

## ERP System Adoption - Does the Size Matter?

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### Abstract

*This paper investigates the relationship of enterprise size to the constraints and objectives of Enterprise Resource Planning (ERP) systems adoption. The survey data based on the responses of 44 companies indicates that significant differences exist between small, medium-sized and large enterprises in ERP system adoption. Specifically, the findings suggest that small companies experience more knowledge constraints than their larger counterparts in ERP adoption. Further, while being the most prevalent objective for ERP adoption in all the company groups, business development through ERP adoption is considered especially important by the medium-sized and large enterprises. Finally, the findings of the study suggest that instead of considering small and medium-sized enterprises as one homogenous group, the differences between these two groups of companies should be acknowledged in the future research.*

### 1. Introduction

Enterprise Resource Planning (ERP) is an ideology of planning and managing the resources of an entire organization in an efficient, productive, and profitable manner, and is manifested in the form of configurable information system packages. ERP system packages promise the seamless integration of all the information flowing through an organization. They fulfill this promise by integrating information and information-based processes within and across the functional areas in an organization, and further, by enabling the integration of information and processes beyond the organizational boundaries. The alleged benefits of ERP adoption are numerous. They include, for example, cost reductions, productivity improvement, quality improvement, customer service improvement, better resource management, improved decision-making and planning, and organizational empowerment [1].

As ERP system adoption is typically accompanied with considerable investments in terms of time, money and effort, the decision to acquire an ERP system has major implications for the adopting organization. In large organizations, ERP system implementation may last

several years, particularly if the system is heavily customized to make it better suit the needs of the adopting organization [2]. The great effort and difficulties related to ERP implementation, as well as the associated organizational change, have given ERP adoption projects a somewhat notorious reputation. It has been estimated in the literature that at least 90 percent of ERP implementations end up late or over budget [3], 40 percent achieve only partial implementation, and almost 20 percent are scrapped before completion as total failures [4]. Indeed, many ERP adoptions can be, in one way or another, considered failures [5, 6, 7, 8].

All in all, the decision to acquire an ERP system is a long-term commitment and a considerable investment having a significant impact on the organization. Most large organizations worldwide have already adopted an ERP system and smaller organizations have started to follow their lead [9, 10]. Due to a resource poverty typically characterizing small and medium-sized enterprises, the adoption of information systems, and thus, ERP systems, can be seen to represent a greater resource commitment and risk for them than for their larger counterparts [11, 12, 13, 14].

This study aims to contribute to the discussion on ERP system adoption by investigating the relationship of enterprise size to the constraints and objectives of ERP system adoption. More importantly, instead of resorting to the customary approach of considering small and medium-sized companies as one homogenous group, this study aims to bring forth the differences between small and medium-sized companies. By dividing the companies into three different groups, small, medium-sized, and large enterprises, this study aims to develop a richer understanding of enterprise size related issues in ERP system adoption, and to provide insights that may have been overlooked in previous research.

The survey data, based on the responses of 44 Finnish companies, indicates that significant differences exist between small, medium-sized, and large enterprises in ERP system adoption. Specifically, the findings suggest that small companies experience more knowledge constraints than their larger counterparts in ERP adoption. Further, while being the most prevalent objective for ERP adoption in all the company groups, business development

through ERP adoption is considered especially important by medium-sized and large enterprises. Finally, the findings of the study suggest that, instead of considering small and medium-sized enterprises as one homogenous group, the differences between these two groups of companies should be acknowledged in future research.

The paper is organized as follows. The next section presents the research questions and the theoretical background for the study. After this, the research methodology is described, followed by the analysis and results of the study. Finally, the conclusions are drawn.

## 2. Theoretical background and research questions

Due to the saturation of the ERP market for large enterprises, the interest of ERP vendors in small and medium-sized enterprises (SMEs) has increased [9, 10], and simplified and cheaper ERP solutions specifically tailored for SMEs have been brought to the market. At the same time, the increasing needs and possibilities for the integration of information systems, and the availability of relatively inexpensive hardware, have encouraged SMEs to approach the ERP vendors [10].

Compared to their larger counterparts, SMEs typically exhibit limited access to resources such as time, skills and money [11]. Further, due to a lack of slack resources, SMEs in general are more vulnerable to the environmental effects and misjudgments [11, 15]. Limited resources also force SMEs to allocate more time to adjusting to, rather than predicting and controlling, the turbulence they are faced with [15].

Accordingly, resource poverty in the form of financial constraints, and lack of time and knowledge, has been found to hinder IT adoption [16, 17, 18, 19], and to negatively affect IS implementation success [14] and IT growth [12] in SMEs. Further, SMEs decision-making and management related to information systems have been described as reactive, informal, intuitive [20], and opportunistic with a day-to-day focus [19, 21]. Also, the management skills needed for information systems planning and organization have been found to be limited in SMEs [20, 22, 23]. In addition to hindering IT/IS planning [24], the resource constraints faced by SMEs may hinder their ability to maintain technology up to date, while at the same time forcing them to consider their investments in IT as something that should last for a long time [22]. The constraints may also force SMEs to assume an incremental approach to IT investments, which, in turn, may result in isolated and incompatible systems [25], as well as decreased flexibility [22]. As a result, there is an evident discrepancy between the management methods and skills employed by SMEs, and the systematization and

the resources required by IT/IS planning and implementation [20].

All in all, although information technology is getting cheaper and more ubiquitous all the time, it still represents a major investment and commitment to smaller enterprises. Specifically, in resource-demanding ERP investments, the larger enterprises have been found able to take advantage of economies of scale and, hence, compared to their larger counterparts, smaller companies are faced with a relatively bigger commitment when adopting ERP systems [26]. Interestingly, however, although previous research has suggested that management, adoption and implementation of IT/IS in SMEs is problematic, the differences between different sized companies in ERP adoption have remained largely unexplored. The present paper contributes to filling this gap by exploring the constraints and objectives of ERP system adoption in companies of different sizes. Furthermore, instead of resorting to the customary approach of comparing SMEs to large companies, we choose to divide the companies into three groups - small, medium-sized, and large enterprises. In this way, we aim to develop a richer understanding of company size related differences in ERP system adoption. Below, the more specific research questions addressed by the study are discussed.

*Research question 1. How is enterprise size related to the constraints of ERP system adoption?*

The requirements set by the business environment, such as the demands of the value chain and the need for electronic networking and collaboration with customers, suppliers, and other business partners, have been identified as important drivers for ERP system adoption [27, 28, 29, 30]. Further, external factors and influences in general may play an important role in companies when they try to reduce the uncertainty and ambiguity related to decision-making [31]. In technology acquisition, for example, external factors in the form of peer influence have been found to affect the technology choices made by companies, and as a result of imitation of the decisions made by others, even lead to the selection of a product that has initially been evaluated as inferior [32].

The importance of external advice and references in IT/IS investments has been found to characterize especially small enterprises. In particular, the impartial advice and opinions given by parties other than vendors have been found to play an important role [23, 33]. Correspondingly, gaining information regarding the experiences of the current users of the vendor's product [34], the influence of family members, and the recommendations of others in the same business have been found to play a significant role in the IT/IS acquisition in small companies [24, 35].

As for the resource-intensive nature of ERP system adoption, this represents a greater risk for smaller enterprises than for their larger counterparts [12, 13, 14, 26]. The role of resources in ERP adoption is further emphasized if ERP software customization is required. The companies' reluctance to get involved with resource constraining and lengthy implementation and customization of ERP system packages is clearly shown in the study by Everdingen et al. [9], where the most important criterion used in ERP system selection in companies (50-1000 employees) was found to be the ERP system package's compatibility with the company's current business procedures. Further, the study conducted by Bernroider and Koch [36] indicates that small and medium-sized companies value the shortness of implementation time more than larger companies. Especially in smaller companies, the extensive use of resources for an ERP system implementation project may even affect negatively the conduct of the company's core business. In some aspects, however, the adoption of an ERP system might actually be easier for smaller companies, which have less established structures and policies and thus more flexibility [22].

All the above aspects, more specifically resource poverty and external influences, can be seen, in different ways, to constrain ERP adoption in companies.

*Research question 2. How is enterprise size related to the objectives of ERP system adoption?*

SMEs, in general, have been found to be characterized more by a focus on day-to-day survival than long-range strategic thinking [22, 24]. This is partly due to resource poverty and vulnerability to external effects typically exhibited by these companies. The focus on survival rather than on strong long-term strategies has been found to lead to an emphasis on efficiency, cost reduction, and automation in IT/IS investments in SMEs [37]. Further, the motivation for information systems investments in SMEs has been found to be related to maintenance and reinforcement of the current expertise rather than to innovation or to a strategic initiative [22, 38]. In ERP investments, specifically, large enterprises have been found to place more value on improved innovation capabilities and business process improvement than small and medium-sized companies [36].

ERP systems are increasingly seen not only as intra-organizational integration efforts but also as playing an important role in inter-organizational integration, such as in supply-chain management and e-commerce [27, 39, 40, 41]. Using the conceptualization proposed by Irani et al. [42], ERP systems can be seen to extend their reach from mere intra-organizational application integration towards inter-organizational application integration, and towards the provision of capabilities for more or less tight inter-

organizational coupling. The scope of integration pursued by companies of different sizes through ERP adoption is an interesting issue, as SMEs have been found not to employ inter-organizational integration to the same extent as larger companies [43].

To conclude, based on previous research on IT/IS adoption, differences in the objectives of ERP system adoption can be assumed to exist between companies of different sizes.

### 3. Research methodology

The empirical data for this study was obtained through a survey investigating ERP system adoption in Finnish companies. The survey questionnaire was designed to address a variety of managerial issues regarding the selection and implementation of ERP system packages. Particularly, the aim was to reveal the constraints as well as the objectives of ERP system adoption. The companies were provided an opportunity to fill the survey questionnaire in either paper or electronic format.

The survey was conducted in 2002-2003 with a moderate sample of 44 Finnish companies responding to it. One respondent per company was invited to participate in the survey. The respondents in the small companies typically represented top business management (in 9 out of 18 cases the respondent was the CEO of the company) whereas the respondents in the larger companies were mainly managers representing the company's IT function. The companies represented a variety of industries including retail, manufacturing and logistics with the biggest representation from the wholesale industry. Most of the companies had already acquired and implemented ERP systems while a few companies had not yet started the implementation. Majority of the companies had acquired their current ERP system in late 1990's or early 2000's.

For the purposes of the analysis the companies are divided into small, medium-sized, and large enterprises using the European Community's definition [44] for small and medium-sized enterprises, also applied by Bernroider and Koch [36]. Accordingly, SMEs are defined as enterprises with fewer than 250 employees, and having either an annual revenue not exceeding EUR 40 million, or an annual balance-sheet total not exceeding EUR 27 million. As there is, based on our literature review, no commonly agreed definition of a small enterprise, we choose to define small enterprises as companies with less than 50 employees. The same definition of small enterprises has been previously applied by, for example, Chau [33, 34]. Consequently, medium-sized enterprises are defined as companies with more than 50 but less than 250 employees. Large companies, then, are those companies that do not meet the definition of SMEs and

have more than 250 employees, or revenue exceeding EUR 40 million, or balance-sheet total exceeding EUR 27 million.

The companies in our survey fall rather evenly into the three enterprise size categories described above. The number of companies, the average annual revenue, and the average number of personnel in each category of companies is presented in Table 1.

**Table 1. Characteristics of the research sample**

Size	n	Mean revenue €*	Mean number of employees
small	18	10,5	29
medium	13	53,9	132
large	13	929,5	4597

\* In millions of Euros

In order to investigate the differences in the constraints and objectives of ERP system adoption in small, medium-sized, and large companies, the following issues were explored using the survey data. As for the constraints of ERP adoption, the data regarding the role of external influences and the different aspects of resource poverty and adaptability in ERP system selection were analyzed. The objectives of ERP system adoption, then, were investigated with the data regarding the three most important reasons for ERP adoption, the importance of cost savings and efficiency improvements versus more strategic business development, and the scope of integration pursued through ERP system adoption.

An open-ended question was used to inquire the three most important reasons for ERP system adoption. The issues related to the role of external influences in ERP system selection, then, were recorded as categorical variables. For the rest of the questions, a 5-point Likert scale (with 5 being extremely important, relevant, successful or true, and 1 being not important, relevant, successful or true at all depending on the question) was used to measure the variables. In addition to the 5-point scale inquiring the importance, the respondents were also given an option to report if a particular question could not be answered or did not apply to their company.

The one-way analysis of variance (ANOVA) F-test was chosen as a primary method for conducting the analysis of the Likert scale data. Further, the variables not meeting the homogeneity of variance requirement of F-test were analyzed using Brown-Forsythe F-test. As the 5-point Likert scale can only roughly be interpreted as an interval scale required by ANOVA, the analysis was also conducted using the more robust non-parametric Kruskal-Wallis test. Thus, non-parametric test was used in addition to parametric test in order to improve the reliability of the data analysis.

For each variable measured with Likert scale the statistics reported include the arithmetic mean (Mean) of the responses in each company group, the significance of group mean differences (Sig.) indicated by F-test, and the group sizes (n). Further, in cases where a significant difference ( $p$ -value  $\leq 0,05$ ) was only indicated by either F-test or Kruskal-Wallis test (but not by both of them), the significance provided by Kruskal-Wallis test is reported in addition to F-test results. As for the categorical variables, percentage of companies reporting influence is presented for each company group. Finally, the answers to the open-ended questions inquiring the three most important reasons for ERP system adoption were analyzed and categorized following the open coding approach described by Strauss and Corbin [45]. The percentage distribution of the reasons to the different categories is reported for each company group.

#### 4. Analysis and results

Analysis of our survey data indicates that significant differences exist between the small, medium-sized, and large companies in the constraints as well as in the objectives of ERP system adoption. Further, the application of ANOVA F-test and Kruskal-Wallis test provided very similar results giving support to analogous interpretations. Next the results of the analysis are presented and the differences identified between the three groups of companies are discussed.

The first objective of this study was to investigate the constraints of ERP system adoption in companies of different sizes. Specifically, the role of external influences and different forms of resource poverty in small, medium-sized and large companies were investigated. The results regarding the role of external influences in ERP system selection in different company groups (Table 2) indicate that influence of the demands of large customers or suppliers was minimal in the ERP system selection in all the company groups. In only one (medium-sized company) of the companies that participated in the survey a customer or supplier had influenced the ERP system selection. Meanwhile, the recommendations received from colleagues influenced the ERP system selection particularly in the medium-sized companies with the small and large companies reporting to have resorted to the help of their colleagues more seldom. Further, in all the company groups the use of the company's own analysis of available ERP system packages as a basis for the selection was prevalent with the probability seeming to rise with the increase in company size.

Consequently, no support was found to the findings of previous research proposing that external influences play a particularly important role in IT/IS investments especially in small enterprises. Further, compared to the

role of external demands or recommendations, company's own analysis seems to play the most prominent role in ERP system selection in all the company groups.

**Table 2. Role of external influences in ERP selection**

	Size	Percentage*
Demands of large customers and/or suppliers influenced the selection	small	0 %
	medium	8 %
	large	0 %
Recommendations received from colleagues influenced the selection	small	22 %
	medium	39 %
	large	23 %
Company's own analysis was used as a basis in the selection	small	78 %
	medium	85 %
	large	92 %

\* Percentage of companies reporting being influenced

The results regarding the resource and adaptability constraints in ERP system adoption (Table 3), in turn, show that schedule and budget overruns in ERP implementation projects were regarded critical by all of the companies regardless of their size. The relevance of the problems related to the competence of users in the use of IT, then, was significantly different between the companies of different sizes. The competence of users was regarded as a significantly more relevant constraint in ERP adoption by the small companies than their larger counterparts. Further, the relevance of this constraint seemed to decrease with the increase in company size. Also the adequacy of information in ERP system selection yielded a significant difference between the three groups of companies. While the medium-sized and large companies reported having had quite adequate information for decision-making in ERP system selection, a significantly lower adequacy of information was reported by the small companies. The small companies also seemed to have problems with the adequacy of participation from different organizational functions in ERP system selection. Again, the medium-sized and large companies reported to have succeeded significantly better.

As for the importance of the easy implementation of the ERP system, this seemed to be slightly more important to the small companies than to the medium-sized or large companies, although no statistically significant difference between the company groups was found. The relevance of the problems related to the changes imposed by the ERP system to the company, in turn, was significantly different between the different sized companies. These constraints were reported as significantly more relevant by the larger companies with the relevance of these issues decreasing with the decrease in company size.

**Table 3. Resource and adaptability constraints in ERP system adoption**

One-way ANOVA (scale 1-5)	Sig.	Size	n	Mean
Criticality of schedule overruns in ERP implementation project	0,39	small	18	4,6
		medium	10	4,5
		large	13	4,4
Criticality of budget overruns in ERP implementation project	0,29	small	18	4,3
		medium	11	4,2
		large	13	4,2
Relevance of the problems related to the competence of users in the use of IT	0,05*	small	18	4,2
		medium	12	3,8
		large	13	3,4
Relevance of the problems related to the changes imposed by the ERP system to the company	0,03	small	18	3,7
		medium	11	3,9
		large	13	4,5
Importance of the easy implementation of the ERP system	0,08	small	18	4,2
		medium	13	3,4
		large	13	3,4
Adequacy of information in ERP system selection	0,00	small	14	2,7
		medium	9	4,2
		large	9	4,1
Adequacy of participation from different organizational functions in ERP system selection	0,06**	small	15	3,2
		medium	9	4,2
		large	9	4,0

\* Significance indicated by Kruskal-Wallis test was 0,07

\*\* Significance indicated by Kruskal-Wallis test was 0,05

The results regarding the resource constraints in ERP system adoption support the findings of the previous research reporting resource poverty in small companies. However, compared to the earlier research where also medium-sized companies have been proposed to suffer from resource poverty in IT/IS adoption, our findings indicate that resource poverty constraints ERP system adoption especially in the small companies. Moreover, it seems that differences regarding the resource constraints of ERP system adoption in companies of different sizes exist mainly in the knowledge domain. While all the company groups regarded budget and schedule overruns very critical, significantly lower adequacy of information and participation from different functions in ERP system selection as well as higher relevance of problems related to the competence of users in the use of IT were reported by the small companies. Finally, also the adaptability constraints proposed for larger companies in earlier research were supported, as the large companies emphasized the relevance of the problems related to the changes imposed by the ERP system significantly more than their smaller counterparts.

The second objective of this study was to investigate the objectives of ERP system adoption in companies of different sizes. In addition to the importance of cost reduction, efficiency improvement and more strategic business development objectives of ERP adoption, the integrability capabilities pursued through ERP adoption

were explored. The results regarding the cost reduction versus more strategic business development objectives of ERP adoption in different company groups (Table 4) show that the improvements in operational efficiency were regarded important by all companies regardless of their size. Similarly the cost savings were considered as rather important objectives for the ERP system adoption by all three groups of companies. Hence, no statistically significant differences could be found between the different company groups regarding the importance of operational efficiency improvements and cost savings in ERP system adoption.

**Table 4. Cost savings / efficiency improvement vs. more strategic business development objectives of ERP adoption**

One-way ANOVA (scale 1-5)	Sig.	Size	n	Mean
Importance of improvements in operational efficiency	0,94	small	18	4,6
		medium	13	4,6
		large	12	4,5
Importance of cost reductions	0,24	small	18	3,6
		medium	13	4,2
		large	12	3,6
Importance of improvements in competitive position	0,07	small	18	3,7
		medium	12	4,2
		large	12	3,8
Importance of new ways of conducting business enabled by the system	0,07*	small	18	3,3
		medium	12	4,3
		large	13	4,0
Importance of the development of electronic commerce capabilities	0,00	small	13	2,2
		medium	11	4,4
		large	11	3,3

\* Significance indicated by Kruskal-Wallis test was 0,02

Meanwhile, significant differences between the company groups were found regarding the more strategic business development pursued through ERP system adoption. New ways of conducting business enabled by the ERP system were seen significantly more important by the medium-sized and large companies than by the small companies. Further, the development of electronic commerce capabilities was considered a significantly more important objective of ERP system adoption by the medium-sized companies than by the small and large companies. The improvement in competitive position, then, was seen slightly more important by the medium-sized companies, although no statistically significant difference could be found between the company groups.

The findings give partial support to earlier research proposing that larger companies are more focused on business development through IT/IS investments than small companies. However, unlike in the previous studies where small and medium-sized companies have, as one homogenous group, been compared to large companies, our findings indicate that also medium-sized and small

companies differ significantly from each other regarding the business development objectives of ERP system adoption. Further, the findings did not support previous research reporting that small companies are more inclined towards the cost reduction and efficiency improvement objectives of IT/IS adoption. More importantly, these objectives seemed to play an important role in ERP system adoption in all the companies regardless of their size.

As for the scope of integration pursued through ERP system adoption (Table 5) no significant differences were observed between the small, medium-sized, and large companies regarding the importance of intra-organizational integration capabilities of the ERP system. In fact, these capabilities were considered rather important by all the company groups. Meanwhile, the inter-organizational integration capabilities provided by the ERP system were considered significantly more important by the medium-sized and large companies than by the small companies. The findings clearly suggest that there is stronger orientation towards inter-organizational integration in large and medium-sized companies.

**Table 5. Scope of integration pursued through ERP system adoption**

One-way ANOVA (scale 1-5)	Sig.	Size	n	Mean
Importance of the intra-organisational integration capabilities of ERP system	0,27	small	16	3,4
		medium	13	3,6
		large	13	4,2
Importance of the inter-organisational integration capabilities of ERP system	0,02	small	16	3,0
		medium	13	3,9
		large	13	4,0

In addition to inquiring the importance of the intra and inter-organizational integration capabilities of the ERP system, we also inquired how successful the companies had been in their integration efforts. The results (Table 6) show that small companies had been significantly less successful in both their intra and inter-organizational integration efforts than the medium-sized and large companies. Meanwhile, it was slightly surprising that the medium-sized companies reported their integration efforts to have been more successful than the large companies. The relatively poor success experienced by the small companies in their efforts to integrate the ERP system with their other information systems may be explained by the resource constraints characterizing the small enterprises.

**Table 6. Successfulness of integration in ERP system adoption**

One-way ANOVA (scale 1-5)	Sig.	Size	n	Mean
Successfulness of the intra-organisational integration with the ERP system	0,03	small	11	2,9
		medium	10	4,3
		large	9	3,8
Successfulness of the inter-organisational integration with the ERP system	0,05*	small	9	2,9
		medium	8	4,3
		large	9	3,8

\* Significance indicated by Kruskal-Wallis test was 0,07

As for the open-ended question inquiring the three most important reasons for ERP system adoption, the results (Table 7) indicate that small, medium-sized, and large companies alike acquire ERP systems mainly due to their wish to develop business and integration capabilities. Further, in all the company groups, the second most reported reasons for ERP system adoption were related to necessary replacement of old information systems. The efficiency improvement and cost reduction related issues formed the third and least prevalent group of reasons for ERP system adoption in all the company categories.

**Table 7. The prevalence of the most important reasons for ERP system adoption**

Percentage distribution	small	medium	large
Efficiency improvement and cost reductions	11,8%	17,2%	18,2%
Replacement of outdated information system	20,6%	24,1%	30,3%
Development of integration and business capabilities	67,6%	58,6%	51,5%
Total	100%	100%	100%

## 5. Discussion and conclusions

The objective of this study was to investigate the relationship of enterprise size to the constraints and objectives of ERP system adoption. For this purpose empirical data was gathered using a survey approach. Instead of resorting to the customary approach of comparing SMEs to large enterprises, in this study the companies were divided into small, medium-sized and large enterprises to achieve a more fine-grained picture of the phenomenon.

The findings of this study indicate that company size, indeed, does matter in ERP system adoption and a number of significant differences between enterprises of different sizes can be found. Of particular importance was the finding that not only do small and medium-sized enterprises differ from large companies but that many significant differences can also be found between small

and medium-sized enterprises. In many aspects of ERP system adoption explored in this study, medium-sized companies seem to be closer to large enterprises than to small enterprises. Specifically, our results indicate that small and medium-sized enterprises should not be considered as a homogenous group when ERP system adoption is concerned. This should be taken into consideration in the future research on ERP system adoption in organizations of different sizes.

As to the issues constraining ERP system adoption in companies, company's own analysis - as compared to the role of external demands or recommendations - seems to play a prominent role in ERP system selection in small, medium-sized and large companies alike. Hence, at least in the selection of an ERP system and to the extent explored in this study, companies regardless of their size seem not to be significantly constrained by external influences. Consequently, in this regard, no support was found to previous research proposing that external influences play a particularly important role in IT/IS investments especially in small enterprises.

However, support was found to the previous findings indicating that resource constraints are an issue in IT/IS adoption especially in small companies. Further, it seems that differences regarding the resource constraints of ERP system adoption in companies of different sizes exist mainly in the knowledge domain. While budget and schedule overruns were considered very critical by all the company groups, the problems related to adequacy of information and participation in ERP system selection, as well as to the competence of users in the use of IT, were emphasized by the small companies. Finally, also the adaptability constraints proposed in earlier research for larger companies were supported by the findings, as the large companies emphasized problems related to the changes imposed by the ERP system significantly more than their smaller counterparts.

The objectives of ERP system adoption in companies of different sizes, in turn, was investigated by exploring whether ERP system adoption is associated with cost reduction and efficiency improvement or more strategic business development initiatives. Further, differences in the integration capabilities pursued through ERP system adoption by small, medium-sized and large companies were examined.

The results indicate that small, medium-sized and large companies alike acquire ERP systems mainly due to their wish to develop business and integration capabilities. The second and third most prominent reasons for ERP adoption in all the company groups were related to necessary replacement of old information systems and to efficiency improvement and cost reduction, respectively. However, in unison with previous research, the findings of this study indicate that larger companies emphasize the importance of more strategic business development

objectives of ERP adoption more than their small counterparts. Moreover, unlike in the previous research where small and medium-sized companies have, as one homogenous group, been compared to large companies, our findings show that also medium-sized and small companies differ significantly from each other regarding the emphasis on more strategic business development objectives of ERP system adoption. The medium-sized companies emphasized most the importance of business development objectives leaving the small companies clearly behind.

The importance of cost reduction and efficiency improvement objectives of ERP system adoption, then, was emphasized in all the companies regardless of their size. Thus, the proposition that small companies are more inclined towards cost reduction and efficiency improvement objectives of IT/IS adoption than their larger counterparts was not supported.

As for the scope of integration pursued through ERP adoption, the intra-organizational integration capabilities provided by an ERP system were considered rather important by all the company groups. Moreover, the findings clearly suggest that there is stronger orientation towards inter-organizational integration in large and medium-sized companies.

To conclude, the findings suggest that small companies experience more knowledge constraints than their larger counterparts in ERP adoption. Further, while being the most prevalent objective for ERP adoption in all the company groups, business development through ERP adoption is considered especially important by medium-sized and large enterprises. Finally, the findings of our study suggest that instead of considering small and medium-sized enterprises as one homogenous group, the differences between these two groups of companies should be acknowledged in the future research. Regarding the generalizability of the findings of this study, the small sample size as well as the Finnish context in which the survey was conducted should be taken into consideration as limitative factors.

As for future research, the influence of company size to ERP system adoption should be studied more thoroughly taking into consideration the differences between small and medium-sized companies. Further, we want to acknowledge the need for research on the scope and means of integration related to ERP systems and enterprise application integration (EAI) in general in companies of different sizes.

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