

Information systems – unavoidable nuisances in combining local administratives?

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Abstract

Local administratives face challenges similar to enterprises due to changes in their environment. Municipalities need to join their resources to reimburse and to deliver services. However, municipalities have not received much attention regarding ICT related integration, especially in cases when multiple municipalities are combined. Despite the central role of information systems in government services, ICT is often left without prior contemplation when making plans to integrate municipalities. Therefore, this paper addresses the role of information systems in municipality integration. In so doing, the study uses a framework described in prior literature: using this framework, the paper describes particular municipality integration and discusses IS-related factors in the implementation of integration.

Keywords: IS combine, municipalities, local administration, public merger

1 Introduction

This paper discusses the role of information systems in the process of combining distinct organisations such as municipalities. Even if there has been only little research on the relationship between ICT and organisational change in the public sector on the whole, organisational integration in distinct public sectors has been in the interests (e.g. health care) for decades (see Carey, 1998, Burns & Pauly, 2002). Especially integration in the municipality level has received only minor attention in academic information systems research. However, organisational change and information technology in the private sector has been discussed for decades (Barrett et al., 2006). Extant research mainly concentrates on governments seeking to provide electronic access to government services (Coram & Burnes, 2001, Flak et al., 2005, Ilshammar et al., 2005). Nowadays however, enterprises tend to combine their resources to effect better profits and revenue.

In this paper, a municipality is discussed as a town, city, or a rural district having local self-government. Municipalities are not always profit-centred, and their primary focus is to provide their inhabitants with adequate education, health care and infrastructure. To fulfill this aim, the municipalities use information systems connected to for example civilisation, financial management, health care, human resources, social welfare and technical services. However, all these services must be funded and municipalities need to ensure their initiatives are efficient and feasible in terms of benefits versus costs (Blom-Hansen, 2007).

Recently, the Swedish government stated that the public sector expresses several similarities to the private service sector in terms of preconditions for more efficient handling of information systems (Ilshammar et al., 2005). However, information systems developments in the public sector display a particularly high propensity for failure, with between 20-30% categorised as total failures and between 30-60% as partial failures (Goldfinch & Malpass, 2007). Such levels of failure may have a profound impact on public finances both in developed countries and moreso to e-government initiatives in developing regions around the globe (Collins & Bicknell, 1997). As such, we suggest that municipalities may be compared to profitable enterprises in this context.

Ahlström and Nilsson (2005) defined a merger as the joining or integration of two previously discrete entities. In an integrative process there is a need to keep and maintain focus on business priorities and goals. In an acquisition, an enterprise takes over another enterprise and it often is aggressive, with expansion potentially at the cost of the other enterprise. In addition, often the aim of acquisition is to get new business knowledge to the parent enterprise. With municipalities, acquisition is not as applicable. Instead, 'merger' better describes the situation, because it usually is a question of failure or survival especially if municipalities are so small that their funding (mainly revenue) base cannot cover them, for example, increased pension costs. Mergers carried out between enterprises are considered successful if desired synergy benefits are achieved in a certain time, if the business value increases and if the functional volume increases after the merger (Mehta & Hirschheim, 2007). Perry and Herd (2004) continue that it may be difficult to understand the promised significance of synergy if the integration process has not received a proper attention.

Two of the main causes for failures in enterprises' mergers in 1980's was the insufficient implementation of ICT, and failed integration of information systems (McKiernan & Merali, 1995). Discussions preceding mergers focus on economical and lawful issues while the technical and organisational aspects concerning the units to be combined receive only minor attention (Robbins & Stylianou, 1999; McKiernan & Merali, 1995). Nowadays, organisations are strongly dependent on their information systems, and are reliant more so on successful information system integration (Stylianou et al., 1996). However, many IS projects still fail to deliver. Luna-Reyes et al. (2005) claim that rather than being 'technological' in nature, a significant set of these failures stem from social and organisational factors that are difficult to observe. Furthermore, Orlikowski and Barley (2001) argue that information technology research can benefit from organisation studies and organisation studies can benefit even more from information technology research. We propose that the same principles are valid in the case of municipalities' mergers but we emphasise the special nature of public sector information systems. The strategic and comprehensive nature of several public sector

organisations necessitates that their information systems bear no failure because it can lead to large-scale disasters in many economic and social activities and even danger of human lives (Loukis & Spinellis, 2001).

In this article we detail two cases where two small municipalities implemented a merger. While keeping the research focus on the mergers, we investigate if and how information systems were used as enablers in the implementations, or indeed if they were irrelevant or forgotten in the merger process.

2 Municipalities and their mergers

To date, little research has been carried out on combining municipalities, and especially on the role of information systems in these implementations. Walsh et al. (2008) have recently studied shared services in public sector. They comment that the literature recognises benefits and implementation issues for shared services in the business or private sector and only some in public sector. Instead, public sector studies have focused on their private sector counterparts and on service integration. They continue that there is very little research on shared services arrangements for the non-profit sector. In their work, shared service was defined as "multiple agencies sharing common corporate services through a dedicated shared service provider" (p. 202). We suggest that this definition is also valid for combined municipalities. That also justifies our research because it verifies the need of knowledge of shared services in municipalities.

More attention is paid on profitable enterprises and their mergers and acquisitions (for example, Mehta & Hirschheim, 2007). In their article on business-IS alignment as reflected in IS integration decision in a merger context Mehta and Hirschheim (2007) explored three large enterprise mergers. The participants had been on the IS integration task force of their merging firms or were informally involved in IS integration decision making and implementation. Our empirical cases are in line with that, except that we had access to two merge cases.

In his study of 2000 enterprises Henningsson (2006) found that 30% planned a merger as an active action and 40% considered themselves targets of mergers. The amount of mergers in 2004 was 33,500 and half of them were located in the European Union. Furthermore, the amount of money spent on them was almost 2.4 trillion USD. Robbins and Stylianou (1999) point out that the preceding discussions before mergers emphasise economical issues while technical and infrastructural questions receive only minor attention. For instance, rapid growth, increased market share and getting new products, services and skills appear as aspirations to mergers (Stylianou et al., 1996). Lack of integrated systems can be a significant hindrance to business integration (Markus, 2000). Similarly, we suggest that non-integrated systems can also influence integration between non-profit organisations such as municipalities. In her article about "technochange" Markus (2004) points out that some managers even use information technology as a strategy to drive organisational change while others see IT projects as non-avoidable tasks. According to Markus, the latter miss significant opportunities to benefit from IT-enabled organisational performance improvements.

In its formal inquiry about regional statistics for the community Eurostat (2007) defines municipalities as local level administrative structures. According to the formal inquiry, states transfer municipalities between administrative regions and they also combine

municipalities. Furthermore, there are frequent changes to local administrative units. E.g. in Denmark 11 new non-administrative regions were created by combining municipalities in 2007 (Eurostat, 2007.) Blom-Hansen (2007) explored expenditure behaviour due to the Danish 2007 local government reform. In that nation-wide reform, 271 municipalities were reduced to 98. In Norway the municipalities differ in population from less than one thousand to several hundred thousand. To meet the demand for improvement and concurrently cope with limited resources, the municipalities have adopted several initiatives to reorganise their operations. An important initiative has been the increased use of e-government. The e-government costs may be relevant in large municipalities, but they often receive less acceptance in the smaller communities (Flak et al., 2005.)

In their study on intergovernmental partnership in Spain, Font et al. (1999) notice the need of partnership with neighbouring municipalities or higher levels of government to deliver the required services. Controversially, Blom-Hansen (2007) describes how councillors in small Danish municipalities may want to protect the inhabitants against policy reversals by the decision maker of the new and larger municipality before the merger takes place. In Argentina, Prud'homme et al. (2004) notes the need for stronger municipalities because stronger municipalities could contribute to produce stronger cities and thus lead to economic development. On the other hand, Prud'homme et al. add that cities are not always efficiently managed and therefore the benefit of mergers may remain humble.

3 The Study

In this section we describe the research setting. First we describe the empirical background, then we introduce the used framework, and finally we describe how the research was carried out.

3.1 Background to the cases

In the beginning of 2007 four independent Finnish municipalities were combined to form two new municipalities. The empirical material was collected by questionnaires sent by email at the end of 2007. In both new municipalities the respondents represented both of the previous municipalities. The respondents used information systems in financial administration, human resource management, social welfare and health care.

The first municipality (Greatville) was established 1973 when two municipalities were combined. There were 4501 inhabitants at the end of 2006 over an area of 781 square meters. The municipal operational cost was €25.6M and the municipality had 324 employees. The second municipality (Smallville) was established in 1876 and there were 1325 inhabitants at the end of 2006. The operational cost was €6.5M and the municipality had employed 78 persons. In 2005 the municipalities had decided to make a pre-report on the possible combination and its influence on their economical situation, services, and possibilities to influence and on employees. The pre-report was written by the commissioner of Greatville. The new municipality was named Smallville.

The third municipality (Greathill) was established as an administrative parish in 1445 and its last number of inhabitants was 7002. The operational cost was €358M and there were 471 employees. The fourth municipality (Smallhill) was established in 1867 and its latest number of inhabitants was 1977. Greathill and Smallhill and some other

municipalities around them decided in 2005 that they produce a pre-report on combination. In the run of the pre-report the others wanted to stay outside of the combination. The new municipality was named Greathill.

3.2 The framework

The framework (Fig. 1) introduced by Alaranta (2006) bases on a previous framework described by Motwani et al. (2002) that was developed for ERP (enterprise resources planning) implementation. In her unique model Alaranta added several issues concerning factors related to software and vendors, factors related to company expertise and resources and factors related to mergers. Even if the framework originally was developed to evaluate mergers between profit companies, especially the factors related with software and vendors make it useful in our research that focused on significant organisational changes in municipalities because the role of information systems and their operational continuity is emphasised in municipalities that are deeply dependent on information systems (Blom-Hansen, 2007, Goldfinch & Malpass, 2007, Ilshammar et al., 2005, Loukis & Spinellis, 2001).

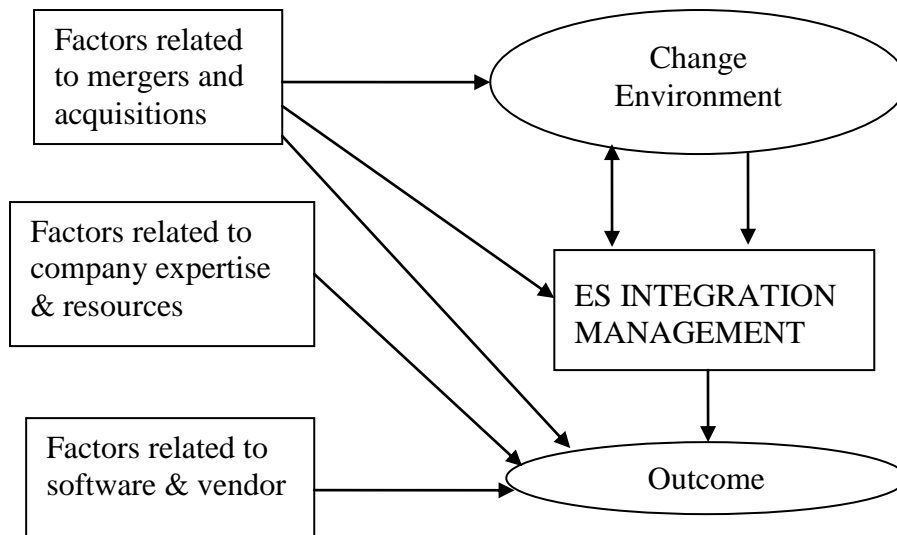


Figure 1: A framework for post-merger integration of an enterprise system (Alaranta, 2006, 65).

Alaranta (2006, 65) defines the factors in her framework as follows:

- Factors related to mergers and acquisitions: political and power structure issues, cultural fit, overall merger management
- Factors related to company expertise & resources: organisational and management IS maturity, IT and ES expertise and resources and project management
- Factors related to software & vendor: suitability of the software, quality of the software, vendor and ES complexity
- Change Environment: strategic initiatives, learning capacity, cultural readiness, IT leveragability and knowledge-sharing capacity, network relationships

- ES INTEGRATION MANAGEMENT: business process change, change management, process management.

3.3 Research Approach

To address our research question(s) we used a qualitative research approach that enables us to interpret, explain and understand social and cultural phenomena (Walsham, 1993). To further support this approach, we also applied quantitative measures (Brannen, 2005). Due to the small size of respondents, no statistical calculations were carried out. Case study approach is suitable for this study since it is exploratory in nature, with the intention of investigating integration of municipalities in a real-life context. Case study approach is also beneficial where control over behaviour is not required or possible (Yin, 2003) or in case of contemporary descriptions of recent events that appear complicated (Eisenhardt & Graebner, 2007). We evaluated the projects in the context of a framework introduced by Alaranta (2006), as outlined above. As the model highlights factors connected to software and vendors, it was an appropriate choice in our study because we paid special attention to the role of information systems in the mergers.

3.4 Data Collection and Analysis

At the time of receiving the questionnaires, many of the respondents were still involved in learning new information systems and work routines. The qualifying questions ensured that the respondents were involved to a significant degree and that they had a role on the project which provided them with an informed opinion on the combine and information systems in there.

The questions in the questionnaires were formed to meet the framework by Alaranta (2006). The questionnaire was sent both to key users of the information systems representing personnel level and to persons representing management and who were responsible for information systems in the municipality. The questionnaire addressed to the personnel included 23 closed questions with a 5-step Likert Scale and 5 open questions about planning integration of information systems, schedule, management participation, communication, support and training, systems' functionality and size of change. The last question was "What else would you like to say about integrating information systems or their role in the combine?" From the personnel level, altogether 6 replies were received from the key users in Smallville that hired 402 employees in total; and 7 replies from the key users in Greathill that hired 612 employees in total. The study did not clarify how many employees used the information systems in the municipalities.

Correspondingly, the questionnaire addressed to the management consisted of 20 closed questions and 5 open questions about partly same issues as addressed to the employees added with the role of IS in combining municipalities, transferring information, decision making and perceived success of implementation. In both of the municipalities the management level returned 2 replies as one from the municipal manager and one from the IT manager. The modest amount of received replies describes well the size of the municipalities and thus confirms the need to combine their resources.

The closed questions were classified and the answers to the open questions were proof-read and annotated. In any cases of ambiguity, clarification was sought from the

corresponding respondent, either via telephone or e-mail. As the number of respondents was small we ensured that only the person in charge for receiving the responses was aware of the identities of the respondents.

4 Results

In this section we interpret the research results (Fig. 2) systematically with the help of the elucidating framework (Fig. 1) created by Alaranta (2006).

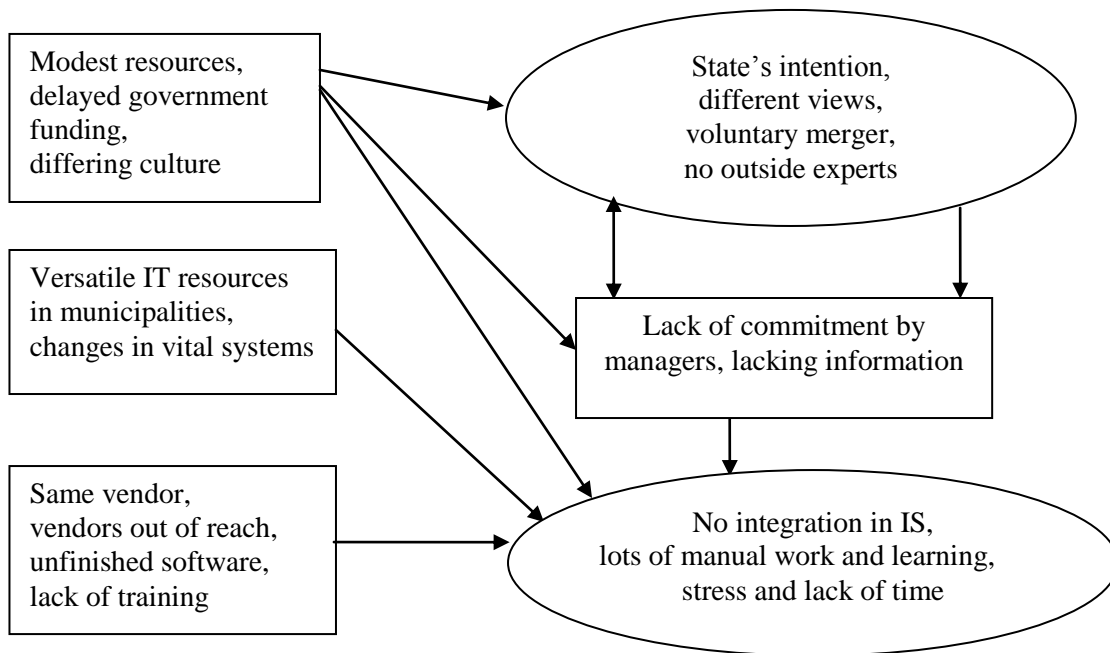


Figure 2: Factors and their relationships expressed with the framework.

4.1 Change environment

The background for the mergers grounded on the need to combine the small municipalities as a response to the state's intention to decrease the number of week administrative municipalities. The managers considered the information systems as drivers for changes in processes. The role of information systems was recognised in the situation and in the agreements of combine in both Greathill and Smallville they even noted the plans to ensure the consistence of the information systems and also to carry out the plans.

From a strategic perspective, in both cases the management thought that they had a plan and schedule. On the other hand, half of the personnel in both cases felt that no plan or schedule existed. In Smallville personnel thought that the information systems were not even discussed until the agreement of combine was signed. There was no knowledge base of previous combines of municipalities. Part of the personnel perceived that they had not enough training for the information systems. The new information systems seemed to be unfinished evaluated by the management and personnel of Smallville.

Neither cases used outside experts and the problems were solved by personnel and vendors. Both personnel and management thought that a lot of learning and problem solving took place during the process.

Employees from Smallville explained:

“If legacy systems had been in use in the new municipality, there would not be so much stress. Still, new issues emerged so much because there was a new municipality and new tasks and on top of that new information systems and there we had a mess. No problem if you did not need ICT.”

Only two employers from Greathill perceived the communication by management open. Some respondents were also dissatisfied with the delay of decisions made by trustees. In Greathill there was an Intranet where all preliminary material should have been uploaded to be seen by all inhabitants.

4.2 ES integration management

In small municipalities the municipality managers have so much to do in their daily managerial routines on top of combining their municipalities. Only five employees thought that leadership was aware of current phases and supported in solving problems. Management thought that problems were solved together with personnel. The lack of commitment was expressed as follows:

“The top management was not aware of issues, software applications, the necessary security issues, software environment and the work load that had to be done. The process of employing was lousy, personnel were unsure of its settlement and it led to lack of motivation to attend training. The atmosphere was something like: not my business, let other people take care.”

On the other hand, a sign of commitment was seen when talking about workload:

“The mergers phase was carried out only because of the committed personnel.”

Due to the leader system in municipalities the municipality managers had to report issues to the trustees. The municipality manager of Smallville remarked:

“The most traumatic experience was when we prepared the budget for 2007. The accounts were combined about in time but after that the vendor caused us mostly grey hair and an unfortunate hurry. We complained but no help. I don't know what guinea pigs we were. ... Also in economic follow-up we had problems. We didn't know until the end of this year if we can keep the budget or not. The trustees haven't always understood.”

4.3 Mergers and acquisition factors

Because information systems were integrated they influenced work routines. That caused some resistance to change:

“In practice, the vendor did not offer any choices. We had no real possibility to find out what would be a proper way for the municipality. The ground was that the smaller joins the bigger. From the municipality point of view, there was no expert who could have questioned the given choice.”

In both new municipalities the one manager said that organisational and cultural aspects influenced IS integration and the other said nothing about it.

From an administrative bureaucracy perspective, the state government was blamed for the problem because the applied funding was delayed:

“It seems that the number of combinations of municipalities surprised also the ministry because the decision on supportive investment was not received until in December 2006. It was clear that actions must be carried out and software had to be acquired to be used in both municipalities but the extent of changes depended on the funding.”

4.4 Factors related to expertise and resources

All four of the municipalities used to have software made by the same vendor and partly they had also purchased same software. In small municipalities the users had to learn the applications that were used in the greater municipalities as was the case in Smallville. The amount of IT support in the municipalities varied between one person and three with additional paid support.

4.5 Factors related to software and vendor

In both mergers the central information systems were from the same vendor. In Smallville both personnel and management were much more critical against the quality of software and the vendor than in Greathill. While in Greathill the management thought that support from the vendor was adequate, the management in Smallville thought quite opposite. They even considered the information received from the vendor unreliable. One employee from Smallville remarked:

“The software didn’t function as it should, the vendors could not be reached, the vendors gave no help, the software were unfinished, training was insufficient. ... New software really increased work load.”

The personnel in the two new municipalities had an opposing view of the information systems. In Greathill they thought that there were no errors in the functionality of the software.

4.6 Output

Managers from Greathill reported that all strategic planning and other development in the municipalities ceased totally due to the merger project that demanded all attention at the time. On the other hand, managers from both Smallville and Greathill thought that the output of integrating information systems met almost or totally expectations.

The employees in Greathill were concerned on problems with responsibilities but lucky because they “survived”. They also complained lacking database in the beginning of the fiscal year when new financial statement was to be built. Employees from Smallville responded:

“I would advise others to implement only finished and properly tested software that are widely used in municipalities”.
“Actually nothing succeeded without additional efforts.”

5 Discussion and Conclusion

This paper introduced a circumstance that so far has received only minor attention in research on information systems in the public sector. There are research papers about private organisations and their mergers from the information system view but nonprofit sector is left almost without any notice. Our article contributes to the question raised by Ilshammar et al. (2005): How ideas of ICT use and national development spread among people in decision making positions? Our research showed that the ideas do not spread substantially among decision makers in local administrations (Figure 2).

The clear lack of information of how shared services could be effectively implemented in the nonprofit sector has already been identified (Walsh et al., 2008). Our research adds to that topic, but we take a closer view in sharing because we focus on municipalities that combine to one municipality with their services. Surprisingly, our research shows that information systems are not taken into deep deliberation before decisions are made. In addition, another question was raised via a remark: *“Who decides what kinds of information systems are implemented?”*

Organisational change was a challenge in all four municipalities and occasionally communication was perceived difficult: *“... if you suggested some changes, you got responses such as ‘this way we do these things here’”*

Literature recognises information system integration in mergers to be dependent on leadership such as top support, merger planning and quality of planning (Robbins & Stylianou, 1999, McKiernan & Merali, 1995). In our empirical cases the criticism was focused on overall leadership and especially on the role of personnel in the mergers. Both managers and personnel perceived that it was too hectic and that there were no possibilities to look for better solutions. Organisational culture, too, was seen as an obstacle in the mergers. The chosen framework also helped us to show that vendors have an important role when municipalities combine. According to the results, vendors see possibilities to get rid of old applications and to offer new solutions to the municipalities that already are in change. The applications are tailored to fit in the needs of municipalities and there is hardly any competition. However, if the products are new, even unfinished, the vendors are imposed to offer solutions that need a lot of work and tailoring when they are installed and even integrated with legacy systems, as could be seen especially in the comments from Smallville.

There are research papers on public services and their integration over municipal borders but only some research made on whole municipalities combining their governance. Our article increases understanding of the settings and problems that may appear when independent municipalities carry out a merger.

We explored the role of IS in decision making in the public sector (cf. Mehta & Hirschheim, 2007) in the specific case when local administrative services were combined. As the sustainability is crucial in communal services, information systems should receive proper attention (Loukis & Spinellis, 2001). When municipalities combine, these e-services should be totally changed to meet each other. Therefore, the lack of interoperability between legacy systems and new information system was perceived as a huge problem. There was no difference whether the systems were from the same vendor or not. Our findings show that information systems are not used as enablers when making crucial decisions on the future of municipalities. This finding is commensurate with Orlikowski and Barley's (2001) call for research into the reciprocal benefits of organisational studies and ITC studies. In other words, our article highlights the lack of minding information systems when designing significant organisational changes.

While our research highlights new aspects related to a white area in information systems in local administrative and their mergers, our research also introduced a limited number of responses due to the small size of the municipalities. Therefore it would be worth doing more research in this area with more people involved and adding base-level users in to the target group. As our research was carried out shortly after the mergers had been implemented, another look at the same municipalities would give interesting information about how the mergers are experienced later. In addition, due to the humble amount of academic research in combining municipalities, repeating the same study in mergers that consist of municipalities with more inhabitants and more employees could offer new insights in the topic.

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