OVERCOMING KNOWLEDGE GAPS IN POST-MERGER INTEGRATION: A CASE STUDY

Research-in-Progress

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Abstract

Over 50% of mergers and acquisitions (M&As) fail, mainly because of integration problems. In such integrations, much of the experiential (learning-by-doing) knowledge critical for running the business becomes redundant or is lost. However, we know virtually nothing about what type of mechanisms best facilitate overcoming the gaps in experiential knowledge in these dynamic hybrid organizational situations.

We study a case of integration of software-maintenance processes after a megamerger. In the first phase of the integration, the company combined best features of existing knowledge systems. However, high customer dissatisfaction and low key performance indicators followed. This led to the need to reframe the task into one of creating a new, better process. This led to satisfactory outcomes.

Six key elements facilitated the transfer or creation of experiential knowledge: defining content of change, integrating information systems, leadership, joint collaboration, acquiring knowledge externally, and relocating personnel.
Keywords: M&A, merger, post-merger integration, software maintenance, corrective software maintenance, case study, software maintenance process
Introduction

Mergers and acquisitions (M&As) are a popular strategy tool but also dramatic events in a company’s life cycle that have fundamental influences on its business processes. Yet, over 50 percent of the deals fail to meet their targets (Bekier et al. 2001). Integration problems are among main causes for high failure rates; including poor integration of knowledge resources (Yoo et al. 2007). Much of the knowledge that is critical for running the business processes is lost or becomes obsolete.

Knowledge gaps refer to situations in which an organization or one part of it needs some knowledge but is for some reason lacking it (Cha et al. 2008). Knowledge gaps exist due to changes in organization’s network configurations (Cha et al. 2008; Yoo et al. 2007), but also due to the emergence of new knowledge in some part of the organization (Szulanski 1996), or because knowledge isn’t transferred from one part of the organization to another (Alavi and Leidner 2001; Szulanski 1996; Yoo et al. 2007) Implementing a merger causes knowledge gaps when it requires replacing existing organizations, cultures and operations with new ones. In addition, losing key personnel is a common problem in mergers (Haspeslagh and Jemison 1991), and it also leads to knowledge gaps. Losing the meta-knowledge on where to find knowledge is another common problem in organizational changes (Wegner 1986).

In fact, a knowledge gap results if any of a company’s knowledge processes – knowledge creation, knowledge storage/retrieval, knowledge transfer and knowledge application (Alavi and Leidner 2001) – is disrupted. The loss of different types of knowledge disrupts the sequence of related knowledge-based business processes that together result as a product or service. The capability to perform such activities depends largely on a firm’s prior experience on such tasks, i.e., experiential (learning-by-doing) knowledge (Cha et al. 2008). Experiential knowledge develops over time through learning by doing, i.e.; it is grounded on practice, which the learner learns to understand by intuition. Whilst transferring such knowledge is challenging (Cha et al. 2008; Szulanski 1996), rapid and efficient transfer of the knowledge between the organizations is critical to the success in post-merger integration, and ultimately, to reaching the merger goals.

This paper focuses on the ways to overcome the gaps of experiential knowledge that emerge in the post-merger situation. To amplify the visibility of knowledge issues in merger implementation, we needed to study a knowledge-intensive activity. We identified software maintenance as a potentially suitable context. Software maintenance states for ‘the modification of a software product after delivery, to correct faults, to improve performance or other attributes, or to adapt the product to a modified environment.’ (IEEE 1998) It is knowledge intensive work that is troubled by inadequate information and uncertainties (Zmud 1980). In addition, key problems in software maintenance are of managerial nature (Lientz et al. 1978). Software maintenance is an interesting context for this study also for its economic importance - the cost of software maintenance has been estimated to have raised from approximately 35% of IS costs in 1960s to up to 90% in 1990’s (Polo et al. 2003) Our initial analyses confirmed that knowledge problems were prominent in the integration of software-maintenance processes after Alpha-Beta’s (a pseudonym) megamerger.

Theoretical Background

Knowledge transfer is the process through which one unit (e.g. group, department of firm) becomes affected by the experience of another unit (Argote and Ingram 2000). No definite distinction between the concepts of knowledge transfer and creation exists, and following Bresman et al. (1999), we use the term knowledge transfer to cover both phenomena.

Mergers and acquisitions are dynamic hybrid organizational situations in which knowledge transfers take place. They are not purely inter-organizational situations after the deal is closed yet, they also lack the convenience of inter-organizational transfers because the new organization lacks unified organization, culture and operations. Whilst M&As share some features of inter- and intra-organizational knowledge transfers, they also present their own unique dynamics. (Ranft and Lord 2002) When the groups that transfer and create knowledge reside in different organizations, they also have different operating and external environments. This easily leads to misassumptions and misinterpretations because people are unaware of others’ situation (Boland et al. 1994). These problems are aggravated during merger
implementations, as they are times of dramatic change and high uncertainty (Alaranta and Kautz 2012). As a result, knowledge-sharing and knowledge-transfer activities are troubled (Yoo et al. 2007) and much of the critical experiential knowledge is lost or becomes invalid during merger implementations.

Much of the literature on knowledge issues in M&A implementation focuses on acquisitions where the motivation for the deal is gaining access to new knowledge, such as technologies or capabilities (See e.g., Bresman et al. 1999; Graebner 2004; Makri et al. 2010; Ranft and Lord 2002; Schweizer 2005). However, not all M&As are alike (Bower 2001), and hence some of these studies explicitly exclude larger mergers because they tend to be my motivations other than knowledge exchange. (Makri et al. 2010). This is in line with the finding that the acquisitions which aim at gaining knowledge account for only about 1% of the megeads (Bower 2001). Megamergers are largely driven by other motivations such as industry overcapacity, economies of scale or geographic expansion (Bower 2001). Despite their scale, difficulty and importance, the literature that concerns our empirical context, a megamerger or equals, is scarce. Yoo et al. (2007) found that in the merger of two polymer companies, the chosen knowledge-sharing strategies reflect those of one of the merging partners, resulting in a gap between the strategy and the demands of the actual post-merger situation.

There are fundamental differences in the source and nature of the knowledge gaps between knowledge-gaining acquisitions and megamergers with other growth motivations. In knowledge-gaining acquisitions, the acquiring company has detected a gap in its knowledge base, identified a company that possesses such knowledge as well as succeeded to acquire it. The challenge of acquisition implementation lies in how to integrate and appropriate this knowledge. Knowledge transfer is also critical for mergers of equals. This is particularly true for situations where full integration is desired; especially if the strategy is to blend together best components of both knowledge bases, like in the ICT megamerger in our case study. In these situations, the merger itself produces one key knowledge gap: what are the new organization, culture and operations? Unlike in knowledge-gaining acquisition, this knowledge does not exist previously to be of exploited and assimilated. Instead, it must be largely created or otherwise acquired. Also the megamerger implementations face the knowledge gaps related to how to carry out the integration. The megamerger context poses some special challenges this. As megamergers are typically one-of-a-kind situations, companies haven’t been able to develop the necessary implementation capabilities based on prior experience (Cf. Stylianou et al. 1996). Also, after a merger of equals, the company needs first to establish new organization, authority and power structures and there may be struggles over these, whereas in acquisitions they are in place and can be utilized to support the implementation. In addition, the needs and speed of implementation may vary greatly (Bower 2001; Haspeslagh and Jemison 1991)

However, we know virtually nothing about what type of mechanisms best facilitate overcoming the gaps in experiential knowledge in megamergers. Instead of being easily expressible, experiential knowledge is often tacit or intangible by nature and therefore challenging to transfer. Critical to the success is the transfer and sharing of the knowledge of the operational environment and processes. Conveying this contextual information is likely to be even more difficult in emotionally sensitive situations such as mergers. Lack of shared context and the incompatibility of existing knowledge systems have been found to be among the key factors that contribute to the mismatch between the chosen post-merger knowledge-sharing strategies and the needs of the actual post-merger situation (Yoo et al. 2007). In sum, much remains to be done at both the empirical and the theoretical level, especially in relation to understanding how the knowledge gaps can be overcome in megamergers.

**Methodological Choices**

Qualitative case research was chosen for this study because post-merger processes are complex and contextual real life phenomena. The method allowed us to access and understand fine-grained issues related to both merging parties and all relevant actors. A study of a single case is an appropriate strategy for revelatory studies (Yin 1984). Megamergers are rare but dramatic events in companies’ life cycles. They offer unique opportunities for observing knowledge issues in dynamic ad hoc situations.

**Choosing the case.** We sought a case with a recent merger and a full integration of software-maintenance processes to ensure that the events of the integration project are still in fresh memory of the employees, and we could observe a range of problems related to disruption of existing knowledge processes and constructing new ones. Alpha and Beta (pseudonyms), had signed a global megamerger
deal two years prior to the beginning of this research project and, as a part of its merger of equals, full integration of the software maintenance processes was desired.

Alpha-Beta operates in the ICT industry and its main product groups consist of hardware and software components. It is globally present and has more than 40,000 employees. The motivation for the merger was to achieve economies of scale via integrating synergetic operations and reducing workforce. There were several key differences between the organizations. Where Alpha had one global way of operation, Beta had distinct regional ways of operation. And, Alpha’s management style was so informal that, for example, employees told us about “management by text messages” but, Beta was strictly hierarchical. Alpha-Beta chose one global way of operation and blending together of both styles, leaning more towards Alpha’s informal style. In such absorptive mergers of equals, the elimination of differences between two original companies takes a very long time (Haspelagh and Jemison 1991).

In particular, this study focuses on the integration of the customer-initiated corrective-software-maintenance processes of Alpha and Beta. This process starts when a customer reports a problem to the company and ends when a correction accepted by the client. In the industry Alpha-Beta operates, corrective maintenance is one of the key sources of customer (dis)satisfaction and it influences sales and profitability. Before the merger, Alpha’s communication and collaboration across process stages were based on personal contacts but Beta had a hierarchical process with centralized back-end. Where Alpha had a common global IT landscape, Beta employed a regional, scattered IT. The integration was carried out via picking, mixing and blending components of both approaches. The new process is based on Alpha’s global way of operation and global IT, combined with the centralized back-end structure formerly ran by Beta. The new process has one to four stages depending on the complexity of the maintenance problem. The idea is optimize the process so that the number of unsolved cases is decreased at each stage.

Data collection. Semi-structured interviews provided rich data about the phenomenon and left enough flexibility for each stakeholder to describe their experiences (Cf. Yin 1984). We carried out 47 interviews (2 yrs after the merger) and 3 follow-up interviews one year later. The interviewees were chosen to cover both merging organizations and all relevant organizational units and process stages. Each interview lasted 1-2 hrs and the interviews were tape-recorded and later transcribed. The interview themes included: Respondent background; The post-merger integration of corrective software maintenance process phase by phase: Who did what? What went well? What problems are encountered? How were they solved? Why? IT support? Differences between Ex-Alpha and Ex-beta?; Lessons learned? To confirm, compare and contrast the interview data, we also collected documents from the case company. These included process models, project plans, organization charts and internal reports.

Data analysis. Data collection and analysis were intertwined. There were at least two field researchers in each interview to take notes. The researchers discussed emergent themes and, using theoretical sampling, new informants and questions were added to see if the next interviewees could further explain or deny the theme. The data collection ended when a state of theoretical saturation with respect to a particular theme was reached. (Cf. Miles and Huberman 1984)

To produce these results, first, a chronological narrative including the emergent themes was written (see next section). Second, the data was coded inductively for activities the informants engaged in and believed had helped them to manage the loss of experiential knowledge. 30 activities were identified and mapped onto the timeline. Third, the activities were combined into the eight emergent themes (from now on: elements) that facilitated the post-merger knowledge transfer (See Table 1 for elements and techniques). Fourth, the eight emergent elements were constantly discussed within the research group and compared with existing literature. The results were discussed with key interviewees and academic colleagues. These practices serve to improve the construct and internal validity of the findings (Yin 1984).

Analysis: Integrating the Corrective-Software-Maintenance Processes

First Approach: Picking and Mixing Best Features

Planning the integration. It was a strongly enforced policy that both companies’ viewpoint should be taken into account when deciding upon future operations. Therefore, the decision-making groups were
formed so that both companies had an equal number of representatives. The first task of the integration team was to choose the structure of the new process. To achieve this, they benchmarked other companies and reviewed literature.

To avoid a too big a knowledge gap between the former and the upcoming process, the organization decided to base the new process on the best practices of the former organizations. Thus, the new process structure was created by blending together two somewhat similar designs: Beta’s existing process structure and Alpha’s former development plans that had not been implemented. Also, Alpha’s global way of running the process was chosen. Whilst front-end customer service (Stage 1) and back-end units (product support Stage 3 and R&D Stage 4) changed little, key changes took place in the second stage, for which new, centralized defect-handling units were designed. During the planning, the uncertainty was actively managed by making fast decisions and keeping changes incremental. Some employees considered that the quality of the decisions was sometimes negatively affected by the speed, but they still felt that keeping up that pace was necessary. The planning phase was completed on time five months after the closing of the merger.

**Implementing the new corrective-software-maintenance process.** The new process had one to four stages depending on the complexity of the maintenance problem. The idea was to optimize the process so that the number of unsolved cases was decreased at each stage, and only the most difficult problems would be forwarded to a subsequent phase. The implementation team conducted meetings with the managers of the front-end units (Stage 1) and the new, centralized service units (Stage 2) to plan the ramp-up of the new process. Then, implementation was delegated to the line managers of each site. The implementation was a top-down, gradual effort in which one geographical region and its country units served as pilot sites. As no show-stopping problems were encountered, it was rolled out to the other regions.

The most challenging effort was transferring hundreds of engineers to the new Stage 2 service units. The key method for achieving this was recruiting engineers internally from the regional locations and training engineers to meet the requirements of Stage 2. This was, however, slow because engineers didn’t want to move to new geographical locations. Also, new engineers were recruited and freelance engineers were consulted. During the implementation, the centralized Stage 2 was run by using temporary virtual teams, in which engineers from worked part time from their original locations. The virtual teams were considered to be an essential success factor in the implementation of the new process. After the one year, 80 percent of the temporary virtual teams were dissolved and the customer cases could be sent to the physical Stage 2 locations.

However, 1.5 years after starting to rolling out the Stage 2 units, the new process was not functioning well according to the plans, customers were dissatisfied and key performance indicators low. The engineers hesitated to follow the process structure because of political conflicts, mistrust between the members of different process stages, and change resistance. The different process stages began to operate in silos. As the company focused strongly on the internal change efforts and problems, it started to lose perception of its customers. Another problem was that both companies still ran their separate IS, and the management didn’t have visibility to the process. An initial plan had been to implement a new IS soon after the process implementation, but it had to be delayed. When the IS was finally implemented, the employees received extensive online training sessions and user manuals. However, they resisted the new process and IS. Resistance took various active forms, such as complaining and finding ways to continue using the old IS.

To improve the situation, the management actively communicated the new process, and pushed the engineers to follow it. The management also gave corrective software maintenance the official status as one of the key intra-organizational process to emphasize its importance and remove silos. In addition, job rotation and visits to different units were used to build trust between the process stages. Some two years after closing the merger, the new process design was mostly followed and the management had a clear visibility to the process with the new, integrated IS. Yet, customer dissatisfaction continued high and quantitative performance indicators low. Even though integration targets were met and the project could formally be closed, it was necessary to review and refine the process.
Second Approach: Refining the Corrective Software Maintenance Process

One manager described the starting point for the refining phase as follows: “Once you survive day one and the car is driving into right direction. ... Fast analyze the situation and make a quick decision on what should be done next. Compromises [lead to] mistakes that have to be repaired.” The refining project team started out by interviewing a large number of internal stakeholders in order to get a holistic view of the current situation and gather development ideas.

Then, a development projects were carried out internally and in collaboration with a university. As a result of these efforts, a number of actions were taken. The process structure was renewed collaboratively. The new process was not based on former Alpha’s and Beta’s solutions but instead, it built on and boosted the new, integrated process’ capabilities by e.g. incorporating IS-supported features that facilitated knowledge-sharing, knowledge-reuse and building communities of practice around different types of problems. The new IS features strengthened the adherence to the process design and reduced knowledge gaps between organizational silos. Service-oriented steps were taken to improve the flow of cases in the process. The front-end customer service adopted a new formal operating methodology in order to improve the communication between the process stages. And the company also started to develop new case-routing standards that would be more flexible to adapt to different customers’ needs. The process-support IS was integrated with the R&D department’s IS to improve the process flow in the back-end. These steps eventually improved both customer satisfaction and internal performance indicators.

Findings and Discussion

In the current case, various types of knowledge had to be transferred and created in order to implement the integration of the software-maintenance processes. One prominent finding is that in the planning and execution phases, the focus was in picking and mixing best features of the existing knowledge bases whereas in the refining phase the focus shifted to creating a new, better process.

In order to understand these phases, we view the post-merger integration of the corrective software maintenance process as a dialogue between organizations. Thus, we can understand Alpha-Beta’s integration metaphorically as episodes of conceptual combination and conceptual reframing. Combination is the process through which two or more existing concepts are combined to form a new concept (e.g. responsible business). Conceptual reframing states for reclassifying an object or shifting emphasis from one class membership to another so that a new view emerges. After such reframing, a completely new discussion at a different level is possible (Tsoukas 2009). In this post-merger context, such new discussion facilitates creating new knowledge to exploit merger opportunities beyond the level of picking and mixing. We call this new discussion “knowledge synergies”.

The case suggests that several elements were especially critical in facilitating the transfer or creation during both combination and refining/synergy phases, and the content of these elements evolved during the integration process:

Defining the content of change. The content of change defines what is changed in the new organization compared to the former organization (Pettigrew 1987). Alpha-Beta’s new process was developed and refined over time via designing, piloting, implementing and refining as the merger proceeded and more knowledge about the context was established or unexpected events occurred. The initial strategy for developing the new process model was to rationally compare existing processes and choose the best practices, which is in accordance with prior literature (Epstein 2004; Haspeslagh and Jemison 1991). Yet, it led to poor performance, and our findings show that merely combining existing knowledge bases may not suffice. Instead, reframing the task allowed shifting the focus from picking-and-mixing to creating a new, better processing structure. For example, the first contact point can now diagnose the problem more carefully and, when necessary, forward it directly even all the way to the last phase, the R&D department. This improved through-put time and quality of customer communications. A new insight is that in large-scale integrations, such as full integrations in megamergers, it may be necessary to integrate in two phases, by first combining existing knowledge to build common operations and then create knowledge synergies and refine the operations.

Integrating information systems. Alpha-Beta’s implementation of a new, integrated process-support
IS was first delayed and then, the IS was not used as intended. Despite these problems, the management was highly satisfied with the new IS serving as a key vehicle in integrating the maintenance processes (Cf. Alaranta and Kautz 2012; McKiernan and Merali 1995). It did this by consolidating the knowledge in both previous systems, thus supporting a common way of operations and an overall visibility to the process to the management. After the implementation, one manager said: “I think, you know, some people would describe it as a step back, because the databases that they were using were maybe more advanced than those. So, a lot of [the new IS] was a step backwards in terms of functionality. But from an operational point of view, from a transparency point of view, for me, that was a big step forward, so what I would describe as a kind of a success point. The process side was ... integrated at an earlier stage, but, you know, for me, until you have that information system in place then it’s not really truly deployed, because people are still using the old terminology, they’re still working in the old framework. So I guess that overall deployment activity of getting [the new IS] in place really finalized the process deployment as well.” And, another manager rejoiced: “This brings the company together. One information system! These we should have more and more.” In the refining phase, a knowledge management (KM) system was added to synchronize the knowledge across geographical sites, and facilitate the reuse of already-created solutions as well as solving new problems. Alpha-Beta also integrated the process-support IS with the IS of the R&D department. These steps facilitated exploiting merger opportunities and increased the IS capabilities of the integrated process. Again, the notion of a two-step integration approach emerges. In order to reach the desired results, first, a common IS was built by combining existing ones, and then knowledge synergies were created by boosting IS capabilities.

**Leadership.** The integration team combined managerial resources from Alpha and Beta, which is considered especially important in the merger of equals (Epstein 2004; Marks and Mirvis 2000). The management took and active role in promoting the merger; a finding that is consistent with existing literature (Haspeslagh and Jemison 1991; Marks and Mirvis 2000). One manager described the challenge of implementing the new process structure: “It’s always problematic if you go a unit ... and tell them they have to reduce capacity ... because [another centralized unit] is going to take over some of these tasks. ... So this was a lot of convincing and, I mean also change management ... in order to make the whole change and restructuring happen.” Effort was put into communicating merger goals, training and education, fast-decision-making, incremental planning and measuring outcomes. Communication and training have been found to be among the basic methods of modifying the organization members’ knowledge base (Argote and Ingram 2000). But, it was it was not without problems. One manager told us: “We had [hundreds of] people from ex-Beta that needed to know ex-Alpha products well. So, a lot of cross-training was needed. So, we’re still not at the position we want to be in [new units] in terms of having the competence levels that we would desire. That takes time.” This is because; skills developed via learning-by-doing are sticky to transfer (Cf. Haspeslagh and Jemison 1991; Szulanski 1996).

Alpha-Beta created common objectives and quantifiable performance indicators for the integration process and used these to adjust the integration project by e.g., establishing sub-projects. The importance of active coordination and monitoring has been recognized in the existing merger literature. (Cf. Marks and Mirvis 2000). Making fast decisions has been found to be crucial for avoiding uncertainty in a merger and for minimizing the effective time of negative consequences of the merger (Epstein 2004; Haspeslagh and Jemison 1991). In the refining phase, the management cemented the practices of continuous planning and measuring of process performance, and engaged in collaborative development projects to develop the process further; i.e. to leverage knowledge synergies.

**Joint collaboration.** The literature recognizes combining the knowledge flows from all areas of the merger as a primary task of the implementation team (Epstein 2004; Haspeslagh and Jemison 1991; Marks and Mirvis 2000). In Alpha-Beta’s case, the implementation team and other merger-related teams were formed based on the principle of equal participation from both organizations. Thus, much of the communication and relationship-building was carried out through joint collaboration between actors from both Alpha and Beta. This facilitated transferring the sticky experiential knowledge from all parts of Alpha-Beta, and thereby to overcome knowledge gaps between organizational entities; a finding in line with prior research (See: Szulanski 1996 for communication); (Bresman et al. 1999 for building closer relationships; Haspeslagh and Jemison 1991). In the refinement phase, the principle of equal participation was continued in a more relaxed manner, and a greater emphasis was put to building a new, better process based on the knowledge gained from the first phase of the implementation.
One problem that emerged soon after implementing the new process was that the engineers lacked contact with others who could aid them in solving problems. As one manager described: “What we need to do is to build the relationship between the two organizations, to make it more of a personal relationship rather than just kind of a black whole or email being bombed through the system. Some people think that the best approach is to have an impersonal [process-control] system set up. I personally don’t believe that that will work.” Building personal contacts has also been recognized as a key for the success of functional integration (Haspeslagh and Jemison 1991) and knowledge transfer (Bresman et al. 1999; Yoo et al. 2007) in merging organizations. One of the aims of the new knowledge-management IS implemented in the refining phase was to allow the engineers build communities of practice and thereby alleviate this problem. Whilst the notion of joint collaboration is not new, it is perhaps somewhat new to the literature that it can also work well when mandated. (Cf. Alaranta and Jarvenpaa 2010)

**Acquiring knowledge externally.** Alpha-Beta transferred knowledge from external sources to overcome gaps in different knowledge areas at different phases of the merger. During the planning phase, the organization reviewed appropriate literature and benchmarked other companies as it had no prior experience of such mergers. Alpha-Beta also recruited, used freelance engineers and collaborated with a consultation company during the ramp-up. Acquiring external knowledge has been found to be a beneficial approach for overcoming knowledge gaps in other contexts of dramatic ad hoc change, such as switching major IS outsourcing partners (Cf. Alaranta and Jarvenpaa 2010) and ERP implementations (Ko et al. 2005). It may be of crucial importance for megamergers where full integration is desired, as it is unlikely that the organizations have similar merger experience before and, they don’t have experience of each other’s contexts. In the refining phase, Alpha-Beta engaged in collaborative projects with consultants and with a university to boost the refining of the software maintenance process. At this phase, knowledge was not only transferred from these external sources, but new process knowledge was created in workshops and other joint activities with external partners.

**Relocating personnel.** Transfer of an organization’s members may be a practical way of transferring tacit knowledge from one location to another (Argote and Ingram 2000). However, the engineers were reluctant to move to other geographical locations, and many preferred to switch to a different task in their current location. This is one source for stickiness in transferring learning-by-doing knowledge (Szulanski 1996). Because of this stickiness, Alpha-Beta established virtual teams as a temporary structure. One manager told us: “It was this virtual team concept [with which] we were able to provide [the centralized] functionality more or less from ... [the day] when the first [centralized units] went live. ... In the meantime [we were] building up the non-virtual competencies, that means, the actual employees in the [centralized units] without the disruption of the whole process. And actually this concept worked out nicely.” This was an effective work-around to overcome some gaps in tacit knowledge; a problem often encountered in post-merger integration (Yoo et al. 2007).

However, after the new centralized were ramped up, distrust between old and new units resulted in process-flow problems. One solution to this was job rotation. It promoted trust between different units, employees learned new skills from each other, they knew whom to contact if help was needed, and they learned to understand each other’s point of views. As one interviewee described: “The visiting of engineers from different units is good. One came to [a new centralized unit] to do work for a while and after that they started to trust us and follow the process. I think it’s just a mindset that they are not trusting us and following the process.” However, this effort wasn’t practiced in large extents and employees weren’t willing to visit the new units because of political reasons and change resistance.

Table 1 summarizes the actions to overcome knowledge gaps during the knowledge combination and synergy-reaping phases.

**Conclusions and Future Research**

In this research-in-progress paper, we studied overcoming knowledge loss in post-merger integrating. The empirical case concerns the integration of software-maintenance processes after a global megamerger. Six elements (themes) (Table 1) were especially critical in facilitating the transfer or creation including the missing experiential knowledge. Besides identifying these elements, key findings include the notion of two-step integration, consisting of knowledge-combination and knowledge-synergy phases. The specific actions within each theme change and evolve as the integration proceeds from combination to synergy-creation.
In the knowledge-combination phase, all six elements facilitated combining best features of both companies’ knowledge bases to integrate the processes. However, high customer dissatisfaction and low key performance indicators followed. This led to the need to reframe the integration task into one of creating a new, better process. In the knowledge-synergy phase, all elements facilitated creating knowledge synergies to boost the capabilities of the new process. This time, the elements had more synergy-boosting contents. The process was brought onto a new level by activities such as community-building, incorporating knowledge-management features in the IS and collaborative knowledge creation. Eventually, better knowledge synergies and desired process outcomes were achieved.

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<th>Table 1. Overcoming the knowledge gaps: from combination to synergies</th>
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<td><strong>Element/phase</strong></td>
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<td><strong>Acquiring knowledge externally</strong></td>
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The analysis in this paper is only an initial step towards improving our understanding of how stakeholders cope with the loss of experiential knowledge in integrating knowledge-intensive processes after a merger, and as such its scope is limited. Our future plans include providing a fine-grained views to what knowledge is lost such change in network configurations, when does this loss of knowledge take place, and how such knowledge loss can be overcome, as well as theorizing on these. Our results will advance theories of knowledge issues in post-merger integration. These insights will also be helpful for researchers and practitioners of knowledge transfer, knowledge creation and other knowledge processes.

The specific research context, Alpha-Beta’s global megamerger, will impact our findings and inevitably, some areas will be left uncovered. First, M&As represent fundamentally different phenomena that need to be studied and managed differently (Bower 2001). Therefore, integrations of other knowledge-intensive activities in other M&A contexts need to be studied. Also these cases suffer from the loss of experiential knowledge. But, the extent to which the key elements found in this study are applicable also to those cases remains an empirical question. Therefore, we suggest that researchers scrutinize other types of M&As such as national mergers, cross-border mergers where national cultures form key challenge, acquisitions, and M&A activities in small companies. We also suggest other types of knowledge-intensive activities in the ICT field, such as software development or sales. Second, statistical methods would be needed to scrutinize the effectiveness of different types of knowledge-transfer elements in different M&A contexts.

Third, as mergers are sensitive and often highly political events, the interviewees may have rationalized their actions and decisions when talking to us, which may have resulted in some biases in our data. We took steps to mitigate these issues by seeking to establish trust with the interviewees and discussing the same themes and events with several key parties. We compared the interviews with each other, as well as the meeting observations, and documents; such as actual process metrics and customer surveys. Future research could apply observational methods such as ethnography to further address the possible biases. Finally, future studies could also develop a knowledge-transfer-maturity model for mergers to guide researchers and practitioners.
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