and for this reason, Beta's customer base was not very robust. Beta relied on short-term opportunities; demands from customers were the main driver steering the firm's strategy. With the acquisition, Beta was able to benefit Alpha's global sales channels, which in turn opened up a broader customer base for Beta's products.

M&S in Beta had close relationships with their customers, and salespeople forwarded customers' requirements directly to R&D. Beta had highly competent salespeople who were able to increase deal sizes by promising and selling additional tailored features to the customers. In most cases, such features did not exist, and they had to be developed. The due diligence reports showed that Beta based salespersons' commissions on orders, not on realized deals, which increased the size of the sales commissions. The firm's product development decisions materialized in the interface between marketing

and R&D. Even though the firm was relatively technology oriented, customer-specific product tailoring overloaded Beta's R&D function. Such procedures not only led to fast decision-making and short development cycles, but also directed the firm's talent recruitment and competence development. Beta's customer requirements steered the choice of technologies. Table 4 illustrates how the microfoundations of dynamic capabilities emerged in Beta at the time of the examined acquisition.

Table 4. The microfoundations of dynamic capabilities embedded in Beta's key functions and management.

The locus of microfoundations	**R&D**	**M&S**	***Management***
Structures	Limited quality systems External direction (the CEO [with technical background] is partly responsible for designing the product architecture; customers guide the selection of the new technologies)	Self-organizing structure	*Headquartered in the USA* *No clear division between functions (the CEO and single function managers have a lot of managerial freedom)*
Processes	Short-term target setting Informal, almost non-existent R&D processes Remote management of Indian R&D	A lack of distinctive sales process; sales needs to follow US Securities and Exchange Commission (SEC) regulations No processes for collecting competitor data No processes for collecting customer data No processes for sharing data with other functions	*Informal strategy processes (product strategies are in continuous change as customers come up with new demands)* *No processes for managing product portfolios (the sales function and the top management simply transfer customers' needs to the R&D function on an ad hoc basis, causing extra workload in the R&D functions)*
Routines	Limited routines; an ad hoc mode dominates daily operations (rapid adaptation to customer-specific product tailoring)	Continuous communication with customers M&S strive to meet the quarterly targets in everyday work The coordination of product development (salespersons take customer requirements directly to the R&D function)	*The priority is put on meeting customer needs in all activities*
Skills	Strong technological skills (key persons) The skills to react quickly to new customer requirements	Strong commercial and technical vision of markets Good deal-closing skills (good at understanding the customers' needs)	*Limited organizing skills (the division of work and work allocation between functions)* *Limited economic/financial skills (a lack of understanding of the cost*

	Limited skills in evaluating work load	Limited economic/financial skills and understanding	*structures, resulting from customer-specific tailoring)*

Acquisition 1: The process

The initial negotiations between the two firms in 2004 concerned possible cooperation rather than an acquisition, and these first discussions did not lead to any further action. In that year, Beta reported poor financial results, and consequently Alpha saw this as an opportunity to start acquisition negotiations with a realistic valuation. The pre-acquisition negotiations between Alpha and Beta resulted in a list of possible factors that were potentially critical for the success of the deal. Strategy documents revealed that Alpha listed more than ten environmental- and technology-related factors, but no marketing- or sales-related factors. As a member of the acquiring firm's management board noted, "Commercial due diligence did not provide realistic data on prospects. The concept of sales (closed customer deals) had a different meaning in the Finnish and US firms." The deal was closed in 2005. Right after the deal, the post-acquisition integration process was initiated with the nomination of a former Finnish sales director as the new CEO of US operations. Table 5 illustrates the timeline of the acquisition.

Table 5. Acquisition 1's timeline.

Prior to acquisition	Until 2004: Individual development paths; incl. one acquisition experience for Alpha & first contacts (for cooperation).
Pre-acquisition negotiations	2004: The CEO of Beta proposed negotiations concerning possible cooperation. 2005: Alpha started testing Beta's products.
The deal	2005: The acquisition deal was closed.
Post-acquisition integration	2006: The organizing of management, R&D, and M&S; the U.S. firm Beta was merged into Alpha's simulator business. 2006: The organizing of governance: Alpha shifted the control of Beta's Indian R&D unit to the headquarters in Finland and reduced the number of Indian locations from three to one. Alpha shifted the control over the Japanese distributor to the headquarters in Finland. 2006: The organizing of governance: Alpha nominated a new head of US operations and a new head of sales. Both key persons came from Alpha, Finland.

	2006: The reorganizing of governance: The head of the US operations left the firm. Alpha nominated a new head of U.S. operations—the key person came from Alpha, Finland.
	2007: The reorganizing of governance: A new head of the simulators business unit moved from Finland to the USA. A key person of the load tester sales left the firm. The CTO of load testers left the firm.
	2007: Business situation change: The revenues of the new firm were decreasing.
	2008: Organizing R&D: The load tester R&D was moved from the USA to Finland and India.
	2008: Organizing M&S: The US location became the sales and support function for the Americas.
	2008: Restructuring: Due to the market situation, the firm reduced the number of employees.
Later events	2010: A publicly listed firm acquired the formed entity (beyond the scope of this study).

Integrating M&S

In Alpha, sales commissions were based on invoiced customer deliveries, and the size of commissions had an upper monthly limit. In Beta, sales commissions were based on orders, and sales commissions had no limits. Strategy documents indicate that Alpha saw this as a risk. Salespersons in Beta agreed with the R&D function to deliver customers with product features that did not yet exist, and the firm had major difficulties in estimating the related development and tailoring costs. In order to align and avoid the possible risks, during the post-acquisition integration Alpha forced the M&S function in Beta to adapt to the acquiring firm's processes and policies. A member of the management board pointed out the nascent discord: "US salespeople adapted to, but were dissatisfied with, the new system" because it meant smaller commissions.

Documentation from the due diligence and post-acquisition integration processes also revealed differences in how M&S and the firms' top management transferred customers' requirements to R&D functions. Alpha's M&S and R&D functions prioritized new product development decisions jointly, and the firm's product management closely followed a well-documented process. Beta had no such processes in place. As a result, opposite ways of transferring customer information from M&S to the R&D function led to a conflict between the acquiring firm and the target firm. E-mail correspondence at that time confirms this notion: "Disagreement between the US and Finnish R&D on what features can be tailored

to customers resulted in very high-risk business—manifested by remarkable delays in deliveries and increased costs that exceeded sales prices." In the management, the challenges in the integration related mostly to different degrees of functions' process rigidities, monitoring, and formal coordination. In Table 6, we scrutinize the two merging firms' M&S functions before and after integration and the managerial issues stemming from the underlying microfoundations that arise in the firm functions.

Table 6. A comparison of the underlying microfoundations of Alpha's and Beta's M&S functions during integration.

The locus of microfoundations	**Pre-acquisition**	**Integration**	***Management (challenge)***
Structures	Alpha's hierarchical structure vs. Beta's self-organizing structure	Hierarchical structure introduced; only partially adopted in Beta	*Structural rigidities: integration by changing the locus of power (re-organizing governance), no concrete reorganizing of M&S units*
Processes	Alpha's formal processes vs. Beta with no distinctive M&S process (excl. SEC regulations)	Formal processes introduced (to limit M&S decisive power regarding tailoring and product development)—not executed in Beta (earlier processes remain dominant) Reward processes weakened for Beta	*A centralization process in decision-making* *Administrative M&S processes* *Limited efficacy of managerial intervention processes (e.g., a lack of incentives to adopt new processes)*
Routines	Alpha's routines for market/customer (knowledge) management vs. Beta's routines for market/customer (knowledge) management Alpha's activity is routinely guided by a product roadmap vs. Beta's activity is guided by sales targets Alpha's influences/communicates with R&D via top management vs. Beta with a direct influence on R&D direct communication with R&D	Routines remain: for Alpha, technology-oriented culture vs. for Beta, sales-oriented culture	*Failing in redesign of routines* *Monitoring of practices* *Monitoring of achieving goals and targets*

Skills	Alpha's good market/customer (knowledge) management skills vs. Beta's good market/customer (knowledge) management skills Alpha's limited communication/influencing capabilities vs. Beta's strong influencing capabilities and limited economic/financial capabilities	Market/customer (knowledge) management skills dominate	*A lack of leadership skills (cultural differences adding the challenges)*

Integrating R&D

The integration of two R&D functions was seemingly easy, but a few key persons in the acquired firm—in particular Beta's CEO and R&D manager—caused considerable problems. Alpha's management board member pointed out that "The US firm was absorbed into the Finnish firm's simulator business unit. The original purpose was to implement existing simulator user interfaces into acquired load testers. This never happened; the original software code guaranteed US developers their positions and made their specific skills more important to the firm." During the first year, it became obvious that the post-acquisition integration process had not proceeded as planned. A management board member referred to the e-mail correspondence at that time and pointed out: "It became clear that the former US people had a strong tendency to continue working as before." Moreover, individual developers refused to share their knowledge, as notes from the post-integration period reveal: "Software developers in the acquired US unit did not implement some of the promised features, which would have made the R&D integration easier. The US people were protecting their position, and sticking to existing solutions made their related skills less easy to replace."

A further issue was that the acquiring firm was not happy with the technical quality of the US product development. The head of US operations had a background in sales and hence lacked technical understanding. This led to conflicts, and eventually Alpha nominated its head of R&D as the head of US operations in order to enhance quality and development processes. This was not completely successful

either. The new head of US operations had a strong technological background, in contrast to the previous one, which then led to new conflicts with the salespersons in the US. As in Table 6, in Table 7 we compare the microfoundations emerging in the two merging firms' R&D functions.

Table 7. A comparison of the underlying microfoundations of Alpha's and Beta's R&D functions during integration.

The locus of microfoundations	**Pre-acquisition**	**Integration**	***Management (challenge)***
Structures	Alpha's top-down hierarchical, technology-based product strategy vs. Beta's customer-demand based strategy Alpha's audited quality system vs. Beta's limited quality system	Quality systems introduced; only partially adopted in Beta	*The concrete reorganizing of R&D units* *Re-organizing governance*
Processes	Alpha's formal processes (for implementing the approved new technologies) vs. Beta's informal R&D process	Formal processes introduced (to limit M&S decisive power regarding tailoring and product development)—not executed in Beta (earlier processes remain dominant) Limited processes for purposive knowledge exchange between R&D units	*A centralization process in decision-making* *Administrative R&D processes* *Limited efficacy of managerial coordination processes* *Limited product complementarity adjustment processes*
Routines	Alpha's routines for executing product roadmap vs. Beta's routines for rapid reaction to customer demands Alpha's continuous communication among functions and top management vs. Beta's responding to demands ad hoc	Underdeveloped new routines: no routines for knowledge transfer, particularly from Beta R&D function	*Failing in redesign of routines*
Skills	Alpha's strong technological (and adaptation) skills vs Beta's strong technological (and adaptation) skills	Limited willingness for knowledge transfer	*Limited administrative skills to overcome the routine modes of acting* *Limited leadership skills* *Limited skills in the retention of functional skills and capabilities*

Managerial challenges summarized

The consolidation of the firms' strategies was not painless, and it required a lot of attention from top management. One possible explanation for the extensive workload is that the acquisition process was lacking a dedicated integration manager. The alignment of different strategies had direct effects, in particular in the M&S and R&D functions' routines and processes. E-mail correspondence and firm-internal documentation indicated that during the post-acquisition integration phase, top management believed that similarities in products and markets alone would yield the desired synergies. The outcome, however, was different.

Beta's Indian subsidiary, especially the transfer of its management from the US to Finland, provides an incisive anecdote for the challenges that emerged during the post-acquisition integration process. Before the acquisition, the Indian subsidiary was purely an R&D unit, and the management controlled the Indian product design on a day-to-day basis from the US. During the post-acquisition integration phase, Alpha shifted the Indian unit to be under the R&D director in Finland. The quality manager moved from Finland to India, and the Indian R&D unit quickly adapted to the new conditions. In particular, the unit quickly accepted the Finnish quality process. At the same time, the former US management was against the process. As a result, the expected integration of Alpha's simulator user interface with Beta's load tester was not finished, and testing limped along. Installment costs increased, and the director of the simulators business unit traveled to the USA multiple times to help with integration and R&D. A management board member noted, "In the end he had to give up; the decisions made on Friday were abandoned by the US people during his flight back to Finland on Saturday." The underlying differences in the different functions resonate with this.

Regarding the integration a member of the management board concluded that "All in all, soft integration and remote management didn't work. Harder integration and a completely new organization within the previous firm could have worked better. Now there were people creating a bad spirit for too long." During the three years of integration (see Table 5 for the timeline), the people with the strongest

opposite views left the firm, and both the M&S and R&D functions eventually adopted the acquirer's (the Finnish firm Alpha's) processes and routines.

4.2. Acquisition 2

Epsilon: Background

The acquiring firm in the second examined deal, Epsilon, was a publicly listed US software firm (an SME) established in 1992. Epsilon had its headquarters in New York and had two R&D centers: one in New York and one in the UK. The firm also had distributors in South Korea, Japan, France, and the UK. Epsilon was operating in the wired video technology industry, providing IP-based video technology to video service providers globally. The firm was anticipating strong annual growth with new customers in each quarter. Epsilon's customers typically operated in the wired environment and had no solutions or applications for mobile devices. At the time of the acquisition, Epsilon employed 100 persons, had no foreign subsidiaries, and had an annual turnover of 10 million US dollars.

Epsilon was a highly market- and customer-oriented firm in which the M&S function coordinated the product development. The director of integration noted, "Sales was running the whole business. Sales constantly provided R&D with new requirements that had to be implemented in a short cycle." Individual salespersons sought approval from the CEO, and when the green light was given, salespersons requested R&D to implement new product features: "Salespeople in the US were reporting directly to the CEO," as summarized in the due diligence reports of that time. As a result, the R&D function in Epsilon was responsible for implementing the product requests that came from M&S. The director of integration pointed out that "the acquiring firm's people were very aware of customers' needs and let sales influence R&D processes" and went on to say, "the firm had fast R&D decision-making routines based on customer needs. Sales effectively transferred customer needs to the R&D function, and at the same time, the CEO

did not have control over … how R&D implemented these features. Customer need-based design manifested a willingness to listen to customers' needs, but the absence of efficient consolidation of the market information made R&D processes more or less chaotic." Table 8 illustrates the microfoundations in Epsilon's key functions and management.

Table 8. The microfoundations of dynamic capabilities, embedded in Epsilon's key functions and management.

The locus of microfoundations	**R&D**	**M&S**	***Management***
Structures	No quality system or standards A hierarchical, sales-driven structure (strong influences from outside the function: from sales, the top management team, and the CEO)	Hierarchical structure (the CEO dominates control)	*Headquartered in the USA* *A very light strategy process (individual managers have significant roles; M&S owns the strategy process)* *Decisions made by the board of directors are not recognizable at the operational level*
Processes	Top-down knowledge processes (R&D receive filtered information) Informal R&D processes; internal organization Short-term target setting; sales set the targets for R&D Limited processes for modification A lack of systematic R&D documentation	No structured processes for collecting competitor data No structured processes for collecting customer data; No structured processes for sharing data with other functions A formal process for recognizing revenues No formal processes for managing customer requests Sales targets guide the processes No distinctive sales process; a need to follow SEC regulations	*No formal strategy processes; informal project portfolio management* *Loose managerial processes* *Limited chance management processes* *SEC regulations have a strong influence on the firm's management*
Routines	Limited routines; an ad hoc mode dominates daily operations (rapid adaptation to customer-specific product tailoring) Limited routines (due to the lack of transparency) for decision-making	Continuous communication with customers Striving to meet the quarterly targets in everyday work Continuous coordination of product development	*Loose managerial routines (target setting varies each year; top management and the CEO loosely change the targets)* *Ad hoc reaction to customer requests* *Limited routines for delegation*

Skills	Strong technological skills (key persons) Pragmatic skills The ability to react quickly to new customer requirements Limited ability to evaluate workload	Good (short-term) market/customer knowledge management skills (Reactive) customer relationship management skills Good sales skills	*Limited leadership skills* *A limited understanding of the competences in functions* *A limited understanding of the industry*

Kappa: Background

The target firm, Kappa, a privately owned Finnish high technology SME established in 1992, has a background as a designer and a manufacturer of device-related technology. The firm had its headquarters in Finland and had distributors in Germany, Japan, Taiwan, South Korea, and the USA. Kappa was funded by private and institutional venture capital investors during 1999–2001. Kappa was a highly technology- and product-oriented firm. Kappa's products were embedded hardware and software solutions for the main or application processors in mobile terminals. Its customers were the main global semiconductor vendors and wireless device manufacturers, who included Kappa's solutions as modules in their own products. Kappa was a typical engineering-led firm with a subsidiary in the USA. The firm employed 100 persons, and its annual turnover was 10 million US dollars.

Kappa's customers typically have long product development cycles. A prerequisite for being a supplier for such big, global customers was that Kappa had to disclose and follow transparent R&D processes with no room for deviations. Moreover, Kappa needed to align its processes to match customers' processes. As a result, Kappa had very detailed R&D processes. Both the documentation at the time of the acquisition and the integration director's personal notes summarized that "The firm was led by Finnish engineers with a strong technical orientation and with a strict and well-formulated R&D process in which the product definitions were developed together with its customers." Further, customer negotiations took a relatively long time, as e-mail correspondence with the head of sales pointed out: "Salespersons needed not only support from R&D, but often also from other salespersons in order to

close the deals." Customers' limited understanding on the future features of semiconductor products created some additional uncertainties. As in Table 8, we summarize Kappa's microfoundations in Table 9.

Table 9. The microfoundations of dynamic capabilities embedded in Kappa's key functions and management.

The locus of microfoundations	**R&D**	**M&S**	***Management***
Structures	Formal R&D units Strict quality systems and quality control Systematic documentation	A hierarchical structure (strongly influenced by R&D)	*Headquartered in Finland* *Functions are divided (the CEO and management team are responsible for the strategy process; the product road map has a significant role in operational management in R&D and M&S)* *The board of directors ratifies the budget*
Processes	Highly formal R&D processes A process-based organization; limited freedom to develop products Formal processes start new R&D projects Vast customer-specific tailoring to customer's deliveries Customer-dependent processes	Distinctive sales processes; long sales cycles Sales and marketing cannot promise any product tailoring without permission from cross-functional management Brand-building based on technologies Incentive processes (unlimited sales commissions based on orders and customers milestones)	*Cross-functional knowledge / information management processes* *Strategy implementation processes* *Resource allocation processes (e.g., via the budget)* *Transparent change management over functions and business lines*
Routines	Continuous, systematic dialogue with customers' R&D Routines derived from rigid product roadmaps Regular negotiation between sales and R&D regarding the product specifications (features)	Dialogue with R&D Salespersons make offers based on existing product features	*The board of directors accept targets at both strategy and operational level by granting budgets* *A mechanism is in place to manage the organization from top to bottom* *Slow reaction time to customers' product-related feedback*
Skills	Strong technological capabilities (key persons) Good project management skills (excl. poor individual workload estimations)	Good market information identification and processing skills (a good understanding of customers' product development processes) Good reaction skills	*Limited competence evaluation skills (at company level; there is an ability to evaluate competences at individual level)* *A limited understanding of the industry*

Acquisition 2: The process

In the telecommunications industry, user-generated content and mobile data transfer were growing exponentially in the mid-2000s. Both firms were manufacturing solutions for a similar purpose. Epsilon had software solutions for wired devices, and Kappa was designing embedded solutions that semiconductor vendors implemented in wireless terminals. Hence, the firms' customers were different, and the two firms' solutions were not competing. Both firms were well aware that wireless and Internet-based, wired telecommunication services were converging relatively quickly. In this respect, at the time of the acquisition, Epsilon had recognized that the development of the company's wireless solutions would take too long.

Table 10 illustrates the timeline of the acquisition between Epsilon and Kappa. The initial acquisition negotiations started in 2005. At first, the firms were discussing a closer cooperation and the firms did not start the due diligence process until 2006. The key persons from both firms' corporate marketing, product marketing, customer relationship, sales, and sales support functions were involved in the acquisition negotiations. As a result, Epsilon acquired Kappa in May 2007. Three years later, a Fortune 500 company acquired Epsilon. As we show in Table 10, pre-acquisition negotiations started two years before the firms signed the deal, and the post-acquisition integration process was not finished until 2010.

Table 10. The timeline of Acquisition 2.

Prior to acquisition	Until 2005: Individual development paths.
Pre-acquisition negotiations	2005: Initial negotiations focus on possible cooperation. The CEO of Epsilon presented a cooperation plan to the firm's board of directors.
	2006: Kappa's shareholders received competing offers from global semiconductor vendors.
	2006: The due diligence process was started, based on Epsilon's term sheet.

The deal	2007: The acquisition deal was closed.
Post-acquisition integration	2007: Organizing governance: The new board of directors approved the integration process plan and nominated the integration director. 2007: Organizing governance: A new strategy and a new strategy process were initiated. 2007: Organizing governance and structure: All functions made current-state analyses, and the first version of the new organization structure was announced. Twenty-two separate units were consolidated into eight functions under two business lines. 2008: Organizing of R&D: A new R&D structure and a new common product road map. 2008: Organizing of M&S: All sales-related activities were organized under a common sales function, and the new sales process was redefined. 2009: Organizing of management of R&D and M&S: A new plan for products and profitability targets were set for each business line.
Later events	2010: A Fortune 500 company acquired the formed entity (beyond the scope of this study).

Integrating M&S

The same key persons from the pre-acquisition negotiations were also involved in the post-acquisition integration process. Both firms shared a common aspiration to find sources for strategic synergies. It was evident that "Strong business-based reasons were driving the acquisition," as the integration documentation noted. During the post-acquisition integration process, all sales-related activities were organized under a common sales function. This new sales function provided the R&D function with product ideas and initiatives, based on recognized opportunities; relatedly, it had the task of collecting new product feature requests from customers. Like in Acquisition 1, attempts to align opposite ways of coordinating how the M&S function transferred product requirements to R&D caused conflicts in Acquisition 2. The director of integration recalled that "Some sales people did not change their ways of working and some were concerned about information sharing" and "during the integration phase, Finnish sales noticed that US software products' income came from smaller customer deals, which were taking their time from semiconductor customer service." Individual salespersons in the US firm reported directly to the CEO, and the director of integration noted that "individualism in the sales function was

very high and salespersons were not willing share their information about their key customers' needs until they recognized some new features that needed specific input."

The firm eventually started to employ Kappa's processes. The new processes included documented product roadmaps, which did not allow any fundamental change requests from the M&S function once the development was started. Epsilon's salespersons considered this to be a lost influence on R&D, as e-mail correspondence at that time indicated: "Some US sales people still tried to redirect R&D by influencing R&D project managers or the CEO." The head of the new M&S function faced challenges as performance pressures came not only from the CEO but also from the board of directors, as the correspondence stated: "The results were not on an acceptable level."

The managerial challenges in the integration phase mostly originated from the firms' different degrees of structural rigidities, but also from different coordination within and across functions, and underlying processes. In Table 11 below we summarize the microfoundations emerging in Epsilon's and Kappa's M&S functions before and after integration, and the managerial issues stemming from the underlying microfoundations that emerge in the firm functions.

Table 11. A comparison of the underlying microfoundations of Epsilon's and Kappa's M&S functions during integration.

The locus of microfoundations	**Pre-acquisition**	**Integration**	***Management (challenge)***
Structures	Epsilon's (hierarchical) structures vs. Kappa's hierarchical, rigid structure	A hierarchical structure is introduced (focus on technology-driven approach adopted from Kappa)	*Structural rigidities: organizing a new, integrated sales function*
Processes	Epsilon's adaptable, informal processes vs. Kappa's rigid, formal processes	Formal processes introduced to Kappa	*The centralization of processes for decision-making*
		No change processes available	*Administrative M&S processes*
		Reward processes weakened for Epsilon	*Managerial intervention processes*

Routines	Epsilon's routines for coordinating R&D and routines for responding rapidly to emerging needs vs. Kappa's established routines for market/customer (knowledge) management in line with R&D Epsilon's influence/communication with top management vs. Kappa's close communication between functions	Adaptation and flexibility in routines decreased	*Limitations in the redesign of routines* *The monitoring of achieving goals and targets*
Skills	Epsilon's good market/customer (knowledge) management skills vs. Kappa's good market/customer (knowledge) management skills Epsilon's limited cross-functional cooperation skills (R&D coordination skills) vs. Kappa's strong cross-functional cooperation skills capabilities	Good market/customer (knowledge) management skills	*Limited administrative skills to overcome the routine modes of acting (especially in terms of decreased flexibility and influence of M&S)*

Integrating R&D

The CEO of Epsilon considered that the acquisition would bring business opportunities and possibilities to improve R&D processes within the firm. During the post-acquisition integration, four different multinational teams evaluated the existing business lines and also conceptualized new products and services. First, the aim was to understand existing businesses from the R&D point of view; and second, a common-product roadmap, based on a new strategy and subsequent integration, was to be designed. The integration director's personal notes from the post-integration process indicated that "The most successful cooperation took place between the US and Finnish R&D. The fact that engineers were speaking the same tech language and both units had distinctive competencies to continue development in their own technologies gave a solid ground for further actions." Epsilon had limited knowledge of the hardware business before the acquisition but was forced to learn. The director of integration mentioned that "a benefit of the acquisition was a stronger understanding of the device development mechanism." He continued, "The US and Finnish COOs shared a common understanding of how to manage resources. The new strategy was to be implemented, but the lack of available resources forced R&D to continue

with existing product development, not being able to start new products. R&D in the US was more optimistic about possibilities to have new products in the market, whereas the Finnish R&D was more cautious on the issue." However, the post-acquisition integration phase experienced some obstacles, as the director of integration pointed out: "Not all key persons committed to the strategy. Targets were not clear enough … the CEO still expected to have a strong personal influence on operational-level issues, and this caused some frustration in R&D." Nevertheless, it was evident that cooperation between R&D and M&S was critical: any false interpretation of customers' needs would have been fatal. Moreover, cooperation among the salespersons was equally important—to close a sales deal with a big semiconductor manufacturer took a relatively long time, was complex, and required several individual's simultaneous contributions. Therefore, structures, processes, and routines were adopted that facilitated this. Table 12 illustrates the microfoundations emerging in the two merging firms' R&D functions during the integration process.

Table 12. A comparison of the underlying microfoundations of Epsilon's and Kappa's R&D functions during integration.

The locus of microfoundations	**Pre-acquisition**	**Integration**	***Management (challenge)***
Structures	Epsilon's no quality systems vs. Kappa's strict quality systems	Quality systems introduced to Epsilon; some resistance	*Organizing for governance, common platform*
Processes	Epsilon's lack of a distinctive R&D processes (sales-driven, reactive processes) vs. Kappa's customer-dependent processes	Formal processes introduced—generally well-received (excl. the CEO's influence)	*Influence by the CEO; a centralizing process in decision-making* *Administrative R&D processes* *Product complementarity adjustment processes*
Routines	Epsilon's routines for reacting to customer demands vs. Kappa's routines for executing a product roadmap Epsilon's ad hoc response to demands vs. Kappa's continuous communication among functions and top management	The adoption of cross-functional cooperation routines for R&D R&D-specific routines with limited modification/change readiness	*The redesign of function-specific and cross-function routines* *The monitoring of policies, guidelines, processes, practices*

Skills	Epsilon's strong technological (and adaptation) skills vs. Kappa's strong technological (and adaptation) skills	Strong technological skills Limited project management skills	*Limited leadership skills* *Limited skills related to the retention of functional skills and capabilities*

Managerial challenges summarized

The pre-acquisition due diligence documentation shows that both firms' management expected the acquisition between the Epsilon and Kappa to be a match made in heaven. In particular, complementarities in the merging firms' technologies were likely to provide synergies. At the time of the deal, an integration manager was nominated. The integration of different routines and processes was done realistically, and top management open-mindedly assessed the processes and routines of both firms' R&D and M&S functions in order to identify best practices. Consequently, the CEO replaced the US ad hoc way of operating with the target firm's (the Finnish firm Kappa's) systematic processes.

During the post-acquisition integration process, products were integrated and Epsilon's technology became part of Kappa's offerings. This integration created high expectations for new deals to arise. The director of integration referred to the correspondence and firm-internal documentations, explaining that "With [Kappa]'s presence in leading mobile phone manufacturers and [Epsilon]'s ownership of internet technologies, the firm was able to quickly establish dominance in the multi-codec chip market, especially among customers interested in the embedded flash product market." Integration, however, also faced challenges, and the integration manager noted: "One of the weaknesses in integration was … [that] several people actually didn't accept the new way of operations, and they tried to continue to play the game with the old rules (in both the US and Finnish entities). That made the whole process much slower."

In the remaining sections, we will discuss these findings, and compare the cases for the concluding insights.

4.3. Cross-case analysis and its reflection to theory

The individual acquisitions analyzed above reveal prominent differences between the merging firms' microfoundations of dynamic capabilities, which arise from distinct functional structures, processes, routines, and skills (Teece 2007; Foss 2011; Felin, Foss, and Ployhart 2015). Our findings suggest that these microfoundations and their interaction have an impact on how acquisitions succeed, especially in terms of the fluency of the integration process and achieving the pursued outcomes. In the following cross-case analysis, we make an effort to explicate how the function-specific microfoundations of dynamic capabilities and their mutual dynamics may either hinder or enhance the post-acquisition integration processes.

Our findings from the compared cases indicate, first, that a pre-acquisition assessment of relatedness and complementarities at the firm level, or even at the function level, does not necessarily reveal the crucial pitfalls that may prevent firms from capitalizing on the potential advantages of acquisitions, but the due diligence needs to go deeper. In both acquisitions, external relatedness between the merging firms' product offerings indicated that synergies were present. Alpha and Beta shared obvious similarities in their market positions as both firms provided their products and services to the same customers, and Epsilon and Kappa had been developing similar solutions for firms in different industries. The management in both acquisitions perceived (justly) that it would be possible to combine and share functional resources in order to lower total costs (cf. Davis and Thomas 1993) and that complementary technologies would have a positive impact on post-acquisition success (King et al. 2008). This is in line with Kim and Finkelstein (2009) suggesting that when two merging firms' differences at the function level are mutually supportive, synergies often appear plausible at the pre-acquisition phase. However, at the same time as the external relatedness was acknowledged, the microfoundations of

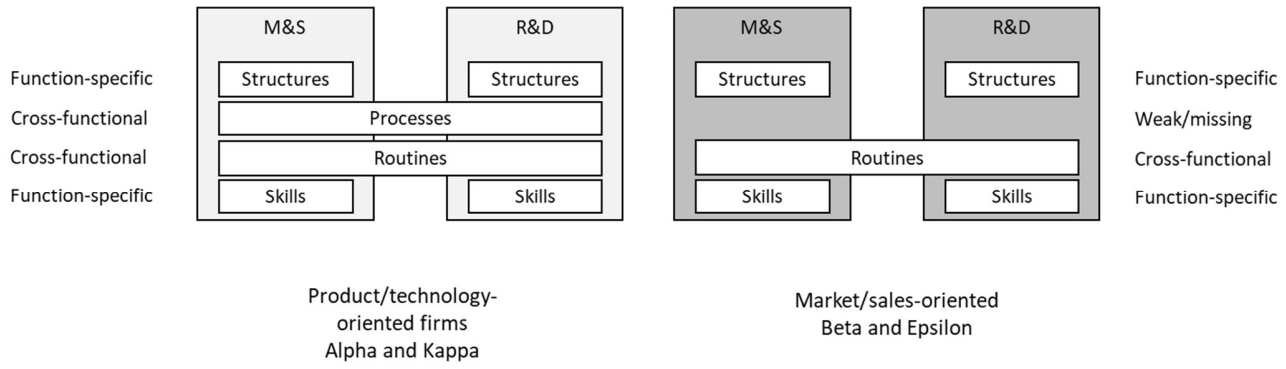
capabilities were overlooked, and in fact, the meaning of the differences was not completely understood. Hence, we argue that M&As' success factors can be better revealed by extending analyses to the microfoundations of dynamic capabilities. The cross-case examination raises further issues regarding the role of cross-functional relationships and the managerial attention to microfoundations.

Second, the analysis shows how going beyond the firm-level or function-level elements to the inter-function relationships matters. In both acquisitions, regardless of the efforts in the due diligence process, the acquiring firms were not able to reveal differences between the merging firms at the functional level, particularly in the prevailing cross-functional relationships and in their dynamic capabilities' microfoundations. The firms' management paid closer attention to typical M&A checklists; when doing so, they bypassed important structural, process-related, routine, and skills-related factors. Moreover, the post-acquisition integration process between Alpha and Beta suffered from a lack of openness in communication. This said, our findings parallel those of Zander and Zander (2010) and Teerikangas (2012) as to this extent all the merging firms remained "grey boxes"; hence, in both acquisitions, the neglected "silent forces" led to further difficulties during the post-acquisition integration processes. In this regard, we agree with Friedman et al. (2016) that a positive communication climate includes top management participation in decision-making, openness in communication, supportiveness, and as shown in our cases, attentiveness to microfoundations. Closer attention to such microfoundations might have enabled Alpha's management to prevent the escalation of Beta's smoldering, protective reactions (see Teerikangas 2012) and hence may probably have smoothened the integration process. Nonetheless, in both acquisitions, involvement in decision-making failed to provide top managers with objective information on the target firm's resources and capabilities.

A merger of two firms is not just a merger of two firms' individual functions; it is also a consolidation of cross-functional relationships. In our two acquisition cases, the major obstacles to a smooth integration were related to the notable differences, not only in the function-specific processes,

but also in the cross-functional processes and routines (see Figure 1, where a comparison of the two firm types—product-oriented and sales-oriented firms—shows the differences in the initial setting). In particular, in our cases, while the product-oriented firms had strong cross-functional processes to balance M&S and R&D, such processes were missing in the sales-oriented organizations. Even if the necessary function-specific skills were in place, this cross-functional element changed the acquisition dynamics, and problems emerged in merging the two types of firms. Thus, we strongly agree with Tanriverdi and Venkatraman's (2005) notion that as the firm functions are mutually dependent, they should not be studied in isolation.

Figure 1. A comparison of the two types of firms in the acquisition cases: cross-functional relationships between functional microfoundations.



Third, in our findings from the compared cases, the cross-case comparison indicates that the approach taken to combine the function-specific and cross-functional microfoundations has an important role in the cross-border M&A success. During the post-acquisition integration, Alpha strived to embed Beta's R&D and M&S functions as an integral part of its own functions, following an absorption (integration) strategy of the Haspeslagh and Jemison (1991) typology. The idea was that the acquired functions would lose most of their autonomy and become dependent on the parent organization. The

target firm's sales people in the M&S function were not happy about the new structures, processes, and routines. Neither were the key persons in the target firms' R&D function. In both acquisitions, the key persons in the respective target firm did their best to safeguard their positions by maintaining control of critical operations; similar observations were made in the studies of as Stahl et al. (2013) and Cooke and Huang (2011) also. In Acquisition 2, Epsilon was following two integration strategies simultaneously as it aimed at retaining the separate technologies and, at the same time, absorbing the target firm's M&S function as an extension of the existing organization. The post-acquisition integration allowed the two R&D functions to continue relying on their microfoundations to a large extent, and the integration was easier compared to that of the M&S functions. However, as the R&D and M&S functions were linked in their original organizations, the process was slower than it could have been. Key persons in the two key functions (R&D and M&S) tended to react in a different manner, and hence, some degree of autonomy in the target firm's decision-making might have improved post-acquisition integration success; which is an approach that has been found appropriate in the studies of Angwin and Meadows (2015) and Teerikangas and Thanos (2018) also. Our findings are also similar to those of Håkanson (1995), noting that an alignment of opposite process orientations may result in resistance and create severe obstacles to M&A integration. The integration of two firms with opposite structures, processes, routines, and skills requires strong managerial reconfiguration capabilities, especially if misalignment (that is, an imbalance between functions) is present within the merging firms. This is particularly relevant when other types of microfoundations (e.g., skills) cannot compensate for some other microfoundations (e.g., processes).

Finally, although more of a context issue in this study than a focal phenomenon to be analyzed, our case comparison points towards the relevance of cultural differences (both national and organizational). In both acquisitions, M&S in the US market-driven pragmatic firms dictated R&D, a process over which the firm's top management had practically no control. The Finnish technology- and product-oriented case firms, on the other hand, had very strict R&D processes with product roadmaps,

even to the level of them being rigid. Our results are similar to Ljungquist's (2014) findings, and they reveal how a (culturally based) pre-acquisition imbalance in the firms' cross-functional relationships (i.e., in its microfoundations) made the post-acquisition alignment very difficult. In both acquisitions, informal channels in the US firms persisted in contradicting formal processes and bypassing the management, while the Finnish firms strived to follow agreed-upon, authorized practices. The findings from our two mirror M&A cases (a Finnish SME acquiring a US SME, and a US SME acquiring a Finnish SME) parallel the works of Calori, Lubatkin, and Very (1994) and Pitkethly, Faulkner, and Child (2003) that indicate that US firms seem to exercise less formal control and more personal involvement in the post-merger integration process. Distant national cultures, which have a strong impact on firms' organizational cultures, highlight these differences. In the cross-border setting, the relevance of microfoundations becomes visible.

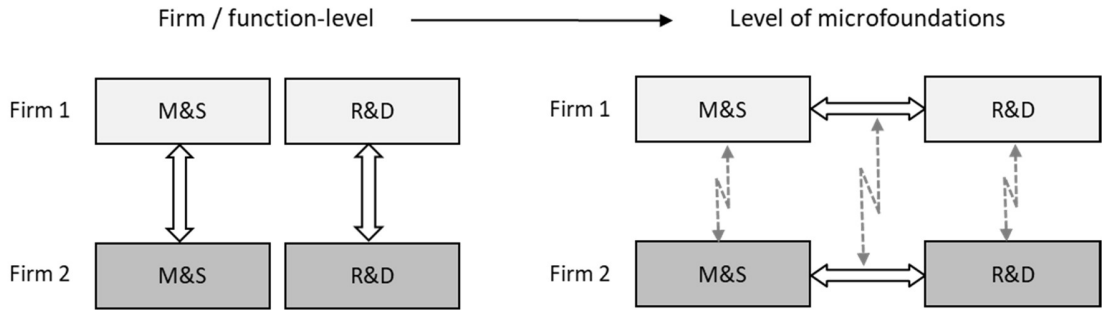
To summarize, we agree with Gomes et al. (2013) and suggest that M&As with a good strategic and organizational fit perform better. The fit, however, may not be fully transparent when simply evaluating M&As at the level of firms, functions, or even (dynamic) capabilities, especially before the integration. As Chatterjee and Brueller (2015) and Hassan, Chidlow, and Romero-Martinez (2016) suggest, a thorough pre-acquisition assessment of the target firm improves the acquisition success. Yet surprising challenges may stem from contradictions in the function-specific and cross-functional microfoundations.

5. DISCUSSION AND CONCLUSIONS

In this study, we examined the role of the function-specific microfoundations of dynamic capabilities during the post-acquisition integration process in the cross-border context. In doing this, we respond to the call of Szücs (2014) and Sinkovics et al. (2014) for more studies on these issues. We follow Angwin

et al. (2015), and suggest that pre-acquisition negotiations, due diligence, and post-acquisition integration processes involve complex microfoundational aspects that have more far-reaching consequences than the M&A literature typically expresses or assumes. To our knowledge, this study is one of the first attempts to combine and extend M&A discussions beyond resource relatedness (Davis and Thomas 1993; Homburg and Bucerius 2006), functional complementarities (King et al. 2008; Kim and Finkelstein 2009; Bauer and Matzler 2014), and acquisition capabilities (Amiryany et al. 2012; Angwin et al. 2015; Nummela and Hassett 2015; Friedman et al. 2016). Figure 2 below summarizes our contributions to existing discussions on cross-border M&As and the microfoundations of dynamic capabilities.

Figure 2. Shifting the focus on the post-acquisition integration of firm functions and cross-functional relationships.



We contribute to the existing literature by suggesting and empirically showing that the pre-acquisition differences between the merging firms' function-specific and cross-functional microfoundations can explain the success of the post-acquisition integration process more precisely than an assessment of similarities and complementarities on a firm or function level. Our results indicate that models that focus on similarities and differences between merging firms' activities (see, e.g., Very and Schweiger 2001) omit complex relationships that take place across functions and activities. As our study shows, these can be quite pronounced in cross-border acquisitions.

More specifically, our study adds to existing knowledge by demonstrating how the underlying microfoundations that arise in the firm functions seem to have the power to determine to what extent and how easily the perceived and anticipated complementarities and benefits of an acquisition are achieved. As noted above, Cording, Christmann, and King (2008), Håkanson (1995), and Teerikangas and Thanos (2018) are among the few that have addressed the M&A integration processes that take place in firm functions. Our study indicates that even when beneficial complementarities exist on the firm level, individual microfoundations—or disorders in them—may make or break the whole integration.

Besides the findings on the function-specific microfoundations, our study points toward the importance of the simultaneous alignment of varying types of microfoundations, especially in a cross-border M&A context. For example, well-matching function-specific skills (e.g., technological skills in the R&D function) between the merging organizations do not ensure a successful M&A deal alone, but in order for the integration to be successful, management needs to also align merging firms' functional structures (e.g., quality systems that match the technological skills). Failing to integrate specific microfoundations may hurt the integration process, even if the integration of some other microfoundations is successful. Compensatory powers may not be present.

However, an understanding of the microfoundations that emerge in the firm functions per se reveals only one part of the big picture. Our findings suggest that the cross-functional dimensions deserve specific attention. With this notion, we extend the work of Nummela and Hassett (2016) and Paruchuri and Eisenman (2012) and we indicate that the established relationships are challenged during the post-acquisition integration process at different levels: at the level of individual functions and at the level of cross-functional relationships (see the dotted lightning-bolt arrows on the right-hand side of Figure 2). The interdependencies are highly influential in the integration phase, especially if the pre-acquisition cross-functional relationships need to be adjusted during the post-acquisition integration phase to ensure the coherent working of the new entity.

Finally, we acknowledge the role of management at the function-level and in cross-functional integration. The success of the post-acquisition integration process depends not only on the character of function-specific microfoundations and the cross-functional relationships—it also depends on the management being able to comprehend the alignment of function-specific microfoundations and the relationships between the cross-functional microfoundations. Aligning the possible disparities in these relationships is a crucial managerial challenge when integrating previously separate organizations' functions.

Aside from highlighting the core phenomenon of microfoundations, our study also contributes to existing literature in terms of the context. As Teerikangas (2012) and Bauer and Matzler (2014) note, the cross-border M&As (especially cross-border acquisitions) of SMEs are still an understudied area. In addition, while we do not deeply analyze the size-related factors in this particular study, the limited resources very likely play a role in terms of how the M&A integration unfolds. In terms of methodology, longitudinal studies are relatively rare due to the related challenges (Cartwright and Schoenberg 2006; Cooke and Huang 2011; Stahl et al. 2013), and with this study, we extend knowledge of the ways in which cross-border M&As can be researched.

The findings of our study not only bear a scientific and theoretical contribution as such, they also have practical relevance. Furthermore, they also invite further research. These issues are discussed in the following section.

5.1. Managerial implications

Firms engage in M&A deals knowing well that many such deals fail. To improve the odds of succeeding, managers need more in-depth insight into the inherent features, and especially the differences, between the acquiring firm's and the target firm's cross-functional relationships. Our findings show that focusing

on functions may give too positive a picture of the synergies. Instead, managers need to assess cross-functional relationships in a detailed way. By paying more attention to interfaces of functions and their underlying microfoundations—for example, everyday interaction practices, the ways and frequency of communication, and factual power relationships—the acquiring firm's management becomes more aware of the similarities and, more importantly, the possible differences. The greater the differences between the merging firms are at this level, the more important the role of top management becomes in the integration process, where the changes and the reasoning for introducing them have to be explained.

Integration in both our cases stumbled until top management had a clear understanding of which underlying cross-functional relationships promoted or slowed down the integration process (and how). Our cross-case analysis indicates that nominating a dedicated integration manager has positive influence on M&As. We agree with Teerikangas, Véry, and Pisano (2011) that a dedicated integration manager may make the communication, preservation, and capture of value from the M&A easier.

5.2. Limitations and further research

Our study has its limitations. One of them relates to our data. While we were able to reveal with just two acquisitions that the cross-functional microfoundations of dynamic capabilities may breach conventional perceptions of what circumstances cause acquisitions to succeed or fail, some issues are worth noting.

First, an obvious limitation is that we only had altogether three persons to interview directly. Even if the documentation provided wide evidence, more interviews would have been likely to augment the gained knowledge. Relatedly, focusing on acquisitions that occurred more than ten years ago is a double-edged sword. We had access to document-based data that revealed how the firms' top management perceived the possible benefits during the pre-acquisition negotiation phase and at the time of due diligence, and finally, how these expectations were realized during the post-acquisition integration phase.

At the same time, there are still challenges related to using older data. The telecommunication industry has changed, perhaps affecting the interpretation of the cases. We cannot neglect this, even if the authors of this paper have also been involved in more recent acquisitions in the same industry, and they argue that in respect to the cross-functional microfoundations in these acquisitions, things remain the same. We briefly compared our acquisitions to earlier and later ones, and we recognized that the same microfoundation-level issues had similar influences on the acquisitions' outcomes.

Another issue is that we acknowledge that generalizations require more qualitative multiple-case studies with more M&A deals. We restricted our study to cover only SMEs in the telecommunication industry. Studies on the microfoundations of dynamic capabilities during M&A deals would benefit from data from different industries and from firms of different sizes. We also argue that M&As among SMEs have a very different nature compared to those in which large, established MNEs acquire smaller firms in order to access their resources and skills. We propose that scholars conduct more qualitative and quantitative studies on M&As' cross-functional microfoundations.

Regarding the cross-border setting, in our study both acquisitions took place between US and Finnish high-technology firms. Differences in managing the cross-functional relationship between the M&S and R&D functions manifests differences in the national cultures in our cases. However, since this aspect was beyond our study, we acknowledge the need and potential for deepening the examination in that direction. While we believe that such a distinction in national cultures is beneficial in revealing the role of cross-functional relationships and in making the microfoundations visible, we also acknowledge the need to study these issues in different cross-cultural settings, in terms of the M&A and communication climate for example (see Friedman et al. 2016).

As a final note, an M&A deal always calls for dynamic capabilities, and therefore the processes that manifest these capabilities deserve further study. Furthermore, the relationships across firm functions

in mergers and acquisitions lack research attention. Therefore, we believe that the findings in this study, and the criticism that they generate, offer grounds for future studies.

Acknowledgements

To be added

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7. APPENDIX 1

Table A. The data sources of the Merger 1.

	Extent of documents	Contents	Participants involved
Annual reports, interim reports	5 documents 2003 - 2006	Financial report and short future look. Focus on missing plans concerning future product lines. Acquisition. New organization implemented.	CEO, board of directors, management team
Documents prepared for customer meetings and for managerial purposes, Alpha	20 documents Between January 2003 and September 2008	Beta was mentioned and acquisition was considered only way to enter the new business. Plan for new organization. Over-optimistic product line integration. Effects of acquisition. Information received during DD was not correct. Features that were supposed to exist in 2005 are still missing in 2007. First analysis of real efforts to integrate products.	CEO, management team, business unit manager, R&D director, director of technology development, product manager, US sales director, key sales people
Functions' meeting memos	3 documents June 14, 2005 June 14, 2005 November 28, 2005	Integration planning. Plans to lower costs or increase sales.	Alpha: Business unit manager, R&D director Beta: Product management, R&D manager, sales director
Personal memos and e-mails (at that time)	50+ documents Between August 2003 and January 2008	DD, Merger and Integration	Hundreds of e-mails, however, those 50+ documents between Alpha Business Unit Manager and Beta sales, product and sales management provide the main information.

Table B. The data sources of the Merger 2.

Extent of documents		Contents	Participants involved
Due diligence reports	2 documents May 10, 2006 February 15, 2007	A global consulting firm advising the two merging firms UK Financial Banker, detailed due diligence concerning financials, customers, ownership, capitalization, organization, employees, products, competition, legal (IPR, patents, litigation)	Epsilon: CEO, Head of R&D, COO, head of legal department Kappa: CEO, head of legal department, head of finance, head of sales, head of services, COO, investment banker representative

Board of directors meeting memos	2 documents August 12, 2007 September 11, 2007	Integration plan, deal status	Epsilon: CEO, head of legal, head of sales, head of HR and administration, COO, CFO, and 5 board members Kappa: CEO, head of business line 1 (COO), head of business line 2, head of marketing, head of administration, EVP of sales, CFO, and 4 board members
Integration group meeting memos	15 documents Between July 7, 2007 and December 4, 2008	Integration plan and implementation status Strategy and Product strategy	Kappa and Epsilon: 2*CEO, head of services, head of business line, head of HR and administration, 2*COO, 2*CTO, integration director, CFO, CTO, 3 key persons from sales, key person from marketing, 2 key persons from R&D
Functions' meeting memos	12 documents Between April 10, 2007 and September 15, 2008	Integration planning Strategy and integration CSA, integration, and implementation Marketing Processes, status checks Common product roadmap, integration follow-up	Kappa and Epsilon: CEO, head of business line, head of services, CMO, COOs, CTO, CFOs, 3 key persons from sales, integration director, 2 key persons from R&D
Personal memos and e-mails (at that time)	137 documents Between April 2007 and January 2010	DD, Merger and Integration	Total of 34 persons