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Searching for keys to successful post-merger integration

A longitudinal case-study following a public sector merger



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ABSTRACT

Unsuccessful mergers are unfortunately the rule rather than the exception. Therefore it is necessary to gain an enhanced understanding of mergers and post-merger integrations (PMI) as well as learning more about how mergers and PMIs of information systems (IS) and people can be facilitated. Studies on PMI of IS are scarce and public sector mergers are even less studied. There is nothing however to indicate that public sector mergers are any more successful than those in the private sector.

This thesis covers five studies carried out between 2008 and 2011 in two organizations in higher education that merged in January 2010. The most recent study was carried out two years after the new university was established. The longitudinal case-study focused on the administrators and their opinions of the IS, the work situation and the merger in general. These issues were investigated before, during and after the merger. Both surveys and interviews were used to collect data, to which were added documents that both describe and guide the merger process; in this way we aimed at a triangulation of findings.

Administrators were chosen as the focus of the study since public organizations are highly dependent on this staff category, forming the backbone of the organization and whose performance is a key success factor for the organization. Reliable and effective IS are also critical for maintaining a functional and effective organization, and this makes administrators highly dependent on their organizations' IS for the ability to carry out their duties as intended. The case-study has confirmed the administrators' dependency on IS that work well. A merger is likely to lead to changes in the IS and the routines associated with the administrators' work. Hence it was especially interesting to study how the administrators viewed the merger and its consequences for IS and the work situation. The overall research objective is to find key issues for successful mergers and PMIs.

The first explorative study in 2008 showed that the administrators were confident of their skills and knowledge of IS and had no fear of having to learn new IS due to the merger. Most administrators had an academic background and were not anxious about whether IS training would be given or not. Before the merger the administrators were positive and enthusiastic towards the merger and also to the changes that they expected. The studies carried out before the merger showed that these administrators were very satisfied with the information provided about

the merger. This information was disseminated through various channels and even negative information and postponed decisions were quickly distributed. The study conflicts with the theories that have found that resistance to change is inevitable in a merger.

Shortly after the merger the (third) study showed disappointment with the fact that fewer changes than expected had been implemented even if the changes that actually were carried out sometimes led to a more problematic work situation. This was seen to be more prominent for routine changes than IS changes. Still the administrators showed a clear willingness to change and to share their knowledge with new colleagues. This knowledge sharing (also tacit) worked well in the merger and the PMI. The majority reported that the most common way to learn to use new ISs and to apply new routines was by asking help from colleagues. They also needed to take responsibility for their own training and development.

Five months after the merger (the fourth study) the administrators had become worried about the changes in communication strategy that had been implemented in the new university. This was perceived as being more anonymous. Furthermore, it was harder to get to know what was happening and to contact the new decision makers. The administrators found that decisions, and the authority to make decisions, had been moved to a higher administrative level than they were accustomed to. A directive management style is recommended in mergers in order to achieve a quick transition without distracting from the core business. A merger process may be tiresome and require considerable effort from the participants. In addition, not everyone can make their voice heard during a merger and consensus is not possible in every question. It is important to find out what is best for the new organization instead of simply claiming that the tried and tested methods of doing things should be implemented.

A major problem turned out to be the lack of management continuity during the merger process. Especially problematic was the situation in the IS-department with many substitute managers during the whole merger process (even after the merger was carried out). This meant that no one was in charge of IS-issues and the PMI of IS. Moreover, the top managers were appointed very late in the process; in some cases after the merger was carried out. This led to missed opportunities for building trust and management credibility was heavily affected. The administrators felt neglected and that their competences and knowledge no longer counted.

This, together with a reduced and altered information flow, led to rumours and distrust. Before the merger the administrators were convinced that their achievements contributed value to their organizations and that they worked effectively. After the merger they were less sure of their value contribution and effectiveness even if these factors were not totally discounted. The fifth study in November 2011 found that the administrators were still satisfied with their IS as they had been throughout the whole study. Furthermore, they believed that the IS department had done a good job despite challenging circumstances.

Both the former organizations lacked IS strategies, which badly affected the IS strategizing during the merger and the PMI. IS strategies deal with issues like system ownership; namely who should pay and who is responsible for maintenance and system development, for organizing system training for new IS, and for effectively run IS even during changing circumstances (e.g. more users). A proactive approach is recommended for IS strategizing to work. This is particularly true during a merger and PMI for handling issues about what ISs should be adopted and implemented in the new organization, issues of integration and reengineering of IS-related processes. In the new university an IT-strategy had still not been decided 26 months after the new university was established.

The study shows the importance of the decisive management of IS in a merger requiring that IS issues are addressed in the merger process and that IS decisions are made early. Moreover, the new management needs to be appointed early in order to work actively with the IS-strategizing. It is also necessary to build trust and to plan and make decisions about integration of IS and people.

SAMMANFATTNING

Misslyckade fusioner är dessvärre mer en regel än undantag och så mycket som mellan 50-80 % når inte målen. Därför finns det anledning att undersöka hur problem och misslyckanden kan undvikas, och hur fusioner samt efterföljande integration av informationssystem (IS) och människor kan underlättas. Fusioner i offentlig sektor utgör inget undantag från svårigheterna att nå lyckade fusioner; dessutom är den sortens fusioner ännu mer sällan undersökta än i privata sektorn.

Avhandlingen omfattar fem delstudier som har genomförts från 2008 till 2011 i två organisationer inom högre utbildning där fusion till ett nytt universitet har genomförts. Den senaste undersökningen gjordes två år efter fusionen trätt i kraft. Den longitudinella case-studien har inriktats på administratörerna och deras uppfattningar om informationssystemen, arbetssituationen och fusionen i stort. Både enkäter (tre) och intervjuer (två) har använts för att samla in data om administratörernas uppfattningar före, under och efter fusionen. Enkäter och intervjuer har kompletterats med information från interna och offentliga dokument för att ytterligare säkerställa fynden.

Att strålkastarljuset riktades på administratörerna hänger samman med deras synnerligen viktiga roll inom organisationerna; administratörer är organisationernas stomme, och utan deras insatser och kunskaper skulle mycket fallera. Detta gäller inte minst inom offentlig sektor, och som i denna studie, inom högre utbildning. Administratörerna å andra sidan är beroende av sina IS och måste kunna lita på att de fungerar väl – alltid. Studien har bekräftat administratörernas beroende av väl fungerande IS. I en fusion är det sannolikt att förändringar sker både av IS och av de rutiner, som finns knutna till arbetsuppgifterna. Därför var det speciellt intressant att ta reda på hur administratörerna uppfattade fusionen och dess konsekvenser för IS och arbetssituationen för att den vägen söka efter ytterligare nycklar till lyckade fusioner och integrationer.

Den första kartläggande studien 2008 visade administratörer med gott självförtroende när det gällde deras kompetens och kunskaper inom IS, och det fanns inte någon rädsla för att lära sig använda nya IS med anledning av fusionen. Majoriteten av administratörerna hade någon form av akademisk utbildning och visade inte oro även om det var oklart huruvida utbildning i nya IS skulle erbjudas eller inte. Administratörerna var före fusionen mycket positiva till de kommande förändringarna och

såg fram emot fusionen med tillförsikt och entusiasm. Undersökningarna före fusionen visade att administratörerna var mycket tillfreds med informationsstrategierna, och ansåg att de fick fyllig information genom många kanaler, och att även uppskjutna beslut och problem meddelades snabbt. Studien motbevisar således att motstånd mot förändringar skulle vara oundvikligt vid fusioner.

Kort efter fusionen (tredje studien) fanns en besvikelse över att det blev färre förändringar än man förväntat (och hoppats) även om de ändringar, som de facto hade gjorts, i vissa fall hade gett en besvärligare arbetssituation. Detta uppgavs gälla rutinändringar i högre utsträckning än IS-ändringar. Dock är man fortfarande villig att förändra och att dela kunskaper med nya kollegor. Kunskapsdelande (även av tysta kunskaper) fungerade väl i fusionen och en majoritet ansåg att man främst lärt sig nya IS och rutiner genom att kollegor hjälpt varandra och genom egna ansträngningar.

Fem månader efter fusionen (fjärde studien) var administratörerna bekymrade över att kommunikationen ändrats; den uppfattades som mer anonym och att det var svårare att få veta vad som hände samt att komma i kontakt med beslutsfattare. Administratörerna uppfattade att makten hade flyttats uppåt i en växande hierarki, som de var ovana vid. Toppstyrning anses visserligen vara nödvändig i fusioner så att saker händer snabbt; det finns inte tid att ständigt nå konsensus, och alla kan inte alltid få igenom sina krav. Det är viktigt att hitta vad som är bäst för den nya organisationen och inte hänga kvar vid tidigare rutiner och IS bara för att de fungerade tidigare. Dessutom tar förändringarna under en fusion mycket tid och kraft, vilket riskerar att fokus flyttas från kärnverksamheten i alltför hög grad.

Ett stort problem visade sig vara den bristande kontinuiteten i ledningen under fusionen. Speciellt besvärlig var situationen inom IS-avdelningen där det var många tillfälliga chefer under hela processen (även efter att fusionen genomförts). Detta ledde till att ingen specifikt kunde driva frågorna rörande IS, och integrationen av IS efter fusionen, med kontinuitet och kraft. Dessutom tillsattes de högsta cheferna mycket sent; till och med efter att fusionen trätt i kraft. Möjligheter att bygga upp en förtroendefull relation med administratörerna omöjliggjordes i och med detta, och undersökningen fem månader efter fusionen visade att tilliten till ledningen hade minskat betydligt. Administratörerna kände sig överkörda och att deras kompetenser inte räknades längre. Detta i samverkan med mindre information ledde till ryktesspridning och

missstro. Administratörerna har annars varit övertygande om att deras insatser var värdefulla och att de arbetade på ett effektivt sätt. Efter fusionen noterades en nedgång i dessa övertygelser men de fanns fortfarande. Den femte undersökningen i november 2011 visade att administratörerna var fortsatt nöjda med informationssystemen, vilket i övrigt gäller hela studien, och man ansåg att IS-avdelningen gjort ett mycket bra jobb utifrån de förutsättningar som funnits.

I båda de tidigare organisationerna saknades IS-strategier, och därmed blev det IS-strategiska arbetet lidande. IS-strategier behandlar exempelvis frågor om systemägande som berör vem som betalar och ansvarar för underhåll och löpande vidareutveckling, utbildningsinsatser vid uppgraderade/nya IS och handlingsplaner för att kunna säkerställa att informationssystemen fungerar väl även om kraven (t.ex. antal användare) ändras. Ett proaktivt förhållningssätt är viktigt i ett IS-strategiarbete; inte minst i en fusion där man måste hantera frågor om bland annat systemval, integration och omorganisering av processerna, där IS är en viktig komponent. I den nya organisationen bildades efter knappt ett år ett strategiskt råd som fick i uppdrag av högsta ledningen att utforma en IS-strategi; 26 månader efter att fusionen genomförts hade ännu inte någon IS-strategi beslutats.

Studien visar vikten av ett kraftfullt IS-strategiarbete i en fusion, vilket kräver att IS involveras tidigt i fusionsprocessen och att beslut om IS fattas tidigt. Dessutom behöver den nya ledningen tillsättas tidigt för att ha möjlighet att arbeta aktivt med IS-strategin, planera och fatta beslut avseende integrationen av IS och människor samt bygga förtroende i organisationen.

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2. Lundqvist, S. (2010a). Well-Functioning IS are Important for the Administrators' Effectiveness and by that for the Organization as a Whole, *Research Report 1/2010, IAMSR (Institute for Advanced management Systems Research) at Åbo Akademi University*, ISBN 978-952-12-2447-8.
3. Lundqvist, S. (2010b). In a Merger: A Lack of Information about IS and the Job Situation, in H. West Nicolajsen, J. Persson, L. Heeager, G. Tjørnehøj, K. Kautz, P. A. Nielsen, (eds.): *Proceedings of the 33rd Information Systems Research Seminar in Scandinavia*, IRIS 33, Engaged Scandinavian IS Research, North Jutland, Denmark 22nd-24th August , 2010, ISBN 978-87-992586-1-7 (CD).
4. Lundqvist, S. (2010c). In a Merger: Administrators are Open-Minded to Reengineering of their Assignments, *Research report 2/2010, Institute for Advanced Management Systems Research (IAMSR)*, Finland: Åbo Akademi University, ISBN: 978-952-12-2448-5.
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PART I:
RESEARCH SUMMARY

1 Introduction

Mergers are commonplace organizational events in the 21st century, but unfortunately they more often fail than they succeed (e.g. Alaranta 2008; Tarplett 2009). According to the Institute of Government (2010) the majority of failures occur during the integration phases. Hence there is a need for enhanced understanding of mergers and post-merger integrations (abbreviated hereafter as PMI), and of learning more about how mergers and PMIs could be facilitated. Research has been carried out in the field of mergers during the last decades but there are still missing keys that could increase the success rate. In the literature there is a perceived lack of research about PMI of IS (e.g. Alaranta 2008), and longitudinal in-depth case-studies are especially requested (e.g. Meglio & Risberg 2010; Wijnhoven et al. 2006).

It is much easier to make a merger decision and to have high hopes for the outcome, than it is to practically carry out mergers that fulfil the initial objectives. The importance of carefully planned and thoroughly realized IS' integration for a successful PMI is often argued in the literature (e.g. Apnovich 2002; Robbins & Stylianou 1999; Sirkin et al. 2005). The necessity of pre-merger planning and early decisions about the IS strategies are also stressed (e.g. Bashein & Markus 1994; Mehta & Hirschheim 2007). Another angle that is often focused upon in the literature is the need for acknowledging human factors in mergers and PMI's since they can either promote or hinder a successful PMI (e.g. Alaranta & Viljanen 2004; Cartwright & Cooper 1995).

Mergers are basically about the opportunities for organizations to achieve better results together than otherwise. Some general proposed arguments, and drivers for mergers are i) the opportunity of improving performance, ii) increasing competitive advance, iii) achieving synergy effects, iv) reducing costs, and v) improving research and development (e.g. Appelbaum et al. 2000a, 2000b; Olie 1994; Pritchard 1993). Mergers are usually connected to various negative manifestations of employee reactions, e.g. lowered productivity, absenteeism, voluntary turnover and power struggles, because people are known to be inherently sceptical to changes that affect their daily life and work situation. Hence employee resistance to change in a merger is to be expected (e.g. Blake & Mouton 1984; Bradt 2008; DiFonzo & Bordia 2000; Epstein 2004; Lewis et al. 2010; Michelman 2007; Strebel 1996). A great deal of advice on how to counter and prevent resistance to change is available in the literature (e.g. Collins 2001; Bradt 2008; Empson 2000a, 2000b;

Schweiger et al. 1987). Some advice stresses the importance of managers regarding resistance to change as basically positive expressions of employee interest in the matters that surround a merger (e.g. Ford & Ford 2009). A basic facilitator for preventing resistance to change is to acknowledge the employees' needs and opinions (e.g. Ford et al. 2008; Michelman 2007; Nyberg & Mueller 2009; Tetenbaum 1999). Other common examples of recommendations are: i) to give information on a continuous basis, ii) to invite the employees to participate actively in the merger processes, iii) to acknowledge the importance of trust-building, and vi) to provide training opportunities in case of new IS and routines (e.g. Bashein & Markus 1994; Ford & Ford 2009; Shrivastava 2007; Smith 2005; Zmud & Cox 1979).

Regardless of whether the managers follow the advice or not, there could still be employees who are unsatisfied with a new situation, and some could even be dismissed due to a merger. Hence it is even more important to achieve smooth communication and to provide information – even if there is little to relate. Trust in management is crucial in a merger, and the mere announcement of a merger could be enough to start the rumour mill because of the insecurity that is usually connected to mergers. Once a rumour is formulated it is hard to dismiss, thus there is no such thing as too much information in a merger. If the employees do not get the information they require – the rumours will flourish instead (e.g. Appelbaum et al. 2000a, 2000b).

Public sector mergers, which today increasingly often are realized in municipalities, universities, police and county councils, have many similarities to those in the private sector. The employees' concerns and worries about the changes that necessarily will follow a merger are practically of the same kind. In addition to an increased risk for layoffs, changes should be expected regarding routines, IS, place of work and even colleagues. Sometimes individuals are concerned that their current knowledge will be insufficient if there are changes in their ordinary routines and IS. In the public sector there are no longer any guarantees that employees' duties will remain unaffected, and that their services will even be needed after a merger is carried out. Organizational needs will determine staffing even if the merger is between regulated public sector organizations. Despite the old, but today outdated, saying that public sector employment lasts forever, even though the salary will be low, public sector employment is just as vulnerable as in the private sector.

A main driver for mergers in the public sector is deficit reduction, which is often given top priority in public organizations according to Grant Thornton (2010a, 2010b) and a related article in the Guardian (George 2010). Potential benefits of mergers are claimed to be simplification of administrative processes and systems.

The failure rate of public sector mergers is not known to be lower than between private sector organizations (Tarplett 2009) and the studies on PMI of IS are scarce (e.g. Alaranta 2008). Studies about public sector mergers are even more seldom carried out and reported according to Tarplett (*ibid.*), who argues that the lack of case-studies of public sector mergers is one important reason for merger failure. There is a need for more “lessons learned” that could support mergers and PMI processes.

To sum up, the problems that are known to occur during mergers are often connected to a lack of understanding of the human issues that could either hinder or promote merger success, and that highlights the importance of the managers’ active participation. Efficient communication strategies are necessary for building trust in management and for down-playing feelings of uncertainty and anxiety that otherwise could result in rumour spreading and other negative attitudes towards a merger and a PMI. How the IS related questions are handled is important for the prospect of a successful PMI because public organizations depend on their administrators’ achievements (e.g. Simon 1971) and the administrators in turn depend on their IS (e.g. Langefors 1995).

The rest of chapter 1 is organized as follows. Firstly, there is a brief introduction to IS, some general merger definitions (e.g. merger types, merger motivation) as well as some examples of merger successes and pitfalls are presented. Secondly, background information will be presented on the case-study, and the administrators’ context in a public sector merger will be briefly introduced. After that the research objectives, the research questions and the research project will be presented. Finally, an overview of the thesis’ key themes, research papers and structure is outlined.

1.1 Information systems (IS)

Information systems have no ends in themselves and should always support and give service to the underlying object system as Langefors (1973, 1995) argued. Langefors is known as the founder of the so-called Scandinavian school of information systems in the 1960s. Distinctive features of this school are an anti-positivistic and action-oriented research

approach, focusing on user-participation and IS evolution as well as a search for varying, innovative theoretical foundations (Iivari & Lyytinen 1998). The object system could be roughly described as a certain form of activity in an organization. Over the years, the early thoughts of Langefors (1973, 1995) and his companions in the Scandinavian systems development discipline have gone through many phases, but the initial, fundamental criterion from the sixties still holds. No system would exist if not needed. Despite this, there have been variations in the fundamental issues in the Scandinavian school of IS: e.g. the socio-cybernetic approach (e.g. Iivari & Koskela 1987), and the language action approaches (e.g. Lyytinen 1985). The socio-cybernetic approach is represented by Iivari & Koskela (ibid.), and the PICO model for IS design (Pragmatic, Input/Output, Constructive and Operative) which handles an environmental (pragmatic) element, acknowledging its purpose and impact as well as its structure and internal behaviour. Important ideas of the model is that no single IS design method is best in all situations, and that the technical aspects of an IS are not the only important factors to consider. On the contrary, the IS specification should preferably be independent of the technical implementation. The language action approaches are represented by Lyytinen (1985), who proposes five language views (or linguistic phenomena) that should be used as a means for filtering and sense making the IS development approaches, characterized by the language views that the system design builds on. The core meaning is that the IS are a means and an environment for human communication (on a linguistic basis). The implementation of the IS is made possible by technology. Langefors' (e.g. 1973) systems view is by some regarded (e.g. Bansler 1989) as Tayloristic, i.e. mechanistic, and mainly aimed at profit maximisation. Furthermore, Langefors' systems view contrasts socio-technical and critical approaches in that humans could be compared to machines. The socio-technical models are mainly interested in the interactions in systems development and design, and in the problems that are caused by the neglect of human needs. The critical models, such as the trade unionist approach, emerged in the seventies when the union's attitudes changed regarding new technology. From being sympathetic towards technology (because they thought that everyone, including workers, should gain from it) the trade unions shifted to a more negative view based on more shift work, and various rate systems that led to health problems, and an increased risk for injuries. The critical approaches were in opposition to the harmonious models of

systems development and saw organizations as places for conflict. This was mainly due to different interest groups' unequal terms and power (Bansler 1989).

Examples of other interesting system thoughts outside Scandinavia are provided by Simon (1979, 1993), Checkland (2000) and Churchman (1968). Simon (*ibid.*), who gave much attention to decision making in organizations, claimed the importance of acknowledging the fact that humans are incapable of making rational decisions (i.e. bounded rationality), no matter what information there is available. Hence it is necessary to accept decisions that are satisfactory. However, co-operation between individuals, who support each other in the decision making process, increases the likelihood of optimal decisions. Langefors (e.g. 1973) considered executive optimal decisions to be satisfactory and to be preferred over scientifically proven decisions, because they could be carried out in shorter time and with fewer resources, which in turn would compensate for a less scientifically based decision. Nevertheless, Langefors' optimal executive decisions and Simon's satisfactory decisions are not fully compatible even if they both raise the human problems of coping with complex issues. Simon (1979, 1993) relied more on intuition when it came to making satisfying decisions while Langefors (1973, 1995) had a more mechanistic view. Nevertheless, in a comparison between Langefors' (*ibid.*) ideas about the need for systems partitioning (subsection 2.1.3) and Churchman's (1968) view of the total system (that also needs to be dissected) Churchman's proposal is more technical and Langefors' more practical (from a human perspective). Checkland (2011) also points out the importance of the human perspective, and the fact that people usually perceive a situation (or the real world) differently compared to others. This implies that there will always be different world-views, and different mental structures involved in basically the same situation. Soft Systems Methodology (in short SSM) is a methodology for handling the real-world complexity with different world-views, changing world-views, and would-be purposeful actions since it is also a human characteristic to act purposefully.

One of the tricky parts could be about matching the system's technical features with organizational and the human needs (Iivari & Koskela 1987; Langefors 1977; Lyytinen 1985) and furthermore with user opinions of how the systems should be in order to be useful and easy to use (e.g. Davis 1989, Davis et al. 1989). If the systems and the technical solutions behind them are not accepted by the users they will

probably not be used as they were intended. Perceived usefulness and perceived ease of use are therefore important factors to consider about a system – preferably before the system is purchased, or developed, and implemented. Davis (1989) developed the Technological Acceptance Model (TAM) which could be helpful when decisions about a new IS are to be taken. TAM could be used for predictions about whether a certain IS would be appreciated by the users, who in that case not only intend to use it but actually also will use the system (Davis et al. 1989). Other factors that could hamper the correct use of IS are connected to the users' knowledge (i.e. the individual's education, training and willingness to share tacit knowledge) and furthermore connected to the way knowledge is managed in the organization (Mathieson 1991; Sveiby & Simons 2002; Venkatesh et al. 2003).

The use of information technology (in the following IT for short) and the IS for strategic purposes are important for business and organizations that aim to be at the cutting edge of their fields. Hence the management information systems (in the following MIS for short) must be prioritized in organizations, because information systems are no longer simply means for supporting actual business operations, collaboration and decision-making. Moreover, they are important means for competition and creating a strategic advantage and should therefore not only be measured by efficiency: how they succeed in minimizing costs, time and other resources (O'Brien & Marakas 2009; Galliers & Leidner 2009; Galliers 2011). Nevertheless, the idea exists that IT is no longer a commodity that enhances the competitive force of organizations (Carr 2004). The reason behind Carr's statement is that IT is commonplace today and therefore does not really matter. It should be said that Carr has been both heavily criticized and honoured for his opinion (e.g. Brown & Hagel III 2003; McFarlan & Nolan 2003). Galliers (2011) argues that Carr does not acknowledge the fact that the critical point is how ICT (Information and Communications Technology) is used to foster competitiveness.

Irrespective of this, when organizations are changing, for example due to mergers, their IS also need to be changed. As a minimum the IS changes would imply necessary steps to achieve system integration, but it could also mean that all IS of the merging organizations will be totally replaced. In any case, it is important to apply an approach from a holistic perspective to the IS integration, and to the possible reengineering processes of the IS. Post-merger integrations (PMI) are important to

investigate, in order to better understand how to facilitate them, because of the high failure rate of mergers (e.g. Alaranta & Martela 2010).

The concepts of IS and IT are sometimes differently described and understood. This could cause misunderstanding and uncertainty of what the various concepts cover if they are not accurately defined. In some contexts there is a sharper distinction between the systems and the technology that renders the use of the systems possible, and the IS could be regarded a subset of the IT. In other contexts the technology is a subset of the IS and the IT refers to the opportunities that are available by use of computer technology and telecommunication. The extended synonym ICT (Information and Communications Technology) is often used in order to highlight the role of communication. In this thesis the author has adopted the latter view of IT as a subset of IS. The users are not concerned with how their IS work from a more technical perspective, they just presume that they will work well. In this thesis the concept of IS refers to an information system's technological specifications as well as to human activities and routines that surround it (e.g. Marcusson 2008). Consequently the term IS will be used even if the organizations that are studied use the term IT and thus the IT-department will here be called the IS-department. Exceptions are made for quotations of interviewees' and respondents' statements (chapters 4 and 5).

1.2 Organizational merger processes – successes and pitfalls

1.2.1 Merger types

Organizational mergers could be described by their type; if the merger is *horizontal/lateral or vertical* (whether the organizations are in the same field of business or not), and if the involved units are in successive stages of production. For example, a vertical merger involves units in the same business but one is at an earlier stage of development/production (e.g. a farm that grows vegetables and a restaurant that cooks them). A lateral merger is between two businesses that produce similar products or services (e.g. restaurants, universities). Harman and Harman (2003) exemplify horizontal and vertical mergers by mergers among universities or other educational institutions. A horizontal/lateral merger between universities with complementary missions and cultures and a vertical (or cross-sectional) merger is between a university and a college at different education levels. The latter is argued to require much more careful

management to be successful compared to the horizontal merger type (Harman & Harman 2003). An example of an unsuccessful vertical merger is the 1989-90 merger between University of New England and three colleges in northern New South Wales (Harman 1993). The new university split into two universities in 1994. Even though many factors were identified as grounds for the break up there were three of particular weight: i) unsuitable partners that did not share commitment to the maintenance of the new organization/university, ii) a forced structure that did not fit for partners without mutual commitment for the merger, and iii) personality clashes (conflicts not further described) (Harman 1993). An example of a successful horizontal/lateral merger is between Pfizer and Warner Lambert in 1999. The companies were already before the merger co-promoting a successful cholesterol-lowering drug (Turner 2001).

A conglomerate merger is an amalgamation of organizations that are specialized in different sectors, and that produce different products. However, they do not have the same buyer, seller or distributional relations, and therefore the merger broadens the organizations' scope (e.g. a restaurant and a taxi company). The merging units are often in completely different businesses in order to avoid putting all eggs in one basket – even called diversification. An example of an unsuccessful conglomerate was between Mattel (toys) and The Learning Co. (educational software) in 1999. It turned out badly because Mattel was not familiar enough with the software business, and the two parted after only some months resulting in a huge decline of Mattel's stock (Turner 2001). Mergers could also be hybrids, e.g. vertical-conglomerates as the merger between London College of Furniture and the City of London Polytechnic in 1990 (Pritchard 1993).

Another way to describe a merger is by its degree of freedom of choice, and whether the merger is between (relative) equals or not. A currently ongoing merger deal “of equals” is between Xstrata and Glencore, (mining companies). The companies seem to have come to an understanding about an “all-share merger of equals”, which when the deal is closed will result in a merger giant (the Economist 2012). However, according to Pritchard (1993), most mergers are on unequal terms with one participant as the “acquirer” and the other/-s the “victim”. So, one unit in a merger can be perceived as a takeover (like in acquisitions) by the other one (Locke 2007). When the organizations involved in a merger share the same picture of opportunities and threats it is more likely that

the merger will be successful (Harman & Harman 2003). An example of a merger with a mutual understanding of the objectives is the merger between HP and Compaq as the two companies set out to take mutual advantage of each others' strengths and capabilities, e.g. a strong distribution network on the East and the West coast of USA respectively (de Camara & Renjen 2004). A major reason for HP and Compaq's merger success was that a detailed integration plan was ready long before the merger was carried out. Also the top manager structure was extensively discussed, and agreed on, before the merger. Moreover, plans for the integration were followed rigorously in the PMI phases. Another issue that was cited as important in the HP/Compaq merger was that employees from both companies cooperated closely on the integration planning and willingly shared confidential information. Another factor that was considered to speed up the merger was the fact that the senior managers actively participated in the processes. Furthermore, the managers were allowed to focus on the merger, and the integration, instead of their ordinary duties (de Camara & Renjen *ibid.*).

A merger could be politically promoted or decided (e.g. mergers in governmental organizations such as universities), and the organizations could contribute willingly or more reluctantly. The Finnish municipal mergers were investigated by Saarimaa and Tukiainen (2010), who found that the local political environment is highly influential on mergers, which could be both promoted or hindered, i.e. sensible mergers could be hindered and suboptimal mergers could be promoted. Furthermore, a central government merger subsidy was shown to influence the merger decisions. An example of the rationale behind a merger decision is that "the council members want to guarantee their and possibly their voters' municipal jobs for the next five years or that they anticipate better career opportunities in the new and larger municipality" (Saarimaa & Tukiainen 2010, p. 36). Mergers in the Swedish public sector (Bringselius 2010a, 2010b) have become increasingly common in recent years. According to Bringselius (*ibid.*) the research on mergers in public sector is scarce and therefore it is difficult to compare them with private sector mergers, which are more frequently studied. International research on public sector mergers is relatively under-represented because of the different contexts of public sector organizations in different countries. Another reason is that acquisitions have earned more interest than mergers, and acquisitions are seldom applied in the public sector (Bringselius *ibid.*).

The terms mergers and acquisitions are often used interchangeably even though they have basically different origin; acquisitions have their emphasis on the takeover of other companies/firms and the takeover could be either friendly or hostile. Mergers are about combining companies/organizations and at least two units decide to join together as a new entity. Despite this, a purchase of another firm could also be called a merger – especially if it is positively regarded by the units involved. Otherwise if the purchased firm is reluctant to the deal the actually more correct term acquisition should be used. This thesis focuses on mergers and therefore the concept of acquisitions will be excluded from further analysis and discussion.

1.2.2 Merger motivation

One common motive for realizing a merger is the prospect of becoming more successful together by broadening the field of competence, improving research and development as well as cutting costs due to rationalizing opportunities. However, according to Harari (1998, p. 21) the image of “post-merger giants poised to dominate the world” could as easily turn out to be “slow-footed beasts” and merger-giants become more like clumsy and hyper-bureaucratic monsters that can hardly move. Pritchard (1993) suggests that financial motives for mergers in higher education should be treated with suspicion since there is insufficient evidence of cost-saving. She also found that other cooperative structures are becoming more popular than mergers, at least in British higher education. The flexibility in other forms of cooperation makes it easier to adapt and change in the rather unpredictable field of business that is higher education. Olie (1994, p. 386) argues that effective merger integration could be defined as: “the combination of firms into a single unity or group, generating joint efforts to fulfil the goals of the new organization”. Nevertheless, the motives behind mergers vary and therefore they need to be dealt with differently (Shrivastava 2007). There are for example different issues that are recognized as important, and even critical for the merger decisions (and for the motives behind them), depending on whether the merger is in the private or in the public sector.

According to Saarimaa and Tukiainen (2010) public mergers could be motivated by a government merger subsidy scheme, as in the Finnish municipal mergers. Nevertheless, their study shows that the monetary motive is often countered by local politicians, who are more concerned

with saving their own employment (by re-election), but also other municipal employees' (e.g. teachers, nurses) future employment.

Choi and Brommels (2009) studied the merger of the Swedish Karolinska University Hospital (carried out between two teaching hospitals - the Huddinge University Hospital and the Karolinska Hospital in 2004). They found the two dominant merger motivations to be research excellence and financial efficiency. In this case there was a strong political will to carry out the merger. The political socialist bloc strongly advocated the merger together with representatives from medical research. This led to the merger decision being made solely in the political arena (Choi & Brommels 2009). The prospect of a merger had been discussed and investigated for several years, and assumed to be impossible until just three months before the merger decision was actually made. The two university hospitals involved had a mutual history of fierce competition, and had never carried out co-operative research projects before the merger. The financial crisis was regarded as an important factor for the merger to becoming reality (Choi & Brommels *ibid.*).

Public sector mergers are not exactly like private sector mergers and among the factors that differ are, for example, that politically based decisions are likely to occur, and that staff in public sector organizations are more likely to make their voice heard. It is often even expected that public sector employees will react when public resources are being wasted, or when the public organizations do not carry out their responsibilities. There are many examples of malpractice in the care of the elderly that have received much attention by the Swedish media during recent years that were leaked to the media by whistle blowers.

1.2.3 Evaluation and determinants of merger success

One problem related to the evaluation of a merger's success is the time-perspective. If a merger is evaluated too early its long-term value prospect, which often is the main driver of a merger, could be difficult to calculate. Epstein (2004) formulates five drivers for facilitating merger integration: i) coherent integration strategy, ii) strong integration team, iii) communication, iv) speed in implementation, and v) aligned measurements. Success in reaching all five drivers is critical for successful PMI. According to Epstein (*ibid.*) it starts with distinguishing a merger of equals from an acquisition, which is important because it articulates how the integration should be carried out. Making decisions

about integration actually starts the implementation of the integration strategy. An important factor is to avoid consideration of how the “old” organizations were structured, and what systems and routines they used before the merger. Also Apnovich (2002) argues IT integration to be a key to achieving merger success. Epstein (2004) proposes that the “new” organization should be given a fresh start, without considering how things were carried out before, and what IS were used. These thoughts should also be considered in questions about how staff and customers are handled. Commitment for the merger should be reflected in how the integration team is put together. It is strongly recommended that the team members work full-time with the merger, and to take care of the customers, who preferably should not even notice the ongoing merger. The merger should be seamlessly carried out from the customers’ perspective. Another important factor to consider is the merging organizations’ different cultures (Epstein 2004).

In the Daimler-Chrysler merger the different cultures were not handled properly. That neglect led to financial loss and many employees were laid off as a result. Staff quarrelled over minor issues like smoking at work, a problem that should have been easily solved (Nguyen & Kleiner 2003). Also Calipha et al. (2010) emphasize the importance of acknowledging different cultures in mergers, and argue that a large body of research points to four factors that are often related to merger success: i) culture, ii) organizational structural issues, iii) the relative size of partners, and iv) managerial involvement. Epstein’s (2004) third driver, communication, emphasizes the need for continuous communication. The top management should participate, the stakeholders should be involved and their needs should be taken into account. This is especially important in the early stages of a PMI. Pritchard (1993) agrees with the importance of top management involvement, and advocates good top management as the most important factor for successful mergers. For the employees it is very important to receive information about their individual situation after the merger. Otherwise there is a clear risk of the voluntary turnover of those who are most vital to retain in the new organization (Epstein 2004).

Speedy implementation of post-merger integration (PMI) is important. It is essential that integration plans are ready and carried out as quickly as possible. Slow integration risks sending signals of uncertainty to the employees and customers could in turn sense instability and look for other suppliers. The measures of the PMI must be well aligned with

the merger strategy and with the merger vision. If targets covering all areas are not clearly formulated it will be difficult to follow up on progress. A good example is the merger between PepsiCo Inc. and The Quaker Oats Co. where the measures were formulated in a way that made it obvious to the stakeholders, and to the personnel, what could be expected throughout the processes (Epstein 2004).

Furthermore, Epstein (2005) formulated six determinants of merger success, which were expected to override common obstacles in mergers. These determinants have much in common with Epstein's (2004) five drivers, but are formulated somewhat differently. They are clearer in terms of the importance of acknowledging and implementing them for successful PMI. It should be noted that every one of the determinants must be successfully dealt with in order to minimize the risk of merger failure. The six determinants are: i) strategic vision and fit, ii) deal structure, iii) due diligence, iv) pre-merger planning, v) post-merger integration, and vi) external factors (influencing in a long-term perspective).

Strategic vision and fit is about the clear articulation of the merger objectives, and should be created with a focus on long-term success before short-term measures of success. As mentioned above (the five drivers) it is highly important that the leaders of the merging organizations carefully formulate the strategic goals, and the vision for the merger. An example of this is the Daimler-Chrysler merger; on one hand the increase in market share based on geographical fit was promising, and on the other hand the different cultures in the two companies made it hard to achieve the expected merger benefits (Epstein 2005).

The *deal structure* of a merger needs attention, and is mainly about the price premium. If a too high a price is paid the new organization could suffer from the consequences. Another financial risk is that a company's stock could be overvalued (or undervalued) at the time for the merger. In the merger of Federated and Fingerhut the latter's price was raised disproportionately before the merger and led to Federated paying a too high a premium. Hence Federated shut down Fingerhut at a high financial loss (Epstein 2005).

A *due diligence team* must be formed, responsible for implementing the strategic vision. Such a team must include representatives of all the merging units in order to gain the personnel's trust. A thorough merging of cultures and of human resources (e.g. leadership styles) is important.

The work practices of the merging organizations should be investigated as well as technical and financial factors (Epstein 2005).

The *pre-merger planning* is crucial and critical issues are to form the new leadership team as well as choosing the new top manager. The latter is pointed out as especially difficult in a merger of equals. Epstein (2005) recommends that a totally new organization is created and emphasize that it is crucial to decide on the new management, and organization before the merger is even announced.

The *post-merger integration* is highly important, and if other determinants are successfully carried out it could facilitate the PMI. However, if the PMI fails potential benefits from the merger could be more or less destroyed. Epstein (2005) claims the importance of good pre-merger planning in order to achieve a good PMI. The most suitable IS solutions must be chosen for the new organization, no matter what applications were applied in the former organizations. Hence, good technical management is important in order to understand how to counter the risks of system integration. Even if there are many factors that are controlled by the companies involved in a merger there are also *external factors*, which are beyond their control. Nevertheless, these factors should not be neglected or forgotten. The economic climate at the time of the merger is an example of external factor that is almost impossible to plan for. According to Epstein (2005) it would be more likely in a strong economy, for a poor merger to be mistaken for a good one and vice versa. It is highly important to take the long-term values into consideration before the more short-term values such as temporary stock declines (Epstein 2005). The six determinants show that both strategy and process are important for successful merger processes. Epstein (2005) proposes that although mergers have a high failure rate, it is not impossible to succeed with mergers, if only the six determinants are properly executed.

Tetenbaum's (1999) advice for preventing post-merger drift, that is to say the productivity drop of between 25 – 50 % when staff is subject to major changes, is that the transition should be carried out quickly. Otherwise, the merger distracts both the managers and the employees. Fast transition pace includes making decisions about individuals' situation after a merger as well as informing about how the merger will affect the staff on an individual level. Preferably this should be done within days after the decisions are made and the deals signed. Productivity drops in public sector mergers could be related to the role of political decisions and a changing political (local or central) environment

that could prolong necessary merger decisions. As shown in Saarimaa and Tukiainen's (2010) studies of Finnish municipal mergers, the local politicians have a great impact on the merger decisions. However, it usually took a long time to agree on whether a merger should be carried out or not, and meanwhile the personnel involved had to face uncertainty regarding their work situation and employment. This is often related to the prospect of cost savings, often highly prioritized in public sector mergers that led to staff cuts.

Bringselius' (2010b) studies of Swedish public sector mergers (National Social Insurance Board, Southern Sweden University Hospital and National Audit Office), showed that the personnel's objections were ignored, and that the merger processes were characterized by conflicts. The uncertainty among the personnel was large and therefore a source of drops in productivity.

Olie (1994) gives some examples of how a merger success could be hampered: i) conflicts of interest; the merger is not supported by the managers in charge of the operating companies, ii) a lack of legal substance (i.e. no overlap between legal and organizational structures) and strategic fit, iii) different managerial ideologies, and iv) failure to shape common identity. Frommer (2001) suggests that expectations of a merger that are not fulfilled could hinder successful mergers and post-merger integrations. Other IS and differences in practice between the merging units are often unexpected as are different leadership styles. Unfulfilled expectations could change positive views of a merger and of the new organization.

1.2.4 Examples of successes

Epstein (2005) suggests that a merger could be successful, even if the short-term financial indicators are less satisfying, and exemplifies with the merger between Chase Manhattan Bank and J.P. Morgan. External factors had to be considered and the economic downturn at the time of the merger would probably have hurt the organizations worse on a separate basis. The six determinants of success (subsection 1.2.3) were executed well in the JPMorganChase (JPMC) resulting in a successful merger. A merger that aims at a long-term relationship should not be evaluated mainly by short-term measures such as a rise in stock value. The JPMorganChase merger was a necessity with the background of the rapid consolidation of the banking sector (Epstein 2005). Bank clients wanted integrated solutions and multiple products, which opened up for building

closer relationships. Although the merger was planned with high secrecy, decisions about the personnel were made quickly, as well as financial analyses and decisions. According to Tetenbaum (1999) a fast pace in a merger is important as are early decisions about the individuals' post-merger situation. The top management teams (the JPMC merger) were appointed before the merger was even announced, and in order to emphasize that it was a merger of equals, the former banks' names were visible in the new name. The merger team members worked full-time with the merger and the merger was carried out quickly; less than four months after the announcement. The communication processes were well-coordinated and worked well. The measurements of the merger success were grouped in four categories: financial, technical, client and people. The sixth determinant of merger success (subsection 1.2.3): the external factors were the most problematic in the JPMC merger because they could not be controlled by the bank management. Examples of external factors, which influenced the JPMC merger, are the economic downturn and the September 11 attacks.

Marks and Mirvis (1992) describe a merger where the management dealt successfully with the rebuilding phase after the merger. The focus was on acknowledging the personnel, who remained in the organization after a downsizing. Leadership issues were crucial because the employees tend to "... mythologize their old jobs" (Marks & Mirvis 1992, p. 21), they grieve the past and miss their former colleagues and assignments. Sometimes those who remain after layoffs are ashamed over their survival in the organization, which is what Marks and Mirvis (*ibid.*, p. 18) allude to by the concepts: "survivor sickness" and "survivors guilt" (*ibid.*, p. 21). Battles at the top are always reflected in the lower levels of an organization. Marks and Mirvis (*ibid.*) suggest activities that are directly addressed to the managers as a feasible option for playing down merger quarrels, insecurity and fear. An internal merger of the Communications and Information Systems divisions at AT&T caused strong divergence, and disagreement between the former departments. The managers had no experience of dealing with mergers, and both sides were unwilling to adapt to new routines and practices. Solving these problems was crucial for the new division's ability to succeed. First, the differences were mapped, and then a three-day meeting was arranged for the managers. During the meeting they went from revealing and discussing their objections and fears, and describing how they have worked before, to a "letting-go process" (Marks & Mirvis 1992, p. 26) in

which they were more or less forced to come together as a group in a scenario building on unity towards a mutual enemy (in that case a 100-ton paver rolling towards the group). The lesson learned from the article (Marks & Mirvis, 1992, p. 31- 32) is that “Managers can ‘pay now’, by investing time in systematic post-merger team building, or they can ‘pay later’ through the loss of key talent and disappointing results”. Engaging in arising problems is a key to successful merger integration (ibid.). Epstein (2004) claims that a merged organization should not primarily try to apply the routines and systems that were used in the former organizations; it is better to base such decisions on what the new organization’s needs are.

IT planning could serve as a facilitator for building partnership in a merger according to Main and Short’s (1989) findings from a study of IT planning at New Baxter. Two planning behaviours are pointed out for their contribution to the successful development of effective partnerships: i) dual purpose executive interviews, and ii) micro and macro analysis templates. These behaviours (techniques) promoted shared knowledge, shared commitment and shared decision making. The interviews had several objectives: i) eliciting information, ii) providing basic understanding of the planning alternatives, which iii) promoted participation and iv) resulted in better communication between the business and the IS management. The intention of separating the micro and the macro analyses was intended as a means of involving the executives in the planning. This was made by showing the executives that their level of business was separately dealt with during the analysis, and also that shared decision making was promoted in the merger. Lewis et al. (2010) argue that people in general have a natural resistance to change, and therefore it is important to counter resistance. The individuals who are part of an organizational change need to be supported through the change processes. In order to succeed with merger projects the managers need to acknowledge, and to act upon the often hesitant or reluctant reactions to change. Hence, in a merger process the focus should be on influencing new behaviours, not on influencing (i.e. changing) attitudes to the change (Lewis et al. 2010).

1.2.5 Examples of pitfalls

During three longitudinal case-studies of mergers (Amazon + Nile, Mekong + Indus, Seine + Lena), Mehta and Hirschheim (2007) found that it took a surprisingly long time before questions and issues related to

the IS alignment came up during the post-merger integration. It should be noted that those three mergers were considered successful from a Wall Street perspective. So, in that respect the mergers were not examples of pitfalls. However, the IS alignment issues could have been handled differently, as mentioned earlier. Examples of what went wrong from an IS perspective are: i) the IS transition teams were not formed until the merger was announced, and only a few persons were appointed to the teams; ii) one of the old systems was chosen because the time to carry out an analysis of the available solutions was not available (i.e. not prioritized); iii) none of the CIOs were involved in the due diligence process regarding IS alignment, and iv) the IS integration choices were not based on a wish to realize business IS alignment. The systems did not get the attention they would have required until much later (when the expected merger synergies were already delivered). Then the systems were then often re-programmed after analysis of how they could best be aligned with business needs. Hence Mehta and Hirschheim (2007) argue the need for attending to IS alignment issues early in a merger process, and for building the IS' infrastructure around business needs right from the start.

Harman (1993) describes, from the insider's standpoint, an early 1990s merger in British higher education that failed. There were many factors named as contributing to the conflict and breakup – further described in subsection 1.2.1. Three factors were considered to be crucial in this case: i) the mismatch of partners ii) the adoption of an unsuitable structure for the campuses, and iii) personalities. Harman (1993) argues the importance of describing merger failure and not simply focusing on the success stories. In the University of New England case the merger started to fail soon after it was carried out. Different campuses quarrelled openly about new rules for staff promotion and student load between campuses. Furthermore, there were problems with the location of the campuses, regarding distance and transport, which was an impediment to the integration (Harman 1993).

Tetenbaum (1999) refers to the merger of Boeing and McDonnell Douglas that was less successful than expected. The merger integration had distracted the management because merger questions became a key focus at the expense of the business. A productivity drop caused by a post-merger drift is problematic in several aspects: i) employees are distracted by merger issues at the expense of their ordinary duties, ii) merger related problems take the focus from the competitors'

achievements, and iii) cost-savings could end up in an increase in costs if customer needs and competitor advancements are neglected (Tetenbaum 1999).

The longitudinal case-study presented below is an example of a merger in the public sector.

1.3 Background to the longitudinal case-study

1.3.1 A merger of two universities

The general background information was mainly collected from documents, some of them internal and some official. Information was also gathered from informants, and acquired by internal access to the research objects (chapter 3 - method). In order not to reveal the real names of the universities the references to the documents are not provided. The pseudonyms of the universities involved are Org D and Org E; the new organization is called University DE, and the merger is referred to as the DE-merger.

Before the DE-merger Org D and Org E had a three-year (2006-2008) agreement for a strategic co-operation with a third university (Org F). There were far-reaching plans for a merger between those three universities. These plans were valid until immediately before the DE-merger process started. The main reasons for Org F withdrawing from the merger were partly a fear of the considerable administrative upheaval (that was not considered to counterbalance the gain in quality and effectiveness) and partly a conviction that the university (Org F) would be better off on its own. Org F had already a large proportion of international students and research partners and regarded their research environment as satisfactory. The plans for a merger between Org D, Org E, and Org F were reminiscent of the research triangle in North Carolina, where three universities (Duke University, North Carolina State University and the University of North Carolina at Chapel Hill) formed a successful research co-operation. In the case of Org D, Org E and Org F they were also located as points in a triangle. When Org F announced their withdrawal, early in 2008, Org D and Org E continued with the merger planning on their own.

Public sector mergers do not only have financial motives and could stem from a political initiative (Choi & Brommels 2009; Saarimaa & Tukiainen 2010). The DE-merger was carried through as a politically promoted, voluntary merger, and was based on a wish to utilize the two

universities' resources more effectively, to exploit the opportunities of further organizational development and of rationalization. The merger was expected to result in improved quality in both education and research. It also aimed at attracting more new students and reputable research partners. This in turn would lead to increased competitiveness, both nationally and internationally. It was an important factor for the DE-merger's approval that the fulfilment of the merger should create better opportunities in order to meet future challenges. The ambition level was high for University DE and the DE-merger aimed at creating a totally new organization with new visions and goals.

The merger type was horizontal and the two universities were relatively equal, even if Org D was regarded to have a higher academic status, more students ($\approx 15\,000$) than Org E ($\approx 10\,000$), and more staff. Before the merger Org D employed about 1 200 people and Org E about 800. Org D carried out research in three areas: human sciences, social sciences and technology; Org E carried out research in natural sciences.

The universities in the DE-merger were located in two different cities, at a distance of about 100 kilometres, a situation that would remain unchanged after the merger. The managers of the new organization were expected to commute between sites in order to be available for both sites' personnel. Likewise, the administrators would have to travel between the campuses in order to co-operate, and meet with colleagues since the departments would be located on both campuses. In order to minimize the travelling, groupware for co-operation online and e-meeting tools would be available. However, face-to-face meetings were regarded as important; especially before the administrators got to know their new colleagues.

1.3.2 The administrations and information systems

The organization of the administration was different in the two universities. A couple of years before the decision to carry out the DE-merger, Org E had gone through an administrative reorganization that resulted in the appointment of administrative managers for each department. The administrative managers reported to the head of each department; the organization of Org D administration was more centralized.

There were also differences between the IS¹-departments regarding their financing policy and their role specifications. In Org E the IS-department charged the users (on a departmental level) monthly for IS-related services such as infrastructure, telephony, support and technical operations. In Org D a similar financing policy was not applied, and the departments were not charged for IS services. The differences in the financing policy affected both the routines and the demands for reporting.

The IS-department in Org E was inspired by ITIL (Information Technology Infrastructure Library), which is a so called best practice of IT service management that provides a framework for identifying, planning, delivering and supporting IT services (Carlidge & Lillycrop 2007). Org E's organizing in 1st, 2nd, and 3rd line was in accordance with ITIL's guidelines regarding the handling of incidents and tasks, and the roles were well-defined for all three lines. In Org D the roles were not specified for the 2nd line that primarily dealt with support and training of teachers and students. All Org E's IS-personnel belonged (on an organizational level) to the IS-department even if individuals were physically located in another of the university's departments. Org D's IS-personnel could either be employed by the IS-department or by other departments. In Org E the IS-department was responsible for the purchase of hardware, IT-services and software in order to ensure technical compatibility and to avoid users or departments having to monitor updates and licence agreements. In Org E the departments only owned their printers (with one exception; one department also owned its servers). Org D had the ambition that the IS-department would handle all IS-related purchases but was not quite there yet. In Org D it was common that the departments owned their computers and their local technicians were responsible for the related services.

Something that Org D and Org E actually shared was a lack of IS-strategy.

1.3.3 The organizing of the DE-merger

An organization committee was appointed to oversee the DE-merger. A top manager for the organization committee, who came from outside Org D and Org E, was appointed early in the merger process. That person had previously been employed at Org F. The top managers of Org D and Org

¹ The term IT was applied in the organizations, but in this thesis IS is used in accordance with the definition in section 1.1, i.e. the technology is a subset of IS.

E were expected to carry out their duties as usual until the DE-merger was carried out, and the former organizations could be closed down. Until then Org D and Org E should function wholly, i.e. continue normal operations, and after the merger the University DE should take over seamlessly (cf. fig. 1). Figure 1 will be further referred to in chapter 5 and 6; dotted lines mark substitutes or preliminary appointments).

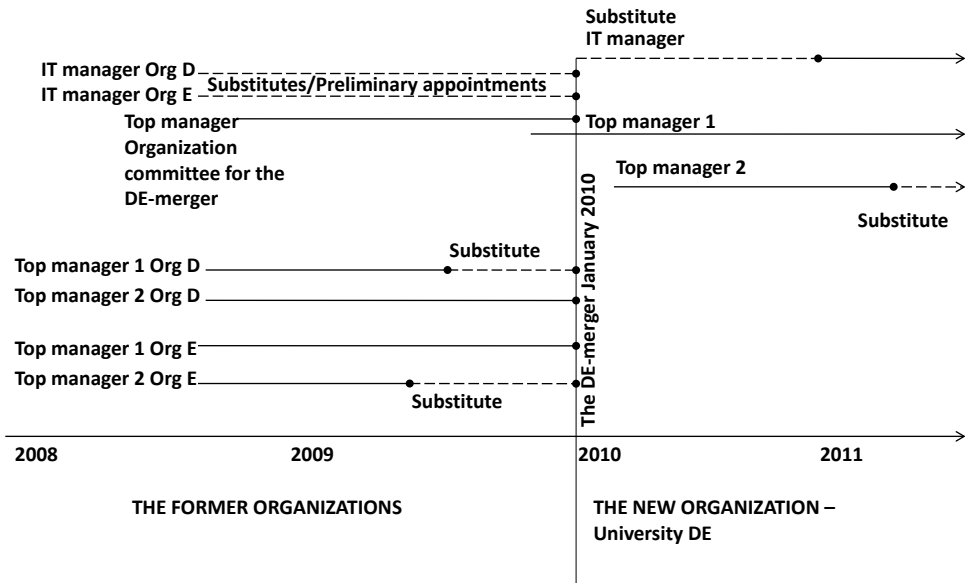


Figure 1: The timeline of the DE-merger.

The DE-merger carried an extensive workload that required an exceptional effort from the administrators, because the merger related assignments would mainly be carried out by the ordinary staff. Hence the administrators were important participants in the DE-merger.

1.3.4 Administrators in the DE-merger

In both Org D and Org E, the administrators' tasks embraced a variety of duties in the spheres of finance, personnel administration and production planning. The latter include several student related tasks as well as resource planning/management, public relations and marketing. Those tasks should be handled at both locations before and during the DE-merger, and after it was carried out by the University DE. The administrators were expected to collaborate with colleagues from both

campuses, which would require travelling, as well as establishing new ways of co-operating online.

All organizations are highly dependent on their administrators who form the backbone of the organization, because their performance is fundamental for the organization's success. Reliable and effective IS are also critical for maintaining a functional and effective organization (Andersen 1994; Langefors 1995; O'Brien & Marakas 2009) and organizations depend on their systems' support capabilities, not least for assuring that the right person gets the right information and support at the right time (SIG Security 1997). This makes the administrators highly dependent on the organizations' IS for the ability to carry out their duties properly. Hence it is important that administrators learn to operate and manage their IS (Hoffer et al. 2002; Mathieson 1991). In order to maintain an organization that performs as intended, both during and after a merger, it is important to make sure that the IS are handled as intended in a PMI. Hence the administrators in the DE-merger were expected to participate in the change processes concerning their IS and routines. The administrators are skilled in monitoring the IS, they understand the routines thoroughly, and they carried out their duties diligently.

The objectives of public sector administrative processes sometimes differ from those in the private sector. In public organizations the foremost objective is not to make more money for the owner (or those risking their money). Nevertheless, the focus is still on keeping costs down since resources are limited (Simon, 1971). The tasks that the public organizations handle are often mandatory and regulated by law or regulations and therefore they need to be performed as effectively as possible. Most of the duties that the administrators in the DE-merger were assigned to handle were controlled and regulated by higher authorities. They needed be dealt with in the right way, which does not imply that they could not be handled in different ways and with more or less flexibility and efficiency.

Katz (1974) stated that the effective administrator has three basic skills: i) technical, ii) human, and iii) conceptual. Conceptual skill was seen as the most familiar and concrete, and also the skill that would be most required because of the need for specialization. Hence it was indispensable to efficient operations. As regards the DE-merger's administrators they were likely to need all three skills that Katz (1974) pointed out as fundamental to being effective. Technical skills were required in order to master (and understand) the organization's IS and to

participate in the reengineering of the new organization's routines/processes. The processes applied in Org D and Org E needed to be scrutinized in order to differentiate between the essential and central processes and those that needed to be further developed or even removed. Totally new procedures could be necessary because of merger related issues, and different external factors that could emerge due to the merger. Human skills would be needed for the ability to co-operate with their "counterparts" (hopefully positively perceived), and for applying the concept of knowledge sharing. Conceptual skills would most likely be needed in order to cope with the organizational changes due to the merger and the PMI. Conceptual skills would also be important for the ability to participate in the reengineering process whilst understanding the *whole* – not only the technical and the human issues, but the wider perspective of the merger's consequences. Such an understanding of the wider perspective would be a basis for acting in a proactive manner for solving merger related problems and for being prepared for the potential challenges of post-merger integration. Administrators who have these three basic skills are likely to be important participants in a merger (Katz 1974).

Sometimes the concept *administrator* relates to an executive assignment, to someone in a leading position in an organization. However, in this thesis and its related research papers, a more general meaning of the word is applied, and administrators are administrative staff. Some of them could be executives or managers but the majority was not. The administrators' opinions were followed throughout the longitudinal case study much because of their importance for a smoothly working organization, because of their dependency on efficient IS, and because of their knowledge about the IS and routines that were likely to be changed during the merger.

1.4 Research objectives and research questions

Post-merger integrations are known to frequently fail (e.g. Alaranta 2008), making it particularly interesting to gain a deeper understanding of what could be done to increase the success rate of PMI. The literature about post-merger integration of IS is scarce, something that several authors in the field of post-merger integration have noticed (e.g. Alaranta 2008). In the literature, longitudinal in-depth case-studies of mergers are proposed for future studies (e.g. Cartwright & Cooper 1990; Meglio & Risberg 2010; Olie 1994; Wijnhoven et al. 2006). There are examples of

such studies available, even if they are proportionally few. Some examples: Empson (2000a, 2000b), who carried out longitudinal case-studies, and Mehta and Hirschheim (2007), who followed mergers from the pre-phases of the merger to post-merger integration, three to four years after announcement of the merger. Choi and Brommels (2009) propose longitudinal merger studies that would link pre-merger decision-making to post-merger integration. PMIs in the public sector are particularly seldom studied (Bringselius 2010a, 2010b; Tarplett 2009).

- **Research objective 1:** To carry out a longitudinal case-study of a merger in the public sector; from the pre-merger phases to the PMI.

The use of IS for strategic purposes is important not least since IS nowadays also are means for competition and creation of strategic advantage (e.g. Galliers 2011; Galliers 2009; O'Brien & Marakas 2009). In a merger it is likely that the organizations' IS need to be changed, which puts light on how IS is managed.

- **Research objective 2:** To study strategic management of IS in the public sector merger between OrgD and Org E.

The administrators' efforts are important for an organization's performance and effectiveness; a fact that is making the administrators dependent on reliable and effective IS (e.g. Andersen 1994; Langefors 1995; O'Brien & Marakas 2009).

- **Research objective 3:** To study the administrators' opinions about IS and routines before and during the DE-merger and the PMI.

Since the administrators play an important role in the running of an organization it is important to understand what they consider to be essential and high priority performance criteria for their work (i.e. effectiveness and contribution of value). The feeling of being useful and effective at work is stated to be fundamental for employees' job satisfaction and therefore these matters are interesting to consider during the reengineering of the administrative processes (e.g. Bashein & Markus 1994; Xun 2009). The importance of employee participation and clear information about the current situation are other issues that are often emphasized in the change management literature (e.g. Bashein & Markus 1994; Ford & Ford 2009; Hallier 2000; Napier et al. 1989; Shivastava

2007). Furthermore, the personnel's opportunities, willingness and ability to share their (often tacit) knowledge in a merger are likely to influence the outcome and success of the merger and PMI (e.g. Alaranta & Martela 2010; Yoo et al. 2007).

- **Research objective 4:** To find out if administrator participation in the DE-merger can facilitate the PMI.

Prior merger cases (cf. sections 1.2.4, 1.2.5) have shown that the managers are important for mergers and PMIs.

- **Research objective 5:** To find out how management influences the public sector merger between Org D and Org E.

It is a widespread opinion that human (soft) factors are neglected in PMIs (e.g. Epstein 2004), but the opposite view also occurs, i.e. that the hard (technical) side of change management is sometimes downplayed or ignored (e.g. Sirkin et al 2005). To consider both hard and soft factors in post-merger integrations is recommended in the PMI literature (e.g. Alaranta 2008; Alaranta & Viljanen 2004; Bashein & Markus 1994; Harmon 2007, Vakola & Rezgui 2000; Xun 2009).

- **Research objective 6:** To find and describe important factors, both hard and soft, which influence PMI in the public sector merger between Org D and Org E.

The research questions below are formulated with a standpoint in the research objectives and aim at finding key-issues for facilitating mergers and post-merger integrations.

The research project was guided by the search for answers to the following research questions (RQs):

- **RQ 1:** Should strategic management of information systems be a decisive factor in a public sector merger?
- **RQ 2:** How can administrator participation facilitate post-merger integration?
- **RQ 3:** How can management facilitate a public sector merger?
- **RQ 4:** What factors of importance influence post-merger integration in a public sector merger?

Finding answers to these research questions has also influenced both the structure of the research project and of the thesis.

1.5 Overview of the research project

This research project was started with the intention of gaining a deeper understanding of how mergers and PMI's could be facilitated. As the research questions show the PMI of IS and humans were of particular interest. A merger between two universities, Org D and Org E, was about to start, and gave an opportunity for the research project to follow the DE-merger with internal access to the merger. Research objective 1 was to carry out a longitudinal case study of a merger in public sector, which could be done by following the DE-merger. The research objectives 2 – 6 were also considered achievable by following the DE-merger. Thus, the administrators seemed to be the perfect group of employees to study; mainly because of an expectation that they had high competence in IS and also a dependency on their IS in order to carry out their duties. To record the administrators' opinions and expectations it was necessary to ask them while the merger proceeded. Hence the majority of data was collected by surveys and interviews with the administrators. Internal and official documents were important source for facts. The document reading was furthermore a way of triangulating the findings throughout the case-study (e.g. Yin 2003, 2007). Information about the merger processes was available in various forms, e.g. websites, newsletters, reports, discussion forums, e-mails and face-to-face meetings. Internal documents made it possible to follow the processes for the appointment of new managers, discussions about the new university's IS, and they were also helpful in pointing out subjects that were of special interest to the administrators. Those subjects were followed up in the studies. The administrators' opinions and expectations of their information systems (IS), their job situation and the merger in general were collected. The studies were carried out before, during and after the merger was realized in January 2010.

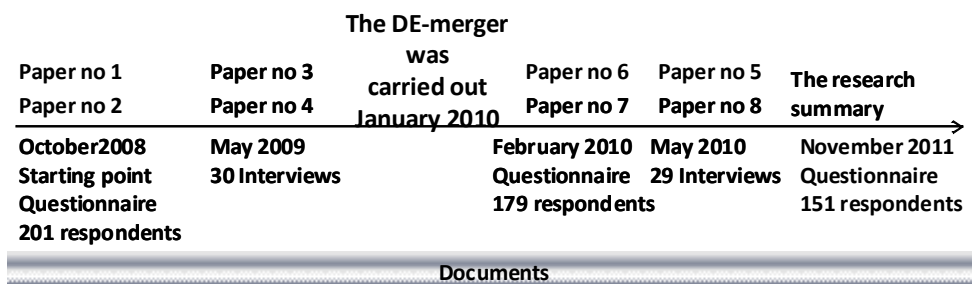


Figure 2: The timeline for the longitudinal case-study and the empirical studies' connection to the research papers.

1.5.1 The first study

An explorative survey was carried out in the autumn 2008, before the merger process actually involved the administrators on a more practical level. However decisions were taken about the merger's implementation and there had been information available about the ongoing process for some time.

Research paper no. 1 was written as a contribution to *the IRIS32 conference in Norway, August 2009* and discusses the role of IS in a public sector merger (Lundqvist 2009). Paper no. 2 was written as a *research report (no. 1/2010), IAMSR, Åbo Akademi University*, and provides a more detailed specification of the findings from the first study (Lundqvist 2010a). Those findings needed to be followed up by interviews and document reading in order to verify them further.

1.5.2 The second study

The second study was carried out by interviews and the questions built on the findings from the first explorative study and the documents available. The findings were presented partly in a contribution to *the IRIS33 conference in Denmark in 2010* (paper no. 3, Lundqvist 2010b), partly in *research report no. 2/2010, IAMSR, Åbo Akademi University* (paper no. 4, Lundqvist 2010c).

1.5.3 The third study

The third study was carried out about two months after the new organization was established. The reason for realizing a study after such a short time was to get an on-the-spot account of the administrators

‘opinions at a time when it was almost inevitable that their emotional reactions to the DE-merger would influence the findings. This was considered to be an important phase of the DE-merger seen from a longitudinal perspective.

Two research papers were written about the findings; paper no. 6 was written as a conference contribution to *IRIS34, Finland in 2011* (Lundqvist 2011b) and was also published in: *IRIS – Selected Papers of the Information Systems Research Seminar in Scandinavia* (nr 2, 2011). The findings point out that advice on how to hinder resistance to change should be followed.

In autumn 2012 paper no. 7 was accepted to the *Electronic Journal of Knowledge Management* (Lundqvist 2011c). Paper no. 7 highlights the importance of acceptance of technology and of promoting knowledge sharing during mergers and PMIs.

The findings needed to be followed up with interviews after a further period of time in view of the fact that the third study took place so soon after the merger. Document reading continued simultaneously with the case-studies.

1.5.4 The fourth study

The fourth study was yet another follow-up with interviews, which were carried out in May 2010, nearly half a year after the DE-merger. The findings from the survey carried out shortly after the merger gave input to the interviews together with documents about the PMI processes, e.g. about how the appointment of the new managers was realized.

Two research papers were written – both published in a journal that is mainly concerned with management issues: *Problems of Management in the 21st Century, vol. 1 and vol. 3* (papers no. 5 and no. 8, Lundqvist 2011a, 2012).

The findings that indicated dissatisfaction among administrators concerning the new leadership style and the loss of trust for management should be further investigated. However, this was not possible until the PMI-processes in University DE had become everyday practice and the administrators were less preoccupied by changes due to the merger. In the meantime further documents were read and the PMI was followed from inside the organization.

1.5.5 The fifth study

The fifth study was carried out in November 2011, nearly two years after University DE was established. Since the third survey had been carried out so close to the date of the DE-merger, and the fourth study was carried out about five months after the merger, here was a need for further investigation. A survey was regarded as most suitable for the follow-up, because it hopefully would need less time from the respondents than interviews, and the administrators would probably be very involved in PMI-related issues at that time. Furthermore, both internal and official documents were read and discussions in various channels were followed, partly for reaching a deeper understanding of the merger context and the administrators' work situation and partly for triangulation of the findings. The findings are presented in this thesis (section 4.5 and chapter 5). Suggestions for future studies are given in chapter 6.

1.6 Overview of key themes of the thesis and research papers

The key themes of the thesis, which were realized during the longitudinal case-study, are listed without any ranking of importance for the study, the merger or the PMI processes:

- Strategic management of IS (e.g. sections 2.1, 2.2, 5.2)
- Post-merger integration of humans and IS (e.g. sections 2.2, 2.3, 5.1, 5.2, 5.7)
- Administrator participation in reengineering for PMI (e.g. subsections 2.2.2, 2.3.3, 5.4.5; section 5.7)
- Knowledge sharing between administrators in a public sector merger (e.g. subsection 2.3.4, 5.4.4; section 5.7)
- Management in organizational change (e.g. subsections 2.1.6, 2.1.7, 2.1.9, 2.3.2; sections 5.5, 5.6, 5.7)

The theories about IS (chapter 2.1 – fundamental IS-issues) should be seen as a foundation for all the key themes of the thesis.

1.6.1 Research paper 1

[Addresses RQ2, RQ3, RQ4]

Presented at the *IRIS32 conference* in Norway, August 2009 (peer-reviewed).

The first paper reports on the explorative survey that was the starting point of the longitudinal case-study. Because a merger in the public sector can severely be disruptive for the administrators, their opinions were interesting and important to follow throughout the merger and PMI. In a merger the organizations' IS are of special interest, because of their importance for the employee's performance (e.g. Andersen 1994; Langefors 1995; O'Brien & Marakas 2009).

The study was mainly accomplished in order to investigate the administrators' opinions about their information systems before a merger, but also in order to find out their opinions regarding their ability to influence work-related changes due to the merger. Other purposes were to record the administrators' opinions about the approaching merger, of their IS-skills, and of training opportunities because of merger related changes.

Important findings were: i) a confirmation of the administrators' good knowledge of their IS, ii) the administrators' high level of confidence in their IS, iii) a satisfaction with the communication process, iv) the administrators' conviction about their ability to learn new IS, and v) their positive expectations of the merger in general.

The findings were mainly useful as an explorative starting point for the longitudinal case-study. Additionally they pointed to the importance of good communication in a merger in order to prevent resistance to change (Lundqvist 2009).

1.6.2 Research paper 2

[Addresses RQ1, RQ2, RQ4]

Published in *Research Report no. 1/2010, IAMSR, Åbo Akademi University*.

Paper 2 also reports on the first study, and provides a more detailed specification of the findings from the first study. The administrators' performance is a vital factor for the effectiveness of an organization (e.g. Andersen 1994; Hoffer et al. 2002; Langefors 1995; Mathieson 1991; O'Brien & Marakas 2009; SIG Security 1997; Willoch 1994). The IS are bound to undergo changes in a merger and that is why it is vital to investigate the administrators' opinions about their IS in the process.

Key findings presented in paper 2: i) a majority were satisfied with their IS, ii) most of the IS were found to be easy to learn, iii) most IS were found to facilitate the administrators' work, iv) a confirmation of the dependency on efficient IS in order to work effectively, and v) a

conviction that the administrators' work contributed value to their organizations.

Important implications of the findings are i) an understanding of the importance of efficient IS for administrators' performance, and ii) therefore a need for organizations to realize the importance of a carefully planned IS implementation in a change process, and last but not least, iii) the need for organizations to invest in IS (Lundqvist 2010a).

1.6.3 Research paper 3

[Addresses RQ2, RQ3, RQ4]

Presented at the *IRIS33 conference* in Denmark, August 2010 (peer-reviewed).

The third paper reports on findings from a study that investigated the administrators' opinions about the merger information, their attitudes towards IS, and additionally about whether their competences were utilized in the merger or not. In organizational change easily accessible, reliable information and the opportunity for the personnel to participate are often mentioned as effective tools against rumours and resistance to change (e.g. Empson 2000a, 2000b; Spector 1978; Strebel 1996; Washington & Hacker 2005; Zmud and Cox 1979).

Key findings were: i) the administrators received plenty information but still a third of them lacked the individual information they considered most crucial, ii) there was a lack of information about what would happen to the IS after the merger, iii) a majority found their present IS to be supportive, and iv) their competences as utilized.

The implications of the key findings are: i) an abundance of information is important during a merger, and ii) the employees' competences should be used as much as possible (Lundqvist 2010b).

1.6.4 Research paper 4

[Addresses RQ1, RQ3, RQ4]

Published in *Research Report no. 2/2010, IAMSR, Åbo Akademi University*.

Administrators rely on their IS to perform, and they need training to utilize them properly. A merger brings matters to a head since it usually affects the organizations' IS and changes ingrained routines. This can cause damage to the organizations' performance if not handled properly. When an organization is changing it also provides an opportunity to examine reengineering options. Hence training in new IS and routines

were interesting – as were the administrators’ opinions about reengineering (if they were willing to change the way they did things), (e.g. Hammer 1990, 2003; Hammer & Champy 1995, 2003; Hoffer et al. 2002; Mathieson 1991; Sveiby 1996; Venkatesh et al. 2002; Willoch 1994; Zmud & Cox 1979).

Important findings were: i) the administrators were explicitly open-minded to the reengineering of their tasks, even though there was ii) a lack of information about the IS after the merger, and iii) a lack of information about the training.

The main implications of the findings are i) an understanding of the importance of managers dealing with questions about IS and system training as soon as possible when an organizational change is imminent, and ii) to take the opportunity to reengineer the administrative processes (Lundqvist 2010c).

1.6.5 Research paper 5

[Addresses RQ2, RQ3, RQ4]

Published in *Problems of Management in the 21th Century* (peer-reviewed).

This paper reports on the fourth study (the order could be confusing but this is how the data was analyzed and written). In order to understand more about how to prevent post-merger implementation from failing, it is important to understand what issues could be helpful for keeping administrators positive about the merger, even after implementation (e.g. Alaranta & Martela 2010; Blake & Mouton 1984; Epstein 2004; Marks & Cutcliffe 1988). The aim and focus of this article was to point out issues that management need to know in order to maintain employee enthusiasm also after the new organization is established.

The main findings that were reported: i) a disappointment that management did not exploit the opportunities for further organizational development, ii) the administrators experienced a more complex work situation, iii) lower productivity, and iv) less involvement after the merger, furthermore v) they found it harder to tell whether they created value or not.

The most important result is that the findings add to the knowledge on facilitation of PMI (Lundqvist 2011a).

1.6.6 Research paper 6

[Addresses RQ2, RQ3, RQ4]

Presented at the *IRIS34 conference* in Finland, August 2011 (peer-reviewed) and published in *IRIS – Selected Papers of the Information Systems Research Seminar in Scandinavia*.

There are many studies of organizational changes and mergers, focusing on expected resistance to change and offering advice on how to prevent it (e.g. Kotter & Schlesinger 2008). The topic is important mainly since post-merger integrations (PMI) are known to fail more than they succeed (e.g. Blake & Mouton 1984; Epstein 2004; Marks & Cutcliffe 1988). When IS are subject to changes in a merger the employees, who are discontented with the new situation, could blame the IS instead of searching for the underlying reason (e.g. Kotter & Schlesinger *ibid.*). Hence, to acknowledge the human factor is critical, i.e. how people are thinking and acting.

The key findings show the importance of embracing administrator openness to change. It is also shown that the means necessary for adopting new IS should be provided by the management. The administrators' contribution to new routines should also be supported from the managers. The resistance to change that is often referred to in the literature can be countered if a merger is handled well.

The main findings confirm the importance of applying various types of advice on how to prevent resistance to change, which includes embracing openness to change, the necessity to provide means for adapting to new systems, and for contributing to new routines (Lundqvist 2011b).

1.6.7 Research paper 7

[Addresses RQ2, RQ3, RQ4]

Accepted to *the Electronic Journal of Knowledge Management*, 2012 (peer-reviewed).

The key findings of this paper show the necessity to carry out careful knowledge management during mergers since they could easily hinder knowledge sharing (e.g. Alaranta & Martela 2010; Epstein 2004; Hislop 2005; Ruggles 1998; Sveiby & Simons 2002; Szulanski 1996).

Major findings were: i) the administrators found their knowledge to be used, ii) considered that they worked effectively, and iii) found that they contributed value to their organization, furthermore iv) the uncertainties about training did not worry them.

Important findings are an understanding of how important it is i) to acknowledge and to make use of the personnel's knowledge (e.g. to involve them in a merger process, ii) to provide training, iii) to activate knowledge sharing activities, and iv) to communicate continuously (Lundqvist 2011c).

1.6.8 Research paper 8

[Addresses RQ1, RQ3, RQ4]

Published in *Problems of Management in the 21th Century* (peer-reviewed).

According to the Institute of Government (2010) the majority of merger failures occur during the PMI phases. Hence, there is a need for enhanced understanding of mergers and PMI, especially for managers (e.g. Alaranta 2008; Caudron 1996; Cooper & Markus 1995; Ford & Ford 2009; Marks & Mirvis 1992; Olie 1994; Podsakoff et al.1996; Sehoole 2005; Tetenbaum 1999).

Research has been carried out in the field of mergers during recent decades but still there still seems to be important insights missing, which could increase the success rate. That is why longitudinal in-depth case studies are recommended (e.g. Meglio & Risberg 2010; Wijnhoven et al. 2006).

The most important findings were: i) a loss of trust in management, ii) that was appointed very late in the PMI, and iii) that applied a more authoritative leadership style, iv) changed, less appreciated, communication strategies, v) which started the rumour mill, and vi) postponed decisions about IS-related issues.

The implication for practice is that the managers should be appointed in good time before or during a merger to get a realistic opportunity to influence the merger processes. The implication for research is that a successful PMI is more likely if the new management/new managers are available throughout the merger processes, and could take an active part in decision-making and trust-building (Lundqvist 2012).

1.6.9 The structure of the thesis

The rest of the thesis is structured as follows. Chapter 2 starts with a brief presentation of fundamental IS-issues, presents the theoretical framework for the thesis's five key concepts and preliminary answers to the research questions. Chapter 3 handles methods and methodology issues, describes the data collection procedures, and the analysis. Chapter 4 presents main

findings from the empirical studies and partial answers to the research questions. In chapter 5 there is a discussion and synthesis drawing on the findings; limitations with a single case-study are dealt with. Chapter 6 gives answers to the research questions, presents lessons learned, concluding remarks and implications of the findings. Finally, proposals for future research are given in chapter 7. Part II is the collection of original publications.

2. Theory: Organizational change – challenges and opportunities

The chapter starts with a summary of fundamental IS-issues followed by a presentation of the remaining key themes of the thesis. Surveys have been carried out from the existing literature and contributions from some theoretical studies are summarized.

2.1 Fundamental IS-issues

Before discussing IS in relation to the thesis research questions and findings there are some basic issues about IS that will be presented, as a foundation for further reflections about IS in a public sector merger. The main objective of viewing IS from this holistic perspective is to emphasize the comprehensive view that is worth applying in any discussion concerning IS. Another reason is to present the author's pre-understanding and understanding of the IS field; the focus in this thesis. Research is seldom neutral and the researcher's perception of the problem area is reflected in the choice of research method (e.g. Gummesson 2000). Section 2.1 aims at setting the scene as regards fundamental IS-issues in this thesis. Hence this chapter is somewhat more comprehensive than the research questions actually call for.

2.1.1 Information systems (IS)

The classical definition of an IS is that it should be able to collect, process, store and distribute data/information. Another definition of IS is that they have three basic functions: input, processing and output and that an IS could also be defined as “a set of interrelated components, with a clearly defined boundary, working together to achieve a common set of

objectives by accepting inputs and producing outputs in an organized transformation process” (O’Brien & Marakas 2009, p. 24). There are two additional elements that would make the system concept even more useful: *feedback* and *control*. Feedback can be positive or negative and for example used for control functions; classic examples are James Watt’s speed controlling centrifugal regulator and a common thermostat. Control is about monitoring and evaluating feedback to see if the system is moving toward fulfilling its goals or not (Skyttner 2001). Other characteristics of IS are that they exist and function in an environment of other systems. An IS could for example be a *subsystem* of a larger system and if that is the case the larger system is the *environment* for the subsystem. Systems could share environment and be connected or linked to each other by the same interface. It could be an *open* IS that interacts with other systems and could be an *adaptive* system that has the ability to change itself in order to survive in a specific environment (O’Brien & Marakas 2009). A common problem connected to design of IS is to describe/consider the *boundaries* for the system. Every system acts like a subsystem in other system/-s. It is therefore problematic to decide what is regarded to be the *whole system* that should be designed. The boundary of the whole system is named the *outer boundary* in Langefors’s (1973) description. The *inner boundary* is the set of subsystems that are parts of the whole system, i.e. building blocks for the whole system and boundaries to other subsystems are called *intermediate boundaries* (ibid.).

People, hardware, software, data and networks that are interrelated are the five basic components of an IS and could be seen as the resources of the IS. The components have well-defined boundaries and work together in order to reach a common goal. This includes inputs of data resources being accepted, data being processed into information and transformed to outputs of information products to the system environment. Feedback and control are used to improve the IS effectiveness and are sometimes designed to change in order to be adaptive to environment needs and demands. The ability to store data is a basic component of an IS because data usually need to be retained for use later on (O’Brien & Marakas 2009).

2.1.2 Data vs. information

As mentioned above a classic criterion of an IS is the capacity to collect, process, store and distribute data. According to Langefors (1986, p. 137)

“data are intended as means for informing, thus, as knowledge representation”; basically information systems are providers of information and data systems are subsystems of information systems.

Langefors (ibid.) formulated the infological equation in order to show the relationship between data and information as a proof of data being signs used to provide knowledge, which is synonymous with information by Langefors’s definition. The infological equation:

“ $I=i(D,S,t)$, I = the information conveyed, i = the information process (or interpretation process), D = the data (or any perceived configuration), S = the preknowledge or frame reference of the information receiver t = the time required or available for the process. Because I is a piece of knowledge, it will become added to S so that after the process i we have $S + I$. For instance, if the subject would perceive the same data D a second time, he will obtain the information $I = i(D,S + I,t)$. Further $t = T(D,S)$ that is the time required, depends on the data to be interpreted as well as on the pre-knowledge of the receiver“ (Langefors 1986, p. 139).

According to Langefors (1986) the insight from the infological equation is that designing data to inform properly i) is problematic and difficult; ii) does not depend on the computer technology, and iii) the users’ participation is needed. The last point is valid because there is no method available for knowing the individual’s S , namely the information receiver’s pre-knowledge and frame of reference. Langefors (1973, 1995) proposes that the infological equation should be solved before the technical problems and that people (users) should participate in the system development processes. Langefors’s infological equation is referred to by Hirschheim and Klein (2011) as insightful even if it has been criticized as too mechanic. Also Bansler (1989) finds Langefors (1973) to be mechanistic and even Tayloristic. However, compared to Churchman (1968) Langefors (e.g. 1973, 1995) could be considered as more human oriented than Churchman, who represents an even more technical approach when it comes to dealing with the system’s partitioning.

There have been, and still are, contrasting views of data/information (however still with focus on the individual’s interpretation and

understanding of the data with a standpoint in individual knowledge) and IS (as represented by Simon 1979, 1993), which rely on the individuals' intuition and ability to make satisfactory decisions. The decisions could only be satisfactory from a rational point of view because of the bounded rationality of humans. No matter what data are provided by the IS in the future the IS would still be dependent on the people who develop them and thereby affected by the bounded rationality (e.g. Simon 1993). Galliers (2011) views IS as a socio-technical infrastructure, e.g. shown in the revised information systems strategizing framework (further worked out in subsection 2.1.8), that "... comprises human beings who can make sense of data provided by both formal and informal systems via the application of their situated knowledge. In doing so, they turn data into purposeful information." (Galliers, *ibid.* p. 330).

2.1.3 System partitioning – an example of system analysis

In systems analysis it is important to partition a system in subsystems/blocks from which the system could be constructed – especially because people generally tend to ignore things that they cannot actually see (Langefors 1973, 1995). The method for analyzing and designing systems needs to overcome human cognition limits, i.e. perception, conception, and reasoning (Langefors 1995).

Complex things can be more easily understood piecewise by humans. Hence a complex concept will gain from being analyzed as a system that is partitioned into subsystems. Hence designing a system requires subsystems to be identified and their external properties defined. Sometimes the system's external properties have to be inferred from internal properties – i.e. from subsystems and their interrelations. In order to partition a system it is necessary to have a rough understanding of the external properties of the system (that are impossible to fully grasp directly). Therefore the system needs to be partitioned into subsystems and those subsystems might need further partitioning into smaller subsystems. The smallest subsystem is often called an elementary system and is not further divided. The external properties of a system are roughly those that will fulfil the expectations of the system, i.e. they are built on the user needs.

Langefors (1973) suggests that "The only possibility of designing a system so that it will have specified properties is by combining a set of subsystems which have necessary properties and interconnecting them in such a way that the resulting system contains the specified properties"

(ibid, p. 72). There are no exact rules of how a system should be partitioned but Langefors (1973, p. 84) states that in a subsystem structure the number of subsystems should be “not more than 10 - and not less than 4”.

2.1.4 The system development life cycle

Basically, a system development process starts with an idea that is initiated from a need (underlying cause) that is considered to be solved by an information system. Despite the different versions available for the system development life cycle model there are some common features that are usually included in the model. Figure 3 shows a classic version inspired by Andersen (1994) and Hoffer et al. (2002). There are usually iterations between the different phases and sometimes phases can overlap each other to some extent depending on the actual IS development project and what model that is applied.

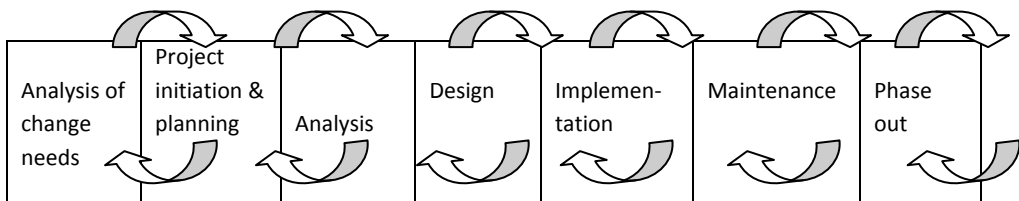


Figure 3: An example of a system development life cycle.

2.1.5 Models for system development – some examples

There are several models for systems development and the *waterfall model* is a traditional model that is occasionally used, despite several competing newer models. The waterfall model is rather simple and easy to grasp with its sequential stages (phases) where each stage is finished before the next starts. However, there are modified waterfall models that apply iterations between the stages (Hoffer et al. 2002). An example of a waterfall model is shown in figure 4.

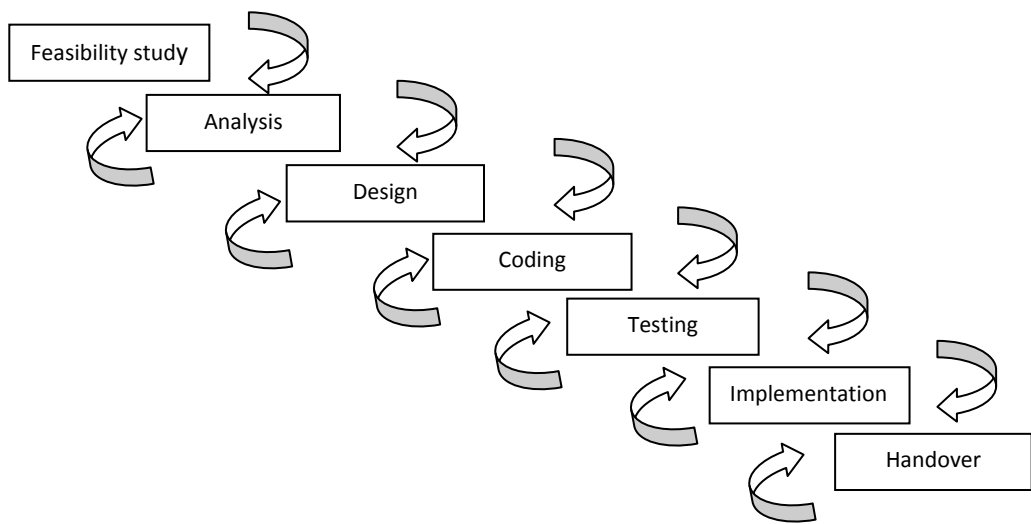


Figure 4: A waterfall model of system development – with inspiration from McManus and Wood-Harper (2003).

The benefit of the waterfall model is its structure, that allows the complexity and problems of an IS project to be divided into separate stages, which coincide with the planning and control phases. One problem with the model is that requirements that are formulated early in the process could be difficult to change later on – even if needed. Therefore the waterfall model seems to be more suitable for IS projects if the needs and requirements are well understood and the business processes rather mature. In those cases it would most likely be possible to predict the requirements early – even if it is inherent in IS projects that conditions change during the project (McManus & Wood-Harper 2003).

Other models are for example the *spiral model* that focuses on reducing and handling risks throughout the project and therefore preferably could be applied to other models since the approach is iterative and non-linear. Prototyping is a way to let coding take place earlier in the project, and also the testing can be carried out earlier. The purpose is to have a closer interaction with the customers/users throughout the project in order to better understand what the customer wants/needs while showing what is feasible to achieve. However, a problem with prototyping is to make the customer understand that a lot of work still remains when the prototype is ready.

Rapid Application Development (RAD) has outmanoeuvred the waterfall model when the project has to deliver quickly because of business needs. The model first produces visualization, then a prototype is demonstrated and feedback given rapidly (several iterations are applied in interaction with the customers) so the product with the “right” functionality could then be delivered as quickly as possible. RAD requires specific modelling tools and techniques that are collected in a resource toolbox; something that is inherent in RAD. RAD is for quick solutions in a changing environment.

Joint Applications Development (JAD) builds on that developers, managers and customers/users working closely together in something that is much like a RAD project. The JAD model puts a stronger emphasis on the interactions and co-operation between all actors involved in the project (Andersen 1994; McManus & Wood-Harper 2003).

Some *agile models* like for example *SCRUM* build on very fast and overlapping development phases and self-organizing project teams; the team members are those that best know how to solve the specific problems throughout the project. A SCRUM project proceeds with a series of iterations that are called sprints. The underlying ideas for the SCRUM system development model come from Takeuchi and Nonaka’s (1986) article that compared product development with rugby.

Soft Systems Methodology (in short SSM) highlights the need for acknowledging and considering the real world in which the system should operate (Checkland 2000; 2011). The benefit of applying SSM for an IS development project is the opportunity to learn more about the system and to get a deeper understanding of the system’s specific and complex problems. One way to gain understanding is the use of so called rich pictures; pictures usually say more than words. The conceptual models that emerge during the process should always be compared with the real world. Hence SSM is helpful for the work of designing and implementing information systems. Checkland (ibid.) states the need for prioritizing the real-world purposeful action that the IS concerned will support; instead of starting out by considering data, information and IT.

In the former organizations, Org D and Org E, more traditional system development models (like the waterfall model) had been used. There had not been much system development before 2008 when the merger intentions were announced and the preliminary work started. During the DE-merger the agile SCRUM model was used for the web-site for the new organization. After the merger, a mix of the waterfall model

and agile models has been proposed for University DE. It is considered too demanding for the human resources to apply a strict agile model.

2.1.6 IS and change

For IS it is a fundamental truth that the environment will change and the system would most likely be forced to adapt to the new situation (e.g. Langefors 1995). Otherwise the system could be outmanoeuvred by another system that could fulfil the requirements. As stated above, in the very first lines of this chapter, no IS should exist if it does not fill its purpose – that is to fulfil someone's, e.g. user's, business's, needs. What those needs are must be specified by the actual user and/or by business demands and requirements. A new IS could be developed because someone (business) has identified a need on the market where that could be offered. Nevertheless, it is costly to develop and/or purchase a new IS making it important that an existing IS is used as long as possible, as long as the user/business needs are met. Therefore further development of an existing IS is often a choice. Whether or not that is the best way of solving a problem depends on the specific situation and context so there is no clear answer to what would be the best way to meet a changing environment. However it is not only the organization/business that has to react to environmental changes/demands which would demand changes in the IS. Sometimes processes in a system change placing demands on business/users to change their behaviour (Langefors 1995).

Davenport (2000) argues that an organization, in order to be successful, must be prepared to continuously carry out changes in its business processes and strategy as well as its IS. For example after an Enterprise System (ES) is implemented and the configuration is finished many organizations think that the process is completed but Davenport (ibid.) emphasizes the need to continuously tune the configuration and to carry out changes in the system in case of mergers or other events that may call for adjustments or radical change. The system will also change as new versions of the software are released. This does not mean that every new version must be implemented if there is no business need for it – “In short, fitting your systems to your processes is a matter of business-driven continuous improvement” (ibid., p. 159).

The DE-merger meant that two organizations needed to agree on what IS should be used in the new organization. Org D and Org E had in some cases used the same IS and in other cases different ones. Even when they had applied the same IS the applications were implemented differently

and the configurations varied; as was the case with the financial system. The first issue was to decide what IS to use and the second in what way they should be implemented and integrated. According to both Langefors (1995) and Davenport (2000) it is crucial that the business needs should govern the choice and the use of the systems. Hence the technical management is important to judge the risks involved in the system integration (e.g. Epstein 2004, 2005; Mehta & Hirschheim 2007). Therefore, it is important to choose the most suitable IS for University DE regardless of which applications were used in the former Org D and Org E.

The strategy for choosing the IS for University DE followed the principle that the choice should be between (only) the systems that were already in use in either of the organizations. Other criteria were scalability (i.e. the IS must work just as well with a lot more users) and that the systems worked satisfactorily. The principles were explained by the fact that there were scarce resources (time, money, personnel) available for obtaining working IS-solutions. There were a lot of systems and applications in use in Org D and Org E, and considering the lack of a comprehensive IS-strategy, this was a complex situation to deal with.

It is important to balance the level of strategic planning, which according to Newkirk et al. (2003) risks being either too much or too little. Additionally, the lack of formalized IS-strategies made system maintenance more problematic, not least the long-term planning.

2.1.7 System maintenance

When an IS project is finished and the system handed over (cf. fig. 4) to the project sponsor's organization the system still has to be maintained throughout its lifecycle. System maintenance is not only about correcting problems but also includes the further development of the IS. According to Révay (1992) systems maintenance is responsible for 60 – 75 % of the systems costs during its lifecycle; which makes it crucial to acknowledge the maintenance processes as facilitators, and providers of enhanced IS value. Bergvall and Welander (1996) claim that an IS spends much more time in the maintenance phase than in the development phase. That is to say that the system maintenance requires more resources than the system development (ibid.). The continuous changes of IS that Davenport (2000) proposes are sometimes part of the maintenance processes.

A careful pre-merger planning is important for a successful IS alignment as mentioned above (subsection 2.1.6) and for a successful

PMI. The post-merger activities are also highly important for continuing the system's life cycle and the maintenance. Hence system maintenance should be activated immediately when a new organization is established, and that requires good and early planning. There are always some activities that need to be planned in advance even when an IS is newly implemented.

Again, it must be pointed out that the fundamental problem of the lack of IS-strategies in Org D and Org E combined with the lack of a mutual understanding of who the system owners were, severely complicated the situation. In particular the long-term planning involving issues such as system development and staff training were affected. The problem was (section 1.3) apparent especially during the late pre-merger phases, and hired consultants suggested that an IS maintenance model should be implemented as soon as possible. Even though the problem was identified as urgent in the autumn 2009 it took about two years until there was a proposal available for an IS-strategy. Twenty-six months after the DE-merger the IS-strategy was not yet decided, but the process of building an IS-strategy was in its final phase.

2.1.8 IS strategy

Galliers (2011) emphasizes the need for continuous learning and review in IS strategizing, which is an iterative process. Hence, he recommends the implementation of an *IS change management strategy* that leads to informed decisions and further development.

“... the process of strategizing is one of visioning, planning, taking action, and assessing outcomes, all with an eye to changing circumstance and imperatives, and the actions of individuals and groups outside of, or irrespective of, any formal strategy process” (ibid., p 337).

Galliers (2011, p. 338) presents a framework basically to serve as an “aide-memoire” and a learning tool and not as a prescriptive tool or the solution. The framework (that addresses IS as a socio-technical construct) contains the components:

- Exploitation strategy (deliberate and formal)
- Exploration strategy (emergent and informal)
- Change management and implementation strategy (incorporation ongoing learning and review)

- Knowledge creation and infrastructure sharing (dynamic, ongoing and iterative process).

The strategizing environment seen from the internal perspective is a question of balancing formal and informal – the deliberate with the emergent. The external environment includes socio-political and regulatory issues, which put emphasis on the contextual influence of the IS-strategizing process.

To work out the framework further (but still on a general level) the two contrasting perspectives, the *internal* (balancing the formal and informal) and the *external* (context and culture, such as trust issues) both need to be involved in the strategizing environment. These two perspectives create the strategizing environment for an organizational IS. Here also a *change management perspective* is needed and according to Galliers (2011) integration of IS after a merger has to include considerations about the IS alignment. Should it be complete or coexistent? A fundamental criterion for a successful IS-strategy is that its infrastructure facilitates the *knowledge creation* and *knowledge sharing* in the organization. For this to become a reality there is a need for *trust* between the participants in the knowledge sharing environment. The DE-merger aimed at rationalization and effectiveness, which opened up speculations about possible staff cuts. The administrators had to prepare for sharing knowledge with new colleagues who could possibly take over their jobs.

The *exploitation* and the *exploration strategies* raise the importance of balancing between the standardized/codified and controlled procedures and systems (e.g. routines, policies, enterprise systems, information services) that are connected to the exploitation strategy. The exploration strategy puts a stronger emphasis on learning in the context of communities of practice, cross-project learning and knowledge brokers. In the DE-merger the administrators participated in a lot of projects (some of them were IS-projects), which gave learning opportunities for the participants; some administrators took on the role of knowledge brokers. As mentioned above the framework shows the variables that would be helpful for IS-strategizing processes. According to Galliers (2011) the framework used "... as a sense-making device should continue with a view to improving organizational performance, exploiting organizational and technological capabilities, exploring new opportunities, with a view to continuous innovation" (ibid., p. 338-339).

After the DE-merger the IS-strategy group has worked with the formulation of an IS-strategy for the new organization in a process that is somewhat similar to the Galliers' framework.

Galliers (2009) suggests that IS strategizing has gone through four phases: isolated, reactive, prospective and proactive. The strategizing has shifted from ICT (information, communication and technology), away from ICT and back to ICT again; i.e. from being technology-driven to business-driven and back to technology-driven. Today's IS strategizing are coloured by each of these four phases:

- isolated (technology-driven, problem solving - efficiency)
- reactive (business-driven, problem solving – current effectiveness)
- prospective (business-driven, goal-seeking – future effectiveness)
- proactive (technology-driven, goal-seeing – competitiveness)

Galliers (2009) wants to recall the basic understanding of data, information and knowledge and outlines the differences between them (cf. Langefors 1973, 1986, 1995). An IS (e.g. knowledge management system, KMS) processes data; information is context dependent, and knowledge is tacit and resides in people. That is why IS need "... to include human beings and the act of interpretation for the term to be at all meaningful" (Galliers 2009, p. 24).

It was a fundamental problem in the DE-merger that there was no explicit and formalised IS strategy. Hence there was a rather urgent need, pointed out by the external consultants, to develop an IS-strategy for the new University DE; a strategy that should be well aligned with the visions, the goals and the needs of the new organization. In the literature (e.g. Alaranta 2008; Epstein 2005; Mehta & Hirschheim 2007) it is found that the IS issues should be part of the merger discussions and the merger planning from the early pre-merger phases. As mentioned (section 1.3) this was not the case in the DE-merger, but the need for an IS-strategy became obvious during the late pre-merger phase (in the autumn/winter 2009).

2.1.9 Management of IS vs. management information systems (MIS)

In short, the management of an organization's information systems is a question of making the most out of the organization's information, to be precise, the organization's information systems by properly executed

management processes. However, this is easier said than done and there are a lot of factors to acknowledge and follow up on in order to succeed. Sometimes there is confusion about the management of IS or management information system (MIS). The MIS, is an information system that monitors and analyzes other IS in order to handle organizational tasks effectively and efficiently. O'Brien and Marakas (2009) show that a MIS "Provide information in the form of pre-specified reports and displays to support business decision making" (ibid., p. 14). Examples of this are sales analysis, production performance, and cost trend reporting systems.

Management of information systems originate from the early days of information systems when organizations had to take care of their own IS without any specific help from IS-expertise. The organizations had to figure out how to best manage an IS that had probably involved a significant investment (Markus 2011). The professionalization of management and information management is one of the recent trends in the practice of information management. Other trends are the externalization of IT work and the transformation of in-house IT services (ibid.). Already in the 1960s the use of computers for executing organizational tasks motivated new management practices. The externalization of IT work – "the movement of IT professionals out of IT-using organizations and into organizations that specialize in the provision of IT services" (Markus, 2011, p. 5) has been facilitated by the professionalization of IS. The technical activities could be down-played and the strategic considerations more focused.

In the former organizations in the DE-merger there were some local IT-policies, but there were no agreed administrative procedures for IS ownership (together Org D and Org E used nearly one hundred systems). In the new University DE there is a central IS-department that handles some issues and furthermore there are IS-personnel employed in the various departments. Consequently those individuals are often organised under a manager who lacks explicit IS-competence. Together with the lack of IS-strategy and unclear system ownership it has been difficult to plan maintenance (e.g. further system development, replacement of applications), and user training activities. An organization's IS-strategy should be the basis for an effectively executed MIS.

2.1.10 Acceptance of technology, diffusion of innovations and IS success

Recent developments in IT/IS has been focused on devices for facilitating mobile IT (Sørensen 2011) and various e-phenomena, such as e-marketing, e-business and e-meeting tools (Turban et al. 2006). There is an abundance of wireless solutions and cloud computing options that enhance the usefulness/usability of for example smart phones, mobile applications, touch pads and smart-TVs. A smart-TV could easily be used for surfing if a TV-computer and a wireless keyboard is connected to it. Cloud computing implies the use of external disks for storage and program access, so the users would not be forced to invest in hardware or software. Cloud computing solutions contribute to lower costs for utilizing IS/IT solutions which could be a way to further spread the use of information systems and the technology that supports them. Hence new technological solutions continuously and rapidly develop the need for users/business to adopt new innovations, especially for those who want to be at the leading edge of technology.

The diffusion of innovations theory shows five crucial factors for technology adoption: relative advantage, compatibility, complexity, trialability and observability (Rogers 2003). Context-related factors such as location, user mobility, physical, and social context also influence the acceptance of technology, and the diffusion of innovations (Bouwman et al. 2012). Davidson (1991) shows that mergers could trigger innovations because a merger provides new means, such as another types of competence/knowledge or a new contextual situation, but also a need to survive (or at least learn to cope with the new situation due to cultural differences, loss of independence, and change).

The acceptance of technology has been extensively researched by, for example, various TAM (technology acceptance model) studies (e.g. Davis 1989), which build on TRA (Theory of Reasoned Action) such as research about how to predict human behaviour (Ajzen & Fishbein 1980). TRA is a model dealing with the relations between beliefs, attitudes, intentions, and behaviour. Ajzen and Fishbein (ibid.) argue that behaviour is rather easy to predict on the basis that people tend to consider the implications of their actions before they decide how to act. A person's intention is a function of two basic determinants: attitude toward the behaviour and subjective norm. TAM (Davis 1986) aimed at improving the understanding of the users' acceptance process in order to develop a theoretical foundation that could be used for testing new systems before

implementation or even before purchase of a system. The method could also be used in prototyping and for continuous evaluation and testing during system development. Davis (ibid.) proposed that adoption is a function of perceived usefulness and perceived ease of use. Davis found (1993) that perceived usefulness proved to be 50 % more influential than perceived ease of use when the actual usage should be determined. Park et al. (2008) carried out a study that confirmed Davis' (1986) findings and additionally showed that motivation to use a system influences the perceived ease of use and perceived usefulness and the intention to keep using a (new) system.

Objections to TAM have been raised because TAM presupposes the IS usage to be voluntary while Hodgson and Aiken (1998) argue that mandated systems use requires other measures. Anyhow, the TAM puts emphasis on the importance of acknowledging a system's functionality; Mahmood et al. (2001) show that IT-support is a top-priority when it comes to influencing IT use. Venkatesh et al. (2002) propose that it is crucial for user acceptance, and extended the TAM with User Acceptance Enablers (UAEs).

Hodgson and Aiken (1998) propose an extended TAM to explore the determinants of attitude toward new IS implementation and toward organizational change, which is facilitated by a new IS. Their study considers user acceptance attitudes to be more relevant than usage. At least when the IS change is mandated and not an individual, voluntary choice for the users.

In the DE-merger the administrators' system use is mandated and connected to their duties – both in the former organizations and in University DE. Hence the administrators could not choose whether they wanted to use an IS or not, making the TAM less interesting (Hodgson & Aiken 1998). However, there are other variables in both TAM (e.g. Davis 1986) and its forerunner TRA (Ajzen & Fishbein 1980) that make the models interesting. For example TRA and TAM emphasize the importance of predicting user behaviour and this is still important even if the use of IS is not voluntary.

Innovation could be triggered (Davidson 1991) in University DE because of the need to quickly adapt to changed IS and routines, and in order to cope with the new situation. The new organization must take over seamlessly from the former ones. IS-support is likely to be needed (and highly prioritized) in the new University DE.

DeLone and McLean (1992) have developed a descriptive model for IS success that is further developed with a focus on e-commerce (ibid. 2003). The model has points in common with the TAM (e.g. Davis 1986) as regards an interest in use and user satisfaction. Their first model (DeLone & McLean 1992) aimed at producing a manageable taxonomy of the great number of different dependent variables used to measure MIS success; or rather to reduce the large number of variables. Their model also aims at providing consensus on the various measures of IS success. DeLone and McLean (ibid.) also aim to measure IS impact on the performance of an organization. They (ibid.) argue that MIS success is a multidimensional construct, which makes it even more important to find a model that combines measures of different dimensions in an understandable way. The Langefors (e.g. 1973) system partitioning is a way of grasping the *whole* concept in stages because humans often have difficulty handling several (more than ten) elements at the same time. This could be compared with the problem of handling too many variables of IS success at the same time. Hence several individual dimensions of IS success are collected in the IS success model. The categorization of IS success measures resulted in the following six interrelated and interdependent categories:

- system quality
- information quality
- information use
- user satisfaction
- individual impact
- organizational impact.

These categories constitute the IS success model (DeLone & McLean 1992) that is shown in figure 5.

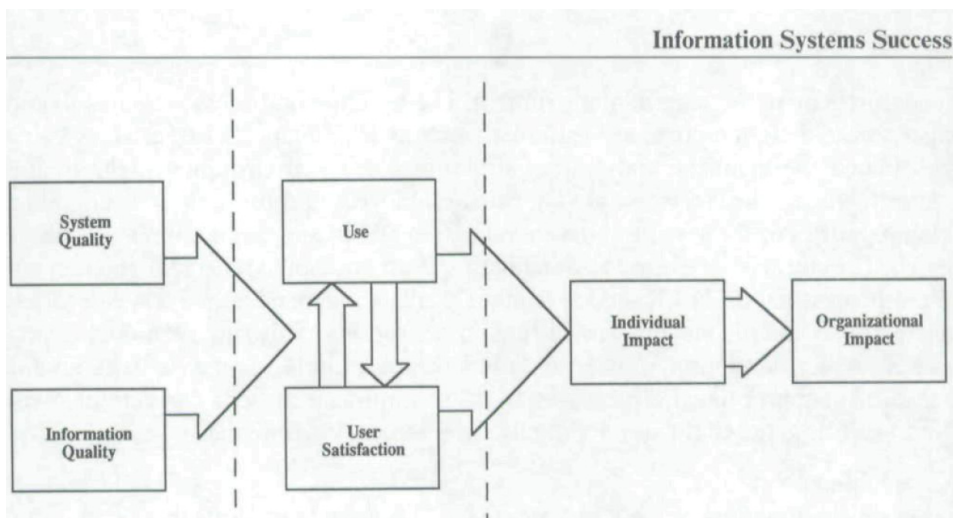


Figure 5: DeLone and McLean’s IS Success model (ibid. 1992, p. 87).

DeLone and McLean’s (2003) extended model emphasizes net benefits of e-commerce; they included service quality as a complement to information and system quality. The *use* is partitioned into *intention to use* and *use that is interrelated to user satisfaction*. Net benefits are influenced by the *user satisfaction*, *intention to use* and *use* (and behind those dimensions the quality aspects/dimensions exert influence).

The IS success model (cf. fig. 5) has been frequently referred to throughout the years since it was published in 1992. Despite this, many who used the model have missed its core; its multidimensionality and interdependency (DeLone & McLean 2003).

Halonen and Thomander (2008) applied DeLone and McLean’s (2003) extended model of IS success on knowledge transfer success; their research approach was qualitative and interpretative (cf. fig. 6). Halonen and Thomander (ibid.) use the model differently from the original model; in Halonen and Thomander’s (ibid.) extended model *system design* covers *system quality*, *information quality* and *service quality*. *Use* and *user satisfaction* are included in *system delivery* and *net benefits* (from DeLone and McLean’s extended model, 2003) are divided in *positive* and *negative aspects*.

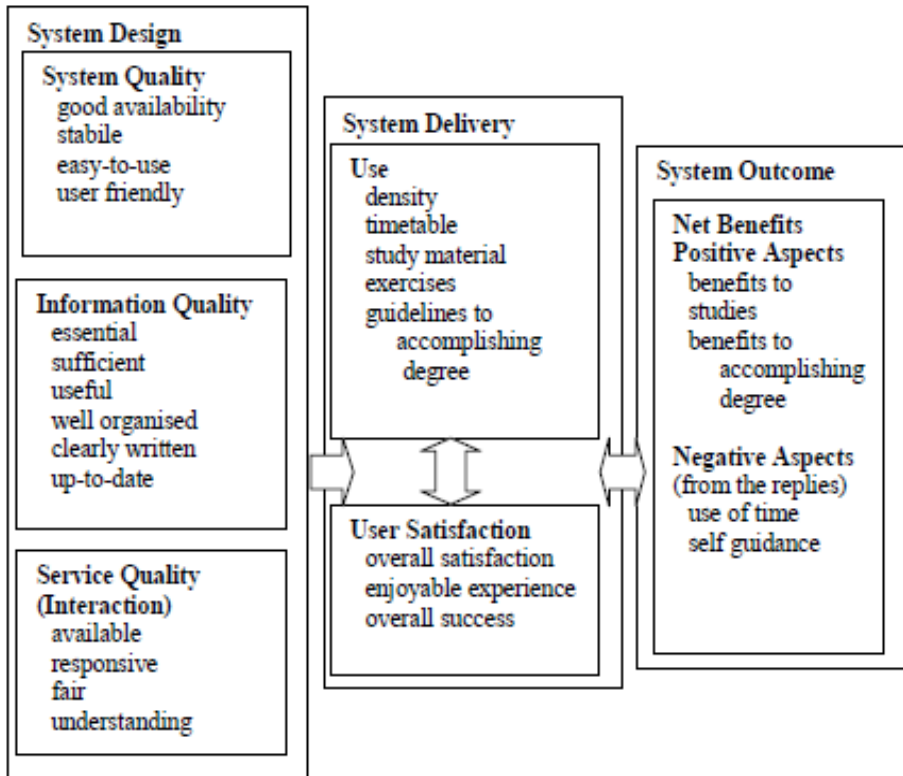


Figure 6: Modified evaluation model by Halonen and Thomander (2008, p. 7)

The modified IS success model was applied as a tool/means for evaluating how knowledge transfer success was experienced from the customers' point of view (i.e. the learners' perspectives in a private educational institute).

When the IS-strategy comes into play (which is work in progress about two years after the DE-merger) it probably would be easier to implement the IS success model (DeLone & McLean 1992, 2003) than it was in Org D and Org E. Another issue that is likely to influence the implementation of the IS success model is the IS governance. A governance model (pm³) that is often used in other public organizations was chosen (and partly implemented) with the purpose of bringing order to system ownership.

This is crucial for planning IS maintenance, which the system owner has to pay for. The system quality, information quality and the service quality (Halonen & Thomander 2008) depend on a system owner with a budget to pursue these fundamental issues and to guarantee that the IS

work properly. When those basic needs are taken care of it is more likely that system delivery and system outcome will be successful.

2.2 Post-merger integration of IS

It is common that post-merger integrations fail more than they succeed and the failure rate is as high as 50 - 80 % (Alaranta 2008; Alaranta & Martela 2010). The potential risk for failure of PMI projects is continuously posed in the literature as the main reason for investigating this field. Another common motive for research into PMI is because the literature on IS integration is perceived as proportionately scarce. IT integration is seen as a key to successful mergers (Apnovich 2002) but the problems are even more important to acknowledge. Apnovich (ibid.) finds that organizations are aware of the integration problems that could arise with employees and organizational units. A common problem is that IS and IT are not involved in the decision making process until it is too late to discuss potential problems, i.e. when the deal is almost done. IT should be involved early in the business discussions the IT integration should be planned (in detail) in the pre-merger phase. An IS-integration team should handle the integration process and experienced people should monitor the processes (Apnovich 2002).

Alaranta and Henningsson (2008) claim that there is no single best way of planning a PMI of IS and they stress the importance of adapting the strategies to the actual merger context - which is a managerial problem for IS-professionals. The time spent, the resources used, and how the IS integration fits actual business needs are measures of success for the IS integration planning.

McKiernan and Merali (1995) propose that the growing focus on human resource issues in mergers should not be carried out at the expense of thorough analysis and consideration of the merging units' IS. Sirkin et al. (2005) agree with the need for management to give more attention to the hard side of mergers. If the managers do not acknowledge the hard side the change programs risk breaking down before the human issues even come into play. The hard factors have three distinct characteristics – i) they could be measured directly or indirectly, ii) their importance is easy to communicate, and iii) the business factors could influence them quickly.

Empson (2000a) emphasizes the need for the technical staff to stay in the organization after a merger and to share their technical skills as well as their professional networks with their new colleagues. Shrivastava

(2007) points to the need of starting the integration before a merger is realized; this would focus on the integration questions already in the pre-merger phase. However, the major part of the integration has to be executed after the merger and will last for several years (Shrivastava 2007).

As Alaranta and Henningsson (2008) argue it is important to adapt the IS-strategies to the merger context – which was problematic in the DE-merger when there were no IS-strategies in the first place. The pre-merger planning of IS probably suffered from the lack of IS-strategies as well as from the lack of a governance model. The managers that should be responsible for the IS integration after the merger should participate early in the pre-merger phases and motivate the IT-staff (Empson 2000a; Shrivastava 2007).

2.2.1 Challenges of IS-integration after a merger

Alaranta's (2008) study of post-merger integration focused on the integration of IS. The research resulted in ten recommendations for post-merger integration of IS. Those recommendations highlight the importance of understanding the post-merger situation, the need for making active and informed choices of IS integration strategy and the people that should be involved as well as the necessity of obtaining top management support and sufficient resources for the post-merger processes. The communication with the end-users is crucial and the managers in charge should also be prepared to solve power/political struggles. Finally, the progress and success of the IS integration should be tracked. (Alaranta 2008) The recommendations point to the various problems that surround a post-merger integration of IS. There are other authors that have proposed what should be done in order to succeed with the post-merger integration and some examples are presented here.

Which IS infrastructure model to choose is a critical question according to Alaranta and Viljanen (2004). Should a status quo be applied, should there be a total consolidation of the systems, or is there a middle way? The answer could stir up anxiety among the IS personnel if a total consolidation is chosen. The reason is that such a solution could result in staff reductions. If separate systems were maintained it would ease this anxiety. However, partial integration, for example by using a middleware, would create other problems such as a need for data analysis that is likely to increase the workload for the IS staff.

Giacomazzi et al. (1997) studied IS integration after mergers and point out the need for IS decision makers to consider the integration in terms of management needs. Both internal and external factors must be investigated and both technical and human/organizational factors acknowledged. Other factors of interest are the level of standardisation of operations and differences between the companies involved. The differences in management needs refer to the type of business that is involved and the need to integrate databases. IS integration strategy is for example a choice between total integration, partial or no integration.

Wijnhoven et al. (2006) discuss how information, technology and organization should be integrated after a merger, and highlight the difficulties of interpreting a merger's objectives into IS integration strategies. The problems are often related to a lack of understanding from both sides (IS and organization) and different IS policies could be an aggravating circumstance. IS integration strategies are mainly politically determined which make socialisation an important factor for achieving the strategic objectives.

According to McKiernan and Merali (1995) an unsuccessful formulation of IS strategy in a merger could ruin the new organization's prospects of competitiveness and effectiveness as opportunities to develop sustainable IS infrastructures are missed. This could in turn cause IS professionals resign if they do not see any proof of future IS development. Furthermore, it could lead to problems in maintaining inefficient and redundant systems in the new organization.

Stylianou et al. (1996) found IS participation in merger planning to be critical for the PMI success. Merger planning must foresee both problems and opportunities to be successful. Data sharing and different programming languages in the merging organization could be causes for careful analysis during the pre-merger planning. Robbins and Stylianou (1999) propose that a well-performed merger and IS integration planning is necessary for a successful PMI. The support from top management, user participation and good communication are pointed out as critical factors. Furthermore IS standardization is seen as a positive factor (ibid.).

Shrivastava (2007) outlines different managerial motives behind a merger that complicate post-merger integration because every motive needs to be treated separately and requires different integration procedures. Three types of integration issues must be dealt with: procedural, physical and managerial/socio-cultural. The procedural integration involves IS and how the systems should be combined in the

new organization, requiring the homogenization and standardization of work procedures.

The importance of a successful formulation of IS-strategies in a merger is shown (Alaranta 2008; Alaranta & Viljanen 2004; Giacomazzi et al. 1997; McKiernan & Merali 1995; Wijnhoven et al.2006); as well as the need to involve IS in the merger management and PMI planning (Mehta & Hirschheim 2007; Robbins & Stylianou 1999; Shrivastava 2007; Stylianou et al. 1996).The lack of an IS-strategy and of governance model have been impediments for the post-merger implementation of an IS integration in the DE-merger.

2.2.2 Business Process Reengineering (BPR) for PMI

Successful PMI implies that the business processes (from the units involved in the merger) are investigated and presumably need to be changed and redesigned in order to fulfil the new organization's business needs. BPR highlights the importance of investigating and understanding an organization's business processes and recommends redesign of those processes if they are not found to be sufficiently effective (e.g. Hammer 2003). Adam Smith (1723 – 1790) introduced the process concept using a pin factory as example and argued that division of labour would increase productivity. Henry Ford (1863 – 1947) applied and further developed Smith's ideas for the automobile production and built assembly lines in the automobile factories. The objectives of BPR are to achieve effectiveness and to fulfil customer needs by using technology to enhance the business processes. Technology is often mentioned as a prerequisite for successful BPR initiatives (Hammer 2003; Hammer & Champy 2003; Willoch 1994). Ascari et al. (1995) emphasize the need for designing IS in a way that supports business and the organizational changes that are in progress. Marjanovic (2000) finds that IT can help reduce resistance to change thanks to the fact that groupware technology allows people to collaborate smoothly. However, Bashein and Markus (1994) argue that a BPR-project could be too technically focused in relation to the actual reengineering which could result in animosity toward IS.

Hammer (2003) emphasizes the importance of applying a customer view to all business processes and to achieve business success by meeting customer needs and desires. He (ibid.) states that those who want business success need to resolve even the smallest details rigorously while integrating processes across corporate boundaries. Hammer (ibid.)

backs down from an earlier statement that put radical change as a core priority of BPR and now focuses on business processes as the essence for business reengineering.

According to Hughes (2009) there are two problems with BPR: i) it can serve as a “self-fulfilling prophecy” for practice because “... if managers believed in radical change enough they would achieve radical change”, and ii) “...the ambiguities of reengineering may have helped to maintain its longevity as an organizational change initiative”.

Business Process Management (BPM) is often treated as synonymous to BPR; the core interest of BPM is management of the business processes and their need for continuous quality improvement. Ko et al. (2009, p. 746) describe BPM as “... a cross-discipline ‘theory in practice’ subject with many views, definitions and perspectives” that is “more practical, iterative and incremental in fine-tuning business processes”. Some authors in the field of BPM (like with the BPR) focus mostly on the technical facilities; the information systems that help to track how the processes are analyzed, improved and automated. Other authors (e.g. Drucker 2008; Senge 1995) focus more on the so called human side of BPM (cf. subsection 2.3.3).

Trkman (2010) expresses the need for an underlying BPM theoretical framework that could support organizations that face redesign. Trkman (ibid.) warns against using BPM as a comprehensive solution since it cannot by itself find the optimal matching between strategic programs and business. In the literature there are a lot of statements about how BPM using IS can be a fruitful approach for continuous improvement of business processes by understanding, analyzing, redesigning, implementing and maintaining them. Kovacic (2004) proposes the redesign of business processes and implementation of application programmes in order to keep pace with the challenges of today’s ever-changing business environment. Those rapid changes do not only affect the business but also the applications that support it. That is why information systems need constant renovation and adaptation. Bashein and Markus (1994) warn against reengineering if the management have a cost-cutting focus for the BPR because in those cases the management is often unwilling to support investments, e.g. in new technology that could be critical for success.

Willcocks et al. (1997) carried out a longitudinal case-study in public administration. The findings show that radical reengineering (cf. Hammer & Champy’s early work from 1995) was not that easy to apply and

suffered from many limitations. It was difficult to start anew in public settings where traditions influence and inhibit the reengineering initiatives. Willcocks et al. (ibid.) found that managers had to consider the political, cultural and human resource issues in order to succeed. Furthermore, they realized that it was more problematic to manage a fruitful BPR in the public sector (Willcocks et al. 1997).

Bashein and Markus (1994) found that IS and human resources departments should be involved in the early phases of the reengineering because it could reduce animosity between management and the workers. Xun (2009) advocates the necessity of adroit BPR for enterprises in order to be successful. The main suggestions are that senior managers should directly lead the reengineering processes and the users of the latest processes should be closely participating as they are fully aware of how the processes work. Therefore it is vital that staff views are recognized and taken seriously. Furthermore, co-operation groups should be formed in advance (before the implementation) and the members should ensure further redesign and continuous development of the enterprises processes (Bashein & Markus 1994; Xun 2009).

In the DE-merger it was almost inevitable that a reengineering of the organizational processes would be needed. Org D and Org E had in many cases applied different routines and/or IS for solving the same type of assignments/duties and this would require studies of which IS and routines should be adopted in University DE. Hence it would be necessary to carefully investigate which processes were still needed, which processes needed further development, and which processes should be replaced.

As Bashein and Markus (1994) show it is important that a BPR-sponsor (in this case managers with the authority to make decisions about IS and routines in the merger and the PMI phases) is able to participate continuously in the reengineering processes throughout the change process. Also Xun (2009) found that senior managers should participate in the BPR. However, in the DE-merger there was a rather complicated management structure at the time of the merger processes (cf. fig. 1). Radical change is no longer a top priority of BPR (e.g. Hammer 2003) and in the DE-merger there was no clear need for it either even if there was a need to find the best routines and IS for the new organization. Ko et al. (2009) propose that process management is an effective means for iterative and incremental fine-tuning of the processes, which was

probably more likely to be needed (and suitable) in the DE-merger than radical change.

2.3 Post-merger integration - the human side

One perspective of PMI considers the human side of the post-merger integration and what impact the so called soft issues have on the level of success (Blake & Mouton 1984; Epstein 2004; Marks & Cutcliffe 1988). Both the personnel and the systems need to be integrated after a merger and the IS personnel is highly involved (Alaranta & Viljanen 2004). Because those who participate in a merger could either contribute to or hinder the processes it is important to acknowledge the so called human or soft side of the merger. Davidson (1991, p. 44) argues that "... integration is difficult to accomplish and frequently does not work at all". It is well-known that changes per se can worry staff and make them anxious. Employee hesitance and distrust of mergers make no exceptions (Abrahamsson 2000; Empson 2000a, 2000b; Gash & Orlikowski 1991; Herron et al. 1999; Kotter & Schlesinger 2008; Lawrence 1969; Schweiger et al. 1987; Smith, 2005; Washington & Hacker 2005).

However, there is considerable advice available for managers who want to be proactive and avoid employee resistance (e.g. Bradt 2008; Collins 2001; Empson 2000a, 2000b; Lewis et al. 2010). Despite the various recommendations for how to prevent resistance to organizational change there are also examples that raise the need to listen to those who resist the changes. They could have a point in their critique (Michelman 2007) and resistance and negative staff opinion could be a resource in the change process (Ford et al. 2008). Organizational change can be demanding for those who are affected and managers need to work with the employees in order to facilitate the change processes (Cooper & Markus 1995).

A merger could require a more direct leadership style than otherwise, especially if the employees that are involved in a merger are highly educated and used to a high degree of participation (Harman & Harman 2003; Pritchard 1993; Pritchard & Williamson 2008; Weddeburn 1991). Change processes need to move quickly in order to avoid productivity drops (cf. Tetenbaum 1999).

Frommer (2001) studied the role of expectations in mergers and post-merger integrations and claims that expectations of a merger and of the PMI will influence the attitudes and commitments to the merger, the PMI and also to the new organization. Unfulfilled expectations could have

negative consequences which in turn could affect the merger, the PMI, and also the perceived success of the merger.

2.3.1 Why resistance to change?

A changed work situation, including the prospect of having to master new IS, and adapting to new routines can be intimidating, especially if you are not sure of your competence. The management has to be prepared for various manifestations of resistance and/or reactions in a merger: lowered productivity, motivation and performance, adherence to (old) routines, compulsive repetitive actions (e.g. sabotage), absenteeism, voluntary turnover, health problems and power struggles. This is partly because employee requirements are not always considered in the merger planning (Alaranta & Viljanen 2004; Cartwright & Cooper 1995). Ford and Ford (2009) found that strong leaders do not look at resistance as a threat; they listen and learn from what is said even if it is critical. A main problem with managers that are offended by resistance is that they react in ways that are counterproductive. A more productive attitude to employee resistance is to see it as feedback and a resource. Neglecting the manifestations of resistance could be dangerous in that useful information may be wasted (Ford & Ford 2009). As Nyberg and Mueller (2009) point out, resistance to change could just be another way to coping with change. Lewis et al. (2010) emphasize the importance for management to understand that resistance to change is inevitable and that the individuals need to be supported by their leaders; their behaviour is what should be focused on, not their attitudes.

Management should communicate the change so that the employees understand it and should also communicate the progress that has been made. The managers also need to understand that change must be ongoing. It is not a single event of change that does the trick. It is also important to be sensitive to how the employees react to the changes. Incremental changes are often more successful (Lewis et al. 2010). Bringselius (2008, p. 290) defines resistance to change in the following way:

“Personnel resistance in M&A is the opposition of a substantial group of personnel against the combination or integration with a merger/acquisition partner, or against other management decisions and directives in relation to the merger/acquisition.”

The DE-merger was carried out in the public sector and it must be seen in the light of the differences between such mergers and those in the private sector. The administrators' earlier experience of participation and a general awareness of the public use of resources make such a merger more challenging than one in the private sector. Hence, it is even more important that they continuously feel involved in the merger processes, and that they are well informed throughout the process. The managers in the DE-merger needed to be aware of the consequences of resistance to change (e.g. Cartwright & Cooper 1995) and to acknowledge the reasoning by Ford and Ford (2009), Nyberg and Mueller (2009), and Lewis et al. (2010) that resistance can be a positive manifestation of commitment. Hence managers should support their personnel throughout the merger processes.

2.3.2 Management of change

Managers face many challenges in an organizational change, irrespective of the origin and nature of the change. The various problems/matters that managers need to handle in a merger are examples of such demanding challenges. Schweiger and Goulet (2000) propose that organizational culture, the management of the integration process, and decisions have an impact on the outcome of the merger. Erkama's (2010) study showed discursive struggles over organizational restructuring as regards the issues: relevant themes for negotiations, resources for financial arguments, identity constructions (of self and others) and organizational ideologies. An important conclusion of the findings is the need for managers to get involved in those discursive struggles in order to influence the discourse and counteract resistance to the organizational changes.

Carlsson (1961) studied administrative succession (among school superintendents) and found that the successor's origin (from inside or outside the organization) make them relate to the organization differently. Those who were recruited from the inside put their place of employment above their career and those who were recruited from the outside were more involved in their careers; outsiders were more often chosen when the employer wanted changes and insiders when the employer wanted stabilization. Furthermore, those who came from outside stayed for a shorter time than the insiders; the outsiders were more innovative and the insiders more adaptive according to Carlsson's study (ibid.).

Shrivastata (2007) highlights the need to establish a new strategic leadership as soon as possible since top management usually changes after a merger. Often the new top management is not accepted by all parties and therefore it is even more critical that potential integration problems are solved immediately. A new strategic leadership needs to provide directions and purpose for the new organization and this involves the implementation of strategic control, design of structures and procedures as well as gaining political control through dominant coalitions and establishment of professional norms. It is important to establish well-defined authority lines because the managers from the merging units are unfamiliar with the other side, and do not understand the work culture; they lack information, or have not built trust relationships with the new subordinates yet. Therefore it could be tempting to postpone decisions, which could cause failure per se. There are two challenging factors for creating a new strategic leadership: i) it has to be immediately established, and ii) it has to take control over factors with an impact of performance (Shrivastata 2007).

Collins (2001, 1 p. 181) argues that there is a risk connected with appointing new leaders since they could cause a “doom loop pattern”. This refers to the risk that they would stop a successfully “spinning flywheel” (i.e. successful business/processes). Epstein (2005) shows the importance of creating a new organization, and appointing the new management before the merger process starts.

Empson (2000a, 2000b) found that managers were afraid of imposing organizational change because of the risk that their employees would react negatively if they did not like the prospect of change. They were also wary of disturbing their customers, which made them adopt a *laissez-fair* approach to change. Empson’s studies showed that the managers promised their customers that they would have at least the same service as before the merger integration and more if they wanted. Simultaneously they assured the staff that the integration would not increase their workload - a difficult equation to solve but the staff was encouraged to seek co-operation with their new colleagues. However, it was not possible to force the employees to share their knowledge or their customers. A reason for not sharing was that the employees were afraid of being made redundant and that they regarded their former organization as better than the merger partner’s. Employees that were more in favour of the integration were frustrated by delays; those who were less willing to integrate were frustrated because they were uncertain about their own

situation. Empson's (2000a, 2000b) conclusion was that the managers could not control the integration (only influence it) and suggests that managers should not force the pace too much. Shrivastata (2007) found that the merger units often have different opinions of the merger, and even conflicting frames of reference, which could cause problems if the need for socio-cultural integration is neglected. It is especially important that the managers are open to the other side's perspective, and that they are successful in building trust between each other.

In the DE-merger there were two organizations with different cultures even if they were public sector organizations (cf. Schweiger & Goulet 2000; Shrivastata 2007). It is often inevitable that a merger increases the workload (Empson 2000b). In the DE-merger the administrators generally had to both carry out their ordinary duties, and work in various merger groups. Collins (2001) warns against appointing new managers in a change process.

In the DE-merger new managers including the top management were appointed late in the process. The top management were externally recruited which we found to have negative consequences for the PMI (cf. Carlsson 1961).

2.3.2.1 The importance of trust

As the management icon Peter F. Drucker (1999, p. 72) put it: "Trust between people does not necessarily mean that they like one another. It means that they understand one another". In an organizational change it is important that the employees trust their managers, and do not need to search for hidden agendas or proof of the management's intent to deceive the personnel.

Many issues are sensitive in a merger, in particular the appointment of new managers. If the new manager comes from one of the former organizations; the other party could be disappointed and fear a risk of bias (Epstein 2004). Bringselius (2010a) found a loss of confidence in the new management when employees suspected that new managers favoured the personnel from their former organization, especially when the former managers from (only) one of the organizations involved were appointed to lead the new organization.

Bringselius (2010a) studies showed that the so called vertical resistance (i.e. between the management and their subordinates) to change is more obvious in public sector organizations. The employees experienced that they were not treated the way they were used to and

after the merger they felt a lack of respect and space for individual thinking, initiative and dialogue (Bringselius *ibid.*).

Van Iterson and Clegg (2008) point out that executives should seriously look into organizational rumours if they insinuate wrongdoings. In mergers the involved organizations need to trust each other. Van Iterson and Clegg (2008) also found that organizational gossip is an important factor with an impact on the power structures in inter-organizational relations. Spreading gossip about competitors often aim at undermining their actions.

Whitener et al. (1998) investigated how managers could initiate a trustworthy behaviour and found the biggest challenge of trust initiation to be the necessity of managers making the first move, even before they are sure that their subordinates deserve to be trusted. It is often more tempting to apply control mechanisms in order to find out if the personnel is trustworthy (*ibid.*).

Podsakoff et al. (1996) found that employees (i.e. subordinates) who consider their own knowledge, experience and ability to be high have more trust in their leaders than those who think they have less knowledge, are less experienced, and less able. The leaders' ability to foster their subordinates' acceptance of group goals and to give them individualized support was found to have a positive impact on trust.

Trust is important in building alliances and Volery and Mensik (1998) characterize trust as superior prediction, authority, and bargaining when it comes to reducing uncertainty in complex situations. Cullen et al. (2000) agree with the need for trust in building alliances and call attention to the fact that it takes time to build trust. In a trust building scenario there are some general benefits (fair exchange of knowledge) and vulnerabilities (inequitable transfer of tacit knowledge) that the participants need to balance in order to find the right level of trust and commitment.

If communication is insufficient it is likely that rumours will flourish especially if the management withholds information about issues that concern the employees (Mishra 1990). The informal organizational grapevine (the informal and unsanctioned information network within every organization) will always supplement formal communication channels when employees lack information (*ibid.*).

The managers that understand the great impact of the so called grapevine are better suited to deal with its consequences (Mishra 1990). There is a need for the managers (on all levels) to participate in trust

building/maintaining processes instead of leaving these important activities to the human resource department (Caudron 1996).

DiFonzo and Bordia (2000) found that harmful rumours are frequent in times of organizational change. It is pointed out as important to monitor what effect potential rumours will have internally and externally. If organizational changes are approaching DiFonzo and Bordia (ibid.) recommend management to prepare for the changes by establishing committees to explore possible change alternatives, and to disclose the changes as early as possible.

2.3.2.2 The importance of communication

Bashein and Markus (1994) recommend good communication in change (BPR) projects as there is a need to share visions among both employees and management. Gaps of communication between organizational levels are a source of top management's visions being misunderstood or misinterpreted. Extensive communication is recommended since too much communication is almost impossible to achieve. Despite this there could be delays in a reengineering project if the managers have a culture of consensus decision making. Communication about reengineering should focus on the opportunities (Bashein & Markus 1994). Communication in the merger process is often important means of countering resistance to change (e.g. Hallier 2000; Napier et al. 1989; Schweiger and Denisi 1991; Shrivastava 2007; Smith 2005). A varied communication that takes place through several channels is recommended by van Knippenberg et al. (2006) since it will increase the likelihood of meeting the employees' information needs.

It is important for managers not to withhold information that they feel can worry or upset their personnel – as Caudron (1996, p. 21) put it “Despite what managers think, people can handle enormous doses of bad news” and there can hardly be too much information. Honesty is a means of preventing employees from resisting organizational change (Schweiger et al. 1987). The recommendation is to communicate both good and bad news, if decisions are postponed and even if there is nothing new to say (Kets de Vries & Balazs 1997; Napier et al. 1989; Schweiger & Weber 1989). Marks and Cutcliffe (1988) highlight the need to communicate with those who are uncertain about the merger consequences, as a means to keep their loyalty. Gall (1991) finds it important to carry out a proactive internal communication early when a merger is announced to prevent rumours.

2.3.2.3 The importance of employee participation

Ford and Ford (2009) emphasize the idea of making the employees engaged participants in an organizational change by inviting them to discuss the situation and come up with suggestions to solve problems that they fear would come with the change implementation. Remembering earlier experience of unsuccessful change initiatives will reduce the employees' motivation to contribute to the change. Hence managers need to allow their employees to tell their stories about old experiences; the management could be totally unaware of old problems and wrongs that should be cleared up and accounted for (ibid.). Besides education and trust among participants, Zmud and Cox (1979) highlight the importance of user participation and giving employees their own responsibility in the change processes. Empson (2000a) argues that employee participation at all levels usually is a successful way of facilitating merger integration. Shrivastava (2007) found that the employees should be allowed to participate in the decision making on merger related questions. Committed and motivated personnel downplay the negative consequences that could otherwise emerge, causing anger, resentment and a drop of productivity.

2.3.2.4 The importance of providing for training opportunities

According to Drucker (1998) individuals should make it their own responsibility to acquire new knowledge and to stay updated in their specific field of expertise. The concept of lifelong learning emphasizes the individual's personal responsibility to update her/his professional skills (Crowther 2004). Other opinions support and highlight the management's responsibility to provide training opportunities for their staff – especially when organizational changes are imposed on the employees. Bashein and Markus (1994, p. 18) raise the importance of conducting personal transformation training in a reengineering project because people need to be informed and trained in "... the what and how of reengineering, redesigned jobs and teamwork". Venkatesh et al. (2002) found training, provided by the employer, to be a very important means for achieving continued system usage when a new IS is implemented. Buck (1999) points out an important issue that it all starts with offering the instructors sufficient training that would be in accordance with the skills they are expected to pass on. Zmud and Cox (1979) advocate training as a keystone for successful IS implementation. The organizations' IS must be utilized properly by the employees

otherwise important benefits with the IS could be missed (Mathieson 1991). A reason why employees do not use the IS as expected is a lack training opportunities in the new IS when it is implemented in the organization (Hoffer et al. 2002). This could lead to opportunities for cost reduction, such as rationalization, optimization of the existing administrative tasks and providing customer satisfaction.

2.3.3 Reengineering from a human perspective

BPR depends much on technology and IS for enhancing the processes that make a business more successful (e.g. Hammer & Champy 2003; Hammer 2003). Despite the technical perspective of reengineering (subsection 2.2.2) there are also significant human aspects that are important to consider and acknowledge.

Harmon (2007) states that employees usually do not like changes which make it necessary to inform them about why a change (of the processes) is needed. Harmon (2007) distinguishes between the two main conceptions (IS and human approaches) of BPM and uses the acronym BPMS when referring to software tools for business process analysis and design. Redesign of processes can result in forcing some employees to learn to use new IS and some even have to resign. To prevent resistance to the changes and in order to work against backsliding the managers have to communicate the changes well and to evaluate the results in a way that controls that the new processes are accomplished as planned. According to Harmon (ibid.) it is crucial that the employees know whom (colleague/manager) to contact in case of problems concerning the changes.

Harrington, et al. (1997) report on a case study using BPR in the public sector where they noticed that employees were happy about the new opportunities offered by using IT in a new (reengineered) way. The employees were also pleased with a flatter organization (less hierarchical) after changes were accomplished - but at the same time there were some contradictory problems with control, empowerment and commitment. Senge (1995) and Drucker (2008) highlight more common management approaches that include managing people involved in the processes. Drucker (2008) focuses on management by objectives and the need for knowledge workers to take responsibility (i.e. self-control) for becoming effective, in other words doing the right thing.

The leadership style and the hierarchical structure changed after the DE-merger had been carried out and so did the communication strategies

(subsection 4.4.2). The need to reengineer the routines and the IS have consequences for the administrators in University DE; the management style is a factor that could either inspire or discourage the administrators. Communication is important even after a merger is carried out because much of the reengineering work still remains to be completed. Training activities, formal or informal (e.g. colleagues that teach each other) are usually needed when routines and IS are changed.

According to Bashein and Markus (1994) unrealistic objectives and expectations are common in BPR-projects and this is problematic. Top management could have a false impression of the prospect of success and then it is important to disclose false expectations early in the process. Managers need to be involved and committed to the reengineering throughout the BPR, and encourage the employees to take their own responsibilities in the reengineering process. Better results are shown in settings where a collaborative culture of work is established before the reengineering. However, BPR resistance is found to be evident in the middle management layers because down-sizing has often affected these positions when BPR is carried out. Management workshops during the processes, including middle-managers, are means of creating positive preconditions for successful BPR. Vakola and Rezgui (2000) show a new methodology for BPR where the human and organizational issues are included in the reengineering. Issues that need to be further acknowledged are for organizational culture, human relationships, and resistance to change.

Cooper and Markus (1995) refer to the so called Okuno's five techniques for successfully carrying out organizational changes. These techniques are focused on human reengineering and the employees should participate in the change instead of being change objects. The five techniques is an integrated system for continuous innovation and improvement: i) group leader meetings, ii) price control system, iii) the tornado program, iv) the draft system and v) the hangen (cutting in half) game. Although the focus was on people and not on the business processes the human reengineering lead to improvements in the business processes.

The hangen game focused on *making change* instead of just *being changed*, which required employees to use their creativity when they carried out their assignments. It is a form of reengineering because the workforce is decreased by half, putting emphasis on identifying the most necessary processes and leading to staff reductions.

The draft system (inspired by the Japanese professional baseball league's draft system) is about job rotation but showed the downside for employees who work too hard (in order to adapt to the new work situation) and this results in health problems. However, the draft system was a better method for identifying the next generation of group leaders than the tornado (tatsumaki) program.

The tornado program aimed at "... both to increase the group leaders' management skills and to reduce the group members' dependency on the leaders". The subordinates had to, without warning, take on the manager's responsibilities for three days; in the meantime the group leader had to find out how the group worked without his/her management.

The price control system aimed at teaching the group leaders to be more aware of the money-making process (i.e. cost awareness). The groups should sell their "products" to other internal groups and buy what they needed to produce their part from other groups. The group leader meetings had the objective of developing the group leaders' management skills.

Sometimes BPR results in down-sizing even if that is not a goal in itself (Marjanovic 2000). Irrespective of this the concept has been criticized for its down-sizing risks and the potential increase in unemployment that it would bring on (Grey & Mitev 1995). Besides, down-sizing of the staff during BPR would challenge the employees who remain in the organization to accomplish more as well as having to face all the changes that the BPR brings on (ibid.). Willoch (1994) found that the focus of reengineering is to design processes where fewer people contribute more value to the organization in an attempt to maximize the value added. This differs from rationalization since that is about fewer people doing the same work as more people did before. Mishra and Spreitzer (1998) highlight the importance of a good long-term relationship between the management and the employees when down-sizing is implemented. The personnel need to trust that the down-sizing is carried out fairly; empowerment should not be restricted. Employees that survive a down-sizing are encouraged by the redesign of their duties if they are invited to participate in the process and if they can see that their jobs will become more meaningful after the down-sizing. A main reason for carrying out mergers in public sector is often the prospect of cost-saving (Saarimaa & Tukiainen 2010).

In the DE-merger a reengineering was expected and the administrators already showed that they were aware of it (Lundqvist 2009) and welcomed it (Lundqvist 2010c). There was a realistic risk of the need for down-sizing because the administrators in the two locations carried out basically the same duties and one justification for the merger was to use the opportunities for rationalization. The administrative routines and IS were likely to be reengineered. In the merger processes the administrators worked part-time with merger related projects and combined this with their regular duties.

2.3.4 Knowledge sharing, knowledge gaps and PMI

Drucker (1998) forecasted today's evident need for employees to be skilled at checking and maintaining organizational knowledge. That is to say that the employees need to understand who depends on what information and where to find that information. There is also a need for employees to perceive how everyone, including themselves, can contribute to the organizations' needs. Dixon (1999) finds it especially important in organizational change that the employees' knowledge is used because everyone has valuable knowledge that is worth sharing and collecting. Because so much knowledge in practice is tacit, and therefore not supported by IS (Sveiby 1996) it is crucial that the employees are willing to share knowledge with their colleagues.

Hislop (2005) notes that a general risk with knowledge sharing is that a person, who is willing to share knowledge might get nothing in return. Knowledge management systems (KMS) are also affected with the mistrust of putting knowledge in and maybe getting nothing in return (ibid.) Tissen et al. (1998) argue that people are usually more positive to using knowledge from a KMS than they are putting their own knowledge into such a system. Alavi and Leidner (2001) question the level of trust that would be needed in order to rely on knowledge obtained from a KMS especially when they do not know the person that the knowledge originates from. Hence they (ibid.) search for solutions to further develop peoples' trust in information and knowledge that are available in KMS. Senge (1995) argues the importance for an organization to become a learning organization by utilizing the employee's competences and participation and this requires managers/leaders to be visionaries and willing to share their ideas and knowledge with their employees. In contrast, Galliers (2009) emphasizes the importance of understanding that

data (only) is handled in a KMS; it is still the individuals that make knowledge out of it by making sense of the data they capture.

When organizations merge there could be gaps in the knowledge sharing that would affect the merger negatively (Alaranta & Martela 2010). Ruggles (1998) proposes that organizations appoint special knowledge managers (chief knowledge officer) who should leverage and enable knowledge and make knowledge visible in order to identify knowledge gaps. The biggest problem was (in a study from 1997) found to be changing people's behaviour (56 %) and the biggest impediment to knowledge transfer was culture (54 %) (Ruggles 1998).

Yoo et al. (2007) studied knowledge sharing in mergers and found five factors that contributed to the knowledge gap: i) the nature of the mergers, ii) the lack of shared context, iii) the incompatibility of knowledge systems, iv) tacit knowledge and v) time pressure. The short conclusion is that mergers disrupt knowledge sharing. In University DE the merger was voluntary and politically promoted between similar organizations in the public sector. The routines and the IS were different, as well as the knowledge systems, the contexts were not identical and knowledge gaps were likely as the new colleagues did not understand each other completely. The sharing of tacit knowledge was problematic in the new organization as the administrators were uncertain about their jobs after the merger. The time pressure was obvious because the administrators had to carry out both their ordinary duties and project tasks for the merger.

Alaranta and Martela (2010) investigated methods for overcoming knowledge gaps during PMI and found incompatible knowledge systems, which together with time pressure led to insufficient knowledge sharing and missed opportunities to leverage new knowledge. Ford and Ford (2009) found that employees accepted the idea that in a merger, old and new colleagues should train each other in order to share knowledge.

Szulanski (1996) discusses the problem of best practice that does not transfer and therefore results in a gap between what is known within the organization and the knowledge that is put into practice in the same organization. To solve this problem Szulanski (ibid.) suggests that the organization pays serious attention to the development of learning capacities between organizational units in order to make them work closer and communicate practices quicker and better.

For reengineering initiatives to become successful employees with a good knowledge and understanding of their systems and routines are

better prepared to participate in the redesign of the IS and routines. Ruggles (1998) wants management to have good knowledge of the employees' competences in order to use them properly and to find tacit knowledge that could be shared. A study of knowledge sharing in electronic networks of practice (McLure Wasko & Faraj 2005) found that people shared their knowledge without expecting to get something in return if they were embedded in the network, if they thought that their professional reputation could gain from it and if they found their experience to be worth sharing.

Jones and George (1998) claim that unconditional trust is a basis or knowledge sharing. If there is a climate of unconditional trust, the participants do not need to fear being used or exploited. Instead they are convinced that their specialized knowledge will be used in a way that everyone and the organization will gain from.

The openness to reengineering that the administrators in the DE-merger showed was also a promising basis for knowledge sharing even though there were problems that needed to be handled (like uncertainty and time-pressure).

2.4 Summary – preliminary answers to the research questions

The DE-merger was politically promoted and carried out between relative equals (even if one unit had a somewhat higher status). There was a rather complicated management situation throughout the merger with many substitutes and temporary managers, for example the organization committee for the merger. There were late appointments and a lack of individual information about the administrators' employment after the merger. IS-related issues seemed to have been given low priority in the merger, caused partly by the lack of IS-strategies for both the merging units and partly by the management situation where no one was in charge of the PMI of IS in the new organization throughout the merger.

The starting point for the merger was promising as the administrators were positive to the merger and the reengineering initiatives. The administrators were well-educated and were confident that their IS-skills and knowledge would be sufficient to cope with the changes that were to come with the merger. The findings (chapter 4) will show that the picture changed (less satisfied and less enthusiastic administrators) after the DE-merger had been carried out thus making it interesting to investigate what

happened, not least in order to search for keys that would facilitate the PMI after the merger.

The study has so far been carried out with existing literature, and the insights collected offer some preliminary answers to the research questions:

RQ1: Should strategic management of information systems be a decisive factor in a public sector merger?

Strategic management of IS should be decisive because:

- Strategic management of IS is a basis for decisions and management of IS-related issues. If these issues are not dealt with there could be serious consequences that influence almost every part of the organization (sections 2.1, 2.2).
- Organizational change will influence the IS (sections 2.1, 2.2).

RQ2: How can administrator participation facilitate post-merger integration?

Administrator participation could facilitate a post-merger integration because:

- Their knowledge (often tacit) is necessary in order to prevent knowledge gaps during mergers (section 2.3).
- The administrators are well initiated into the organization's IS and the routines, which are needed in order to fulfil their, and the organization's, duties and assignments. It is costly to change IS making it important that new IS fulfil user and organizational needs so they can be used as long as possible (sections 2.1, 2.2).
- If they are satisfied with the communication during the merger it is less likely that they will speculate and start the rumour mill (section 2.3).
- Their acceptance of new IS (new technology) will positively influence the diffusion of innovations (section 2.1).
- Participation in the ongoing processes is a means of preventing resistance to change (section 2.3).
- The managers have the opportunity to win the administrator's trust during the ongoing merger phases (section 2.3).
- The administrators could both hinder or contribute to new routines. If they actively participate in the processes it is more likely that they will also contribute to them (section 2.3).

RQ3: How can management facilitate a public sector merger?

The management could facilitate a public sector merger by:

- Understanding that resistance is a natural human reaction to change and acting on that knowledge. Resistance is possible to predict and to meet; it is not only about preventing resistance. If it is understood it can be countered (section 2.3).
- Applying communication strategies that provide plentiful and candid information about the merger/change processes, even when there is actually nothing new to tell or when the information carries bad news. Varied communication through various channels is more likely to be effective (section 2.3).
- Involving the administrators in the merger processes (sections 2.2; 2.3).
- Understanding and acting on the fact that reengineering of the processes will be needed due to the merger (section 2.2).
- Realizing that PMI planning could be more demanding than pre-merger planning. This requires the full attention and participation of the top management, the IS-managers, and other managers. The IS-managers should be appointed as early as possible; to be able to deal with the IS-issues (sections 2.2; 2.3).
- Being prepared for political/power struggles about IS in the PMI (sections 2.2; 2.3).
- Motivating competence and knowledge sharing among colleagues (sections 2.2; 2.3).

RQ4: What factors of importance influence the post-merger integration in a public sector merger?

These are important factors that could influence the PMI in a public sector merger:

- The diffusion of innovations and acceptance of technology become key issues when a merger calls for applying new technical solutions, routines and IS (section 2.1).
- The IS success is dependent on the quality of the IS and information, the users' experience, and the impact on individuals and organization (section 2.1).
- The management (on all levels) need to understand that IS-issues must be given priority as they are the basis for the organization's processes and activities. Otherwise the PMI could be

unsuccessful. The worst case scenario is that it could be ruined (sections 2.1, 2.2).

- The IS need to support the administrators in their work as well as other categories of employees (section 2.2).
- Reengineering is most likely be needed because different routines and/or IS are required even if the merging organizations basically carry out the same work programs (sections 2.2, 2.3).
- The pre-merger planning is important in order to understand the many questions that need to be dealt with and that entail planning. Some examples are training activities because of changes as well as analysis of the new organization's requirements and needs (sections 2.2, 2.3).
- Good communication is important for trust-building, down-playing fear of the approaching changes and for smoothing resistance to change (Section 2.3).
- The need for training to cope with the changes should be studied and acted on (sections 2.2, 2.3).
- The leadership style. A directive leadership style could be effective in order to get things done quickly (section 2.3).
- Trust in management is important. Otherwise it is difficult for employees to believe what they are told and to feel that they are being fairly treated in a climate of downsizing and redefined roles. Trust may be jeopardized without effective communication. Leaders that foster the acceptance of group goals and provide individual support are more likely to be trusted (section 2.3).
- An inspiring knowledge management (KM) program for sharing knowledge with colleagues is helpful in an organizational change (section 2.3).
- Employee participation helps individuals feel useful and will convince them that their opinions count (section 2.3).
- Co-operation in a merger between organizations at different locations will be more time-consuming (sections 2.2, 2.3).
- Appointment of new managers late in a merger process is negative for the PMI. Externally recruited new managers lack the organizational history and culture that are vital to understand in the PMI (section 2.2).

3 Methods and methodology

The chapter comprises a brief history of IS research and methodology. First, traditional IS research is discussed in section 3.1. A critical evaluation of possible research methods is carried out in section 3.2. The design of the longitudinal case study is outlined in section 3.3. The data collection and the analysis are accounted for in section 3.4. Finally, this chapter is summarized in section 3.5.

3.1 Information systems research

Information systems research is a relatively recent academic discipline and to use Hirschheim and Klein's (2011) division of IS history it actually comprises four eras: first era 1964-1974, second era 1975-1984, , third era 1985-1994 and the fourth era 1995 – present. Before the first era the focus was on information technology (IT) and not on IS. The main topic for the research in the first era was to show how IS differs from other disciplines, something that went on even in the second era.

According to Hirschheim and Klein (2011) it was in the mid 1980s that the researchers began to formulate their concerns about the lack of suitable IS research methods. The scientific methods that had been applied in other disciplines were questioned and there was a need to emphasize the inclusion of social needs and problems. In the third era the Harvard Business School organized a colloquium on IS methodologies, i.e. qualitative research, experimental research, survey research, mathematical methods and software systems demonstrations. Academics in the IS field needed to publish their research, but the major journals were not initially interested in IS research results. Hence Management Information Systems Quarterly (MISQ) was started, which was the first journal in the IS field that aimed at two fundamental target groups: academics and practitioners in the field of IS.

The first conference covering IS issues was organized in 1978 – Information Systems Research in Scandinavia (IRIS). The IRIS conference started out as a Finnish event that included the rest of Scandinavia but started to attract more and more participants from outside Scandinavia as well. In the third era, also professional societies were also established, for example the International Association for IS Academics (AIS) and the European Conference on Information Systems (ECIS) were founded in 1993. In the fourth and present era the progress of alternative, more qualitatively oriented, research approaches has been

significant – at the expense of positivist research methods that dominate management science, computer aided intelligence, and other computer based research areas. IS research methods that were established included interpretive and critical research approaches (Hirschheim & Klein 2011).

The research methods used in this thesis focus on both IS and organizations, which Orlikowski and Barley (2001) found to be a good combination: “Thus, greater interaction between the fields of information technology and organization studies should be viewed as more than a matter of enrichment. /.../ In the intellectual engagement of these two fields lies the important fusion of perspectives...” (Orlikowski & Barley 2001, p. 145). The two fields, IS and organizational studies, are difficult to distinguish and IS researchers often come either from the field of organizational studies or have been influenced by organizational study literature (Orlikowski & Barley, *ibid.*).

In the DE-merger the administrators sometimes had difficulties in distinguishing between IS changes and changes of existing routines. The “human agency” is embedded in the context as well as the technological constraints (Orlikowski & Barley, *ibid.*, p. 158).

The need to combine organizational and IS perspectives was considered as the methods were evaluated. The methods discussed below in section 3.2 were the initial candidates in the selection of research method. They are all methods that have been used extensively in IS research in recent years. As Hirschheim and Klein (2011, p. 45) found “... the IS field is now more receptive to interpretive, action and critical research”.

3.2 A critical evaluation of candidate research methods

Four methods were initially considered for the thesis project: design science, action research, ethnography and longitudinal case study. There are benefits and drawbacks with all these methods and this section summarizes the main reasons for the final choice.

Ethnography: Hughes et al. (1994) suggest ethnography as a method for designing CSCW (Computer-Supported Cooperative Work) systems because it is a good method to inform designers about the social context where the system is to be applied and the collaborative (i.e. also social) type of work that should be carried out. Networking and distributed computing are cost-effective methods of collaboration that require new forms of analysis. However the use of ethnography has both positive and negative sides. Ethnography is not in itself a solution to problems in itself

and should not be looked upon as such. When using ethnography in systems design it is important to understand that the social organizing of the work setting is more focused than the systems design. Ethnography is a means of uncovering the “‘real world’ character of work” (Hughes et al. 1994, p. 436) since system design is work design where humans are important (Hughes et al. 1994).

According to Andersson (1994) ethnography is a method that suffers from common misconceptions by the users, especially from those who find ethnography to be a sufficient method for system design (e.g. Hughes et al. 1994). Andersson (ibid.) argues that using ethnography to compile specifications of end-user requirements is just about data collection (without considering the social settings). There are some common misconceptions: every fieldwork is ethnography, social skills guarantee successful fieldwork and every story carries depth, interest and insight. Furthermore, the understanding of the ethnographer as a transducer is somewhat overrated because the dichotomy that lies in *us* vs. *them* is mostly present. Ethnography could even be an analytical approach: “Brokenness is in the eye of the beholder. If you cannot be sure that it is broken, think twice before setting out to mend it.” meaning that it could be useful to explore the possibility of a “play of rationalities” as a part of the problem-definition phase of the design (Andersson 1994, p. 178).

Ethnography was not chosen as method mainly because the research aims at finding keys to facilitating PMI in public sector mergers. Also the resources that would have been needed to carry out an ethnographical research process were not available.

Action research: According to Gummesson (2000) action research is a very good method for research when applied properly, meaning that the researcher should gain internal access to the research area in order to get involved and informed. Pre-knowledge is important in order to carry out good research. In action research the researcher may even act as a consultant with his/her own agenda to the course of events and to the change processes. Walsham (2006) argues that action research is a method where close involvement by the researcher is needed in order to gain in-depth access to the data. Walsham (2006, p. 322) declares the action researcher to be “... trying consciously and explicitly to change things in the way that they feel best”. O’Brien (2001) claims action research to be about “learning by doing”. The search for a solution to a certain problem is acted on and evaluated; if a satisfactory result does not

result from the trial a new trial is carried out. The procedure is much like a practitioner's way of analysing and trying to find solutions to unidentified problems. However, the difference is in the scientific approach taken by the researcher in order to find good solutions; the researcher has to make sure that the activities build on good theory and valid conceptual frameworks. An important factor in action research is that the problems dealt with come from real situations and not from simulated experiments. This is crucial because the methods aim to solve real problems, which does not prevent both practitioners and academics from gaining from the results (O'Brien 2001; Gummesson 2000).

Schön (1983) states that it is important for a researcher to understand how professionals think in action, and how they reflect upon their actions. Besides, even professionals gain from understanding the factors involved in the organizational learning that Schön discusses. In Schön's (ibid.) definition of the interplay between the professional and the researcher, reflective theory shows how the professional more actively contributes with his/her knowledge than just being a passive receiver of the research findings.

Action research was not chosen as a method because the method would involve the researcher in the merger process as a change agent. In this case there was actually an opportunity to gain internal access to the merger process but the researcher decided on ethical grounds not to become actively involved in the merger process. In other words the research project was not carried out as a consultant project as this could have risked breaching the trust of the participants. It would also have been too large a task as the merger turned out to be very complex.

Design science: Hevner et al. (2004) claim design science to be one of the dominant research paradigms of IS research. Design science deals with creating new artefacts and the artefacts should be evaluated. In order to get feasible artefacts with design science methods the problem domain and possible solutions need to be carefully understood by the researcher (ibid.). March and Smith (1995) list design science products as i) constructs, ii) models, iii) methods and iv) implementations. All of them are technology-oriented and evaluated against whether they work or not; as the method aims at creating things that will fulfil human needs. Markus et al. (2002) argue that design science is more and more applicable to various assignments even if IT was not the obvious choice for solving the problems in question.. However, the artefacts should be built and tested and this was not the objective of the DE-merger study.

The main reason for this is that the researcher did not set out to exercise any influence on the merger/post-merger processes. A design science approach to study the merger process would have required a group of at least 5-6 researchers in order to build and test IS artefacts that could support the PMI.

Case-study – cross-sectional and longitudinal: The most common case-studies deal with a single case and study the complexity and nature of the specific case in question. Single could refer to a single organization, a single location, a single person or a single event. The DE-merger is about a single merger (event) even if two former organizations are involved in the new organization. It is about employees from a single category, administrators, even if the administrators could be divided into several types of assignments. Case-studies could be either cross-sectional or longitudinal where the cross-sectional ones are carried out in different (preferably many but at least two) settings in order to get a “body of quantitative or quantifiable data in connection with two or more variables /.../ which are then examined to detect patterns of association” (Bryman & Bell 2007, p. 55). Cross-sectional studies are carried out at a single point in time and the researcher is looking for variation and relationships between variables (that are not manipulated). A common problem with cross-sectional studies is to capture the directions of casual influence between the variables. Cross-sectional case-study mostly uses quantitative research methods but qualitative studies sometimes apply a cross-sectional design, e.g. by triangulation of the findings with both semi-structured interviews and questionnaires. Meglio and Risberg (2010) found that studies of mergers are often cross-sectional and based on secondary data or survey-based perception data. In our DE-merger research project it would be sufficient to triangulate the findings and make use of both qualitative and quantitative research.

Longitudinal case-studies often follow a specific case in a specific context over time, and they are often used to map changes in business and management. In order to carry out a longitudinal study the data has to be collected on the same variables, with the same people, and/or organizations in at least two rounds (Bryman & Bell 2007). One problem is that people, participants in the study, could disappear between the data collection rounds which was a possibility in our DE-merger study. Longitudinal studies aim at understanding causal influence in a time perspective and are better equipped for dealing with the direction of causal influence than cross-sectional design. Pettigrew (1990, p. 268)

found that longitudinal case-studies are valuable for investigating change by exploring “the context, content, and process of change together with their interconnections through time”. The longitudinal case-study provides an opportunity to a holistic in-depth understanding of real-life events (Yin 2003) which was an important objective for the study of the DE-merger and the PMI. Meglio and Risberg (2010) found longitudinal studies to be less common because they are time-consuming. Longitudinal approaches are often turned down in favour of cross-sectional studies (Meglio & Risberg *ibid.*) as researchers need to publish their results and editorial boards seem to prefer cross-sectional studies (*ibid.*). Interpretative research can be carried out with a case-study method (Walsham 2006), which offers an opportunity to find keys to more successful mergers and PMI.

The case-study method was found to be the most appropriate method of those that were evaluated for several reasons:

- its focus on the triangulation of findings which could be helpful to prevent biased research findings
- the opportunity of combining both quantitative and qualitative data collecting methods
- the opportunity to gain a holistic in-depth understanding of the research problems and...
- the longitudinal approach, that was found very useful for capturing the administrators’ opinion changes during the merger process.

The longitudinal case-study method will be further presented and discussed below in section 3.3.

3.3 Longitudinal case-studies

The method chosen for the research project is a case-study that is much inspired by Yin’s work (Yin 2003; 2007) but also deeply influenced by Gummesson’s (2000) findings about the importance of pre-understanding, understanding and internal access to the organizations that are studied. Despite Gummesson (*ibid.*) advocating internal access and pre-understanding (i.e. pre-knowledge) of the research objects he is sceptical to case-studies in their traditional form (Gummesson 2007) since the development of case-studies as a research method seems to have stopped. The proposal is to combine case-study research with network theory in order to also obtain a combination also of quantitative and qualitative research; the latter more connected with case-studies and

social sciences research; the former with network theory applied in both social and natural sciences. However, the case-study approach by Yin (2003) proposes triangulation and the use of both quantitative and qualitative research. Kaplan and Duchon (1988) emphasize the value of triangulation and the use of data from different sources, which they argue could bring out analytical mistakes and omissions. Because different research perspectives have their own limitations and possibilities a combination could make it possible to address a certain problem from more than one angle (ibid.). Longitudinal case-studies have been proposed for mergers in order to get a better theory base for decision making and IT integration (e.g. Wijnhoven et al. 2006). However, Gummesson (2007, p. 232) warns for too much data, since “an abundance of data” could be mistaken for good quality of research. Gummesson (ibid.) refers to a discussion with Barney Glaser, co-creator of grounded theory, and argues that research should not be prolonged to the point that the productivity risks becoming diluted, which could happen if the research takes more than six months. Gummesson (2007) finds it counterproductive to divide research into natural and social sciences and considers qualitative and quantitative research to be just as important; there is no need to choose the winner or the winning concept. In the DE-merger’s longitudinal case-study both quantitative and qualitative research were applied and found to be equally important. Gummesson (2007, p. 237) proposes that “quantitative elements” could be applied in case-studies – which they are in the longitudinal study carried out in this thesis.

Cartwright and Cooper (1990) propose that research on the human side of mergers should start by collecting data from the start of a merger process, then continuing during the merger, and also after the merger has been completed. The fact that some studies need to be carried out in sensitive times during the merger could negatively affect gaining access to and being able to co-operate with the organizations involved.

The target population of this study was administrators employed in either Org D or Org E. The administrators are key players in the two organizations and their achievements are crucial for the organizations’ performance. In the approaching merger the administrators were likely to experience changes in their terms of employment, in their IS, and in their current routines. Nevertheless, some administrators were omitted from the study; namely administrators employed at some central service

functions that were unlikely to be affected by IS changes during the merger process and the PMI.

Weber and Camerer (2003) find a possible bias if studies of mergers are carried out in the merged organization only and showing the survivors' opinions. This is a problematic issue and in the DE-merger there are a couple of interviewees that were leaving the organization. There was, however, no significant difference in how they expressed their opinions compared with the other administrators.

The question of *validity* is as critical when case-studies are applied as in any other research; maybe even more so (Gummesson 2007). Was the research focused on obtaining answers to the research questions or was something else studied? Guba and Lincoln (1994) state that the *credibility*, *transferability*, *dependability* and *comformability* of research results should be evaluated in order to find out if the research is trustworthy or not. The likelihood of other researchers repeating the studies and obtaining the same findings (e.g. Bell 2006) is low since the object of study is in a process of change. Nevertheless, it could be possible to get the same results in a similar organization in a similar context. As Gummesson (2007, p. 232) states on *reliability*: "This is usually not attainable when you study complex phenomena, especially when change is a major force".

Gummesson (2000) considers the researcher's internal access to be important for case-studies; it should be possible to carry out data collection, to work out a relevant analysis, and to gain a deeper understanding of the research problem as time goes on. New understanding is input for more pre-knowledge and better opportunities to gain an even deeper, richer understanding, illustrating how the hermeneutic spiral works. When the researcher has access within the organization and is allowed to participate in the ongoing discussions there is a better chance of finding out what is really taking place in the organization. Access to internal documents is also more probable in the case of internal access (Gummesson 2000).

Also Pettigrew (1990) discusses the researcher's involvement in the organizations that are studied and considers it to be a delicate and important problem to handle. There is a problem with researchers getting too involved: "Research is a social process not just a technical task. Equally well one should not get over-involved and 'go native'." (Pettigrew (ibid., p 278.)). There was a clear risk in the DE-merger project

that the researcher would become over-involved. Hence it was important to triangulate the findings, and to keep away from the role of a consultant.

The administrators that were included were hand-picked from information on the websites of Org D and Org E, and their participation was solicited through a direct e-mail to top managers and to the department chairs, as recommended by Bell and Opie (2002). The e-mail explained the objectives of the study and that the aim was to write a doctoral thesis. None of the managers objected to the longitudinal case-study.

It needs to be declared that the researcher has individual knowledge about the organizations in the DE-merger; knowledge that provides pre-understanding of the problems studied and of the organizational culture. Full information on how/why is not revealed because some elements of the study need to be kept confidential. The researcher had a pre-understanding/pre-knowledge of the research problems and the organizational culture present in the studied organizations. This was helpful during the construction of questionnaires and interview guides and the researcher also had access to internal documents and information about the merger. Some documents were official, but the pre-knowledge and understanding of the context made them easier to find. The administrators were fully aware of the author's pre-knowledge (i.e. pre-understanding) and made no negative remarks about it.

Gummeson (2000) found the organizational culture to be difficult to understand for someone who only visits the organization because of a research project. Also Walsham (2006) argues that close involvement is good for in-depth access to data, to the organization including people and documents. This enables a level of participation beyond mere access to carry out interviews and questionnaires. Nevertheless, a researcher is always biased by background and frame of reference making it difficult to claim the role of neutral observers (Walsham 2006). There is a risk that insight into the studied organizations could lead to false assumptions and results if not handled properly; for example by triangulation of the findings (e.g. Yin 2003, 2007). It is also important that researchers "...engage others in the design and conduct of their studies" (Van de Ven 2007, p. 193).

Shotter's (2006) *witness-thinking* in contrast to *aboutness-thinking* (a more traditional view of how empirical investigations should be performed) encouraged the use of existing pre-knowledge in support of Gummeson (2000). *Witness-thinking* deals with the procedures when

the researcher meets participants in a study and *how* the dialogue is actually carried out. An open-ended dialogue is suggested instead of a check-list for the interview; something which could “reduce and humiliate” the interviewee (Shotter 2006, p. 593). Data collection with questionnaires could be seen as totally contradictory to the interactivity that is implicit in the *witness-thinking* concept. Data collection with interviews proved the usefulness of *witness-thinking*. The interview guides took note of interviewees’ responses and they were able to develop the questions into themes they were especially interested in. Some of the findings on trust and rumours in research paper 8 are examples of this.

In a longitudinal single-case study (Yin 2003) it is necessary to be careful about generalization (or external validity as it is sometimes called) of the findings. Bassey (1981) proposes that generalisation is possible even from single events and Gummesson (2000, pp. 97) argues that too much weight is given to generalization:

“As long as you keep searching for new knowledge and do not believe that you have found the ultimate truth – rather the best available for the moment – the traditional demand for generalization becomes less urgent.”

3.4 Data collection and analysis

The data collection was carried out by reading documents, by using questionnaires, and by carrying out interviews (cf. fig. 7). Five empirical studies were accomplished; in three of them questionnaires were used for the data collection and two employed interviews.

October 2008	May 2009	February 2010	May 2010	November 2011
Starting point	30 Interviews	Questionnaire	29 Interviews	Questionnaire
Questionnaire		179 respondents		151 respondents
201 respondents				
Documents				

Figure 7: An overview of the longitudinal case-study.

In the following the data collection will be described, and the analysis will be briefly outlined. More information is available in the research papers no 1 – 8 (Part II).

3.4.1 Documents

The access to the organizations described in section 3.3 allowed the researcher to study internal documents during the merger process. Some of the documents were official and available to the public; for example via the organizations' web sites. Some documents were only internally distributed through e-mail, newsletters, and "house magazines". There was also a web forum that was available for all personnel, and information was distributed at several physical meetings during the merger process. The documents will not be listed in the reference list since it would reveal the real names of the organizations. There was a promise made about not revealing the names of the organizations when the case-study started and therefore this promise has to be kept. Pettigrew (1990) considers documents to be a source for facts, but warns against the danger of selective deposit and survival. Yin (2003, 2007) recommends reading documents as a means for triangulation.

3.4.2 Questionnaires

Three studies used questionnaires for the data collection. The first of those was accomplished in autumn 2008, the second in winter 2010 and the third in winter 2011 as a follow-up study (c.f. fig. 8).

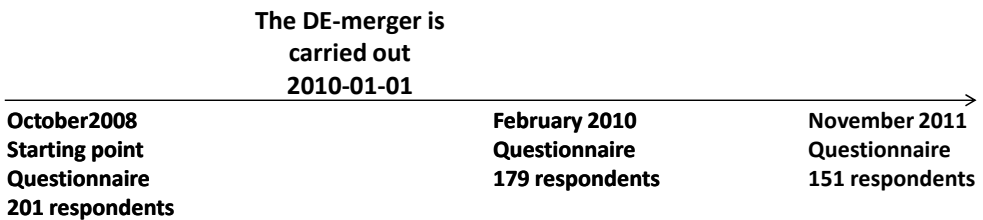


Figure 8: Three surveys using questionnaires for the data collection.

The aim was to include all administrators in Org D and Org E. However, the information about the administrators was collected by the official websites' contact information. In a few cases there was confusing information about employment and/or competences that led to a handful of individuals being contacted who were not actually administrators. The following rounds of questionnaires aimed at the same population, and no new members of the administrative staff were included for round two and three. Employees that objected to their participation, as they had moved to other types of work, were also removed from the original list of

administrators. Hence the administrators who were able to answer the questionnaires decreased throughout the studies. It is always problematic if individuals from a certain population leave during an ongoing case-study and a main problem to consider is whether those leaving have had significantly different opinions.

After the questionnaires were drafted they were pilot-tested by two persons within and two persons outside the relevant organisations. The pilot tests were conducted to improve the questions and to estimate the time required on the questionnaire. A web-based survey method was adopted for the questionnaires. The answers were given anonymously. Bell's (2006) definition of anonymity was adopted and the researcher could not connect any answers to any respondent. Two reminders were sent during the 2-3 weeks that the questionnaires were available. The websurvey tool (Texttalk Websurvey) provided first analysis of the data, which was enhanced with SPSS. As recommended by Eliasson (2006) the correct coding of the data and entries in SPSS were carefully checked.

3.4.2.1 The first survey – October 2008

Because the first study was exploratory the questionnaire was extensive and maybe too ambitiously designed. All questions and the answering alternatives are available as an appendix in research paper 2 and a summary of how the questionnaire was designed is shown in table 1.

Table 1: The design of the questionnaire from the 2008 study.

Questionnaire:				
<i>Opening part:</i>	Background information			
<i>Second part:</i>	About specific IS			
<i>Third part:</i>	About training/education, self-valued knowledge and competence, opinions about the merger and the merger information received			
<i>Fourt part:</i>	More about specific IS			
<i>Final part:</i>	About what was regarded as important for working effectively, opinions about the respondents' contribution of value			

A total of 315 questionnaires were sent to the organisations (175 to Org D and 140 to Org E) with a covering letter. The questionnaire was available for a period of two weeks and two reminders were automatically sent by the websurvey system. 201 respondents filled in the questionnaires (102 from Org D and 99 from Org E). This gave a

preliminary response rate for Org D of 52 % and for Org E 72 % and a total response rate of 64 %. However, some web information was not updated and thus some received the questionnaire even though they had left their jobs or changed to another category of employment. With these persons excluded the definite response rate, and fall-offs are presented in table 2, and the gender distribution in table 3.

Table 2: Response rate and fall-offs, survey 1.

	Response rate			Fall-offs		
	<i>Org D</i>	<i>Org E</i>	<i>Total</i>	<i>Org D</i>	<i>Org E</i>	<i>Total</i>
	Survey 1	64%	73%	68%	36%	27%

The fall off is higher in Org D (36 %) than in Org E (27 %). There were differences in opinions about the merger depending on organization but it was not clear if this had any impact on the participation in the survey.

Table 3: Gender distribution, survey 1.

Gender distribution				
	Respondents		Fall-offs	
	Org D + Org E		Org D + Org E	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Survey 1	22%	78%	17%	83%

The gender distribution for the respondents and fall-offs is about the same.

3.4.2.2 The second survey – February 2010

This questionnaire was less extensive (appendix 2) based on the experience of analyzing the first one. This study was a follow-up after the merger and posed questions about changes of IS and routines, how those changes were perceived and how they influenced the work situation, the self-valued effectiveness and contribution of value, as well as training opportunities. The survey also asked for opinions about how the merged organization was perceived, development due to the merger, and if the respondents’ expectations were fulfilled or not.

The distribution list was based on the administrator list from 2008. A total of 302 questionnaires were sent to the administrators employed in the former Org D and Org E. Before this the distribution list from the first

round was revised, and 13 administrators were removed who had left the new organization. As mentioned before, newly employed administrators were not included in the list because of the scope for the longitudinal case study.

After the questionnaires were sent out, auto replies from the e-mail system provided information about 21 administrators that had left the organization thus the population was reduced to 281 administrators. A total of 179 respondents answered and submitted the questionnaires; see table 4 and 5 for the response rate, fall-off and gender distribution for both survey 1 and 2. As shown in the tables (4, 5) the two surveys gave similar response rates.

Table 4: Response rate and fall-offs, survey 1 and 2.

	Response rate			Fall-offs		
	<i>Org D</i>	<i>Org E</i>	<i>Total</i>	<i>Org D</i>	<i>Org E</i>	<i>Total</i>
Survey 1	64%	73%	68%	36%	27%	32%
Survey 2	60%	69%	64%	40%	31%	36%

Table 5: Gender distribution, survey 1 and 2.

Gender distribution				
	Respondents		Fall-offs	
	Org D + Org E		Org D + Org E	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Survey 1	22%	78%	17%	83%
Survey 2	21%	79%	15%	85%

The longitudinal case study followed the DE-merger process and, since the administrators were in the midst of this, it was likely to influence their opinions. Bell (2006) discusses the importance of acknowledging if there has been a particularly significant event just before a data collection that could influence the respondents' answers. In University DE several administrators had recently been assigned IS and routines, which they had to learn to master. They were also expected to contribute to the development of work procedures together with new colleagues. Their work context had been changed and they had to find new ways of co-operating with colleagues on two campuses. They had high

expectations of the merger and the short time that had elapsed could make it difficult to answer the questionnaire. The main reason for carrying out this study was to get an on-the-spot account of the administrators' opinions, especially in order to be able to compare with subsequent findings in the longitudinal perspective. No technical failure or any misunderstanding of the questionnaire was reported.

3.4.2.3 The third survey – November 2011

The third study that used questionnaires for data collection was carried out almost two years after the DE-merger. It was a short questionnaire, five questions in total (appendix 4). The questions concerned the administrators' opinions of the work situation, about the support they got from their IS, and how the IS had been handled in the merger process.

The participants had been informed of the ongoing longitudinal study and its aim in the autumn 2008. One respondent asked for an update of the research objectives but the other respondents seemed to remember the longitudinal case-study.

The distribution list from round two was used without change; automatic reply mails showed some fall off and the websurvey system showed who had answered or who had not. It was possible to investigate the fall off and two strategies were applied. The names of those who had not answered were checked against the internal phone directory and on the web site for the new organization (University DE). There was still a possible source of error if people had changed their surnames. When the distribution list was updated in accordance with the auto replies, the phone list and web the response rate was calculated and the results are shown in tables 6 and 7.

Table 6: Response rate and fall-offs, survey 1,2 and 3.

	Response rate			Fall-offs		
	<i>Org D</i>	<i>Org E</i>	<i>Total</i>	<i>Org D</i>	<i>Org E</i>	<i>Total</i>
Survey 1	64%	73%	68%	36%	27%	32%
Survey 2	60%	69%	64%	40%	31%	36%
Survey 3	60%	74%	67%	40%	26%	33%

It is still not obvious what these figures actually tell, except that they are rather stable.

Table 7: Gender distribution, survey 1.2 and 3.

Gender distribution				
	Respondents		Fall-offs	
	Org D + Org E		Org D + Org E	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Survey 1	22%	78%	17%	83%
Survey 2	21%	79%	15%	85%
Survey 3	20%	80%	16%	84%

It was necessary to examine the group that did not respond. The gender distribution was the same as on the previous two surveys, and the distribution between the former Org D and Org E was about the same (table 7).

There was a technical lapsus when the third questionnaire was sent out as the link to the questionnaire was missing (unintentionally removed). This was quickly noticed and a correct version was sent after a few minutes with an explanatory letter. A couple of people experienced problems with the send button that was placed below the comment field. These two incidents may have had a minor effect on the fall-off rate.

3.4.3 Interviews

During the research project there were two studies that used interviews for the data collection. The first was carried out in spring 2009 and the second in spring 2010 (cf. fig. 9).

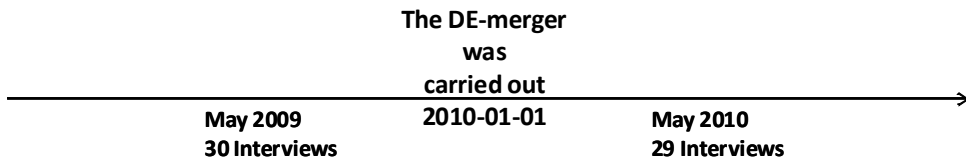


Figure 9: Two studies that used interviews for the data collection.

The procedures for those data collections are presented below. The main reason for employing interviews as a complement to the surveys was to combine various methods for a triangulation of the findings as recommended by Yin (2003). Another reason is that interviews allow for rephrasing to prevent misunderstanding and for follow-up questions when

relevant. The questions were open and semi-structured (appendix 1) and were possible to rephrase even if they were put in a pre-determined order (Andersson 1995). Lantz's (1993) approach that interview questions can be analyzed both quantitatively and qualitatively was followed.

The measuring instruments need to be trusted to guarantee the consistency of repeat measures (Bell 2006; Trost 1994). In this case, the ongoing changes would probably influence the administrators' opinions throughout the case-study; they could change their opinions partly or totally. Hence, Yin (e.g. 2003) recommends that case-studies should be carefully documented; researchers could not expect surveys and interviews to give the same result if the studies are repeated.

The interview questions were built on findings from earlier studies; the interviewees were familiar with the ongoing study and did not show any difficulties in understanding the questions (appendix 1 and 3) or putting them in relation to their own context. However, Gummesson (2000) claimed that interviewees are not always reliable since they could give what they believe is an appropriate answer for the situation, rather than their own opinion. Thång (1984) found that the interviewees often try to anticipate what answers the interviewer wants. Hence the two rounds of interviews were carried out in such a way that the interviewer was careful not to reveal thoughts, pre knowledge or expectations about the issues that were raised in the interviews. The interviews were recorded and transcribed. Kvale (2006) warns that transcriptions are not 100 % reliable because different transcribers can write/transcribe the same material in different ways, not using the same words. In order to minimize that risk the interviewer transcribed all interviews personally and the transcripts were compared with the recordings before they were deleted.

3.4.3.1 The first interview round – May 2009

The first study using interviews was realized in May 2009 as a follow-up to the explorative study. The target population was administrators from Org D and Org E that had participated in the first study and answered positively to a question about their interest in participating in follow-up interviews. The procedure resulted in thirty administrators taking part in the first interview round; no one that had announced their interest for participation was rejected. The profiles of the interviewees are described in chapter 4.

The interviewees were assured of confidentiality. Anonymity according to Bell (2006) is when not even the researcher can connect

answers to an individual, which is not feasible in a face-to-face interview situation. Hence the researcher gave the interviewees numbers referring to the order when they said yes to interview participation. This was a numbering that no one but the researcher could know, and it did not say anything about the interviewees' positions or places of work. The ambition was that the interviewees should be able to feel confident and relaxed during the interview and they could choose location. Despite this, the interviewees usually chose their ordinary office. A few even said that they did not care if their participation was made official, but the researcher found it most important to treat all interviewees strictly confidentially.

The NVIVO 8 software was utilized for the analysis. The software made it possible to store the interviews, to mark words/sentences and to create cases. The text was read several times (while considering the research questions) in order to fully understand the inherent meaning. During the reading interesting data was marked (i.e. coded) in NVIVO 8 to facilitate the creation of categories for the qualitative analysis (cf. research papers no. 3 and no. 4).

3.4.3.2 The second interview round – May 2010

The second study was realized a year after the first round of interviews and about five months after the merger was carried out. The interviewees from the first round were contacted by email, and the second interview was arranged. The interviewees were already familiar with the procedure for the interview and with the researcher and were (as it seemed) confident of the confidential handling of their answers/opinions. The latter was a critical factor as the interviewees gave their opinions about the merger process and touched on sensitive issues. Without high confidence in the researcher's integrity some information would probably have been withheld. The interviews were closed with a summary of the 2009 interview that offered the interviewees an option to object if they had conflicting opinions of what was said. All interviewees agreed to the summary of the previous interview. All of them were now familiar with the longitudinal case-study and with the researcher.

The interview questions were semi-structured and open-ended and also this time the author followed Lantz's (1993) recommendation that interview questions should be analyzed both quantitatively and qualitatively. This time the interviewees were asked to answer some of

the questions using a five-point Likert scale (appendix 3). The interviews were recorded and then transcribed literally. The interviewees were promised that the recordings would be treated as confidential which some of the participants found highly important.

This time the analysis of the interviews was done stage by stage and the qualitative material was analyzed for themes while the aim of the study was clearly kept in the author's mind. This was an interpretive process, in which the data was categorized; core meanings were found and grouped so that all discussed issues were noted. This process was inspired by Burnard's (1991, 1996) method of thematic content analysis for analysing qualitative interview data in a stage-by-stage process. The transcripts were read several times and the researcher worked with several categories and sub-categories, which throughout the process were collapsed into broader themes/categories. Colour-pencils were used to mark the transcripts during the search in order to identify data that could be categorized into themes. The colour-coded data were collected together under the themes that had arisen. Burnard (1991) shows the need to be careful not to cut out strings of words so that the meaning risks being lost. With this in mind the author took particular care to ensure that the context was maintained as recommended (Burnard, 1991) and kept track of which interviewee (i.e. number) the items came from. This was important in order to be able to go back to the "right" transcript and get the complete text to quote if needed. Another reason for this rigorous handling of the material was that it could be necessary to re-check if there was any uncertainty while the categories/themes were re-considered.

The answers registered on numerical scales were analysed with SPSS. The process is described in detail in order to show that care was taken to avoid subjective interpretations.

3.5 Summary

The longitudinal case-study method (Yin 2003) was chosen for the research project. The case-study methods are applicable both for organizational studies and for IS research which was one of the main reasons for choosing this method (Orlikowski & Barley 2001). Longitudinal studies of PMI are scarce (e.g. Alaranta 2008, Cartwright & Cooper 1990, Meglio & Risberg 2010, Olie 1994, Wijnhoven et al. 2006), which was a motivation for using a longitudinal case-study to study the DE-merger: i) the case was available, and ii) the researcher had access an internal pre-knowledge.

Five studies have been carried out (so far) and the procedures of the data collection and the analysis are described. Document reading was a complement throughout the research which employed both qualitative and quantitative research in order to triangulate the findings. Triangulation of the findings is important in a single case-study and when the researcher has pre-knowledge of the situation. Hence the use of data from different sources is recommended (e.g. Kaplan & Duchon 1988, Yin 2003).

The author's pre-knowledge and internal access was discussed and Gummesson's (2000) arguments for more reliable research findings when the researcher has internal access were presented. Those arguments (Gummesson *ibid.*) were encouraging since there are also contradictory opinions about possible bias in cases where the researcher has pre-knowledge of the case that is being studied (e.g. Weber & Camerer 2003).

Questions about the validity and reliability of the research findings are always important and critical issues. In this case the research was based on a single case-study and the researcher had internal knowledge of the situation before the research project started. Hence it is important to discuss the possibilities of biased findings, of validity, and of reliability. The document reading was an important source for getting an unbiased picture of the merger processes. The mix of surveys and interviews in the data collection was another step that was taken in order to prevent bias as was the researcher's approach (to invite all and not hand-pick them) to the choice of interviewees. The strategy could easily have been problematic if more administrators (than 30) had agreed to the interviews.

The reliability of case-studies builds on documenting the research process to allow for further analysis of the data and to test if the same findings/conclusions have been reached by other researchers (Yin 2003).

The internal validity has to be focused to avoid false conclusions; triangulation is one way of avoiding this together with an awareness that there could be alternative explanations. In the DE-merger research the pre-knowledge and internal access to documents combined with following on-going discussions in the organizations offered opportunities to find explanations.

External validity is always problematic in a single case-study (e.g. Gummesson, 2000). Some authors also find it possible to confirm external validity (Bassegy 1981; Yin 2003). It is a common misunderstanding that this generalization should be applied to other case-studies. Instead the results should be generalized to theories that could be tested by replication (Yin 2003). In the

present case the main objective was to find keys that could facilitate the PMI of IS and administrators in a public sector merger.

4 Findings

Eight research papers (table 8) present the findings from the four case-studies realized between the autumn 2008 and spring 2010 (sections 4.1 – 4.4). A fifth study was carried out as this thesis was being written in order to give an updated account of the situation about two years after the DE-merger (section 4.5) including the administrators’ feelings, perceptions and opinions about how IS had been handled.

Table 8: The relations between the studies and the research papers.

Study carried out in:	Related research papers:
October 2008	Paper 1 (Lundqvist 2009) & Paper 2 (Lundqvist 2010a)
May 2009	Paper 3 (Lundqvist 2010b) & Paper 4 (Lundqvist2010c)
February 2010	Paper 6 (Lundqvist 2011b) & Paper 7 (Lundqvist 2011c)
May 2010	Paper 5 (Lundqvist 2011a) & Paper 8 (Lundqvist 2012)
November 2011	The Summary

The main findings from the studies will be presented in a summarized form and detailed accounts are given on the research papers. Extracts that relate to a specific research paper are drawn from those e.g. Interviewee x, p. x, Lundqvist 2011a. Material that has not been included in any related paper simply refers to the time when the actual study was realized, e.g. Interviewee x, May 2010. References that are marked Administrator x, November 2011, relate to comments from the fifth study, but which have not been published in any research paper (section 4.5).

4.1 The starting point for the case-study - an explorative study in 2008

The explorative study was the starting point for the longitudinal case-study (cf. fig. 10). The research papers that were generated by the study are no. 1 (Lundqvist 2009) and no. 2 (Lundqvist 2010a).

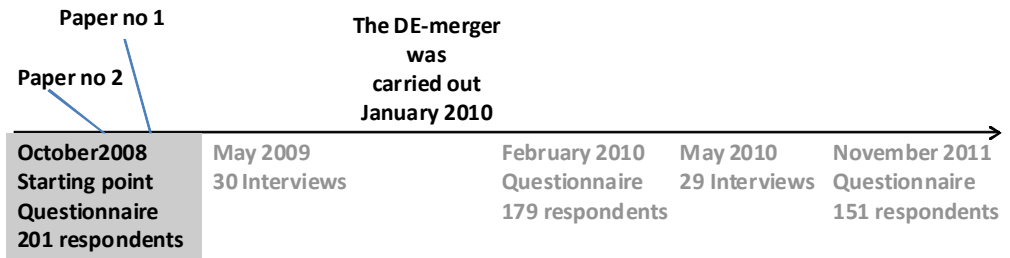


Figure 10: The first study and related research papers.

Changes affecting an organization's IS often affects the administrators' work as they depend on IS to fulfil their duties. The study also looked into the administrators' opinions of what was required to be effective and if they felt they contributed value to the organization: – their self-valued effectiveness and value contribution. The findings provided much background information (table 9) that was useful for a fundamental understanding of the administrators in Org D and Org E.

4.1.1 Profile of the respondents

There were three times more female than male respondents. The vast majority was permanently employed, had academic education, and had a period of employment that had lasted ten years or more. About a third of the participants had changed tasks 3-5 times and almost as many had changed their place of work (either office or department) during their period of employment. Descriptive characteristics of the respondents are summarised in table 9.

Table 9: The profile of the respondent group (N=201). (Lundqvist 2009)

Variables:	Frequency:	Organisation D		Organisation E		Total D + E	
Employed at	Org D	102	51.0%			201	100.0 %
	Org E			99	49.0%		
Gender	Female	75	73.5%	81	81.8%	156	77.6 %
	Male	27	26.5%	18	18.2%	45	22.4 %
Education level	Vocational education	0	0.0%	1	1.0%	1	0.5 %
	High school	12	11.8%	23	23.2%	35	17.4 %
	Academic courses	16	15.7%	12	12.1%	28	13.9 %
	Academic degree	73	71.6%	61	61.6%	134	66.7 %
Age	Other	1	1.0%	2	2.0%	3	1.5 %
	21 – 30	7	6.9%	8	8.1%	15	7.5 %
	31 – 40	25	24.5%	33	33.3%	58	28.9 %
	41 – 50	44	43.1%	34	34.3%	78	38.8 %
	51 – 60	16	15.7%	17	17.2%	33	16.4 %
Form of employment	61 – 65	9	8.8%	7	7.1%	16	8.0 %
	66 –	1	1.0%	0	0.0%	1	0.5 %
	Permanent	88	86.3%	78	78.8%	166	82.6 %
	Project	5	4.9%	11	11.1%	16	8.0 %
	Substitute	9	8.8%	10	10.1%	19	9.5 %
Period of employment	On hourly basis	0	0.0%	0	0.0%	0	0.0 %
	< ½ year	3	2.9%	5	5.1%	8	4.0 %
	½ – 1 year	16	15.7%	9	9.1%	25	12.4 %
	2 – 5 years	23	22.5%	19	19.2%	42	20.9 %
	6 – 10 years	26	25.5%	29	29.3%	55	27.4 %
Changed tasks	> 10 years	34	33.3%	37	37.4%	71	35.3 %
	0 times	18	17.6%	15	15.2%	33	16.4 %
	1 – 2 times	35	34.3%	31	31.3%	66	32.8 %
	3 – 5 times	33	32.4%	40	40.4%	73	36.3 %
	6 – 10 times	12	11.8%	7	7.1%	19	9.5 %
Changed place of work	> 10 times	4	3.9%	6	6.1%	10	5.0 %
	0 times	42	41.2%	23	23.2%	65	32.3 %
	1 – 2 times	35	34.3%	36	36.4%	71	35.3 %
	3 – 5 times	18	17.6%	26	26.3%	44	21.9 %
	> 5 times	7	6.9%	14	14.1%	21	10.4 %

4.1.2 Main findings

The study found that a majority of the respondents (62.7 %) thought that the probability of their duties changing after the merger was “Very high” or “Rather high”. However, about a third (35.3 %) thought their chances of influencing work related changes during and after as being “Very low” or “Rather low”. Despite this a majority (56.7 %) had a “Very positive” or “Rather positive” attitude towards the merger. A majority (59.7 %) also found the information that was given about the DE-merger to be “Very clear” or “Rather clear” (Lundqvist 2009).

About two-third (69.4) of the respondents stated that they viewed their present IS as being “Very good” or “Rather good” (Lundqvist 2009). Three quarters of the system users (75.7 %) felt that the IS facilitated their work. Despite this 21.9 % viewed their IS as inflexible, about a quarter (25.3 %) thought that the IS increased productivity, and 34 % believed their overall IS improved quality. A full third found that their IS in general were easy to use (the respondents were often users of several systems which was taken into consideration) (Lundqvist 2010a).

Over a third (37 %) of the users estimated that they used their IS only occasionally during their working hours and 15 % that they used their overall IS “A great deal of the time”. The remaining users were in between these extremes on a seven degree scale. How much time, in minutes/hours, the alternatives (on the 7-grade scale) actually represented was not further described in the question and was up to the respondents’ own judgement. Hence the conclusion that could be drawn from that specific question is only the respondents’ own estimates of how much they use their IS.

Some questions asked more specifically about groups of IS: 44 % of the users answered that they use the financial system a few times weekly and 30 % that they use system F1 (one of several financial systems) daily. The personnel administration systems were used “A few times weekly” of 37 % and “A few times monthly” of 35 %. Just over a third (35 %) of the administrators used their production systems “Daily” and 24 % used them “A few times weekly”. A majority (54 %) of the users wanted to keep their current IS and further develop them instead of replacing them as part of the DE-merger (Lundqvist 2010a).

A majority (53.3 %) of the respondents considered the system training they had been offered as “Very good” or “Rather good” (Lundqvist 2009). However, 28 % of the administrators had not received any training on the IS that they considered to be most crucial (self-valued) for their

performance. More than half of those who did not approve of the training found it to have been too superficial, and given too early before they started to use the system. Of those who were satisfied a majority found it positive that training was given close to the system implementation. They also considered a trustworthy instructor to have been important for their satisfaction (Lundqvist 2010a). A majority were confident of their ability to learn how to use new IS ($\approx 90\%$) and of their IS knowledge ($\approx 75\%$) (Lundqvist 2009). 56 % of the IS users found their IS easy to learn (Lundqvist 2010a). There was a relatively strong positive correlation between the respondents' views on the opportunities for merger related learning and their opinions about the merger (Lundqvist 2009).

The two key issues required for effectiveness identified by the administrators were "I like my job assignment" (82 %) and "I'm allowed to take responsibility for my work" (83.5 %). The two issues that were marked by the fewest of the respondents are "I only need to register the same thing once" (48.2 %) and "I only need to check the same thing once" (45.2 %). (Nevertheless, even these alternatives were marked by a significant number of the administrators.) The issue of IS dependency was the fifth most marked alternative among the ten that were given, a fact that holds true for both organizations. Several alternatives could be chosen (see appendix in research paper 2, Lundqvist 2010a).

The analysis showed a significant majority of positive attitudes on how useful the administrators believe they are for their organization; 87 % of the respondents from Org D and 91 % from Org E, marked the alternatives "Very often" or "Rather often" in answer to the question if they were convinced of their contribution of value to the organization. The remaining minority answered "Very seldom", "Rather seldom" or "Neutral" (Lundqvist 2010a).

A hypothesis test (Field 2009) showed that there were some, however small, differences between the administrators' opinions of the DE-merger depending on which organization they were employed at. Furthermore, the administrators in Org E (76.8 %) found the information to be clearer than those from Org D (43.1 %) (Lundqvist 2009).

4.1.3 Main conclusions from the first study

A majority of the respondents were confident in their ability to use new systems and of their IS knowledge. They were also confident about their ability to learn new IS. In the literature (e.g. Davis 1986; Hodgson & Aiken 1998; Park et al. 2008; Venkatesh et al 2002) the need for user

acceptance of new technology is emphasized because the implementation of new IS depends greatly on how the users accept it. Hence IS training is an important issue (ibid.); a majority found good opportunities for learning new IS skills in the merger, and a majority was satisfied with the training they received earlier. However, 28 % had not received any training in the system they most depended on. Nevertheless, the findings showed administrators had good self-confidence in IS skills and their ability to learn to handle new IS.

A majority wanted to keep their IS and to further develop it; they did not want to replace it. Most of the systems were considered easy to learn and facilitated the administrators' work. However, approximately a quarter of the respondents felt they increased productivity and only about a third thought that they improved quality. The respondents were positive to changes due to the merger and this could be related to the opportunities of developing the IS. The findings show that the administrators needed IS that worked well and contributed to their effectiveness, confirming the results often found in the literature of organizational dependency on IS (e.g. Andersen 1994; Langefors 1995; O'Brien & Marakas 2009).

However, in retrospect the fifth place was possibly not so prominent but the alternatives that were available for the respondents were less well-formulated in that they measured different categories of values. The alternatives that were the most highly ranked (i.e. important) concerned the work climate/atmosphere and others like efficient IS had more to do with the technical features and work routines. The administrators' opinions of what they regarded as most important in order to be effective highlights the need for acknowledging the human factors in mergers. However, there are warnings in the literature (e.g. Bashein & Markus 1994; Giacomazzi et al. 1997; Ko et al. 2009; McKiernan & Merali 1995; Shrivastava 2007; Sirkin et al. 2005) against being too focused on human issues at the expense of "harder" issues which could effectively put an end to the changes or at least aggravate the PMI if it (the hard side) is ignored.

The respondents expected changes that were likely to have an impact on their work situation but perceived that their influence on the changes would be small. Nevertheless, a majority was positive to the DE-merger. Frommer (2001) found the prevailing expectations about a merger have an impact on both the attitudes and the commitment to a merger, making positive expectations promising for the PMI. Nevertheless, the hypothesis testing showed that there were some differences in opinion about the

merger depending on which organization the respondents were employed in (Lundqvist 2009). Frommer's (ibid.) theory could also be a problem if the expectations are not fulfilled in the merger. Also Bashein and Markus (1994) point out the problems of unrealistic expectations.

The respondents from Org E were more satisfied with the information about the DE-merger than those from Org D. A lot of advice in the literature deals with the need to communicate the change message in a proper way (e.g. Bashein & Markus 1994; Gall 1991; Hallier 2000; Ketz de Vries & Balazs 1997; van Knippenberg et al. 2006; Lewis et al. 2010; Mishra 1990; Napier et al. 1989; Schweiger & Denisi 1991; Schweiger & Weber 1989; Shrivastava 2007; Smith 2005): by varying the modes of communication, informing even if there is nothing new to tell, not withholding information even if it is unfavourable for the employees and acknowledging those who are negative about the changes.

The findings showed that the respondents believed that they contributed value to their organizations. Employees that are sure of their working abilities and skill levels are usually more inclined to trust their leaders than those who are less satisfied with their own contribution to the organization (cf. Podsakoff et al. 1996).

4.2 The second study - carried out in May 2009

The study was realized in May 2009 (cf. fig. 11) and the related research papers are no. 3 (Lundqvist 2010b) and no. 4 (Lundqvist 2010c). Thirty administrators were interviewed, after they had agreed to the researcher's request during the first survey; none of those who accepted the interview invitation was omitted. The interviewees could choose where the interviews were carried out, but a majority preferred their ordinary office. They were promised confidentiality, and therefore referred to by numbers that do not refer to their post, place of work, or their competence. Furthermore, the recordings were deleted after transcription by the researcher.

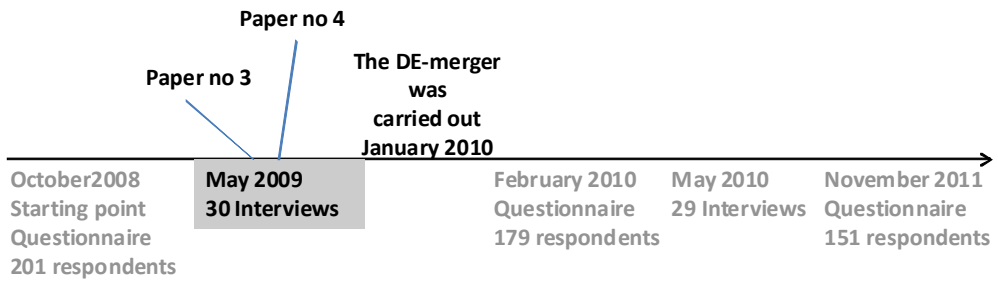


Figure 11: The second study and related research papers.

4.2.1 Profile of the interviewees

There were 38 % female and 62 % male interviewees from Org D and 71 % female and 29 % male from Org E. More than half (54 %) of the participants from Org D and from Org E (64 %) were between 41 - 60 years. The vast majority (Org D=77 % and Org E=94 %) worked with production systems or with a combination of IS where production systems were included: the financial systems, the personal administration and the HR (human resources) systems and other administrative IS that handle student-related issues, e.g. registration, monitoring/entering study results, certificates, making reservations and booking premises/classrooms.

4.2.2 Main findings

The overall findings show that the administrators were very positive to the information that was given about the merger; 83.3 % were satisfied in many respects. The information was given through various channels, such as web-sites, e-mails, newsletters and physical meetings (with top management representatives present) and given shortly after decisions were made. There was also information about postponed/delayed decisions.

Nevertheless about a third (36.6 %) lacked individual information about what would happen to them after the merger. They might have to leave their job, change their place of work and leave their colleagues. They could also be forced to replace their IS and change their ingrained routines. Some interviewees were concerned about the physical distance between the two campuses and were worried about being able to continuously meet the students', teachers' and researchers' needs and demands. Another worry was the prospect of less challenging tasks (degradation) and not having the time to carry out the necessary changes.

Some were worried that managers in charge of IS and technical decisions did not have the proper qualifications to decide on important and complicated issues. The main reason was that those in charge were often neither IS- nor IT professionals. These combined factors could have given the administrators cause for concern, but a majority (56.6 %) was positive and enthusiastic about the merger and were not worried (76.6 %) about it. A clear majority (76.6 %) believed that they would be able to influence their work situation after the DE-merger (Lundqvist 2010b).

Half of the interviewees talked about the fact that the management had not yet been appointed and they considered that to be the reason why there was no information about many administrators' jobs and positions. They also saw it as a reason for postponed and delayed decisions about what would happen to the IS (Lundqvist 2010b).

The administrators were satisfied with their IS as 83.3 % considered them to be supportive even if some problems like inflexibility and difficulties to learn and to manage were mentioned (Lundqvist 2010b). Half of the administrators were not sure about whether there would be any system training or not; 23.3 % knew that they would be trained and 16.6 % did not think they would need it because they expected to use the same IS as before the merger (Lundqvist 2010c).

The findings showed that the administrators' competencies had been utilized at least to some degree in the merger; only 20 % expressed that their competencies had not been used and 16.6 % had no opinion or did not say anything about it. Participation in merger projects was promoted and this was seen as a good way to use one's knowledge. The interviewees were asked if they found the merger to be a good time for carrying out changes:

“Yes, because you have a totally different authority for carrying out changes and also a greater understanding. Besides, if this is dealt with it is a better foundation for the new organization – that is totally clear. But it is very important to realize it in due time! Trying to do much in a short time could lead to a catastrophe.” (*Interviewee 30, May 2009*)

The administrators often participated in merger projects beside their ordinary duties and were positive to carrying out changes in the merger processes:

”It is a convenient time to take the opportunity of carrying out changes [author’s comment: changes of IS]. Absolutely, a good opportunity of doing so and that goes for the organization too” (*Interviewee 1*, May 2009)

This finding conflicted with what is often mentioned in the literature (e.g. Abrahamsson 2000) about resistance to change, as a clear majority (93.3 %) was positive and open-minded to reengineering duties, routines and processes.

4.2.3 Main conclusions from the second study

This follow-up study confirmed the findings from the first, explorative study that a clear majority was positive to the merger and looked forward to it and that the communication was, in general, good. However, important information was missing about positions, tasks, and location after the merger and it was uncertain if there would be any training on new IS or not. It is often recommended that information should be extensive in a merger process, rather more than necessary, because there can hardly be too much information in a merger (e.g. Applebaum et al. 2000a, 2000b; Bashein & Markus 1994; Caudron 1996; Ford & Ford 2009; Institute for Government 2010; Marks & Cutcliffe 1988). Nevertheless, the lack of individual information did not cause any negative feeling on the part of the administrators. The information strategy mainly confirmed the advice in the literature (*ibid.*) which might have helped the administrators overlook the lack of individual information.

The administrators felt that their competencies and knowledge were acknowledged, a factor that is often stressed in the literature to prevent employee resistance to changes/mergers (e.g. Drucker 2008; Empson 2000; Ford & Ford 2009; Shrivastava 2007; Zmud & Cox 1979). Allowing and facilitating employee participation in the change processes is recommended (*ibid.*). Inviting the personnel to participate in the merger/change processes is a way of making use of their knowledge and facilitating participation.

The fact that both top management and other managers were not appointed on time caused some worry among the administrators and they thought that this was the reason that some decisions were delayed. In the literature it is often emphasized that the managers who are to be in charge

after the merger should participate throughout the merger processes, from the pre-merger planning to the PMI. There are several reasons for this: to reduce uncertainty and disagreement between the personnel and the managers (Bashein & Markus 1994) and to make sure that the managers can participate in the IS strategizing, in the decision making and in the trust building in order to facilitate a successful PMI (e.g. Empson 2000; Epstein 2005; Erkama 2010; Lewis et al. 2010; Schweiger & Goulet 2000; Shrivastava 2007).

The administrators were positive to reengineering initiatives of their duties. The human perspective of BPR is important not least as a counterbalance to the technical decisions (Bashein & Markus 1994; Cooper & Markus 1995; Drucker 2008; Grey & Mitev 1995; Harmon 2007; Harrington et al. 1997; Mishra & Spreitzer 1998; Ranganathan & Dhaliwal 2001; Senge 1995; Vakola & Rezgui 2000).

The administrators were satisfied with their IS that they regarded as supportive. Administrators usually depend on their IS (e.g. Andersen 1994; Hoffer et al. 2002; Langefors 1995; O'Brien & Marakas 2009) to carry out their tasks as the organizations in turn depend on the administrators to carry out their duties (Katz 1974; Simon 1971).

4.3 The third study - carried out in February 2010

Research papers no. 6 and no. 7 relate to the third study realized in February 2010. Figure 12 shows the research process. The questionnaire was sent to those who had participated in the last survey (in 2008) and had remained in the new organization. More administrators had now left the organization; thus, 281 administrators had the opportunity to answer the questionnaire.

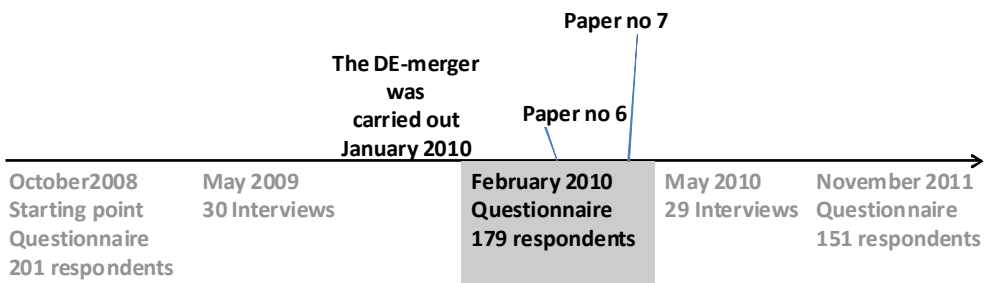


Figure 12: The third study and related research papers.

4.3.1 Profile of the respondents

The total response rate is 64 % (Org D 60 % and Org E 69 %). A majority (78 %) of the participants are female (Org D = 75.5 %; Org E = 82.4 %) and 31 % are younger than 41 years (Org D = 28.7 %; Org E = 33 %). Before the merger 52.5 % of the respondents were employed at Org D and 47.5 % at Org E.

4.3.2 Main findings

Shortly after the DE-merger the findings showed that a majority (58 %) of the respondents wished for further organizational development, both of the routines and the IS, and they thought that those who were in charge of the merger should have better exploited the opportunities for further development:

“It is important that the IS supports and optimizes the business. Before the IS is changed it is important to figure out how the work should be done, to investigate the routines and the procedures. I think that there has been too little time for new thoughts.” (*Commentator 32*, February 2010)

A minority, 15 %, considered that the management did what was necessary to carry out changes in the DE-merger. However, 40 % believed that the changes in routine that were actually realized had impacted negatively on their work situation whilst the realized IS changes were considered by 27 % to have had a negative impact on their work situation. Some examples of how new IS had influenced the work situation negatively are: problems with user accounts and getting access to some IS away from the ordinary workplace/office; the “old” systems were used instead of looking for new solutions and a lack of support/manuals for some applications. The need for a lot more travelling negatively impacted the work situation and new IS (hard to distinguish from routines per se) take time to master. There is often also a lack of consensus on the best practices/routines to implement in the new university (when other and different routines have been used before the merger).

There were no differences depending on gender (Mann-Whitney U-test) or age (Kruskal-Wallis test) in the opinions about how IS and routine changes influenced the work. However, the Mann-Whitney U-test showed differences depending on the former employer ($r = - 0,22$;

mdn=3); in any case the influence was found to be small (below .3) (Lundqvist 2011b).

The IS were considered to be satisfactorily supportive by a majority (57 %). A majority had experienced, “Totally” or “Partly”, changed IS(78 %) and routines (79 %). Of those who had not been exposed to changes 26 % wished for routine changes and 19 % for IS changes (Lundqvist 2011b).

There was still some uncertainty about opportunities for user training; 39 % of those who had changes in their routines did not know if they would receive training or not, and 38 % had neither received training nor would they get any. The corresponding figures for IS changes were 29 % that did not know about whether they would be offered training or not, and 27 % that neither had nor would have training because of IS changes. Regardless of these findings there was no specific demand for training (Lundqvist 2011c).

The findings indicate that the administrators still considered their knowledge as utilized and that they contributed value to the organization (89 %), “Mostly” or “Always”, and that they worked effectively (72 %), “Mostly” or “Always” (Lundqvist 2011c).

4.3.3 Main conclusions from the third study

A majority believed they created value and were effective even after the DE-merger was realized. Participation and opportunities for being effective are important reasons for involving employees in a merger (e.g. Drucker 2008). It is also important that managers work together with their employees in order to find good solutions for how to deal with change (e.g. Cooper & Markus 1995).

There was still uncertainty about training but the study did not find that it was particularly expected either. The administrators showed high self-confidence regarding their IS-skills and their ability to carry out their tasks and they were also confident of their ability to learn new IS (section 4.3, Lundqvist 2009). Expectations could have an impact on mergers and PMI (Frommer 2001), and positive expectations could turn to negative if not fulfilled. After the DE-merger the respondents were disappointed that there was less organizational development than expected.

The changes to routines and IS that were actually carried out were considered by some to have had a negative influence on the work situation; the routine changes more than the IS changes. This discontent could be connected to the fact that there were high expectations that the

merger would lead to organizational development and change. The administrators did not perceive the reengineering attempts that were made satisfying since they had expected more significant changes. Common wisdom and findings from earlier research (e.g. Abrahamsson 2000; Alaranta & Viljanen 2004; Cartwrights & Cooper 1995; Empson 2000; Gash & Orlikowski 1991; Herron et al. 1999; Kotter & Schlesinger 2008; Lawrence 1969; Schweiger et al 1987; Smith 2005; Washington & Hacker 2005) were challenged since the administrators did not show resistance to change. There is advice in the literature (e.g. Ford & Ford 2009; Nyberg & Mueller 2009; Lewis et al. 2010) about the importance of looking positively at naysayers; their objections could be relevant.

The findings indicated that the administrators could make use of their knowledge in University DE as was also the case before in Org D and Org E. The opportunity to make use of one’s knowledge and skills is often a facilitator for coping with changes (e.g. Ford & Ford 2009; Ruggles 1998; Shrivastava 2007).

4.4 The fourth study – carried out in May 2010

The research papers 5 and 8 relates to the fourth study, realized in spring 2010 (cf. fig. 13). The same group of administrators, who were interview in May 2009, were contacted for a new interview to which they had agreed a year previously; only one person could not participate in the second round. As before, the administrators could choose the location for the interview and they were promised confidentiality. The same numbers were used as in the last interview; the interviewees’ identities were hidden and the recordings were deleted as before.

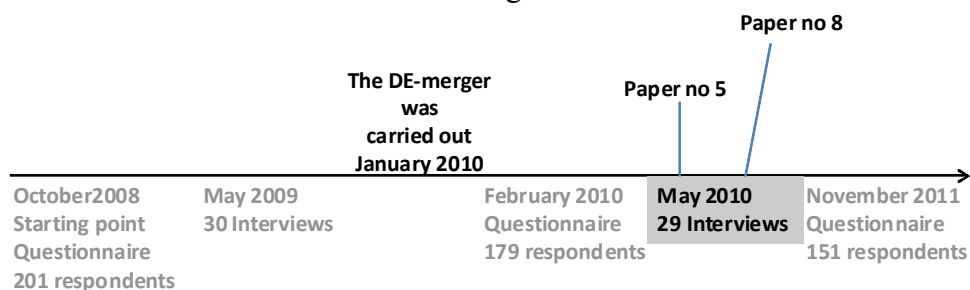


Figure 13: The fourth study and related research papers.

4.4.1 The profile of the interviewees

There were 55 % female and 45 % male administrators among the interviewees. Before the DE-merger 55 % of the interviewees were employed in Org E and 45 % in Org D. 62 % belonged to either one of the age groups 41 – 50 years and 51 – 60 years. 72 % said that they retained the same duties, nevertheless, 86 % had new routines and 80 % had got updated or replaced IS. A majority, 86 %, had not changed their place of work after the merger was carried out.

4.4.2 Main findings

After the DE-merger the administrators experienced a more complex work situation, and 75.8 % of the respondents found it harder to tell if they created value or not. There appeared to be different views about how routines should be carried out in University DE and some thought that it was problematic to discuss with the “other” side because:

“It is hard for two parties to agree on mutual routines when they do not speak the same language in the first place“ (*Interviewee 13*, p. 93, Lundqvist 2011a).

There were opinions about the lack of continuity regarding management of the IS/IT-department:

“I am not sure whether the reason is that the IS-manager is not going to be operative until the autumn or the fact that the appointments of the managers have not accompanied the merger process. I mean it is rather late and I know that the proposal [authors comment: for the new IT-manager] has been ready for some time now but then the second top manager should be appointed first in order to have his/her say about it and should for example meet that person and so on... The person that was suggested for the job could not leave his/her position immediately and had also a planned leave from work after that - so it will take eight months before the manager finally is working.” (*Interviewee 22*, May 2010)

There was some misunderstanding concerning how the IS were chosen for the new University (e.g. section 1.3). Some criticized

the fact that the “other side’s” IS were applied more often and found it to be unfair that their IS were not favoured:

“Org E demanded us to adapt to all their IS. Our systems were better! It is sleepless nights!” (*Interviewee 5*, p. 96, Lundqvist 2011a)

However, there were a couple of interviewees with knowledge of the reality behind the choice of IS-solutions – as the example below shows:

“I actually know how they think at the IT-department and if there is an IS that is working well – or let us say that they have two systems that are working well, they have to agree on using one of them. They do not take in new IS if there already are IS that are working well – just because of the time constraints.” (*Interviewee 22*, May 2010).

The choices of IS for the University DE were based on the following criteria: i) if the IS was used in both the former organizations the implementation (if they differed) that worked best was chosen and ii) if different IS were applied the system that was chosen should be working well and provide the best opportunities for scalability.

There were opinions about lowered effectiveness after the merger. The distance between the campuses as well as more problems than expected with the use of e-meeting tools were often mentioned as reasons:

”Well, then we should apply video conference facilities – because if we did, that would solve all the problems – I wish....we sat down in a conference room and the others sat at their meeting table, tight together, while we sat more outspread. There was only one loudspeaker available so we could hear what they said but they did not hear us because there was no mobile microphone available so we had to move around.” (*Interviewee 5*, May 2010);

”I do not think the systems are so difficult but the e-meeting program was actually more difficult to learn – but we got proper training though - provided by an external part. It was good, but after that I have not come any closer to actually

using it. It was the intention that it should be used for communication with Org E /.../ But when I want to start using it – I am ready to do so! /.../ However, the technology is not always that good and here we have experienced that the sound is fluctuating and when it happens we think that the problems are related to the ‘other’ side.” (*Interviewee 8*, May 2010);

“The technology could fail and then the ‘other’ side is irritated and the situation becomes stressful.” (*Interviewee 19*, May 2010);

“We need some training on the web meeting systems - or a better manual should be available in the e-meeting room. We use them often for our departmental meetings and before we could not show pictures but now we can - if we only knew how. /.../ Perhaps a clearer manual would be enough to inform about news in the e-meeting room.” (*Interviewee 2*, May 2010)

Despite the criticism, there were also (a few) opinions about the e-meeting facilities to enable co-operation:

“The e-meeting tools – they work very well. We use mostly Adobe Connect and we have furnished some premises so it is possible to use the system together in a group or we could also use the program from home and it is very good to have the opportunity to choose.” (*Interviewee 7*, May 2010)

It was also often mentioned that travelling between the two campuses was both time-consuming and tiresome. Hence it was even more problematic that the e-meeting tools were not as easy to use as they had expected. Furthermore, many found it important to meet in person – and not only by e-meeting facilities.

More fragmentation of the workday, was experienced by nearly half of the interviewees (48 %), but 24 % experienced less fragmentation. A main problem regarding the fragmentation seemed to be a lot of interruptions during the work day (mostly related to the merger). As two of the interviewees expressed it:

“If I should be able to accomplish what I really should be doing then I have to go home and work from there.” (*Interviewee 23*, p. 94, Lundqvist 2011a);

“Generally there is more fragmentation now because of the two locations – otherwise you could meet in the staff-room and work things out during coffee-breaks.” (*Interviewee 18*, p. 94, 2011a)

Lowered productivity was experienced by about half of the respondents (52 %). This was often attributed to new routines and IS. In some cases communication problems were mentioned as a reason:

Personal chemistry and the fact that we worked at different sites but in the same departments made it difficult to do precisely the same things and we worked in differing ways, had different routines – even if the duties were basically the same /.../ it was almost too delicate a subject” (*Interviewee 16*, p. 96, Lundqvist 2011a).

The new routines and IS were not fully implemented and even though the administrators had carried out practically the same duties they had applied different routines in many cases. Because there were more colleagues to take into account it was perceived more troublesome to carry out changes and to reach consensus on various matters:

“There are more departments to take into consideration – routine changes take more time because there are more employees involved.” (*Interviewee 1*, p. 95, Lundqvist 2011a);

“There are very different ways of working in Org D and in Org E – so, if I suggest something that Org E has done before it is not appreciated by those from Org D and vice versa... and I do not believe that is has anything to do with the suggestions per se.” (*Interviewee 6*, May 2010)

The administrators had very positive expectations about the merger and the organizational changes that they expected (section 4.1, 4.2). After the merger those expectations were often not fulfilled:

“Well, this modern organization... – actually, it is not that very modern nor is the management style modern – in fact, quite the opposite – it is rather dated. I feel disappointed because it did not turn out to be that modern organization – it was more of a package with the intention of appearing to be modern.” (*Interviewee 26*, p. 71, Lundqvist 2012)

The administrators participated in several merger-related projects before the merger. Hence it was not appreciated that ongoing IS-projects were stopped after the merger without any explanation (when the new top management was appointed):

“We had a situation where we had a plan and provided that it had been carried out things would have been in order. /.../ During the autumn (and we started over a year ago) we worked with a proposal for a new structure. No decisions were taken but the former managers found it to be very good. We worked together, Org D and Org E, and had a tangible proposal but we have not heard anything since the merger – it is just gone and nothing else has been proposed instead.” (*Interviewee 22*, p. 71, Lundqvist 2012)

A majority (69.2 %) of those who experienced routine changes considered them to be more time-consuming. IS changes were estimated by 46.2 % to consume more time. A new routine could be more time consuming as colleagues would have to check each other's work more often. It was sometimes difficult for the interviewees to distinguish between IS and routines since they are intertwined, but it was obvious that the interviewees had tried hard to do so. The new routines were seen as causing more errors than the IS changes, even if the IS changes also caused more errors than before (Lundqvist 2011a). In any case there were hopeful comments about being able to manage the changes:

“Initially there are more faults because the routines are not fully established yet – I am still at the stage where I have only carried out new things once.” (*Interviewee 3*, p. 97, Lundqvist 2011a)

Five months after the DE-merger some administrators were still not sure of their duties nor did they understand where the new organization was heading:

“There will be changes but when? I do not know, there will be studies – I believe that these events take place high over one’s head.” (*Interviewee 26*, p. 71, Lundqvist 2012)

There were also worries that some questions would not be handled at all: “... it is not so much duplication of work as things falling by the wayside” (*Interviewee 13*, p. 96, Lundqvist 2011a). Some interviewees found it unfair that the “other side’s” IS had been chosen instead of their own, which they considered to be more convenient and better. The new top management that took over after the DE-merger was found to apply a more firm and directive management style which reinforced hierarchy and power structures.

“The power has been kicked up a level in terms of decisions. A departmental manager cannot always decide, instead the question has to be moved to a higher manager and sometimes even to the top manager – and this concerns issues that earlier were decided by the departmental manager.” (*Interviewee 7*, p. 71. Lundqvist 2012);

“Before the merger the top managers were closer and there was always a channel, through which it was possible, to get in contact with the top manager. This feels different now.” (*Interviewee 17*, p. 71-72, Lundqvist 2012)

Some administrators expressed that they received less appreciation from the top management after the merger:

“... aah, those are the small administrators they are not worth anything and we can decide whatever we find suitable regarding them. I think it is so sad because many administrators have academic education – it is not just anyone who can be an administrator /.../ Then I feel I am disregarded by the top managers but not by the manager in my own department.” (*Interviewee 9*, p. 71, Lundqvist 2012);

“It is obvious that the hierarchy has increased which is not what I had expected. Hence, I believe that much competence is lost since they are rushing off without listening to those who work with certain tasks, which I find peculiar. I am sometimes very sceptical.” (*Interviewee 20*, p. 70, Lundqvist 2012);

“... there is no democracy any longer and it has been worse with the new management – there have been so many things and I thought it should be exciting but then I realized – well, that is *not* what is going to happen ... (*Interviewee 1*, May 2010)

The trust in management (especially the new top management) was fading and there was a great deal of rumour spreading in the newly established organization:

“The personnel do not support the new management – I have heard from the central administration that this is the truth.” (*Interviewee 9*, p. 72, Lundqvist 2012)

There were opinions about the late appointment of managers and of the problems that this had caused to the merger processes. A manager who resigned after the merger talked about the problems of postponed decisions due to the late appointment of managers for the new organization:

“The problem during the autumn was that there was one organization with managers in charge of the merger that took some decisions – but those that would be responsible for the new organization later on – they were not available then. It was like just one organization taking some overall decisions. /.../ It was the late appointments of the new managers in general and that made it difficult because there has to be people in charge with responsibilities./.../ Issues and decisions were lost. The new management were needed in their positions in the autumn and I felt that the situation was completely different by the time the new managers were in their positions.” (*Interviewee 25*, p. 72, Lundqvist 2012)

The findings pointed to a great awareness among the administrators about the consequences of late management appointments:

“Well, I did not think that getting new top management would influence, but it did. /.../ an organization carries its history and sometimes there seems to be very little understanding of that and that makes it hard for us who work at the grassroots. I actually believe so.” (Interviewee 17, p. 72, Lundqvist 2012)

A changed communication strategy did not seem to be appreciated by the interviewees. A clear majority (79.3 %) considered that the information content had changed to what they considered as more concrete (many decisions were taken and communicated when the new managers had been appointed) and less visionary (more practical instead). 31 % thought that there were fewer communication channels and 58.6 % believed that the amount of information had decreased. 62 % believed that the sender of the information had changed and become more anonymous after the merger. The administrators still lacked information about issues that were important to them in their duties. However, the quantitative analysis that was carried out did not tell whether the changes were good or bad though the qualitative analysis did:

“There is a more anonymous sender from the central unit for information /.../ It feels like there is a hidden agenda, maybe some are getting to know things now that they do not tell. Before we were spoiled – there is much we do not know now.” (Interviewee 17, p. 100, Lundqvist 2011a);

“The doubts that are abundant in the organization have not been taken care of /.../ the disappointment is revealed in the informal information channels.” (Interviewee 19, p. 98, Lundqvist 2011a);

“There is less in a way. Maybe more or less unconsciously but I think that they believed that it was less important to inform us when the merger was carried out. Practically that was what happened and now about a month ago they started to provide more information again. They realized that it is needed.” (Interviewee 30, p. 99, Lundqvist 2011a);

“New channels have not been communicated – a blind faith that people would search for information?” (Interviewee 29, p. 99, Lundqvist 2011a)

However, the changed sender could also be perceived as a step towards more openness:

“Now the information is sent out in a more integrated form – before you did not know who was responsible for it.” (Interviewee 9, p. 100, Lundqvist 2011a)

The amount was often regarded as less after the merger but some said that it seemed to be turning towards more information again.

“Before, we had weekly meetings but they died out.” (Interviewee 16, p. 99, Lundqvist 2011a)

There were some questions that were not analyzed until now (at the writing of the thesis) and therefore not discussed in the research papers no. 5 and no. 8 (appendix 3) The interviewees were asked if they had suggested changes for the DE-merger – which a majority (79.3 %) had done. Those who had made change proposals (23 of the interviewees) were asked if they considered that their ideas were utilized (scale question); their opinions are shown in figure 14.

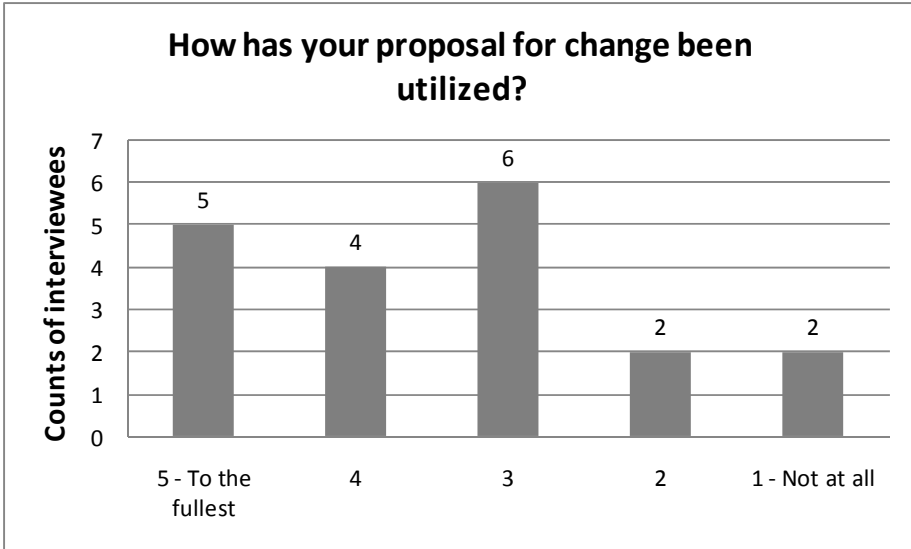


Figure 14: Opinions about how change proposals were used (N=23; internal fall offs=4).

There were two questions about whether changes of IS and routines were needed before *and* after the DE-merger was carried out: i) *As far as you remember – did you think that changes of IS and routines were needed before the merger?* ii) *Now, after the merger – do you think that changes of IS and routines still are needed?* As figure 15 shows, a minority thought changes were not needed before the DE-merger was carried out (3 out of 29 could not tell; N=26).

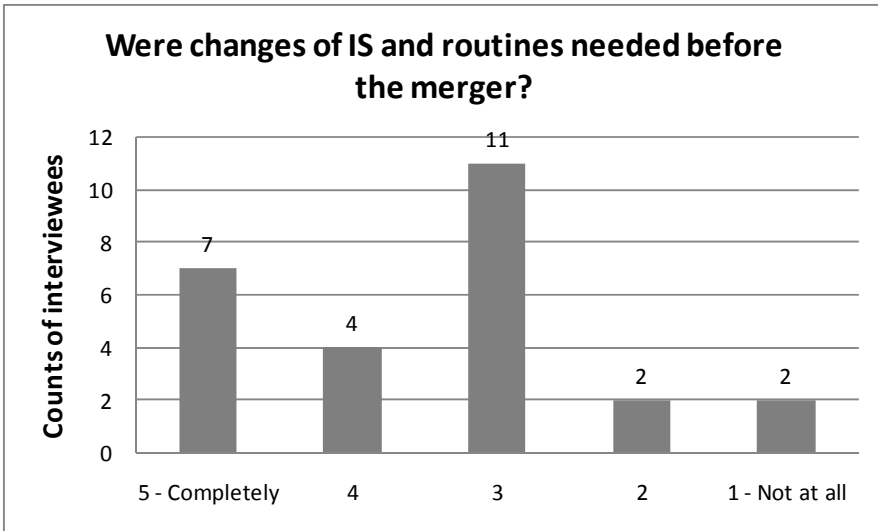


Figure 15: Opinions on whether or not changes were needed before the merger (N=26).

Figure 16 shows that after the merger was carried out the interviewees still found it necessary to change IS and routines (2 out of 29 did not know; N=27).

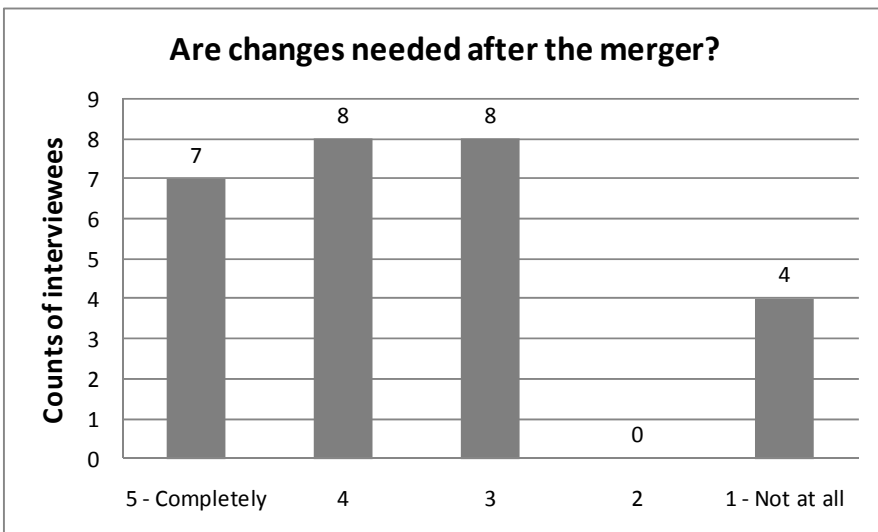


Figure 16: Opinions on whether or not changes were needed after the merger (N=27).

The fourth study also revealed a need for further planning:

“Now there has to be more long-term planning and one has to consider that there are a lot more people involved. Sometimes this fails.” (*Interviewee 13*, p. 71, Lundqvist 2012)

About half of the interviewees (54.3 %) found that they had to take responsibility for their learning and training on new or updated IS (and routines). About two thirds of the interviewees (68.6 %) said that colleagues teach and train each other to master new IS and 48.6 % helped each other to use new routines.

“Well, that is how we do things because we check with each other. I think that those from Org E are more in to checking with the colleagues in Org D than the other way around /.../ I believe that those in Org D have another kind of self-esteem and self-confidence than we. But they are helping us out to the fullest.” (*Interviewee 24*, May 2010);

“That is so to a very high degree and I do not know everybody in Org D like I do here in Org E and am not sure about who is responsible for what issues. That is how it is like now in this organization – you do not know who handles what, but you are trying to help each other and search for someone you think may know.” (*Interviewee 22*, May 2010);

”That is how it is, even if you do not have the time for it you might have to sit down with a colleague when a question comes up, because some parts of the system you do not use as often as others and then you have to ask others about these parts. Of course we teach each other and mostly I am the one that helps others when there are questions about the systems.” (*Interviewee 1*, May 2010)

4.4.3 Main conclusions from the fourth study

An organization’s multi-site location could be an obstacle for successful PMI (e.g. Giacomazzi et al. 1997). Travelling takes time and is tiresome, especially in times when there is a lot to do, as in PMI

processes and this is often mentioned during interviews after the DE-merger (Lundqvist 2011 a).

The findings show that it is not recommended to change successful communication strategies in the PMI phases – especially not if the employees perceive the new strategies as less open, less honest, and more anonymous. It could also be problematic to change or remove channels and cut the amount of information right after a merger, even if there were some findings (16.6 %) of information overload before the DE-merger (Lundqvist 2010b). It was also unpopular that informal meetings were discontinued after the merger (Lundqvist 2011a). To inform extensively (i.e. openly and honestly) is often recommended in the literature as an effective means of helping employees to overcome uncertainty and anxiety in mergers or other organizational changes (e.g. Applebaum et al. 2000a, 2000b; Institute for Government 2010; Tarplett 2009).

The findings from the DE-merger indicate that well-managed pre-merger phases do not guarantee successful PMI. The pre-merger studies showed positive opinions about the expected changes and the merger; the post-merger studies showed less satisfied administrators (Lundqvist 2009, 2010b, 2010c, 2011a, 2011b, 2012). The workload is often raised while a merger is ongoing (e.g. Bashein & Markus 1994; Empson 2000b; Epstein 2004; Grey & Mitev 1995) and during the DE-merger the administrators usually participated in at least one merger project beside their ordinary duties. In the literature it is recommended to work full-time (and not part-time) with the merger projects (e.g. Epstein 2004). It is problematic when positive pre-merger expectations do not end up in positive PMI processes. The importance of maintaining positive employee expectations in the PMI phases is emphasized by the findings (Lundqvist 2011a).

In University DE the management style was perceived to be more authoritative and the hierarchy was perceived to have grown compared with Org D and Org E. Some interviewees also stated that the power to make decisions was moved to a higher level than before. In the previous organizations the departmental managers had more power to decide than after the merger. (Lundqvist 2012) According to earlier research (e.g. Bringselius 2008, 2010a, 2010b) public sector personnel are often used to being involved in planning and decision making and therefore it is difficult to reduce their participation in the PMI processes as this may increase vertical resistance (between managers and their subordinates). Bringselius (2010a) found that the trust in managers decreased after a merger (between the Swedish National Audit Office and the Swedish

Social Insurance Agency) when the employees' participation in decision making was reduced.

Uncertainties could easily cause rumours (Mishra 1990) and a loss of trust (e.g. Volery & Mensik 1998; Whitener et al. 1998). Rumours were also spread in the DE- merger; some interviewees were not satisfied with the fact that "their" (former) IS was not chosen for the new organization and suspected that decisions were based on a wish to be fair to both campuses. However, this was not true (according to internal documentation and knowledge) at least not regarding which of the IS should be implemented in the new university. The findings indicate a loss of trust in the new management after the DE-merger was realized leading to an increase in rumour spreading (Lundqvist 2012). The findings show a greater feeling of uncertainty because the administrators did not feel that they were listened to or acknowledged for their competence, as had been the case before the DE-merger (Lundqvist 2012). In a merger rumours may originate from within the organization (as the example above) but also from outside (DiFonzo & Bordia 2000), even though there was no clear example of the latter in the study. Nevertheless, rumours had been spread by the media throughout the process and it was sometimes been difficult to distinguish between what was based on organizational grapevine (that can be partly true) (e.g. Mishra 1990), harmful rumours (DiFonzo & Bordia 2000; van Iterson & Clegg 2008) or what was based on fact.

It takes time to establish new routines and new IS. The interviewees experienced reduced effectiveness, increased fragmentation of the working day and reduced productivity (Lundqvist 2011a). Tetenbaum (1999) warns that productivity drops are likely to occur in mergers where too much focus and time are invested in the merger processes. That is why fast transitions are recommended (e.g. Saarimaa & Tukiainen 2010; Tetenbaum 1999). In the DE-merger the transition phase could not be considered as fast. Two years after the merger there were still some ongoing discussions about routines and IS, for example the IS strategy had not yet been decided.

The interviewees stated that the training and learning of new IS and routines were mainly achieved with help of colleagues. Galliers (2011) points out the importance of knowledge sharing, knowledge creation and of knowledge brokering in the IS strategizing processes. Venkatesh et al. (2002) consider training as a way of helping users accept new IS which are often connected to new routines. Thus, the peer-training that took

place should not be seen as a good practice; organized training opportunities should be offered too.

There was also a conviction that changes of both IS and routines were needed as much after the DE-merger as before (cf. fig. 15, 16). DeLone and McLean's (1992, 2003) IS-success model investigates the user satisfaction with IS as one of the dependent variables that measure IS-success. The fact that the administrators still considered changes to be necessary is interesting. Document reading highlighted the fact that there were no IS-strategies in either of the previous organizations. After the merger (during autumn 2010) a directive from the top manager requested that an IS-strategy should be developed. The importance of attending to IS-strategy issues early in a merger process is often mentioned in the literature as one of the high impact factors on the PMI success and when it is not done it can seriously endanger the PMI (e.g. Alaranta 2008; Alaranta & Henningsson 2008; Apnovich 2002; Epstein 2005; Giacomazzi et al. 1997; McKiernan & Merali 1995; Mehta & Hirschheim 2007; Galliers 2011; Shrivastava 2007; Wijnhoven et al. 2006).

A clear majority (79.3 %) said that they had proposed changes during the merger and many of them found that their suggestions had been implemented (cf. fig. 14). There is thus much to gain from collecting, acknowledging and implementing proposals from the administrators. First, the administrators were allowed to participate and to use their knowledge, as recommended in the literature (e.g. Ford & Ford 2009; Shrivastava 2007; Zmud & Cox 1979). Secondly, the knowledge sharing that is so important in a merger could be facilitated because tacit knowledge, which usually is difficult to get hold of, is made visible in the proposals for routines/procedures (e.g. Cooper & Markus 1995; Dixon 1999; Drucker 2008; Mishra & Spreitzer 1998; Senge 1995; Sveiby 1996; Yoo et al. 2007) Mergers can easily hinder knowledge sharing and this may lead to knowledge gaps in the new organization (e.g. Alaranta & Martela 2010; Ruggles 1998).

It is recommended that managers are accessible throughout a merger in order to support their staff (e.g. Bringselius 2008; Lewis et al 2010; Mishra & Spreitzer 1998) and to pursue the questions that they will have to deal with after the merger (Erkama 2010; Shrivastava 2007). This was not the case in the DE-merger because of the late appointments of managers which in turn led to postponed decisions (Lundqvist 2012).

4.5 The fifth study – recent findings from November 2011

The fifth study was carried out in order to get an update about two years after the DE-merger (cf. fig. 17). The same group of administrators as in the two previous surveys was contacted – that is to say those who still remained in the new organization. The figures showing response rate and fall-offs are rather stable (cf. subsection 3.4.2.3) even if fewer administrators participated. The questionnaire was relatively short since the reason was mainly to get a snap-shot of IS-related issues (with importance for the PMI) to compare with prior findings. The questions are available in appendix 4.

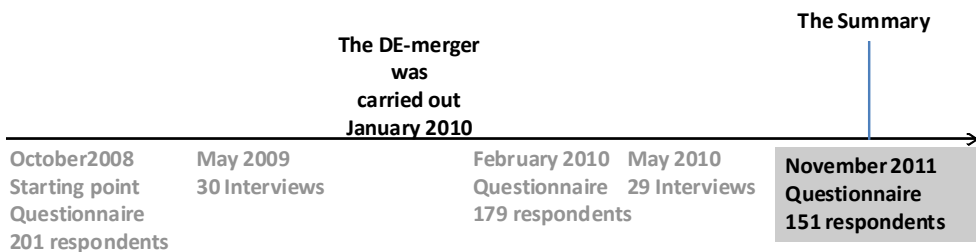


Figure 17: Shows the fifth empirical study’s place in the research process.

4.5.1 Profile of the respondents

There were 79.5 % female (Org D = 41.1 %; Org E = 38.4 %) and 20.5 % male (Org D = 11.9 %; Org E = 8,6 %) among the interviewees. Before the DE-merger 47 % was employed in Org E and 53 % in Org D.

4.5.2 Main findings

A clear majority (75.3 %) was satisfied with the IS they were dependent on to carry out their duties; they regarded them as working “Rather well” (58.3 %) or “Very well” (17.2 %). There were no significant differences depending on employer ($p = .44$) or gender ($p = .36$) as regards opinions about IS. The probability values were not less than or equal to .05. in either of the cases (Mann-Whitney U-tests were employed for the testing).

The respondents were asked how they felt IS-issues had been dealt with in the merger processes. There were no significant differences depending on employer ($p = .30$) or gender ($p = .09$) in the opinions about how IS-questions had been treated because the p -values were over $.05$ (according to Mann-Whitney U-tests). Figure 18 shows the results on how IS-issues were handled in the DE-merger. The more negative (45 %) alternatives were more often chosen than the positive ($\approx 16\%$); 39 % had no opinion.

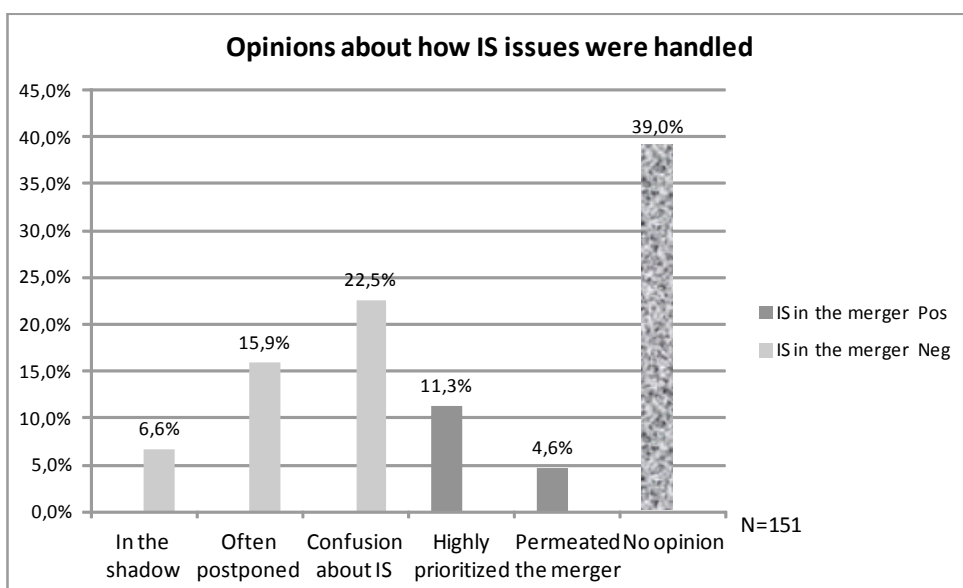


Figure 18: The positive opinions are those that were less often chosen.

One of the questions (no. 5) asked about their work situation after the merger (cf. fig. 19).

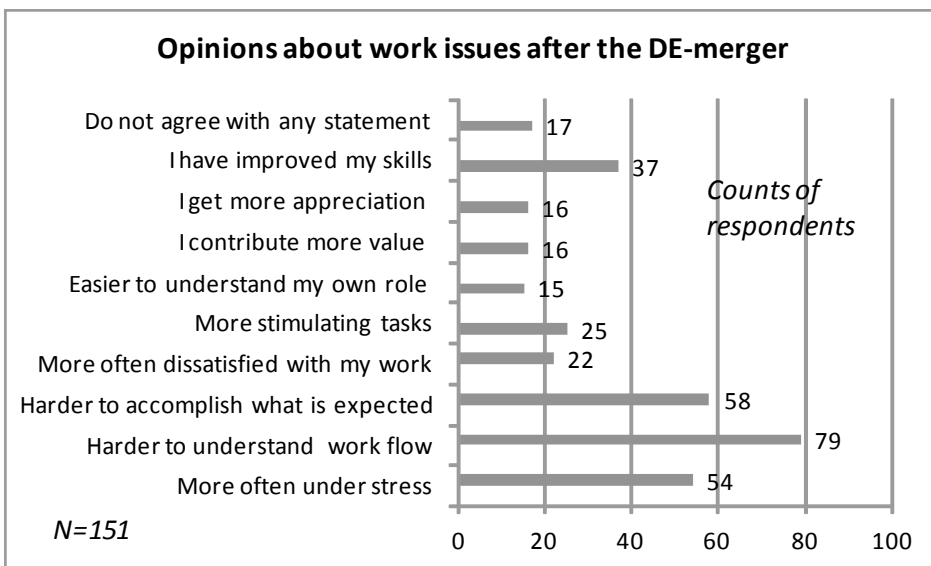


Figure 19: Counts of respondents who agreed with the statements. The negative opinions were more often chosen.

Of those who had answered the question about the work situation 26 % were previously employed in Org E and 74 % in Org D.

In total 22.5 % of the respondents left their comments in a final and open question (appendix 4). There was only one comment that was entirely positive; mostly the comments were negative (cf. table 10) and some raised both positive and negative issues. The neutral comments concerned the need to replace the current IS or that the respondent had changed his/her place of work.

Table 10: Dispersion of the comments.

	Pos	Neg	Pos and Neg	Neutral
Org D	1	16	5	3
Org E	0	6	2	1

The positive and negative comments (Org D=5, Org E=2) could on the one hand praise the IT-department for doing a good job and at the same time describe a work situation that had become harder to cope with due to some politically sensitive situation between former Org D and Org E. Some IS could be described as working well and a few as working

badly. Another issue can be called the fairness perspective: if one campus got their previous routine or IS implemented then the other campus should have theirs the next time. However, this was never a principle for the choice of IS in the DE-merger (cf. subsections 2.1.6, 4.4.3).

As table 11 shows, the administrators, who had answered that their IS were working “Rather well” or “Very well”, had most of the negative comments.

The IS were apparently not the primary subject for the administrators’ discontent with their work situation in University DE.

Table 11: Administrator opinions about IS vs. orientation of open comments.

How do you think your IS work? * Comments Crosstabulation

Count		Comments					Total
		Pos	Neg	Pos and Neg	Neutral	None	
How do you think your IS work?	Very badly	0	2	0	0	0	2
	Rather badly	0	5	0	0	6	11
	Neutral	0	4	1	1	18	24
	Rather well	0	10	3	2	73	88
	Very well	1	1	3	1	20	26
Total		1	22	7	4	117	151

The negative comments were also about the new leadership style and management, reduced flexibility and routines that did not work as expected:

“The managers are always on their way – hard to get in contact with...” (*Commentator 11*, November 2011).

“Invisible top manager, bad management” (*Commentator 22*, November 2011).

4.5.3 Main conclusions from the fifth study

The fifth study showed that a majority (75.3 %) was satisfied with how their IS worked – which is even higher than the findings from 2008 (section 4.1; Lundqvist 2009). Even though the administrators were not satisfied with their work situation (cf. fig. 19; tab. 11) they do not

blame the IS. There were more negative comments on how the IS was handled than the other way around; for example there were comments on how IS issues had been postponed, been unclear and been pushed back by issues of higher priority (cf. fig. 18).

It is often recommended in the literature that the IS-related issues should be dealt with early in a merger (e.g. Alaranta 2008; Alaranta & Henningsson 2008; Alaranta & Viljanen 2004; Epstein 2005; Giacomazzi et al. 1997; McKiernan & Merali 1995; Mehta & Hirschheim 2007; Wijnhoven et al. 2006). The lack of IS-strategies in the former organizations made those questions even more critical. According to McKiernan and Merali (1995) an unsuccessful formulation of IS strategies could destroy the opportunity if building an effective and competitive new organization. The IS should be included in the merger planning in order to succeed with the PMI (e.g. Robbins & Stylianou 1999; Shrivastava 2007; Stylianou et al. 1996). Both the findings from the fifth study and document reading indicate that IS-questions had been marginalized in the merger. Furthermore, the IS issues were postponed because of the late appointment of the managers (Lundqvist 2012), which is contradictory to the recommendations in the literature (e.g. Erkama 2010; Shrivastava 2007).

As mentined above the study showed more negative than positive views of the work situation in the new organization than positive (cf. fig. 19). However, there were no statistically significant differences depending on gender or former employer. The administrators started out with positive expectations of the DE-merger and of the changes that it would bring (cf. Lundqvist 2009, 2010b, 2010c). They were disappointed that the opportunities for organizational development had not been fully exploited in the merger (cf. Lundqvist 2011a, 2011b). Frommer (2001) warns about the consequences of positive expectations that are not fulfilled, because they could negatively influence opinoins and committment to mergers and PMI.

Delayed decision making in the merger and the PMI phases slowed down the speed of the integration and implementation of IS. Mehta and Hirschheims' (2007) case-studies show that the mergers between Amazon & Nile, Mekong & Indus and of Seine & Lena suffered from late planning and decision making about IS-alignment, which was not actually dealt with until the post-merger phase. However, those three mergers were successful from a strict Wall Street perspective; representing a short-term measure of merger successs. Regarding the IS

several issues were not resolved: IS integration decisions were not based on a real desire to realize them, the IS analysis process was not prioritized (section 1.2.5).

IT-planning is a facilitator for building partnerships in a merger as the study at the New Baxter shows (Main & Short 1989). The merger between Hp and Compaq (de Camara & Renjen 2004) is an example of a merger success built on two key factors: i) detailed integration plans that were formulated and agreed on early in the pre-merger phase, and ii) active participation of senior management in the change processes and throughout the merger. Furthermore, the integration plans were carried out to the letter, which was one factor behind the success. The top management structure was also discussed and decided before the merger was carried out (ibid.).

It is recommended that merger transisions are carried out as quickly as possible in order to prevent productivity drops (e.g. Tetenbaum 1999). The study of the merger between Boeing and McDonnell Douglas showed a less successful merger than expected. This was caused by the prolonged merger processes that received most attention at the expense of daily business issues (ibid.) In the DE-merger the IS-strategy had not yet been decided 26 months after the DE-merger was carried out and this hindered the planning of IS development, maintenance and user training, In addition, it was difficult to decide who should pay since there was no clear ownership structure.

4.6 Summary – partial answers to the research questions

The case-studies provide partial answers to the research questions; the findings complement the preliminary answers (section 2.4) from the theory chapter thus confirming many of the preliminary findings.

RQ1: Should strategic management of information systems be a decisive factor in a public sector merger?

Strategic management of IS should be decisive because:

- The IS issues need to be dealt with early in a merger process in order carry out systems analysis of the new organization's requirements and needs. A majority of the respondents found changes of IS (and routines) to be necessary after the merger was carried out even if there had already been many changes (section 4.4).

- If the IS issues are not handled early it is likely that they will not be prioritized during the merger. The IS issues were not prioritized throughout the DE-merger and the PMI (sections 4.4, 4.5).
- The administrators depend on efficient IS to carry out their duties. This supports the view that strategic management of IS should be decisive in a public sector merger (section 4.1).
- Without strategic management of IS, such decisions are often postponed and timely information cannot be given to those concerned. The administrators lacked information about what would happen to their IS after the merger; in some cases even in the PMI phase (sections 4.1, 4.2, 4.3).
- IS management should deal with user training issues as part of an IS-strategy. The administrators lacked information about training opportunities after IS changes (sections 4.1, 4.2, 4.3).
- Management issues (e.g. strategic IS issues) should be dealt with early in a merger. The management situation was complex and there were comments on IS-decisions that had been delayed or postponed because of substitute managers and late appointment of managers (sections 4.4, 4.5).

RQ2: How can administrator participation facilitate post-merger integration?

- They are well informed about the processes that are necessary for the fulfilment of the organization's tasks as well as of their own duties (section 4.1, 4.2, 4.4).
- They depend on efficient IS to carry out their duties; and therefore they are well aware of how the organization's IS should be changed/replaced (section 4.1)
- They are competent in handling their IS. The administrators stated that they had no fear of learning new IS and are skilled in using their IS (sections 4.1).
- Their (often tacit) knowledge and skills are helpful for both the pre-merger planning and the post-merger implementation. The administrators taught each other to use new IS and contributed to development of new routines (section 4.4).

RQ3: How can management facilitate a public sector merger?

- By applying efficient communication strategies. The administrators were satisfied with the information they received about the merger even though individual information was missing (sections 4.1, 4.2). Changes after the merger were less popular and gave rise to rumours (section 4.4).
- By providing opportunities to participate in the merger and PMI processes. The administrators felt that they participated in the DE-merger both before and after, even if there was more dissatisfaction with the work situation in University DE (sections 4.2, 4.3, 4.4).
- By exploiting the opportunities for organizational development during a merger. The administrators stated that they were disappointed because the management in charge of the merger did not fully exploit the opportunities for development (sections 4.3, 4.4).
- By understanding that administrators do not necessarily resist change. The administrators looked forward to the merger with high expectations and enthusiasm, and did not fear or resist the approaching changes in the DE-merger (sections 4.1, 4.2).
- By being prepared for political/power struggles about IS and routines in the PMI. There were different opinions in the two merging organizations about which IS should be implemented in the new organization and there were opinions about an increased degree of hierarchy (section 4.4).
- By motivating the administrators to share knowledge (even tacit) and to provide training opportunities. The administrators stated that colleagues mainly taught each other to handle new routines and IS (section 4.4); they were uncertain about whether formalized training should take place or not (sections 4.1, 4.2, 4.3).
- By appointing managers, for the new organization, early in the merger process so they can participate actively in the change management (e.g. trust building) and IS-strategizing. Many IS issues and decisions were postponed or delayed (section 4.4, 4.5). There was a loss of trust in the new management after the DE-merger (section 4.4).

RQ4: What factors of importance influence the post-merger integration in a public sector merger?

These are important factors that could influence the PMI in a public sector merger:

- Acceptance of new technology and efficient diffusion (i.e. dissemination) of innovations because mergers can stimulate the use of new technical solutions. The administrators are well-educated, sure of their knowledge and IS-skills and believe that they can learn to handle new IS (section 4.1).
- Efficient (well-working) IS, that support the administrators' needs. The fifth study shows that the administrators' satisfaction with their IS was even higher than was found during the explorative study in 2008 (sections 4.1, 4.3, 4.4, 4.5).
- Clear information and well managed communication would prevent rumours and resistance to change. High satisfaction with the merger information and how it was communicated before the DE-merger; afterwards the satisfaction level deteriorated after changed communication strategy (sections 4.1; 4.2; 4.4).
- How the changes are carried out and implemented. The IS changes influenced the work situation less negatively than the routine changes (section 4.3), and the administrators experienced a greater fragmentation of the working day, reduced flexibility, effectiveness and productivity after the DE-merger (section 4.4).
- Prioritization of IS related issues (in order not to negatively influence the PMI). In the DE-merger the IS issues were postponed, delayed, and information about what would happen to the IS after the DE-merger was unclear (sections 4.2; 4.3).
- Reengineering initiatives should be carefully considered in mergers and PMI. The administrators were open-minded towards changes in their duties, i.e. of IS and routines (sections 4.2, 4.3, 4.4). After the DE-merger the administrators still found as much need for changes as before (section 4.4).
- Training should be planned and acted upon individually assessed needs and adapted to relevant knowledge and skills. The administrators experienced uncertainty about training because of IS and routine changes (sections 4.2; 4.3) In the DE-merger the administrators had to rely on colleagues or on their own learning initiatives (section 4.4).
- A less hierarchical organization could promote administrators' convictions of value contribution and effectiveness. The administrators believed that they contributed value and worked

effectively though there was less conviction about both after the DE-merger (sections 4.1, 4.2, 4.3, 4.4). The latter is largely related to increased hierarchy and changed decision-making strategies (section 4.4).

- Leadership style has an impact on PMI. After the DE-merger a more authoritarian leadership style was experienced by the administrators, and some administrators showed frustration and resistance towards the new management style, which they felt disregarded their competences and skills (section 4.4).
- Active administrator participation in mergers and PMI processes could prevent resistance to change and promote positive expectations. The studies did not show any resistance to change that needed to be dealt with and looked forward to the merger with high levels of confidence and expectations (sections 4.1, 4.2).
- Trust is violated when efficient communication and employee participation is *not* applied. After the DE-merger the findings point to a loss of trust in management. This is shown in opinions that management were less willing to communicate, had become more hierarchical and showed less regard for the administrators' competence and skill (sections 4.4, 4.5).
- Knowledge sharing among colleagues is helpful in an organizational change. The administrators stated that colleagues usually taught each other how to manage new IS and routines. This knowledge sharing took place between colleagues that before the DE-merger were employed by "the other" former organization (sections 4.4, 4.5).
- Geographical distance is problematic in a merger. The administrators stated that tiresome and time-consuming travelling was necessary in order to co-operate and meet with colleagues from "the other" location (sections 4.2, 4.4).
- The findings show that appointment of new leaders should be carried out early in a public sector merger (or in any merger) so that those who will lead after the merger will be involved in and take responsibility for the decisions that concern the PMI. In the DE-merger the new top managers like many other managers were appointed very late in the process (sections 4.3, 4.4); some of the consequences were:

- Ongoing projects, e.g. IS projects, were stopped (section 4.4).
- Implementation of new routines and IS were delayed (section 4.3, 4.4)
- Trust in management deteriorated (section 4.4).
- Insecurity about the new organization and the new management caused rumours and gossip (section 4.4).
- Decisions that were taken before the new leaders came were annulled if they did not support the new managerial intentions and decisions (section 4.4).
- Leaders that managed the merger processes were reluctant to make major decisions if they did not believe that they would have a managerial position after the DE-merger (section 4.4).

5 Discussion

The findings from the five empirical studies (chapter 4 and part II) and the document reading will be discussed, mainly within the frame of this thesis's introduction and theory chapters.

In the literature some determinants of merger success are suggested (e.g. Apnovich 2002; Calipha et al. 2010; Epstein 2005). It was never an objective for this thesis to evaluate the success of the DE-merger per se.

Quotations that are marked Administrator x, November 2011, relate to comments in the fifth study, which has not been published in any research paper.

5.1 A challenging merger even without resistance to change

The fact that the DE-merger was of a horizontal/lateral type, and between relative equals did not prevent a show of strength between the two former organizations, e.g. there were opinions among the administrators that their former routines and information systems were better than the merger partner's. They also believed that their new colleagues from "the other side" thought likewise about their former practices and there were

suspicious of unfair distribution of key positions between the two campuses of University DE (Lundqvist 2012).

The DE-merger was voluntary and politically promoted, which was interpreted by some as if the change was inevitable. It had become a more or less an unspoken rule in Swedish higher education that smaller entities should merge in order to be more effective, more competitive and to facilitate growth potential. Even voluntary mergers of equals could be more or less willingly realized and one participant could see itself as the victim of the acquirer (Locke 2007). Hence, the administrators' enthusiasm for the DE-merger should not be taken for granted (sections 4.1, 4.2; Lundqvist 2009, 2010c). A shared vision and mutual goals could minimize reluctance towards a merger even if motives behind the merger could vary between the units involved (Harman & Harman 2003; Shrivastava 2007).

Mergers in the public sector could be financially motivated as in the Finnish municipal mergers (Saarimaa & Tukiainen 2010) and in a merger between two Swedish hospitals (Choi and Brommels 2009). Financial motives for mergers should be carefully put into practice, especially in higher education where attitudes to such are unpredictable (Pritchard 1993). In the DE-merger cost-saving as merger motivation was not highlighted, on the contrary financial aspects were rather down-played.

After the DE-merger there were opinions about the outcome of the merger process indicating more formal handling of procedures than before, even if the DE-merger did not result in a giant new organization (section 4.4) that Harari (1998) warns against. During a PMI there may be struggles between the personnel because of conflicts of interest (cf. Olie 1994). Sometimes the administrators in the DE-merger put words to their fear of sub-optimization because of decisions based on a demand for fairness between the two campuses. The need to find a compromise solution that had not been implemented in either of the former organizations was stressed (Lundqvist 2011a).

The hypothesis tests in the explorative study showed that there were some differences of opinion about the merger depending on which organization the respondents were employed in (section 4.1; Lundqvist 2009). The third study also showed differences between administrators from the former Org D and Org E. However, these differences were considered to be statistically small and concerned how IS and routine changes influenced the work situation (section 4.3; Lundqvist 2011b). In

the fifth study there were no statistical differences depending on gender or former employer (section 4.5).

5.2 IS-strategizing was neither prioritized nor proactive in the DE-merger

The usefulness of IS is often expressed in terms of the support they give to the users. This is a statement that few would question and Langefors (1973) emphasized the importance of IS to support the object systems. Information systems should be valued in light of their importance, their usefulness to the organization and how they support the business activities and processes by providing feedback and control (O'Brien & Marakas, 2009; Skyttner 2001). In our case this includes giving support to the administrators, so that they can be effective and able to contribute value to the organization.

The administrators' opinions about their IS before the merger provided important input for comparison with their opinions afterwards in a search for manifestations of negative sentiment about the merger and/or the IS (which could be a scapegoat for other issues). This was not the case in the DE-merger though. The findings from the studies (2008-2011) showed that a majority of the administrators were satisfied with their IS and that they considered efficient IS to be an important factor for their effectiveness (sections 4.1-4.5), thus confirming the organizational dependency on IS (e.g. Andersen 1994; Hoffer et al. 2002; Langefors 1995; O'Brien & Marakas 2009). The 2011 study showed that a clear majority were satisfied with their IS which they considered to work well (75.3 %). In fact they were more satisfied with their IS than with the way IS issues had been handled in the merger (subsection 4.5). Nevertheless, they experienced problems with the new IS:

“I spend too much time battling with systems that work against me – not with me.” (*Administrator 2*, November 2011);

“System X is still not user friendly. We still run local solutions.” (*Administrator 20*, November 2011);

“Systems should not be implemented before they are tested and proven to really work.” (*Administrator 12*, November 2011)

In mergers and PMI the need to acknowledge the various aspects of IS (i.e. IS strategizing) are more prominent than otherwise (e.g. Bergvall & Welander 1996; Davenport 2000; DeLone & McLean 2003; Galliers 2009, Markus 2011; Rogers 2003). The difficulties connected with the radical implementation and integration of University DE's IS should not have been so different regardless of whether it was a public or private sector merger. To avoid problems it is important that IS is part of the merger process (e.g. Davenport 2000) and change management should be part of an organizational IS strategy (Galliers 2011, p. 338). As there were no accepted IS-strategies in the former organizations this was easier said than done.

“It entails extra work when the systems are not integrated with each other.” (*Administrator 25*, November 2011)

The integration of IS is in the literature often named as a key to successful PMI (e.g. Apnovich 2002; Alaranta & Henningsson 2008; McKiernan & Merali 1995). Integration should be started before the merger is realized and issues concerning the PMI must be acknowledged already in the pre-merger phases (Shrivastava 2007). Nearly two years had passed since the DE-merger when the fifth study revealed that the integration had not yet been completed:

“I really wish that we will proceed towards a system and an IT-based tool that will ‘talk’ to the databases we use. Today too much administration is carried out manually.” (*Administrator 1*, November 2011)

Because an organization's IS need to be carefully considered and designed for their ability to work smoothly with other IS (e.g. Langefors 1995; O'Brien & Marakas 2009), the question about how IS should be dealt with in a merger is crucial. A system analysis requires that those who participate in the development understand the objectives the IS should meet (e.g. Andersen 1994; Hoffer et al. 2002; Langefors 1973; 1995).

One of the most critical issues to solve in a merger is which IS infrastructure to choose (Alaranta & Viljanen 2004). In the DE-merger there were administrator opinions about fairness between the two campus sites as a ground for the choice of IS solutions (Lundqvist 2012). This

suspicion turned out to be ungrounded, but obviously the criteria for the IS choices were not clearly communicated (subsections 2.1.6; 4.4.3). The DE-merger lacked a properly realized systems analysis; there were no decisions about IS and in addition to the lack of IS-strategies there was no manager for the IS-department who could pursue the IS-specific issues. Findings from the second round of interviews (May 2010) showed that there had been some IS-projects during the pre-merger phases (section 4.2). They had involved a lot of people before the DE-merger, but were afterwards found to have disappeared from the agenda (section 4.4).

In a merger the important IS issues must compete for attention with many other important questions. Findings from the second study of the DE-merger showed that the administrators were unsure of what would happen to their IS in the merger and whether there would be training or not if new systems were introduced (section 4.1, 4.2; Lundqvist 2010b, 2010c). The differences between the routines and IS of the two former organizations, and the problems that this caused were obvious in University DE (Lundqvist 2011a). The argument that IT does not really matter any longer, since it has become a commodity (Carr 2004), is not applicable in the DE-merger. The 2011 study showed that there were system integration problems which negatively influenced the effectiveness. To understand how the organization's IS work and how they are integrated is especially important as the new organization has two campuses.

“Not understanding how the different systems ‘speak to each other’, e.g. system X, Y and Z (reworded not to reveal the respondent by his/her IS) means that a lot of time must be spent in order to solve where a possible error has occurred.”
(*Administrator 24*, November 2011)

In University DE the IS-strategizing work started about a year after the merger was carried out and the suggestion from the IS strategy board had still not been decided on. Wijnhoven et al. (2006) show problems with the formation of an IT policy when there are groups in different locations. It is not proven that the two locations for University DE's campuses have had any influence on the delayed IS strategizing in University DE. Unsuccessful IS strategizing can heavily damage an organization's competitiveness (e.g. McKiernan & Merali 1995). The lack of IS strategy

in University DE could make it difficult to know who was responsible for the IS and lead to insufficient information:

“The information from those who are responsible for the IS has often been insufficient and the service level has not always been good and this is because of scarce resources that are assigned to those services - compared to what is actually needed.” (*Administrator 24*, November 2011)

As Galliers (2011) argues an important part of IS strategizing should be proactive. The University DE aimed at being proactive in order to fulfil the merger objectives. Nevertheless, the IS-strategizing work could not have been prioritized since it has taken so long to develop an IS-strategy for the new university. Hence the management of IS has not been proactive in the DE-merger.

Strategizing and integration of IS are crucial parts of a public sector organization’s merger – both before (pre-merger) and after (post-merger) the merger is realized (e.g. Galliers 2011; Markus 2011). A public sector organization needs to maintain its duties to the public.

5.3 The importance of adopting new IS in a PMI

Matching technology with human needs (Langefors 1977) is fundamental for successful IS. User opinions about the usefulness of IS and the simplicity of using them (e.g. Davis 1989, Davis et al. 1989) are core subjects when discussing new technology and innovations. In a merger the employees’ willingness to accept and adopt new technology and sometimes even innovations, are of immediate interest. In our case these issues are connected to the administrators’ worries about changes introduced by the merger and the risk of them being made redundant. Another aspect of the problem is that administrators who are not given formal training from the employer still have to learn to master new technology, and then usefulness and ease of use will be key to the process.

The discussion about usefulness and ease of use could be applied to the administrators’ willingness (or not) to use e-meeting tools. In the DE-merger and in the University DE the need to use e-meeting tools became obvious because of the distance between campus sites. Context-related factors such as location, user mobility, physical and social context will influence the acceptance of technology as well as the diffusion of

innovations (Bouwman et al. 2012). In the DE-merger, a need for more meetings emerged, mainly because more people needed to coordinate their work. The distances made travelling time-consuming, tiresome and expensive. Hence, the use of e-meeting facilities was required by the circumstances. Rogers (2003) found that relative advantage, compatibility, complexity, trialability and observability are important factors for technology adoption. In the case of the e-meeting tools the relative advantage was easy to find since it should be compared to travelling between former Org D and Org E. The compatibility in terms of the consistency with existing values, past experience and the needs of the adopters are also applicable to the DE-merger. The needs for implementing time-saving equipment were obvious. The administrators were convinced that they were skilled at using their present IS and not afraid of learning new systems. However, the complexity that some experienced of the e-meeting tools turned out to be a challenge that needed to be mastered in order to maintain the administrators' effectiveness (section 4.4; Lundqvist 2011a).

E-meeting tools are facilitators for distance meetings and substitutes for extensive travelling, and had been used before by some administrators, but for many it was a novel approach. In the DE-merger a shift to new video conference software was carried out (from Marratech to Adobe Connect). The second round of interviews, carried out about five months after the DE-merger, showed that some found the e-meeting tools more complicated than expected, and that it was harder to use the e-meeting tools than they had been told (section 4.4). This points to the (still) relevant issues emphasized by Langefors (1977); the need to involve users in the choice of IS as different people interpret information differently according to time, pre-knowledge and individual frame of reference. Apparently, not all administrators had the same knowledge about the e-meeting tools. Davidson (1991) found that mergers could trigger innovation because a new situation needs new solutions (like the e-meeting tools).

Both TRA (Ajzen & Fishbein 1980) and TAM (e.g. Davis 1986, 1989) deal with the motives behind people's actions and investigate the beliefs that make them accept, adopt and actually use new technology. The motivation for these models is mainly the opportunity to predict behaviour. As regards the e-meeting tools, there had been opportunities for training but it is not clear whether the administrators attended those training seminars (Lundqvist 2009). Despite this, many interviewees

(May 2010) stated that it was more difficult to use the e-meeting tools than they had expected (section 4.4) even if some administrators found them to work well after all (section 4.4). According to Venkatesh et al. (2002) user training, which the employer should offer, is crucial for promoting usage of a new IS. In the DE-merger there were uncertainties about IS training (e.g. section 4.1, 4.2; Lundqvist 2009, 2010a, 2010b, 2010c).

In a merger new technology and new IS need to be adopted and used to be successful (e.g. DeLone & McLean 1992). The theories about technology acceptance and diffusion of innovations are relevant and important to consider in those cases, as the example of the use of e-meeting tools in the DE-merger indicates.

5.4 Administrator opinions before and after the DE-merger

The soft (human) issues in a merger are in the literature emphasized as crucial to acknowledge; people need to be listened to and allowed to participate (e.g. Alaranta & Viljanen 2004; Blake & Mouton 1984; Epstein 2004; Ford and Ford 2009; Lewis et al. 2010; Marks & Cutcliffe 1988; Michelman 2007). Since resistance was not a problem in the DE-merger there must be other factors that could facilitate the PMI. In other words there are more keys to search for. From the administrators' perspective the IS issues are important because they depend on efficient IS.

Some attitudes to merger related issues differed in the studies before and after the merger and some attitudes remained: i) openness for reengineering, ii) willingness to knowledge sharing, iii) opinions about training, and iv) about their own high competence in mastering the IS.

5.4.1 More negative opinions about the work situation afterwards

The starting point for the merger was positive as the administrators hardly showed any resistance at all to the merger (Lundqvist, 2009, 2010a, 2010b, 2010c), which is unusual (Abrahamsson 2000; Empson 2000; Gash & Orlikowski 1991; Herron et al. 1999; Kotter & Schlesinger 2008; Lawrence 1969; Schweiger et al. 1987; Smith 2005; Washington & Hacker 2005). A majority of the administrators have throughout the merger process been convinced that their achievements contributed value

to their organization and that they were effective in carrying out their duties (Lundqvist 2009, 2011a). Insecurity and postponed information about the future are likely to cause a productivity drop (Tetenbaum 1999). Findings from the fourth study show that the administrators experienced a decrease in productivity and higher fragmentation of their working day after the DE-merger (section 4.4; Lundqvist 2011a). This could be caused by new routines and the ongoing reorganization, but was still a productivity drop.

The administrators had positive expectations about their abilities to cope with the new situation (routines and IS) (section 2.1, 2.2; Lundqvist 2009, 2010b, 2010c). About five months after the University DE was established the administrators' satisfaction with the merger had declined; some administrators were still not sure of their position, and they found the organizational hierarchy to have become more obvious (section 4.4, Lundqvist 2011a, 2012). How well the expectations are fulfilled (or not) is important for the attitudes and reactions to a merger and to the integration afterwards, not only to the PMI but also to the new organization (Frommer 2001). The most recent study (November 2011) showed that the administrators expressed more negative than positive experiences of their work situation than positive (cf. fig. 19, section 4.5), which confirms Frommer's (2001) arguments that unfulfilled expectations reduce merger success. Also the findings from the third study pointed to some disappointment about less development having taken place than expected (section 4.3; Lundqvist 2011b). In the DE-merger many issues that concerned the administrators' situation and the ISs were postponed and this could have influenced the initially positive merger attitudes to become more negative and turned enthusiasm to disillusion (section 4.5).

5.4.2 The new communication strategy after the DE-merger was not appreciated by the administrators

In organizational change, a merger or a BPR initiative, good communication is shown to be important for both preventing and countering resistance to change, and for motivating the employees (Bashein & Markus 1994; Caudron 1996; Gall 1991; Hallier 2000; Harmon 2007; Ketz de Vries & Balazs 1997; Napier et al. 1989; Schweiger et al. 1987; Schweiger & Weber 1989; Schweiger & Denisi 1991; Shrivastava 2007; Smith 2005). It is especially risky to withhold information (Mishra 1990) that could easily lead to uncertainty and a

loss of trust. The longitudinal study found that the respondents appreciated the communication better before the merger and less afterwards (section 4.1, 4.2, 4.4; Lundqvist 2009, 2010b, 2010c, 2011a, 2012).

One risk with information that is perceived to be insufficient is that it could trigger gossip and rumours (e.g. Mishra 1990). In the literature it is recommended that management should continuously provide information (e.g. Napier et al. 1989) and that good communication should be facilitated between the management and their subordinates (Bringselius 2010b). As the merger was realized there was a change of management that changed the so far successful merger process on the human side. As Marks and Cutcliffe (1988) argue, loyalty could be affected if the individuals do not understand how they will be affected by a merger. The administrators in the DE-merger found the communication strategy after the DE-merger to have changed towards both less and more unclear information (section 4.4; Lundqvist 2011a).

In the literature there are recommendations that highlight the need for managers to listen to those who are against a change as well as to those that are supportive (Michelman 2007; Ford et al. 2008). Before the DE-merger was carried out there were several meetings to which all employees were invited. The top managers (or at least representatives from the top management) and members of the organization committee attended and employees could discuss directly with top managers and those who were responsible for the merger processes. It was not known in advance who would attend those meetings and the managers had to be prepared for both positive and negative opinions and had to be open to the discussion of all kinds of subjects regarding the DE-merger. This was an appreciated approach (section 4.2; Lundqvist 2010b, 2010c, 2012). After the DE-merger the physical meetings stopped and were missed by the administrators. Some administrators said that these meetings were on their way back before the summer of 2010 since they had been missed by many (section 4.4; Lundqvist 2011a).

The case-study also confirmed the importance of information about delayed decisions (e.g. Schweiger and Weber 1989). Before the DE-merger even negative information, such as delays, was communicated. Afterwards this strategy was changed (sections 4.2, 4.4; Lundqvist 2010b, 2012).

5.4.3 Opinions about training and competences were rather stable before and after – still high self-confidence

Employees should take responsibility for learning the skills they need to carry out their duties properly and to participate in lifelong learning to keep up with the demands of their work (Crowther 2004; Drucker 1998). The administrators in the case-study were well educated and sure of their knowledge (section 4.1; Lundqvist 2009), which could be a reason for them not fearing the approaching changes and the prospect of having to master new IS.

Training is found to be one of the factors that could prevent resistance to change (e.g. Hoffer et al. 2002; Zmud & Cox 1979) though this was not a problem in the DE-merger. The findings from the studies before and after the merger showed that administrators did not find IS training to be crucial and this conflicts with earlier results about a need for training when new IS are implemented (e.g. Mathieson 1991; Sveiby & Simons 2002; Venkatesh et al. 2002). After the DE-merger the administrators did not explicitly ask for training opportunities even when they were not sure whether they would get any or not (subsection 4.3, 4.4; Lundqvist 2011b, 2011c). The administrators' confidence in their skills and their competence could have been helpful in this case.

The administrators' competence is an important factor for achieving a successful merger and PMI (e.g. Marks and Mirvis 1992). The administrators in the DE-merger expressed that although they took responsibility (54.3 %) for learning to master new IS mostly (68.6 %) relied on colleagues to show them how IS changes should be mastered (section 4.4). Knowledge sharing is important in a merger and is further discussed below.

5.4.4 Openness to knowledge sharing both before and after the DE-merger

In a merger jobs are at risk or job descriptions can be altered in an undesired way. Employees could be forced to change their place of work and their present duties (e.g. Bradt 2008; Empson 2000a); in the literature it was also found that employees could be afraid of being made redundant after a merger and would therefore be reluctant to share tacit knowledge. Many of the administrators in the DE-merger lacked individual information about their situation in University DE until right before the merger was carried out. Some administrators even lacked individual

information shortly after the merger (because decisions were not made on their duties or their employment). This lack of information could have influenced their willingness to share knowledge, but findings from the studies did not point at all in that direction (e.g. section 4.5; Lundqvist 2010b, 2011c).

In post-merger integrations (PMI) a knowledge gap is often noticed which could be a reason for failure (e.g. Alaranta & Martela 2010). Szulanski (1996) argues that development of learning capacities between organizational units has to be monitored and led so that employees work according to best practice and communicate it as quickly and as well as possible. In the DE-merger the administrators had carried out the same tasks at both locations but had not necessarily applied the same routines and had in some cases not used the same IS (e.g. sections 4.1, 4.4; Lundqvist 2009, 2011a). Therefore there was a need for synchronizing the previous routines and the administrators had to share tacit knowledge with their colleagues.

Knowledge management systems (KMS) are often surrounded by mistrust because of the risk of being exploited by others that give nothing in return (Hislop 2005; Tissen et al. 1998). Knowledge is often distrusted in a KMS if the knowledge provider is not known and is shared more willingly if the individuals are connected in a network where their reputation increases as a result of their knowledge sharing (Alavi & Leidner 2001; McLure Wasko & Faraj 2005). This was not an obvious problem in the DE-merger as the administrators often taught each other (section 4.4; Lundqvist 2011c).

The administrators in the DE-merger stated that they were invited to participate and to use their knowledge (section 4.2; Lundqvist 2010b, 2011c) which could have been a facilitator for knowledge sharing. Otherwise there is often a discontinuity of knowledge sharing after a merger and this must be dealt with as soon as possible (Alaranta and Martela 2010; Ruggles 1998; Yoo et al. 2007). Attitudes to participation are further outlined below.

5.4.5 Higher participation in the BPR processes before the DE-merger

The consequences of the ongoing merger made way for reengineering and redesign of University DE's administrative processes. It is often stated in the literature that successful change management allows the employees to participate in the change processes that will affect them

(e.g. Empson 2000; Ford & Ford 2009; Zmud & Cox 1979). Those recommendations were also confirmed in the DE-merger case. Taking part in DE-merger projects (often concerning the redesign of processes) served as a means of involving the administrators actively in the change processes. Besides, their competences were needed because of their initiated knowledge about the organizations' processes and of handling their IS (c.f. section 4.1, 4.2; Lundqvist 2009, 2010a, 2010b, 2010c). Before the DE-merger was actually carried out there were numerous of merger related projects. Some of these stopped when University DE was established (section 4.4; Lundqvist 2012). After the merger there were more negative opinions about the merger and the new organization which were caused by interrupted projects, changed communication and less participation in the change processes (sections 4.3, 4.4; Lundqvist 2011a). If the administrators are involved in the merger related processes the fear of negative consequences can be countered (e.g. Bringselius 2010b, Shrivastava 2007).

The studies carried out before the DE-merger showed an openness to reengineering and IS changes (subsection 4.1, 4.2; Lundqvist 2009, 2010a, 2010c). After the merger the administrators still wished for further changes and considered that changes were needed as much as before the merger (cf. fig. 15, 16, section 4.4). Technology is often proposed as a means for carrying out successful reengineering but it must support critical processes and actual business challenges (e.g. Ascari et al. 1995; Hammer 2003; Hammer & Champy 2003; Harrington et al. 1997; Ko et al. 2009; Kovacic 2004; Trkman 2010; Wiloch 1994). However, technology can take more space than it should at the expense of human issues (e.g. Bashein & Markus 1994; Cooper & Markus 1995; Drucker 2008; Ranganathan & Dhaliwal 2001; Senge 1995; Vakola & Rezgui 2000). Technology is sometimes proposed as a means of preventing resistance to change due to groupware technology (e.g. Marjanovic 2000). In any case, the administrators did not resist the changes (section 4.1, 4.2; Lundqvist 2009, 2010c).

Furthermore, the University DE administrators (79.3 %) had put forward many proposals and suggestions that they found were implemented (cf. fig. 14). After the DE-merger a majority (58 %) was disappointed that there were fewer changes and development activities than they had expected and wanted (sections 4.3, 4.4; Lundqvist 2011a, 2011b). Even if a majority wanted more changes they also experienced problems because of the changes that were made (sections 4.4, 4.5;

Lundqvist 2011a). Changes in routines influenced the work situation more negatively than the IS changes (section 4.4; Lundqvist 2011b). Comments from the 2011 study show that the change processes were still ongoing and this could be both good and bad. IS maintenance builds on ongoing analysis, development activities, and IS strategizing should therefore be a continuous process (e.g. Bergvall & Welander 1996; Galliers 2011).

As Bashein and Markus (1994) argue it is negative for the organization and the reengineering activities if the sponsor leaves his/her job during the change, as was the case in the DE-merger (cf. fig. 1, section 1.3). Management of mergers is an important and delicate topic that will be discussed further in the next section.

5.5 Late appointment of managers hindered trust-building, planning, IS-strategizing and decision-making

Because PMI is known to fail in most of the cases (50 – 80 %) the failure risks need to be acknowledged and acted upon (e.g. Alaranta 2008; Alaranta & Martela 2010). Managerial involvement in a merger is proposed in the literature to be an important factor for merger success (e.g. Calipha et al. 2010; Xun 2009). Some argue that good top management is the most important success factor for mergers (e.g. Pritchard 1993). Our findings point to the fact that managers were more accessible before the University DE was established and there was a more flexible climate in terms of how the top management should and could be approached (section 4.4, Lundqvist 2012).

Management of organizational change requires that managers pay close attention to employee reactions and opinions, and monitor the course of events carefully (e.g. Michelman 2007). If the managers apply a proactive approach to possible negative employee reactions these could be effectively prevented (e.g. Alaranta & Viljanen 2004; Bradt 2008; Empson 2000; Hoffer et al. 2002; Lewis et al. 2010; Schweiger et al. 1987; Zmud & Cox 1979). Our longitudinal case-study showed that the recommendations for preventing resistance to change had been followed to a large extent before the merger was carried out but to a lesser extent afterwards (sections 4.1, 4.2, 4.4, 4.5; Lundqvist 2009, 2010a, 2010b, 2010c, 2011a, 2012). A possible reason was the new top management and its new leadership style which made them less accessible than before (Lundqvist 2012). Nevertheless, some argue that human issues are sometimes more monitored than the technological issues in a merger and

that IT integration is the key to successful PMI (e.g. Apnovich 2002; McKiernan & Merali 1995; Sirkin et al. 2005). Our findings support the fact that soft issues have been sufficiently provided for in the pre-merger phases of the DE-merger since the administrators were satisfied with the communication and opportunities to participate in the merger processes (sections 4.1, 4.2; Lundqvist 2009, 2010b).

Trust in management is said to be an important factor for preventing and avoiding resistance to change (e.g. Bringselilus 2010a; Caudron 1996; Cullen et al 2000; Podsakoff et al. 1996). The DE-merger is an example of how declining trust in the new management can negatively influence previously positive attitudes. Judged by the findings from the fourth study (May 2010) the effects of the late appointment of the new top management were a basis for mistrust and even for mismanagement (section 4.4; Lundqvist 2012).

Managers need to take the first move in establishing trust (Whitener et al. 1998), and our findings from spring 2010 indicate that the new management was not successful in building a trustful relationship with the administrators (sections 4.4, 4.5; Lundqvist 2012). Some of the interviewees discussed a lack of understanding and appreciation from the top management; some spoke about a lack of respect and depreciation of their knowledge and competences; some found the mechanisms of control to have increased and hierarchical management to have become more apparent (section 4.4; Lundqvist 2012). The communication was considered less satisfactory after the DE-merger was carried out with more rumours and speculation as a consequence (section 4.4; Lundqvist 2012).

Gossip and rumours affect how management is measured during a change process, and are known to be means for people to deal with issues that are undesired and uncomfortable (DiFonzo & Bordia 2000; Harman & Harman 2003; Kurland & Pelled 2000; Mishra 1990; Noon & Delbridge 1993). Interviews carried out after the DE-merger showed both rumours and gossip that were negative towards the new management. The top managers seemed in some cases to have become scapegoats for issues that had not been resolved as the administrators had expected or wanted. The blame is more often put on other objects, such as information systems, since doing so is more harmless than levelling criticism against the management. Whether or not the new management really was to blame is not further discussed here (the fact that they were appointed late was not their fault, cf. fig 1, section 1.3). However, trust is a means of

preventing resistance to change and before the merger the administrators trusted the former top managers (who later resigned).

Organizational gossip can influence inter-organizational power relations (van Iterson & Clegg 2008), and the relations before the merger between the former organizations could have influenced the power relations in University DE. The initial finding from the 2008 study that the administrators from Org E were more positive to the merger could be such an example, because Org D was by some regarded to have a somewhat higher academic status and that Org E had more to gain from the DE-merger. However, a contradictory example from the findings is that administrators from Org D found Org E's IS to have been implemented more in the new organization than their former IS. The latter is also a correct understanding of the real situation; Org E's IS were more often implemented in University DE (sections 1.3, 4.4).

Decision making is a highly important side of change management. After the DE-merger the findings show that important, key decisions were not made despite the more authoritative management style (section 4.4; Lundqvist 2012). Planning that foresees both problems and opportunities is a basic requirement for successful PMI and needs support from the top management and organizational merger management (e.g. Robbins & Stylianou 1999; Stylianou et al. 1996). The managerial situation in the DE-merger with many substitutes, very late appointment of the new managers and a special organization committee for the merger, that would not be part of the new organization, was a potential problem for the PMI planning and IS decision making (sections 1.3, 4.4, Lundqvist 2011a, 2012). Nevertheless, the 2011 study showed that the administrators were mainly satisfied with the IS/IT professionals' achievements and a smoothly working IS/IT-department was mentioned:

“I think that the IT-organization has done a good job with the merging of Org D and Org E in order to make the transition as smooth as possible for the users but I feel that managers of a higher level and the top management have not made decisions at the right time - which made it difficult for the IT department to carry out decisive development actions.”
(*Administrator 26*, November 2011)

The managers must understand the post-merger situation and issues concerning the IS alignment need to be solved early (e.g. Alaranta 2008;

Mehta & Hirschheim 2007). In the DE-merger this was a problematic recommendation to follow because of the management situation. The substitutes that were in charge during the merger processes were not able to handle the same issues after the merger. This meant that people were reluctant to decide about issues they knew others would be responsible for later. On the other hand it was problematic for those who were appointed to manage the new organisation that they had no official voice in the pre-merger process. Decisions made in the pre-merger stages were likely to have a strong impact on the administrators of University DE since the decisions about IS alignment were not taken as early as recommended (ibid.). The fourth study showed that decisions were postponed because the new managers had not yet been appointed (section 4.4; Lundqvist 2012).

The IS planning and the choice of IS infrastructure are among the most important questions to solve in a merger (e.g. Alaranta & Viljanen 2004; Main & Short 1989). It is recommended to undertake an analysis of the new organization instead of just implementing solutions that were originally developed for the former organizations (e.g. Apnovich 2002; Wijnhoven et al. 2006). Findings from the second study show that there had not been enough time for analysis (section 4.2). Our findings about a lack of information about the IS, and the confusion after the merger because all IS changes were not implemented, showed shortcomings in IS decision making (e.g. Lundqvist 2010b, 2011a). The November 2011 study still shows that important IS decisions had been delayed or postponed and that the organization was still suffering from this:

“The IT-department has done a good job with the systems. However, the management has not decided yet about ‘a certain group of systems’ [reworded by the author to not reveal the IS and thereby the administrator] – and today those are too many.” (*Administrator 32*, November 2011);

“In the merger process nothing was discussed on a central level as regards IT, IT-organization etc. Instead it was said straight to the point that the IT-organization would be dealt with after the merger. The reason was that they wanted to avoid chaos among the whole IT-staff and our IS. All services should just work during the time for the merger and we worked with various IT-projects and tried to carry out the business as usual.” (*Administrator 3*, November 2011)

Informed decisions early in the process are important for a successful PMI and managers making these decisions should be responsible after the merger (e.g. Shrivastava 2007). The need for management to participate throughout the merger process should therefore be acknowledged as well as the need for the managers to understand the requirements of the integration (e.g. Alaranta & Viljanen 2004; Giacomazzi et al. 1997; McKiernan & Merali 1995; Robbins & Stylianou 1999; Wijnhoven et al. 2006).

Findings from our case-study, the literature review and from prior research support the conclusion that managers should participate throughout the merger, from the pre-merger to the post-merger integration. Moreover, our findings showed that the late appointment of top managers made the PMI processes difficult to manage (e.g. section 4.4; Lundqvist 2012).

5.6 Limitations with a single case-study

Administrative processes in public organizations differ from business processes in the private sector and public sector mergers differ from mergers in the private sector (e.g. Simon 1971; Tarplett 2009). This should preferably be kept in mind when valuing the lessons learned from this study. To generalize from case-studies is always difficult especially if the findings/conclusions are transferred to other circumstances and contexts even if there are some authors who have found that this is possible under certain circumstances (e.g. Bassegy 1981; Yin 2003). Regarding this research the context is described and information about the field of “business” is provided (even if the real names of the units are not revealed) and this enhances the opportunities for other organizations (in higher education) to use the findings from this longitudinal case-study.

6 Conclusions and lessons learned

The research questions (RQ:s) 1 – 4 are derived from the research objectives (RO:s) (section 1.4) and therefore the RO:s are considered to be attained by answering the research questions. Furthermore, RO1: *To carry out a longitudinal case-study of a merger in the public sector; from the pre-merger phases to the PMI* and RO3: *To study the administrators’ opinions about IS and routines before and during the*

DE-merger and the PMI, are considered to be fulfilled simply by carrying out the research project (cf. fig. 20).

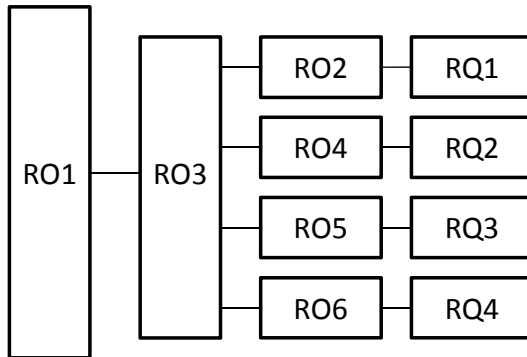


Figure 20: Shows how the ROs and the RQs are related.

Chapter 6 presents answers to the research questions posed initially (section 1.4) and summarizes the factors (fig. 21) that constitute “the lessons learned”.

6.1 Answers to the first research question

RQ1: Should strategic management of information systems be a decisive factor in a public sector merger? The findings are unambiguous; strategic management of IS is an important foundation for proper handling of IS related issues, in particular IS-planning, IS-maintenance and IS decision making. If the strategic management of IS is not taken as a decisive factor, the consequences can be significant and influence almost every part of the organization. Administrators in public sector organizations depend on their IS in order to accomplish their duties, and efficient IS are critical for the organizations’, and thereby for their administrators’, performance. Both the planning and the execution of the merger and PMI processes would likely suffer if the strategic management of IS is not decisive in public sector mergers. A factor that is likely to seriously complicate the strategic management of IS (in the new organization) is if the managers in charge of the merger processes are not those who are to manage those processes after the merger (cf. fig. 1, section 1.3).

6.2 Answers to the second research question

RQ2: How can administrator participation facilitate post-merger integration? The following bullet points are without any ranking of importance.

- The administrators are the backbone of any public organization because of their initiated knowledge (often tacit), which is needed in order to carry out changes to the IS and the routines (e.g. sections 2.3, 4.1, 4.2).
- Participation strengthens the administrators' confidence in their contribution of value to their organization (e.g. sections 2.3, 4.1, 4.2, 4.3, 4.4).
- Participation provides the opportunity to use individual knowledge and skills (e.g. sections 2.3, 4.1, 4.2, 4.3, 4.4).
- Participation in change processes enhances the feeling of not just being exposed to changes but actively contributing to them (e.g. sections 2.2, 2.3, 4.2, 4.3, 4.4).

6.3 Answers to the third research question

RQ3: How can management facilitate a public sector merger? Important means for management to facilitate a public sector merger are (sections 2.1, 2.2, 2.3; 4.1-4.5) listed below without any ranking of importance.

- Awareness of the fact that it can be more demanding to plan a post-merger integration (PMI) than to plan the pre-merger phases for both IS and staff. Hence it is important that the top managers of a new organization and the IS-managers (as well as other managers) are appointed early so that they can actively take part in the merger processes as soon as possible. Otherwise they could not pursue the most important issues for their field of responsibility (sections 2.1, 2.2, 2.3, 2.4, 2.5, 4.1, 4.2, 4.3).
- Prioritization of IS issues, for example by implementing an IS strategy as soon as possible (sections 2.1, 4.3, 4.4, 4.5)
- Applying communication strategies that provide plentiful and candid information about the merger processes (sections 2.3, 4.1, 4.2, 4.4).
- Countering and preventing rumours and speculation among the administrators (sections 2.3, 4.4, 4.5).

- Facilitating administrators' participation in the processes throughout the merger and the PMI (sections 2.2, 2.3, 4.2, 4.3, 4.4).
- Understanding and acting on the principle that reengineering of the processes is likely to be needed in the merger (sections 2.2, 2.3, 4.1, 4.2, 4.3, 4.4).
- Understanding and acting on the fact that the administrators in public sector mergers are not necessarily against or resistant to changes (sections 2.1, 2.2, 2.3, 4.1, 4.2, 4.3).
- Promotion of knowledge sharing among new and old colleagues (sections 2.3, 4.4).
- Being prepared to handle political and power struggles regarding IS and routines (sections 2.2, 2.3, 4.4, 4.5).

6.4 Answers to the fourth research question

RQ4: What factors of importance influence the post-merger integration in a public sector merger?

The longitudinal case-study has shown some important factors for successful PMI in public sector mergers, as listed below (without any ranking of importance).

- Prioritization of IS-related issues. If the IS issues are not highly prioritized it is likely that there will be negative consequences for the whole PMI and thereby for the new organization (sections 2.1, 2.2).
- The administrators, who depend on their IS to support their work must be satisfied with their IS (subsection 2.1.10, sections 2.1, 4.1, 4.2, 4.3, 4.4, 4.5).
- Reengineering of the administrative processes. Even if the merged units basically performed the same tasks before the merger, these tasks could be carried out differently (sections 2.1, 2.2, 2.3, 4.2, 4.3, 4.4).
- Pre-merger planning of IS-human integration. There are many questions that need to be dealt with before the merger is carried out, such as training activities, analysis of the IS needs and requirements for the new organization (section 2.1, 2.2, 2.3).

- High quality information. It is vital to build trust, down-play fear of the merger consequences and to ensure that the IS-strategizing processes work well (sections 2.3, 4.1, 4.2, 4.3, 4.4).
- Training opportunities due to changed routines and/or IS must be investigated and acted on (sections 2.2, 2.3, 4.1, 4.2, 4.3, 4.4).
- Leadership style. A directive leadership style could be sufficient in a merger, but it can cause frustration and resistance among the staff (in this case, the administrators), (sections 2.3, 4.4).
- Trust in management, which could be jeopardized if efficient communication strategies are changed during the merger and/or post-merger phases (sections 2.3, 4.4).
- Willingness to share knowledge. Knowledge management (KM) that inspires colleagues to share their knowledge (sections 2.3, 4.1, 4.4, 4.5).
- Participation. Helps the administrators to feel useful and convinced that their opinions and efforts count (section 2.2, 2.3, 4.1, 4.2, 4.3, 4.4).
- A multi-site organization will require more time for communication, co-operation and travelling and this can cause stress (sections 2.2, 2.3, 4.2, 4.4, 4.5).
- Early appointment of managers. Delays in appointing top management can result in the following:
 - Ongoing processes may be interrupted, e.g. IS projects (section 4.4).
 - Implementation of new routines and/or IS may be delayed (sections 4.2, 4.3, 4.4, 4.5).
 - Trust in management may be eroded or even vanish (sections 2.3, 4.4).
 - Insecurity about the new organization and management can cause rumour and gossip (sections 2.3, 4.4, 4.5).
 - New leaders that are externally recruited are usually not familiar with the organizational context, e.g. culture and history. However, they are generally not influenced by the organization's old problems either (section 2.2, 4.4).
 - Decisions that are taken in the merger process immediately before the new leaders take over may be overturned (if they are not supported by the new leaders) (sections 2.2, 4.4).

- The leaders managing the merger process, fully aware of that they will be replaced when the merger is completed, could be reluctant to decide on matters concerning the new organization (sections 2.2, 4.4).

6.5 Lessons learned and concluding remarks

The longitudinal case-study has provided a step-by-step understanding of the effects of a merger between two universities, i.e. an understanding of the processes in which the administrators form their opinions about the new organisation and of their opportunities to work and to carry out their duties in the new settings. The longitudinal case-study as a research method proved to be successful in finding the intertwined processes that have been in play during the pre-merger and the post-merger phases. These processes were followed all the way from the initial merger expectations through enthusiastic openness towards a feeling of disillusionment and the dilution of positive opinions and a more sceptical view after the merger was carried out.

Administrators' opinions of the management throughout the DE-merger and in the University DE (at least initially) point to mismanagement. The studies did not show any resistance that needed to be countered (section 4.1, 4.2). The administrators were i) open-minded to reengineering, ii) willing to participate in various merger projects, iii) well-educated, and iv) confident of their skills and abilities to learn to master new IS (sections 4.2, 2.4). Given the background of the initial findings that were almost surprisingly promising it is worth asking the question why the post merger atmosphere turned sour. With such a solid foundation of highly skilled and motivated administrative staff, what happened to change their positive attitudes? Why were the IS-related issues not more emphasized in the merger processes than the administrators believed them to be? The answers to the research questions also explain why the administrators' opinions became more sceptical and why the IS issues were not given more attention. Two factors in particular seem to be more influential on the outcome than others and also influenced PMI success. The late appointment of managers and the lack of IS strategies in the former organizations.

The answers to RQs 1-4 can be summarized to the following key factors for carrying out a successful PMI of both IS and humans (cf, fig. 21).

Factors to consider for Post-Merger Integration Success

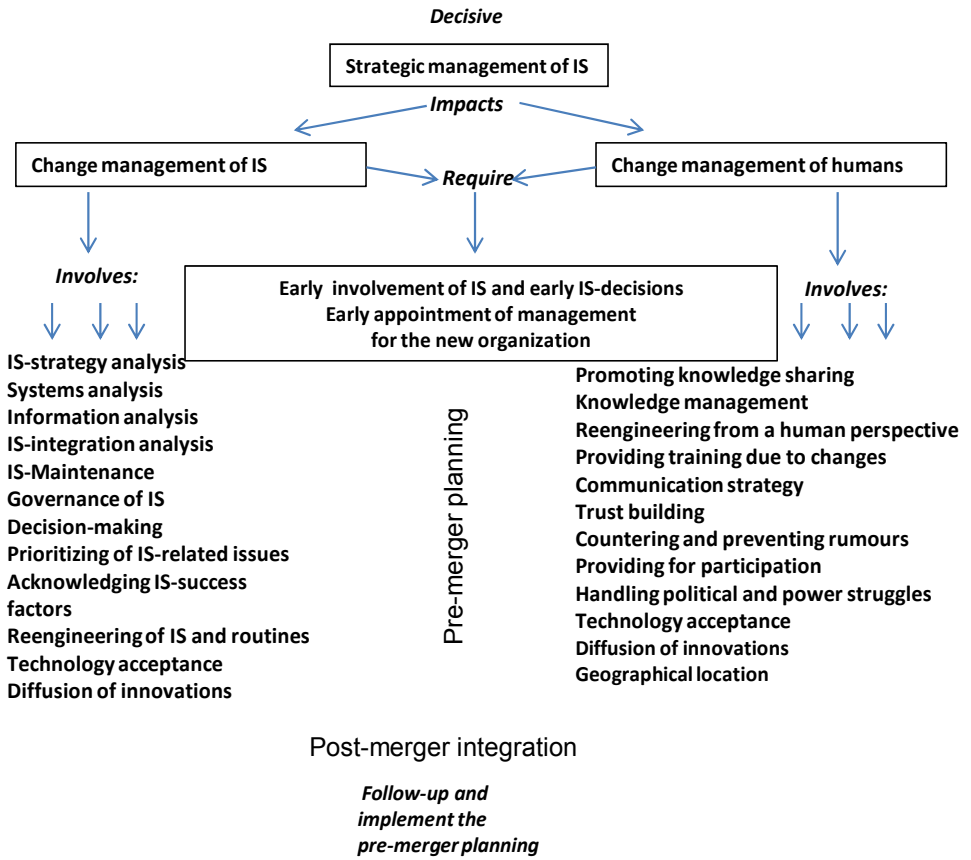


Figure 21: Important factors for successful PMI.

Figure 21 shows an overall view of the factors that constitute the lessons learned from this research. These factors give a theoretical contribution to research as hypotheses for future research. The more practical contribution builds on the lessons learned and are recommended for use as a checklist for mergers in the public sector, especially for mergers in higher education. Some questions were put forward about why the promising start to the merger was wasted. The answers could be found in figure 21 that points out the importance of i) decisive strategic management of IS, ii) early involvement of IS, iii) early IS-decisions and iv) an early appointment of the management of the new organization. It was discovered during the series of studies that

formed this thesis that there were no IS strategies in the former organizations; 26 months after the merger was carried out there was still no IS-strategy for the new organization. The new university management was appointed after the merger process.

7 Proposals for future research

7.1 Follow up after three years in the new organization – University DE

Prior findings and published cases about unsuccessful PMI make it important to work towards further facilitation of PMI. Moreover, the literature on PMI of IS and humans in public sector mergers is scarce. This alone would be ample justification to continue the research that has followed the DE-merger since autumn 2008. Other research methods could preferably be applied as a complement to the case-study approach; for example network theory or action research (as recommended by Gummesson 2007) and perhaps TAM (e.g. Davis 1986, 1989) if new IS are taken into use. However, the latter depends on whether the information about new IS is available in time, before the users are presented with the new IS, as it is important to carry out an initial study early in the process to compare with later studies. TAM was considered for the case-study research when the research project started but at that time it was too late for comparative studies.

7.2 Compare with a similar study in another context

Mergers in the public sector are likely to increase in the near future, not least because of the opportunities for rationalization and financial efficiency. In the field of higher education there are political initiatives to promote future merger within higher education. The justification is mainly to further improve the prospects of reaching research excellence and to increase the opportunities for attracting more students and research partners. Hence it would be interesting to carry out a similar longitudinal case-study among administrators in other higher education organizations that are approaching a merger.

7.3 Testing of the findings from the longitudinal case-study

The findings from the case-study are summarized in the lessons learned (section 6.5) and comprehensively presented in figure 21. The factors pointed out as facilitators for successful PMI (if they are all considered in due time) could be tested and measured in other public sector mergers (section 7.2) outside higher education as the findings are likely to be applicable for other mergers in the public sector.

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APPENDIX 1 – Interview guide, spring 2009

Gender: Male or Female?

What organization are you employed in before the merger? Org D or Org E?

In order to carry out your duties – which information systems do you need?

Economy systems (only)

Personal Administration systems (only)

Production systems (only)

A combination of:

Economy systems + Personal Administration systems

Economy systems + Production systems

Personal Administration systems + Production systems

Economy systems + Personal Administration systems + Production system

Your age?

21-30 years

31-40 years

41-50 years

51-60 years

61-65 years

66 years or more

Do you know what will happen to your present information systems in the merger?

Will it/they be changed to new ones?

Will it/they be further developed?

If Yes to the any of the two questions:

Will you be offered training in new/further developed IS?

How do you feel about learning new IS due to the merger?

Do you find the merger to be an appropriate opportunity to carry out changes to the organizations' information systems?

If Yes: Why? Would you please elaborate your standpoint further?
If No: Why not? Would you please elaborate your standpoint further?

What is your opinion on the information you have received about the merger so far?

What do you consider to be most important?
What is the most positive aspect of the merger information?
Are there any negative aspects?

Do you think your competence has been utilized in the merger?

If Yes: In what way – can you elaborate further?
If No: Can you please describe how you could have contributed to the process? Why did not this work?

Do you think you will be able to influence your work situation after the merger is carried out?

With regard to new/updated duties?
With regard to duties that have not been (or will not be) changed?
How do you feel about this?

Are you satisfied with the support you get from today's IS?

Is this support what you need in order to carry out your tasks?
If No – Can you please describe the problem further? What would you need?

If Yes – In what way? – How could this be achieved?

Do you think that you received proper support and training/education when you started to use the IS?

Please, mention three keywords that describe the merger as you see it?

APPENDIX 2 – Questionnaire, winter 2010

The questions from the third study's questionnaire carried out in the winter of 2010.

Question (Q)1: Before the merger I was employed at: OrgD or OrgE.

Q2: My gender is: Male or Female.

Q3: My age is: - 20 years, 21-30 years, 31-40 years, 41-50 years, 51-60 years, 61-65 years, over 65 years.

Q4: Do you use a new IS after the merger? Yes, entirely/Yes, partly/
I do not know/No.

If changed IS:

a) How has the new IS influenced your work?

Very positively (5)

Rather positively (4)

Neutral (3)

Rather negatively (2)

Very negatively (1)

b) Have you received or will you receive training because of new IS?

Yes, I have received training

Yes, I will receive training

I do not know

No, I have not received and will not receive training

If unchanged IS:

c) Do you think that the IS should have been changed?

Yes, entirely/Yes, partly/ I do not know/No

If no training:

d) Do you think you need (or needed) training?

Yes/No/I do not know

Q5: Were your routines changed in the merger? Yes, entirely/Yes, partly/ I do not know/No.

If changed routines:

a) How have the new routines influenced your work?

Very positively (5)
Rather positively (4)
Neutral (3)
Rather negatively (2)
Very negatively (1)

b) Have you received or will you receive training?

Yes, I have received training
Yes, I will receive training
I do not know
No, I have not received and will not receive training

If unchanged routines:

c) Do you think that the routines should have been changed?

Yes, entirely/Yes, partly/ I do not know/No.

If no training:

d) Do you think you need (or needed) training?

Yes/No/I do not know

Q6: Have your merger expectations been fulfilled?

Yes, just as well as I expected (5)
Yes, almost as well as I expected (4)
Neutral (3)
Not completely as bad as I expected (2)
Worse than I expected (1)

Q7: Did the management in charge of the merger exploit the opportunities for further development? Yes/No/I do not know

Q8: Do you think your work creates value for the organization?

Always (5)/Mostly (4)/Neutral (3)/Rarely (2)/Never (1)

Q9: Do you think you work in the most effective way?

Always (5)/Mostly (4)/Neutral (3)/Rarely (2)/Never (1)

Q10: Are your IS satisfactorily supportive after the merger?

Always (5)/Mostly (4)/Neutral (3)/Rarely (2)/Never (1)

Comments – anything else you want to say about the IS and/or the routines after the merger can be added here (max 320 characters):

APPENDIX 3 – Interview guide, spring 2010

The interview guide from the fourth study carried out in the spring 2010. The questions below were a basis for the interviews; the interviewees mostly answered both according to the scales and gave “open” answers. In some cases they could not grade the answer and only answered openly.

Question 1: Do you work in a new department or in a new working group after the merger? Yes/No

Question 2: Are there any new colleagues in your department? Yes/No

ROUTINES and TRAINING

Question 3: Did you have to learn new routines in order to carry out your tasks?

In case of Yes:

- a. What is your opinion of the new routines?**
- b. Are the routines new for your colleagues too** (i.e. for those who have not changed their place of work as you have)? Yes/No
- c. Time spent on new routines?**
 - Much more time (1)
 - More time (2)
 - No change (3)
 - Less time (4)
 - Much less time (5)
- d. More or less errors because of new routines?**
 - Much more (1)
 - More (2)
 - No change (3)
 - Less (4)
 - Much less (5)
- e. More or less duplicate work?**
 - Much more (1)
 - More (2)
 - No change (3)
 - Less (4)
 - Much less (5)
- f. Apart from you, are there more “new” colleagues in your department or in your work group? Yes/No**
- g. Have you received any training because of the new routines?**
 - Rank on a five-degree scale: Completely (5) – Not at all (1)

- h. Have your colleagues (as far as you know) received any training because of the new routines?** Rank on a five-degree scale: Completely (5) – Not at all (1)

If no training:

- i. Will there be any training?** Rank on a five-degree scale: Completely (5) – Not at all (1)
- j. Do the administrators have to take own responsibility for learning new routines?** Rank on a five-degree scale: Completely (5) – Not at all (1)
- k. Is training necessary due to new routines?** Rank on a five-degree scale: Completely (5) – Not at all (1)

INFORMATION SYSTEMS and TRAINING

Question 4: Did you have to learn new IS in order to carry out your tasks?

In case of Yes:

- a. What is your opinion of the new IS?**
- b. Are the IS new for your colleagues too** (i.e. for those who have not changed their place of work as you have)? Yes/No
- c. Time spent on new IS?** Much more time (1)
More time (2)
No change (3)
Less time (4)
Much less time (5)
- d. More or fewer errors because of new IS?** Much more (1)
More (2)
No change (3)
Less (4)
Much less (5)
- e. More or less duplicate work because of new IS?** Much more (1)
More (2)
No change (3)
Less (4)
Much less (5)
- f. Are there any “new” colleagues in your department or in your work group?** Yes/No
- g. Have you received any training because of the new IS?** Rank on a five-degree scale: Completely (5) – Not at all (1)

h. Have your colleagues (as far as you know) received any training because of the new IS? Rank on a five-degree scale: Completely (5) – Not at all (1)

If no training:

i. Will there be any training? Rank on a five-degree scale: Completely (5) – Not at all (1)

j. Do the administrators have to take own responsibility for learning new IS? Rank on a five-degree scale: Completely (5) – Not at all (1)

k. Is training necessary due to new IS? Rank on a five-degree scale: Completely (5) – Not at all (1)

REENGINEERING

Question 5: About reengineering initiatives in the DE-merger – have you or your colleagues made any proposals/suggestions for changes? Yes/No

If Yes:

How were your proposals received? Rank on a five-degree scale: Completely (5) – Not at all (1)

How were your colleagues' proposals received (as far as you know)? Rank on a five-degree scale: Completely (5) – Not at all (1)

Question 6: Did the management in charge of the merger exploit the opportunities for further development? Yes/No/I do not know

Question 7: Do you think that development was needed before the merger? Rank on a five-degree scale: Completely (5) – Not at all (1)

Question 8: Do you think that further development is needed after the merger? Rank on a five-degree scale: Completely (5) – Not at all (1)

INFORMATION – how it was perceived before and after the merger

Question 9: Has the content been changed? Yes/No

Question 10: Has the amount been changed? Much increased
Somewhat increased
The same
Somewhat decreased
Much decreased

Question 11: Have the channels been changed? Yes/No

If Yes: How?

Question 12: Is it the same sender/-s after the merger? Yes/No

Question 13: Who do you think the sender/-s was/were before the merger?

Question 14: Who do you think the sender/-s is/are after the merger?

EFFECTIVENESS

Question 15: Do you consider yourself to be effective at work?

Question 16: Please, specify what you mean by being effective at work?

Question 17: In terms of productivity, do you feel you accomplish more or less during a normal workday compared to before the merger? Rank on a five-degree scale how you consider your productivity to have become after the merger: Much higher (5) – Much lower (1)

Question 18: About fragmentation of your working day, do you think that your new routines and/or your new IS make your workday more or less fragmented? Rank on a five-degree scale how you consider the fragmentation of a working day after the merger: Much higher (1) – Much lower (5) (reversed scale)

Question 19: How often are you disturbed (during a normal working day) by problems about the new organization and/or new routines/IS?

Question 20: How frequent are these disruptions?

Question 21: Which are the forms for the disruptions, (e.g. e-mail, phone, colleagues who come into your office, unplanned meetings)?

CREATION OF VALUE

Question 22: Do you think your work contributes value to your organization?

- a. How is this measured – by your own judgement or others?**
- b. What do you think yourself?**

KEY-WORDS (from the last interview)

How do you feel about the key-words you formulated the last time we met (a year ago)?

APPENDIX 4 – Questionnaire, November 2011

The questions from the fifth study's questionnaire carried out in November 2011.

Question (Q) 1: Gender? Male/Female

Q 2: Employment before the merger in: OrgD/OrgE

Q3: How well do the information systems, that you depend on to carry out your duties, work?

Very well (5)

Rather well (4)

Neutral (3)

Rather badly (2)

Very badly (1)

Q4: How do you think that IS issues were handled in the merger?

They were often in the shadow of other issues

They were highly prioritized

They were often postponed

There has been confusion about the IS

The IS issues premeated the merger

I have no opinion

Q5: If you compare your present work situation with the one before the merger, which of the following do you agree with (more than one alternative can be marked):

I have improved my skills after the merger

I get more appreciation for my achievements at work now

I think that I contribute more value now

It is easier to understand my own role now

I have more stimulating tasks now

I am more often dissatisfied with my work now

I find it harder to accomplish what is expected now

I find it harder to understand the work flow now

I am more often under stress now

I do not agree with any of these statements

Comments: If you want to add something you can do so here (max 600 characters):

Siw Lundqvist

Searching for keys to successful post-merger integration

Unsuccessful mergers are said to be the rule rather than the exception; therefore it is important to gain a better understanding of merger and post-merger integration (PMI). As part of this process we should learn more about how a merger and PMI of information systems (IS) can be facilitated, and then how people are affected by the merger processes.

This thesis covers five studies carried out between 2008 and 2011 in two organizations in higher education that merged in January 2010. The methods used form a longitudinal case study. The results show that IS issues should be addressed in the merger process and that IS decisions should be made early. Moreover, the (sometimes new) management of the merged organisation needs to be appointed early in order to work actively with the IS-strategizing. The key management issue is, however, to build trust and to plan and make decisions about the integration of both IS and people.



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