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Integration process factors and effects

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ABSTRACT

It is assumed in Merger & Acquisitions (M&A) research that there exists a relationship between business and IS aspects. However, research and literature explicitly addressing the relationship between both is scarce. In this paper we introduce a model to understand the aspects that play a role in an integration process. We focus on process factors and effects, both from the business and IS domain, in particular we are focusing on their interaction. Two cases in the transport industry are presented and discussed. The research discusses the validity of recurring integration process factors and effects, but also indicates the relevance of contextual aspects. The research contributes both to M&A research as well as to IS research by increasing the understanding of factors that impact integration processes and by that it gives direction how these factors should be managed.

Keywords

M&A, IS implementation, post-merger phase.

INTRODUCTION

Integration processes between companies such as mergers and acquisitions (M&A) can enjoy a vast interest of many professionals as well as academics around the world. Integration of companies (as well as divestitures) is considered to be an important way of realizing agile organizations. However, many enterprises fail to achieve the benefits stemming from integration efforts. Many project executives blame the failure of an integration process on the unsuccessful integration of Information Systems (IS). However, there is no substantial scientific evidence that justifies this assumption. It is merely assumed that many enterprises have great difficulties in integrating IS, in particular when they have to re-design their business processes. Why is it that the assumed poor implementation of IS is often used by companies as a reason why the merger or acquisition didn't bring the expected benefits, or are other variables at play? This question did inspire this research project. The objective of this project is to investigate which factors and effects in the business as well as the IS domain can be determined and what interaction between both exist.

The idea of IS playing an important, and often disturbing role in integration processes rest on anecdotes from the business press and only on vague empirical evidence. As stated by Henningsson (2007) the absence of empirical data hampers the development of scientific knowledge in this domain and distracts business professionals. However, when can we conclude that an integration project is successful? Success is defined in many ways depending on the circumstances and the people involved. There are no objective criteria for success of integration projects, neither are there clear benchmarks or repositories of cases that describe and evaluate the processes at play. IS literature suggests that the primary reason why organizations fail to critically assess the role of IS in organization integration has to be attributed to a lack of a conceptual framework, taking human, organizational, management and process perspectives into account (Sharif et al, 2005). Moreover, the role of Information Technology (IT) integration is often disregarded and evaluation ignored. The absence of clearly defined objectives of the integration process is one of the reasons. Evaluation criteria are lacking and stakeholder involvement is difficult.

The research is not addressing the integration process itself. The paper will focus on a framework that takes factors before the integration process and effects after the integration process into account. The assumption is that these factors play a role independent of the way the integration process is managed. Theories from both M&A research and IS research are contributing to our framework. First we address the question which business and IS factors play a role in integration processes. Currently, there is no well-defined and accepted list of general business and IS variables that play a role in integration processes. Secondly we address the question which effects of integration processes can be identified. Although many enterprises have high expectations about integration efforts and available research indicates neither significant successes nor failures, a well-defined and accepted set of relevant effects is lacking. Finally, we address the question how factors and effects can be related.

LITERATURE

Although there is an extensive amount of literature available both on M&A research (Knilians, 2009; Gaughan, 2005; Pablo and Javidan, 2004; Mirvis and Marks, 2003; Galpin and Herndon, 2000; Cartwright and Cooper, 1996; Goldberg, 1983; Kitching, 1967) and IS integration (Lam and Shankararaman, 2007; Venkatachalam, 2006; Cummins, 2002; Myerson, 2002; Hohpe, 2002; Wyzalek, 2000; Yu, 1999; Vernadat, 1996), research that combines both is more difficult to find (Alaranta and Kautz, 2007; Vielba and Vielba, 2006; Sumia et al, 2001; Robbins and Stylianou, 1999; Giacomazzi et al, 1997). There is insufficient information available on the combination of business and IT aspects in integration processes. This is confirmed by other researchers. Menge (2005) observed that there is a lack of research on the role of IS in integration of organizations. More recently, Alaranta et al. (2007) concluded that evidence of impact of IS on failing or successful organizational integration is still lacking.

INTEGRATION PROCESS MODEL

The framework (Figure 1) shows factors and effects within the post-merger phase and highlights the phasing of the process elements. Mehta & Hirscheim (2004) distinguish between three phases of the integration process. These are the pre-merger, merger and post-merger phases. The pre-merger phase contains selection and evaluation of the target objectives and results in the finalization of the due diligence phase. The merger phase is where the actual deal happens and contracts are signed. The post-merger phase is the actual integration of the two companies. The focus in our research will be on the post-merger phase, which is the actual integration and implementation, and involves pre-integration factors and results in post-integration effects.

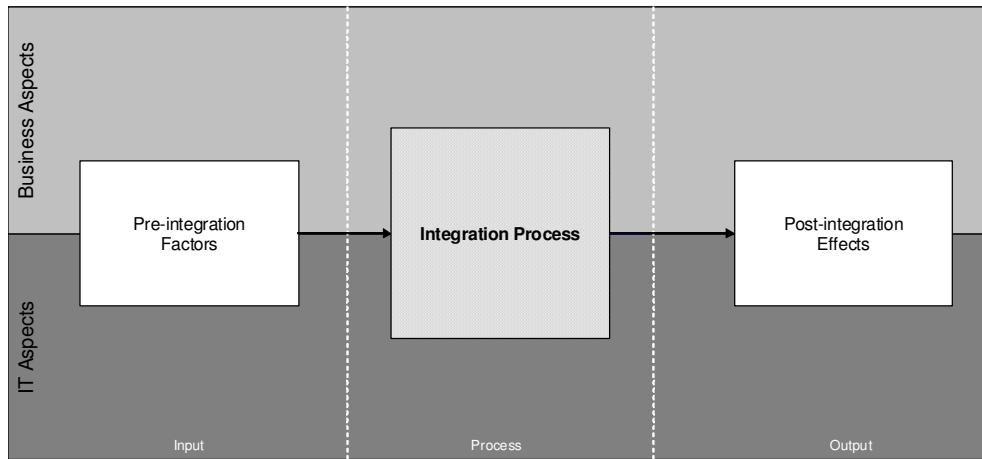


Figure 1 – Research Framework

Integration is both about integrating systems and organizations. Only very few papers define the concept integration explicitly. A common sense definition of integration states that integration brings parts together with the goal to make it whole or complete. In the context of enterprise computing the concept integration has been used in many different meanings. Both in trade and academic literature it is used to describe a process, a condition, a system, and an end-state (Gulledge, 2006).

There are numerous definitions of processes in management and IS literature (Haspeslagh and Jemison, 1991; Pablo and Javidan, 2004; Davenport et al, 2004; Scheer, 2000; Lindsay et al, 2003), here we define process as a series of actions or operations to bring something to an end, e.g. the integration of two organizations. In an integration process it generally means that staff members execute activities to achieve the integrated environment. The integration process is first about integrating a business operation, creating a tighter coordination among discrete business activities conducted by different individuals or organizational units with the goal to form a unified business process (Markus, 2000).

Business process integration is an example of the amalgamation of both business and IS domains. Business process integration is often a requirement for IS implementations because application complexity increases, and application to application integration takes on greater importance due to an increasing number of internal and external connections. Business process integration became an important aspect of the enterprise computing landscape for both intra-enterprise application integrations as well as the inter-enterprise integration (Hanson et al, 2002).

Business process integration puts new demands on IS often leading to Enterprise Integration (EI) efforts. The reality today is that integration involves many aspects of technology and organizational processes (Wyzalek, 2000).

Taking the above into account, process integration can be defined as an all-inclusive process to create relatively seamless and highly integrated systems, processes and organizational structures that are aligned with the business and IT objectives of an enterprise. Large and complex enterprises often need business integration to service their customers effectively. Business integration requires streamlined processes and integrated IS. These systems should be capable of combining information from many sources. If systems are not integrated, they create all sorts of problems. They may for instance prevent a company from analyzing data required for decision making (Markus, 2000). As business and IS are coming together in an integration process, both business integration and IS integration have specific characteristics and need a different, yet integrated approach. In the next sections we will elaborate on both the business and IT factors and effects in integration processes.

INTEGRATION PROCESS FACTORS

We focus on two different sets of aspects: aspects that can be identified *before* and *after* an integration process. Aspects before the integration process are defined as integration process factors and include decisions or circumstances before the actual process of integration starts and are relevant for the actual execution of the integration process. The aspects after an integration process are defined as integration process effects and are discussed later. A list of seven pre-integration factors was compiled based on their recurring presence in literature and empirical sources. All seven factors (1) are discussed in multiple sources; (2) they are assumed to play a role in an integration process; and (3) they represent business and IT aspects and possible interactions between them. The seven factors are:

1. **Staff / People Factor:** The importance of staff / people aspects in integration processes is generally accepted. The establishment of a strategic integration team of business and IT professionals is an important prerequisite for integration success (Horst et al, 2008). Achieving high employee cooperation but low resistance is dependent on managing acculturation at the collective level. As Galpin and Herndon (2000) found people often leave organizations, or “de-commit”, during M&As. When an enterprise is in turmoil because of a merger or an acquisition, people’s thoughts turn inward, away from their jobs and customers. Often people don’t know what to expect and, in today’s environment, generally anticipate the worst.
2. **Timing / Pace Factor:** Once the integration decision is taken, both speed and long-term orientation become paramount. Larsson et al (2004) found that “integration efforts are necessary for synergy realization and should not be delayed for pacifying purposes”. However, although speed is of essence, it is better to start with positive integration efforts and a motivational approach that provides resources influence and opportunities rather than taking them away. One of the main issues is found to be the slow post-merger integration: e.g. once the M&A decision is made, all stakeholders expect a fast integration to reap the expected benefits and synergies as soon as possible. A consistent and clear vision (strategy) is required before the start of an integration process, and at the same time organizations expect and require speed in an M&A implementation process. Howard (2007) found that the biggest single decision concerns the speed of integration.
3. **Communication Factor:** In an M&A process it is important to create a positive atmosphere across employees via two-way communication and with a focus on neutralizing negative expectations, fears, and rumors (Mirvis and Marks, 2003). High-precision communication is critical in the integration process. Effective and informative communication will decrease employee stress. A regular flow of communication early on gives people the confidence that they will be informed about development or decisions.
4. **Project Management and Planning Factor:** Another aspect is the way the project is managed. Traditional project management styles emphasize on structuring the process. Today the emphasis is on speed. Also leadership practices are changing. Leadership should not only be seen at the top but also within the project teams. Project staff must be self-directed and willing to both manage and be managed. Management should be willing and able to be flexible in their ways and approaches (Dickson and DeSanctis, 2001). Executing these projects also means putting tracking and rating systems in place to prioritize ongoing projects to meet integration deadlines (Shearer, 2004). Success or failure of integration is impacted by the way the M&A process is managed (Vielba and Vielba, 2006). Howard (2007) found poor planning of the integration process as a factor of concern. Finally Lynch and Lind (2002) found that there were no risk management strategies in place.
5. **Executive Support Factor:** IS literature has clearly demonstrated that for integration projects to succeed management support is critical. Implementing a system or integrating systems, is not only a matter of changing software systems, it is about repositioning the company and transforming the business practices. Handing over the responsibility to the technology department puts the entire company’s future at stake because of the profound business implications (Bingi et

al, 1999). Senior management has a key role in taking a strategic approach. Most of them do not appreciate the complexities and effort required to integrate systems after a merger. Management need to create a sense of human purpose and direction, that they put together a leadership team, and that they try to win the commitment of people (Mirvis and Marks, 2003).

6. **Expectations Factor:** Lynch and Lind (2002) state that mergers and acquisitions fail because of mistakes in the pre-deal planning period. One important factor in this is the overly optimistic expectation of synergies that can be achieved. The same is found in a study performed by Howard (2007). In this research it was found that overall there is an underestimation by business people of the work that is involved in IT integration and the time it takes and the cost involved. It shows that there are not only high expectations of the benefits that a merger or acquisition ultimately will bring, but there are also high expectations about the process itself.
7. **Integration Level Factor:** Companies that have grown through acquisitions, experience headaches of maintaining many different IS systems of the same application type (Markus and Tanis, 2004). Support for mergers and acquisitions is therefore often a major driver for increased integration (Hohpe, 2002). Integration of applications and business processes is a priority. However, the question can be raised how much IS integration is needed to get business integration. IS and application integration may be required for business integration, but it is not always sufficient for business integration (Markus, 2000). If in the merger process the IT integration is overlooked, the risk exists that the integration level is too high (over-integrating) or is too low (under-integrating). The level of integration should be looked at from both angles, the IT integration strategy should be closely linked with the merger strategy (Bork and Holmström, 2006).

Some factors can be characterized as IT related and some as business related. In this research the process of integration is considered to be the parallel execution of business and IS integration and the result of a decision to acquire or merge with another company; and secondly the decision to integrate IS in parallel.

INTEGRATION PROCESS EFFECTS

Many acquisitions look great on paper but the economic benefits will only materialize after the acquisition is finalized. Value will only be delivered after capabilities have been transferred and staff from both companies collaborates to create the expected benefits or create new ones (Haspelslagh and Jemison, 1991). In an M&A situation integration of IS is a difficult subject. Finding a company with difficulties in system integration even after personnel and business operation are integrated after a merger is not difficult (Sumia and Tsuruoka, 2001). In this section we discuss the integration process effects, e.g. measurable results and concrete achievements after the actual process of integration is finished. We found four integration process effects based on their recurring presence in literature and empirical sources meeting the following criteria: (1) multiple sources; (2) constitutes a significant result from an integration process; and (3) represents business and IT effects as well assumes interactions between them. They are:

1. **Financial Benefits:** Financial benefit is the most highly rated effect of an integration process. For some companies it will be the increase of profitability, for others it will be the increase of turnover. Also the concept of transaction cost is used for financial measurement (Kulkarni and Heriot, 1999). From literature research we assume that cost directly related to business transactions will give feasible evaluation of business integration and that cost directly related to the use of IS will give feasible evaluation of IS integration.
2. **Satisfaction:** satisfaction as an effect of an integration process is a result of the quality of the integration process itself but also of the opportunities and environment created by the process. Satisfaction will be evaluated both for IS integration and business integration. The effect customer and employee satisfaction will be used for business integration (Hayes, 1992) and the effect user satisfaction will be used for IS integration (Mahmood et al, 2000).
3. **Consolidation:** As companies endeavor to achieve the right balance between strategic drivers and operational requirements in integration processes, consolidation of their IS is becoming essential for many organizations (Lam and Shankaraman, 2007). They want to have a unified and rationalized view on its business processes and functions. Hence the reason to list consolidated business processes and a consolidated IS portfolio as effect of an integration process.
4. **Opportunities:** the concept opportunity includes synergy realization. When the term synergy is used without a well-defined context and explanation, acquirers are confronted with a host of problems (Ficery et al, 2007). Finding, capturing, and tracking synergies from a deal is not an easy task. Executives often use synergy expectations to justify the deal. Synergies can only be realized after the deal is closed and the companies are integrated. It requires enterprises to distinguish between what theoretically could add value and what in practice is most likely to add value. We differentiate between opportunities that are business related and opportunities that are IT related.

The output of an integration process is not defined in terms of success, but in terms of discussed integration process effects.

CASE STUDIES

Case studies have provided a solid source of information in the M&A domain (Haspeslagh and Jemison, 1991; Mirvis and Marks, 2003). This study focuses on multiple cases in the transport industry. This research adopts a multi-method approach using qualitative instruments (Yin, 2003 and Eisenhardt, 1989), combining in-depth interviews, analyses of core documents as well as survey methodologies. In this paper we will focus on the results based on qualitative interviews. In total 29 interviews were recorded and transcribed into text. From the whole process tentative themes, concepts, and relationships between aspects did emerge, and coded sub-sequentially. For the coding and analysis we used Atlas.ti. For the coding and analysis of the interviews we first defined an initial list of codes that represented the factors and effects found in the literature research. After that the codes were entered into Atlas.ti and the interviews from the first case were imported in Atlas.ti. Then all interviews were coded based upon three dimensions: (1) the contextual aspects; (2) the process factors; and (3) the process effects. These three dimensions were broken down into the actual aspects, factors and effects by defining them as properties of the three dimensions (codes and sub-codes). The actual coding in Atlas.ti was an iterative process where the list of initial codes was expanded based upon new aspects, factors and effects determined in the interviews. After all the interviews were coded, the codes were reviewed. This was performed using the 'quotations per code' function in Atlas.ti. In this final step new links and codes were created based upon the grounding and content of the quotations. For both cases the same procedure was followed.

Airline Case

The first case study was executed in the airline industry and is representative for a typical cross-border merger. Although the transaction was an acquisition, the integration was executed as a merger. Both companies already had previous experience with mergers and acquisitions. The structure of both companies was quite similar and included three different business pillars namely passenger, cargo and maintenance. The combined network served over 100 destinations. On the IS side both companies had very different approaches in many aspects like sourcing and system portfolio. The post-merger integration was executed in a so-called *symbiotic* style. It meant that a gradual amalgamation of the acquirer and target was executed (Pablo and Javidan, 2004). Both firms did undergo some changes to create the best for both, but real integration was avoided in the early years. This was also due to legal restrictions. Continuing with the details of the case study, in total 17 staff members were interviewed. The group of interviewees had a broad representation of all levels and company backgrounds.

Results show that the integration process was performed in a very careful and balanced way. One of the interviewees summarized it as '*we would do things in a fair and balanced manner*'. Another typical finding was that significant financial benefits were achieved without real integration or consolidation. An interviewee mentioned '*the concept was basically looking at synergies without integration and without job losses*' and another interviewee commented '*the group has been able to obtain very significant synergies in terms of turnover and cost*'. The integration also highlighted that not only alignment between business and IT in general but more specifically between the two business and IT organizations was a challenge. One interviewee commented '*IT had no clue about the impact*' and another one stated '*the mismatch that was happening between business and IT is still there*'. This mismatch was considered to be a major issues and one of the interviewees summarized it as '*when you are a business manager and then you see competing IT departments that is a disaster*'. Initially the approach was to use IT as vehicle to achieve closer integration, but this approach changed over time because the business couldn't cope with this. An interviewee commented '*the message came from the businesses that they were not ready or could not come up with the synergies that would justify the IT integration.*' In the first phase of the integration a specific methodology was used to determine existing applications and to define the future application portfolio. Applications were clustered and colors for both firms were assigned to indicate what firm would be responsible for what application.

Regarding the process factors, the initial list of factors determined in the literature research were mentioned by the majority of the interviewees. In addition the interviewees also addressed other factors that played a role in the integration process, these included:

1. *Approach*: the way and style integration was executed by management;
2. *Understanding*: the level of understanding about integration processes and IS implementations;
3. *Relationship*: the relationship and cooperation between the target and the acquirer;
4. *Guideline*: the instructions given to stakeholders and participants on how the integration process was executed;

5. *Language*: the role and impact of language during the integration process;
6. *Power*: the position and power of individuals and units in both organizations;
7. *Interaction*: the interaction and cooperation between business and IT.

Regarding the effects of the integration process, the four effects found in literature were recognized by all interviewees but in addition one specific effect was raised, this was *continuity* of people, processes and technology elements in both companies. Also more *general* remarks on the results of the integration process were mentioned like a remark from one of the interviewees '*being the leader in this consolidation process allowed us to outperform the market*'.

What became apparent in the case study is that there are aspects impacting the integration process that cannot be controlled but impact the integration process anyway. This is in contrast with the process factors that can be controlled. For our research this is important because they cannot be included in our list with process factors but require attention in the pre-merger phase. In our research we call these *contextual aspects* and we found the following four:

1. *Company Characteristics*: these includes aspects like financial situation, culture, management style etc.;
2. *Legislation*: these are the legal aspects and legal context of the transaction;
3. *Economy*: what was the market situation or state of the industry the moment the deal was closed;
4. *Technology*: what were the technological developments impacting the deal.

Shipping Case

The second case study was performed in the shipping industry and it was one of the largest acquisitions ever in the shipping business. The transaction was considered a real, and according to some a hostile, takeover. Although the integration was executed in a cooperative fashion, the acquirer was in the driver seat. Both companies already had previous experience with mergers and acquisitions. Although the structure of both companies was quite similar, in the IT field there were significant differences. The combined fleet consisted of over 500 vessels and the total headcount exceeded 30,000 employees. The post-merger integration was executed in an *absorption* style. From day one, the approach was to fully consolidate the activities of both firms (Pablo and Javidan, 2004). In total 12 staff members were interviewed. Results show that the integration process was performed in a very short time and the line of command was very clear. One of the interviewees replied on the question if there was commitment on all levels: '*You did not had a choice, you would have no future if you did not*'. On the speed of integration an interviewee commented '*I think that is a record time*'. Another typical finding was that the IT integration was considered to be the reason for integration failure. It caused service issues, employee dissatisfaction and poor financial results. In the annual report it was stated that '*the developments were negatively affected by the implementation of new IT systems*' and one of the interviewee commented '*The IT implementation made the merger process fail*'. In the findings it was remarkable that in general IT staff had a complete different assessment of the failure. What played an important role in the whole process was the parallel development of a new IT system that was a prerequisite for the actual integration of the two firms. It ended up with a very complex situation with multiple IT systems. One of the managers summarized it as '*I had to manage an integration but with three IT systems simultaneously, that was a disaster.*' The integration process brought also to light that the definition and alignment of business processes was critical to make the integration a success. One interviewee commented '*The integration of business and IT is via the business process*' and another one stated '*but by mapping a gap, either there is no documented business process and it will be a tough integration*'. In comparison with the airline case, in this case the alignment between the two IT department didn't had a significant impact but the alignment and cooperation between business and IT had a significant impact in both cases.

Regarding the process factors, the list of factors determined in the literature research and first case study were recognized by the majority of the interviewees, except for two factors found in the airline case namely *language* and *power*. In addition the interviewees also mentioned one other factor that played a role in this specific integration process, which was *training*. This factor indicated the importance of training in systems and procedures in the integration process. Regarding the effects of the integration process, the four effects found in literature were again confirmed by all interviewees except for *continuity*. In addition an effect *competition* was mentioned, meaning the impact the integration had on the market and the competitiveness of the merged company. The contextual aspects found in the first case study also played a role in the shipping case; however *technology* was not mentioned at all. We found one additional aspect *type* and it referred to the type of deal which in this case was a take over. The second case confirmed the majority of the findings from the literature research and airline case.

DISCUSSION, LIMITATIONS AND FUTURE RESEARCH

Based on the case studies we found contextual aspects playing a relevant role in the pre-merger phase. In addition we identified recurring integration factors both in the business and IT domain, playing a role in the post-merger phase, as well as an impact between these two sets of integration factors. Moreover there was also an impact from the contextual aspects and integration factors on the results of the integration process. We used the results to adapt the initial research framework depicted in the revised research framework (Figure 2).

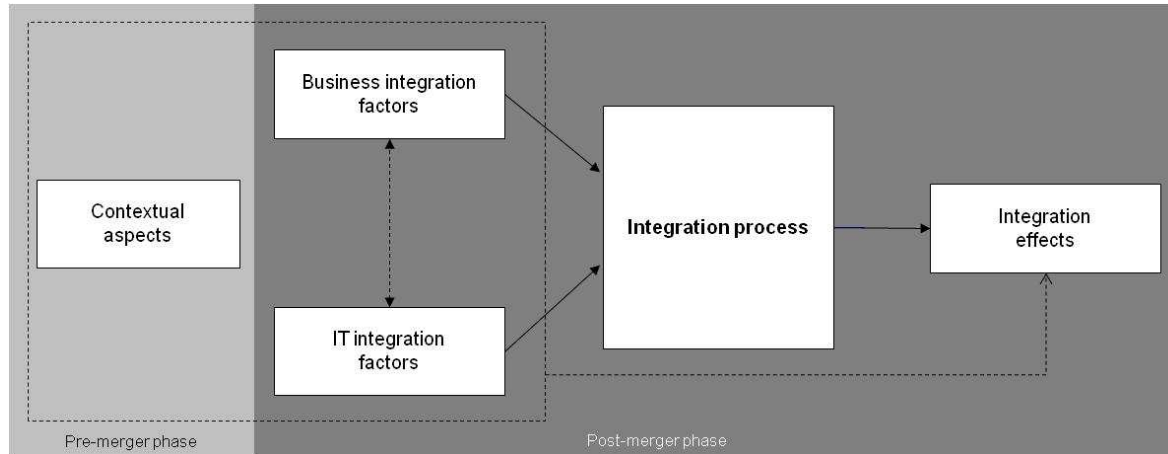


Figure 2 – Revised Research Framework

In the cross case analysis there were aspects, factors and effects determined that only played a role in one specific case. The case studies were only performed within the transportation industry and as such results and findings are limited to this industry. To make the research more generic it should be expanded to other industries. Moreover, it would be useful to use more quantitative measurements. Future research should be focused on case studies in other industries; on testing research results at a larger scale; and on closer linking of factors and effects in integration processes.

CONCLUSIONS

From our research we conclude that a list of recurring integration process factors can be defined and also divided into business and IT factors. This list is not only based on literature but also confirmed by the results of the case studies, however a few factors are only found in one specific case. In the same way we were able to identify a list of effects stemming from the integration processes. We also found contextual aspects that impact an integration process. The contextual aspects are listed separate from the process factors because these contextual aspects cannot be controlled. Because they should be assessed in the pre-merger phase they fall outside the scope of our research. However, identifying these contextual aspects is important to set them apart from the integration process factors. Finally, we determined in our research a relationship between factors in the business and IT domain. From our research we couldn't identify a direct relationship between integration process factors and integration process effects; however, the research indicates that the contextual aspects in the pre-merger phase and the integration process factors in the post-merger phase do impact the results of the integration process. The latter asks for further research in this field and should determine the exact causal relationship but also how these factors should be managed to establish positive results from integration processes.

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