Is permanent external consulting necessary for post-implementation stage?

Bachelor’s thesis within Informatics
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Abstract

IT executives face nowadays a theme that underlies for all questions in today's business – the change! The main factor that accelerates the “pace of change” is globalization. Globalization conducts to severe competition; it conducts also to shorter product life cycles that are necessary aspects for companies in order to increase competitive advantage. A good alternative to be more efficient and gain access to better information is to implement an ERP system that will allow companies to improve efficiency and be more proactive. The main benefits of an ERP system are that it gives more controls over the company's assets, and business processes such as financial supply chain management and profitability assessments of employees, departments and customers. Most of the companies after implementing the system choose to end their relationship with the ERP system supplier and believe that they have the capacity to maintain and develop the system by themselves. The post-implementation represents the use and operation after the ERP system is put into use.

The definite purpose is to investigate why some companies choose to reject the permanent external support concerning the maintenance and further development of the ERP post-implementation stage. The paper will present the diverse reasons to why the respondents choose to not use permanent external support.

In order to find accurate information we have interviewed companies within the Jönköping's county that are in the post-implementation stage. Our purpose was to understand the reason to why some companies reject permanent consulting and how they are developing and maintaining the used ERP system. To make this study more accurate we have used theories about ERP systems and the post-implementation stage that will help us to support and give value to our results.

One of the main results of this research were that companies have only personal motivation concerning the consulting activity choices and they affirmed that the result of the implemented ERP system would be the same no matter which alternative they choose for maintaining and developing the ERP system.
The overall impression concerning consulting activities is quite positive among the interviewed companies.
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1 Introduction

In this chapter, we will introduce the subject of our study. Furthermore, we will present the background, purpose and research question. The stakeholder, delimitations and definitions are also presented in this chapter.

1.1 Background

The paper will present the reasons why the respondents choose not to use permanent external support. The purpose is to investigate why some companies choose to reject the permanent external support concerning the maintenance and further development of the ERP post-implementation stage.

IT executives face nowadays a theme that underlies for all questions in today's business -- the change! The main factor that accelerates the “pace of change” is globalization. Globalization conducts to severe competition; it conducts also to shorter product life cycles that are necessary aspects for companies in order to gain competitive advantage (Durham, 2004). A good alternative to be more efficient and gain access to better information is to implement an ERP system that will allow businesses to improve efficiency and be more proactive. The main benefit of an ERP system is that it gives more controls over the company's assets, and business processes such as financial supply chain management and profitability assessments of employees, departments and customers (IBM, 2007). At the same time, the ERP system attempts to integrate the departments and functions across a company into a single computer system that can serve all those departments particular needs. (Koch, 2006)

According to Muscattelo & Parente (2006), the implementation of a new ERP system can result in a partial failure (40%) or totally abandon (20%). In the same article the authors refer to a survey made by Deloitte Consulting LLC (1998) that shows that 25% of the investigated companies suffered a drop in their performance (see figure 3-2) when the ERP system had gone live. This happened after the companies believed that they had successfully installed the system (Muscattelo & Parente 2006). Since the ERP system is a quite new phenomenon, the research within the area is very limited. Most of the available documentation provides answers to a successful path-forward and refers to implementation activities. This documentation is directed to firms that wish to implement an ERP system (Muscattelo & Parente, 2006).

Many investigations and research studies show how successfully the implementation of ERP has been. However, it is known that for some companies after going on live phase the ERP system failed to meet its objectives (Muscattelo & Parente, 2006). The IT departments are obligated to strive continuously to be more competitive, serve their customer better, and show a high responsibility to the organization's strategic priorities. At the same time, companies face with the challenge of cutting costs and maximize the utilization of the exiting technology in the organization (Durham, 2004).

Based on these facts it has been concluded that the improvement of post-implementation service provided by a consulting firm is just as important as the ERP implementation process completed by the consulting firm (Muscattelo &
Regardless of these facts, many middle-sized companies choose to refrain from the further development and maintenance of the ERP system with permanent support from consulting firms.

The results from the interviews will be present in the analysis chapter with help of a relevant theory.

1.2 Problem discussion

The idea to this project roused based on how Company Trioplast AB (there one of the authors is employed) manages the ERP system. External consultants that are permanently in the company maintain and support the ERP system. We had studied ERP systems at Jönköping International Business School and it was an opportunity to see how an ERP system is working in the real life. We discussed about how the ERP system is maintained at Trioplast AB and then decided that it will be an interesting subject for our thesis. At first, we want to specify that we do not see critically on the problem we will discuss and present in this paper; we do not consider that companies act right or wrong, we just want to find out the reason to their decisions. We planned to find adequate literature about a different type on ERP managing and find an article by Deloitte (1997) where they show that the ERP life cycle consist of two waves. About the first wave is written a lot but not so much about the second wave, so that is the reason to why we decided to investigate this area. An interesting area is the go to a live stage (see chapter 3.3) which divides the two waves. In figure 3-2, is shown that, many companies suffer a downfall when the system goes live. So we thought that it will be interesting to find out how our respondents experienced this fall but, without to get into more details.

A lot of studies point out how important it is for organization to get help during the implementation of ERP (Thong, Chee-Sing, Raman 1994). However, Muscatello & Parente (2006) affirm that the improvement of post-implementation service provided by a consulting firm is just as important as the ERP implementation process completed by the consulting firm. Even Violino (1999) points out the importance of post-implementation service done by specialists. McGee (1998) says that companies in order to get maximum value from the implemented ERP system ask for support from different ERP vendors or consulting firms for ongoing management and maintenance of their ERP software and hardware. According to Willcocks & Sykes (2000) is very important that the ERP vendor or consulting firms support the organization during and after the implementation. Somers & Nelson (2004) affirm that the vendor support and external consulting are important factors in the post implementation stage. Still there are many companies that do not use permanently external support and manage the post-implementation stage in own manner (own reflections). The studies we present to do not specify clearly what kind of support they mean. They mention only that the companies need external support, and not if the support should be permanent or sporadic. So we will look differently at this support and based on our experience separate the support in two categories: permanent external support and sporadic external support. These terms will be further explained in the theory chapter.

Based on these statements we developed our research idea. Therefore, we decided to call different SME companies within Jönköping's area and ask if they implemented an ERP system and if they use permanent external support. Within the group we believe that there are only two alternatives:
• Permanently external support (that means that consultants are permanently available in the company).

• Sporadic external support (that means that consultants are called when the company need help).

We consider that most interesting for us is to investigate companies that choose the second alternative and find out the reasons to their decisions.

There a lot of studies that concerns ERP implementation in large companies, but this fact could be applied for five, six years ago. Nowadays, there are a lot of ERP systems that suit even small companies (Adam & O'Doherty, 2004). So, that is the reason to why we considered SME companies more interesting for our investigation.

1.3 Purpose of the study

This is a study that has the purpose to understand and find out the reasons to why some companies reject permanently external support concerning further development and maintenance of the ERP system.

1.4 Research questions

In order to fulfill the purpose of this paper we considered necessary to have a main research question and two secondary questions that have the role to show the point of view of the interviewed companies regarding ERP system, how they choose to maintain and develop it. Because, according to our respondents, it can be easy to understand that they do not continue to develop and maintain their system after the going live stage.

The second question will explain how the companies maintain their ERP systems internally and how the collaboration with the consulting firm looks like.

With the third question, we want to find out what the companies believe/feel about the fall, if it would have looked different if they have used permanent support from a consulting firm, and do they think that with help from a consulting firm the fall would have been less dramatically.

• What are the reasons that some companies choose not to use permanently extern support for their further development and maintenance of the ERP system?

  o What does the management of the company do in order to develop the ERP system to match the company's changes?

  o How did the companies experience the fall when the ERP system had gone live?
1.5 Delimitations

We will delimitate our thesis to SME (small and medium sized companies) that have gone live, are on the post-implementation process, and have decided not to use permanent external support from consulting firms for their maintenance and development of the ERP systems.

This paper will be done from an organizational point of view and not from the point of view of the consultants. We are interested to find out how the companies see on the consulting support, how they decide and why. The study is delimitate to the companies we investigate and shows the companies’ management point of view. We cannot draw generally conclusions regarding all SME companies but, it is possible that the presented aspects concern other companies as well.

1.6 Stakeholders

In first hand this paper is directed to the companies that we have interviewed during the process of this thesis, it could also be of interest to other companies that want to avoid falls in their work procedure after implementing an ERP system and after deciding to end the collaboration with the consulting firm.

Other interested parties are consulting firms, since this paper could help them to understand why some companies choose to end the collaboration as soon as the implementing work is over.

This paper can also be of interest for other students who want to have an insight of what could happen after the process of ERP implementation ends.

1.7 Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go-live</td>
<td>When the system is put into use (Günzell &amp; Cronwall, 2004)</td>
</tr>
<tr>
<td>ERP maintenance</td>
<td>Post-implementation activities undertaken from the time the system goes live until it is replaced from production (Gable et al, 2003)</td>
</tr>
<tr>
<td>IT consulting</td>
<td>Focus is on using technology to help an organization become more efficient and achieve its goals (MIT Careers Office, 2005).</td>
</tr>
<tr>
<td>Internal consultant/IT coordinator</td>
<td>In this paper, we will use also IT coordinator because the companies we interviewed use the both of them. The first and second used internal consultants and the third used both internal consultant and IT coordinator. In this paper by internal consultant, we mean “people working with each other who are within the same system” (Marcia, 1997).</td>
</tr>
</tbody>
</table>
### External consultant

In this paper by external consultant, we mean people that belong to a consulting firm and provide all kind of help to an organization during and after implementation of the ERP system (Thong et al, 1994).

### Migration

In this paper, the migration refers to the situation when a company's system is updated to a newer and better version (personal communication, Company C).

### SME companies

Small and Medium Companies, Companies that has between 50 to 249 employees and their annual turnover does not exceed 50 million (approx. 450 million SEK) and/or their balance sheet does not exceed 43 million (approx. 390 million SEK) (The EU Information Centre, 2007).
2 Method

This chapter will present the research method we have chosen in order to give an answer to the purpose and research questions presented in chapter 1. We will also present how we have decided to go through with the empirical findings and the collection of a theory for the theoretical framework. A motivation for the choice of the method will also be presented.

2.1 Pre-compression

Before we started with this project our knowledge about ERP systems was limited and the knowledge are tied to the courses we have studied at JIBS (Jönköping International Business School). In order to fulfill the purpose of this paper we have decided to study more about the subject from different sources. There have been many studies about ERP systems, but as far as we know, there have not been done any research or investigation yet on the problem we choose to discuss in this paper. We have founded results about the ERP life cycle that we believe can be very rewarding for our study, for the reason that the post-implementation phase is a part in the life cycle of the system. Furthermore, we chosen to explain different definitions and theories that have connection with our area of study.

In order to find accurate information, we have decided to interview some SME companies within the Jönköping's county that are in the post-implementation stage. Based on the facts that we did not have any information about companies that were in this particular stage, we made a list of some companies within the area of Jönköping. Later we searched information on the Internet about these companies to see if they were SME companies. At the end, the list was reduced to 12 companies that we considered were interesting for the research. The next step was to call those companies to check if they correspond to our purpose and ask them if they wanted to participate in our study. This step reduced the list to only five companies, of which three of them wanted to take part in the study. At each company, we got the opportunity to talk to the responsible of the ERP system.

Our purpose is to find the reason behind our respondents choice, how they are developing the ERP system, because they specified during the phone conversation that the ERP system's maintenance and development represent a priority for them. We took into consideration the possibility to visit companies that did not
correspond to our purpose. If that misunderstanding happened, we planned to excuse ourselves and not include the company in our study.

We did not have any knowledge on how our respondents manage their ERP system until we were there. Then we discovered that two of our respondents choose internal IT coordinators for maintenance and further development of the used ERP system and sporadic external support; that means that they call the consulting firm only when help is needed and this concerns a problem that the companies could not fix by themselves.

The first company did not use permanent external support and neither permanent internal support; they manage the ERP system by themselves. The person that takes care of the system has other responsibilities within the companies too. They cooperate with a consulting firm that has the responsibility for their ERP system. The cooperation is based on an online support a couple of times a month.

2.1.1 Anonymity

An important aspect to take into consideration, according to Lundahl & Skärvad (1999) is the anonymity. A case study can be done in two ways: open and anonymous. The authors say that the advantages with an open case study are that it can be experienced as more interesting and real. And the disadvantage is that it can be too superficial or experienced as controversial and of sensitive character. If the study is anonymous the aspect of controversiality and sensitivity are avoided. However, it can be complicated to respect the aspect of anonymity, because exists the risk that the study can be too artificial.

According to Holme & Solvang (1997), the respondent should be informed that she/he will participate in an investigation and the respondent will do it deliberated.

Regarding the respondents choice of participating or not in this study, we can say that the rules have been respected. We tell them about the purpose of the study and ask if they want to participate. They get the alternative to choose if they want to participate or not in this investigation and we respected their choice.

One of our respondents wants to participate only as anonym. The anonymity does not concern the respondent's statement or answers without only the company's name. Based on the fact we decided that all the implied companies will be anonymous and told to other respondents that we will not have the name of the companies in our project. All our respondents have accepted that and the result is that we handle the companies anonymously. We are aware that the results can be interpreted as artificial but the conclusions would have been the same even if the companies name would not have been anonymous.

2.2 Comprehensive characterization

Knowledge characterization is used to indicate what kind of knowledge will be developed and this is needed within our paper in order to establish the used strategy (Goldkuhl, 1998).
According to Goldkuhl (1998), there are eleven different types of knowledge: categorical-, classified-, descriptive-, historical-reconstructive-, comprehensive-, predictable-, valuable-, normative and knowledge of characteristics. For our research, two of them are the most relevant and they are categorical and descriptive knowledge.

The Categorical knowledge is a fundamental knowledge form. The rest of the knowledge forms presented by Goldkuhl (1998) are dependent of this knowledge. This type of knowledge is characterized by definitions in order to make it easier to study the object of interest. Very important means is to use definitions for knowledge development, but sometimes it has an own-value too (Goldkuhl, 1998). By defining some concepts (IT consulting, go live) is for example development of categorical knowledge.

The Descriptive knowledge describes a quality of a categorized and studied phenomenon. In some cases, this type of information can be of a quantitative or a qualitative approach; this depends on the type of the property (Goldkuhl, 1998). The base of this study is descriptive knowledge, because we will describe what some companies consider about the post-implementation stage of ERP systems and about the external support from consulting firms.

2.3 Qualitative method and quantitative research method

In order to write a thesis there are two different survey methods usually used: the qualitative and the quantitative method (Holme & Solvang, 1997).

A description of a method is according to Holme & Solvang (1997) a tool that helps to achieve different goals in relation with surveys and research. According to the same source, a method will help to organize and plan the way of working based on the chosen purpose.

“Qualitative methods mean an insignificant degree of standardization” (Holme & Solvang, 1997). This method has both a primary and an understandable purpose. The most important aspects when using the qualitative method is that the collected information gets a better understanding of the researched problem or area (Holme & Solvang, 1997). Because our investigation is a pilot study, we will only present suggestions or understandings about the reasons behind choice of consulting method. According to Lundahl & Skärvad (1999) with qualitative method, means that the investigator wants to create results and conclusions based on qualitative data. The researcher try to understand how people “experience themselves”, their life and surroundings. The same authors point out that the investigator is not interested about how the real world is, without how the world is perceived. Holme & Solvang (1997) state that qualitative research is characterized by flexibility. IT concerns at first the experiences that the investigator gain during the investigation and the collection of information. It means that the investigator can, during the investigation course, to change or reformulate the research questions. Secondly, the planning of the investigation is more flexible in qualitative research concerning the respondent's selection. (Holme & Solvang, 1997).

Lundahl & Skärvad (1999), say also that qualitative method is most suitable for investigation that aim to find out how people or groups of people experience different phenomena such as: success, system of payments, and organizations. In
the qualitative studies, the different people or phenomena are interpreted with help of different theories.

Holme & Solvang (1997) defined the quantitative method as more “formalized and structured”. Using a method like this one means that the researcher has more control over the method and at the same time the quantitative method is deciding for the conceivable result. Statistics measuring methods play an important role when analyzing quantitative information (Holme & Solvang, 1997). According to Lundahl & Skärvad (1999), quantitative method is characterized by the complexity of the measurements and how the investigator will reach good descriptions and explanations about the studied phenomenon. The disadvantage with this type of method can be that the information that is described with numbers can be abused and misinterpreted. It is not decided that investigation are better only for the reason that they are described with numbers, important is the effort and work put in the project (Holme & Solvang, 1997).

2.4 Primary and secondary data collection

Primary and secondary data are two procedures that are used within the research area. Interviews are suitable for qualitative research and investigations, because this kind of data collection is most rapid and give access to a lot of information during a short time (Holme & Solvang, 1997).

Primary data means that the people working on this research collect the information and this data is unique to them and to the research, until it is published, no one else has access to it (Thames Valley University, 2007).

Data that has already been collected by someone else for a different purpose is called secondary data (Thames Valley University, 2007). The different types of secondary data we will use in this thesis are electronic collected data and printed data such as books, articles and course literature.

In our project, we will use both primary and secondary data. The primary data has an important role in this thesis since we will interview people responsible with the ERP system in the presented companies. The type of interview we will use is the unstructured interview because we want to get free answers on our questions without affecting the respondent's answers and point of view.

2.5 Choice of method

Since our purpose is to identify the reason that companies reject permanent external support for managing and developing the ERP system, we decided based on the methods presented by Holme & Solvang (1997) and Lundahl & Skärvad (1999) that the most suitable is to use the qualitative method.

We wanted to study the point of view that different companies have been concerning permanent IT support and contribution from external consultants. The qualitative method is considered more appropriate for our data collection, because it demands an interpretation of our collected data and at the same time, we think it is important to go to the bottom of the problem so, the problem mentioned in our purpose is understood. At the same time, this method would give us the possibility to discover different points of view regarding the empirical study we have done.
In this paper, we will raise the qualitative method since we, as the researcher, will take the role as questioner since we will collect our primary data through an unstructured interview (Holme & Solvang, 1997). Apart from this, the advantage of using the qualitative method is that it makes possible to get an overall picture of the organisation and a better understanding of why the leaders of some organisations choose the alternatives corresponding to our research questions. Since our study will be based on interviews, closeness to the object in question will be possible and this will affect the confidence in a positive way. We choose to use a qualitative study approach because it means an intense investigation of every object of study, where the resources are very important; that means that the investigation will be concentrated on very few units. Other important aspect in the qualitative research is as we stated above, the flexibility. According to Holme and Solvang (1997), the qualitative investigation flexibility approach means that the investigator is open for new knowledge and understanding regarding the studied object. As we affirmed above our understanding regarding consulting service was limited and permitted us to further develop it during the interviews. During the interviews, we catch new insight and broaden understanding about how our respondents experience the permanent external consulting in the post-implementation stage. However, there are also disadvantaged with this method, because it can be complicated to compare the gained information. The information from the first respondent can be interpreted as less interesting in accordance to Holme & Solvang (1997) because the investigator has in the beginning weak knowledge about the subject. We were aware on this fact when we interviewed our first respondent and prepared ourselves very well. However, we can say that we were lucky, because our respondent used terms that we could understand and all the time asked us if we understand what he means. Other important aspect is that our respondent had experience regarding the “co-operation” with students and similar projects.

2.5.1 Interview

The primary data in this paper will be of a qualitative approach and collected through qualitative interviews. According to Lundahl & Skärvad (1999), the information collected in this way is characteristic for surveys, case studies, experiments or personnel recruitments. Because we will conduct a case study about three different companies point of view regarding permanent external consultants, the interview is the most suitable method in order to fulfil the purpose of the study.

An interview is a discussion between several people. Using interviews can help the researcher to collect reliable data relevant for the research questions and objectives. There are three different types of interviews: Structured, Semi-structured and Unstructured (Saunders et al, 1997).

- Structured interview: this type of interview is based on a carefully precisely interview schedule where short answers are required. The advantage of using this type of interview is when there are a large number of questions (Thames Valley University, 2007).

- Semi-structured interview: the interview focused on asking certain questions but with the possibility for the respondent to express him or herself more deeply (Thames Valley University, 2007).
• Unstructured interview: this type of interview is also known as in-depth interview. There are two different types of unstructured interview, an informant interview and a respondent interview. The informant interview is based on no predetermined questions to work through where the respondent is encouraged to talk freely. In this case, the interviewee's perceptions guide the results of the interview. The respondent interview is based on the researcher's questions have been prepared and the interviewee can freely answer (Saunders et al, 1997).

Since our research area is complex, we have decided to use an unstructured respondent interview, this means that a certain amount of predetermined questions is made and these will be the base for our interview. For more detailed information about the interviews way, see the following chapter.

2.5.1.1 Interview realisation

As stated above we wanted to interview companies that are in the post-implementation stage and do not use permanent external support for managing and developing the ERP system. At first, we made a list about interesting companies (according to our opinion) within the Jönköping County. How did we choose the firms? At first, we put in the list companies that we knew and then look in the phone catalog for the rest. When we had 12 companies on our list, we seek furthermore information about the companies on the Internet. The information gathered from the Internet concerns the phone number and address.

When we contacted the companies we did not know if the companies had an ERP system implemented, we did not know in which stage they were actually and neither what kind of support they used for managing and developing the ERP system. We were only interested in companies that did not use permanent external support and after we presented us, we presented the purpose of the study. We asked if they correspond and if they want to participate in our investigation. If the response was positive, the next step was to establish a date for the visit.

The interview includes totally 15 questions, which are structured into three sections. An introduction section where the respondents got the possibility to tell us about their experience regarding the ERP systems and the go live stage. The second section includes eight questions and will help us to find the necessary information in order to answer the main research question. The third section includes seven questions that give an overview about the maintenance and development of the ERP systems.

We thought that it was important that the subject was the same for all the interviews, but that the respondents answered from their own work experience. According to Holme & Solvang (1997), the respondents get the opportunity to be more open through interviews and this was very important for our work since we wanted some answers about why different companies decide to exclude permanently extern support from the consulting firms.

The collected data that is of a qualitative characteristic will be compiled and interpreted and this together with the frame of reference will be the base for the analysis and the conclusion parts. During the interviews we took notes about everything our respondents said. Then we compiled all answers and eliminated
the redundant data (everything that was repeated) and compared the results we a
relevant theory.

During the interview, the predefined questions (see appendix 1) will be comple-
mented with following up questions if needed. We choose this type of interview
because this will give us more answers that are complete and at the same time,
we will be able to maintain a good structure for the questions that are being
asked. The structure of the interview-questions is based on the purpose of this
study and this will give us possible answers to the purpose and facilitate the
analysis of the theory and the empirical study. During the interviews, we will
compile the answers in a written form, by this we mean that we will take notes
of everything the respondents have to say.

2.6 Selection of a sample.

Within the group, we had decided that our respondents would be responsible
people within ERP area at companies in Jönköping's county; this decision was
based on our idea that they will have better knowledge about the area that other
in the company. Based on Holme & Solvang (1997) we choose to use “non prob-
able selection”, it means that the investigator can choose the respondents based
on the area of a subject and research question of the study. The same authors
describe the “quota selection” which means that the investigator choose from the
beginning of the study to include a defined number of respondents who have
special characteristics.

2.7 Dropout

According to Holme & Solvang (1997), we can get dropout for all kinds of inter-
views; and there are two types of a dropout: a variable dropout and an entity
dropout.

Variable dropout occurs when there are unanswered questions in the interview
list (Holme & Solvang, 1997). We did not have the drop out variable since during
the interviews all the questions have been answered.

According to Holme & Solvang (1997), unit dropout occurs when the investigator
did not find enough “people” for the investigation or when the respondents do
not want to participate. In this category we met some problems because a part of
the companies we called did not fit with our purpose and other stated that they
are to busy and cannot participate. We can affirm that our investigation had not
been affected so much, because we think that the number of interviewed com-
panies provide us enough information in order to do a good investigation, and
the unit dropout is not higher than expected.

2.8 Method valuation

In order to increase the chance of getting the most objective answer regarding
the subject, the researcher has to gain attention to the two particular emphases
on research design: reliability and validity (Saunders et al, 1997). At the same
time, we will explain how we intend to carry out this paper in order to fulfill its
reliability, validity, objectivity and generality.
2.8.1 Reliability

According to Joppe (2007) “the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability.” Consequently, we can say that in this case the results of the study can be reproduced under a similar methodology and that make possible to affirm that the investigated area is considered reliable.

According to Lundahl & Skärvad (1999), an investigation is characterized as reliable if the person who performs the investigation or the circumstances that can possibly occur does not affect the measurements.

Since our thesis is time-limited, we do not have the opportunity to do the same investigation twice on the selected group. In order to increase the reliability in this paper, we had interviewed only people with knowledge and responsibility about ERP systems within the company. Since the people who work within the company have the knowledge on both the ERP system and the company's current situation and plans, we think that the answers we got are appropriate and therefore we can say the reliability in this paper is achieved.

2.8.2 Validity

“Validity determines whether the research truly measures that, which was intended to be measured or how truthful the research results are” (Joppe, 2007). There are two types of validity; internal validity and external validity. Internal validated measures, which were intended to be measured for example in questionnaires and/or interviews. It prevails in a high degree of conformity between the theoretical and operational definitions (Lundahl & Skärvad, 1999). This means that the investigator in order to determine validity he/she asks a number of questions in which the answers can be comparable with other research answers (Joppe, 2007).

The external validity means that there is a connexion between the chosen instruments of measurement and the circumstances that will be estimated (Lundahl & Skärvad, 1999).

In order to increase the validity of this study, we interviewed as stated previously, people who have the responsibility for the ERP systems. During the interviews, we were prepared to repeat some questions or even to reformulate questions. It was planned to be done without distorting the original meaning of the question. We also consider that the approach of validity has been achieved with the help from the answers of the interview because they are based on our research questions.

2.8.3 Objectivity

According to Holme & Solvang (1997) objectivity means that the investigator describe the different relations that occurred during the study in a real way (Holme & Solvang, 1997), and the interpretation is expected to be related to a set of values and therefore will attempt to recognise and explore it (Saunders et al, 2007).

Objectivity is a type of knowledge that is controlled and investigated and it is not distorted by personal prejudice. Reliable objective investigation provides a systematic controlled and verified knowledge (Kvale, 1997). Kvale (1997) says that
an interview is an objective investigation because it is free from prejudice since
the object of the interview had been linguistic constituted and discussed in a so-
cial human world. Based on these statements it has been concluded that the
qualitative investigation is more objective that the quantitative one. The same au-
thor says also that objectivity is the fundamental conviction that is or it would be
a permanent matrix, which can be a point of reference in order to establish the
nature of rationality, knowledge, truth, reality or equability in different studies
(Kvale, 1997). We think that the objectivity with this paper is achieved because
our conclusions are based on the interview questions and analysed with help
from the theories presented in the Theoretical Framework. The data we collected
during this study has been analyzed based on Kvale's (1997) theory.
3 Theoretical framework

In the theory chapter, we will describe the different theories collected in books, scientific magazines and internet. This theories will help us to analyze the empirical results. We want to introduce the reader into the subject of ERP systems post-implementation stage and the different solutions that a company have at their disposition. During this chapter, in the final part we will complete with our own point of view based on our experience or based on the information we got during the interviews.

3.1 ERP systems

In this chapter, we will present the definition of ERP that we consider is most relevant for the purpose of this paper. At the same time we will shortly introduce the reader into the ERP systems domain and describe the two waves in the ERP system life cycle (Willis & Willis Brown, 2002). For this papers purpose it is important to describe the two ERP systems used by the respondents: Movex and iScala, but in order to make it easier for the reader to follow the theory chapter, the description of the systems will be available as appendices.

3.1.1 Introduction

Enterprise Resource Planning systems (ERP), or also known as Enterprise Computing Systems, is defined in different ways by different authors. In this paper, we will present only the definition that we considered more relevant for our study and in turn, this will facilitate for the reader to understand what an Enterprise Resource Planning system is and how this subject is connected to the purpose of our study.

According to Alshawi et al (2004), “an ERP system is an attempt to create an integrated product that manages the majority of operations in a company”. In the past, in order to automate the business functions, the organisations used separate applications. Nowadays with the help of different ERP systems organisations can avoid that, given that ERP systems makes possible the integration across functions and create a single, unified system (Alshawi et al, 2004).

Nowadays an ERP system is the backbone of many big companies, since the purpose of this system is to provide organisations with a single-point solution and integrate all the core back-office business activities such as inventory, logistics, finance and human resources into one system. The result of having a single integrated system is that it will increase the organizations efficiency by eliminating many redundant activities that might be required to keep different systems synchronised and this will lead to great reductions in the operating costs. Even though problems such as long implementations periods and mass customization are required in today's competitive market, therefore ERP is a necessity for organisations in order to survive (Alshawi et al, 2004).

According to Ross (1999) the main reason of why ERP systems will fail to generate important benefits is because, executives who sponsor ERP initiatives often have no idea what they are getting into (Ross, 1999).

Ross (1999) states that there are three forms of misunderstandings about ERP systems:
1. Management believes that the company is just investing in a new technical infrastructure. This view fails to recognize that the ERP system provides the foundation for a very different kind of business;

2. An ERP system will impose discipline and process integration on an organization. Actually, ERP provides an ineffective infrastructure unless an organization is disciplined and cross-functional in its processes. An ERP system does not deliver “best practice”;

3. An ERP system should yield improvement in baseline operating measures. On the contrary, ERP systems will have their biggest impact on processes that have never been measured before (Ross, 1999).

The role of the senior manager to drive the benefits that ERP can support could be led by these misperceptions to underestimate them. When employees at all levels of the organization take advantage of increased data visibility, can be easier to take decisions that enhance the firm's competitiveness, then the ERP becomes valuable (Ross, 1999).

An ERP implementation is not seen as an IT (Information Technology) or IS (Information Systems) project, instead is seen more as a business project (Chian-Son Yu, 2005).

If the ERP system implementation is successful in areas such as: order management, manufacturing, human resources, financial systems and distribution, external suppliers and customers, the whole will be linked into a tightly integrated system with shared data and visibility. Some of the potential benefits with ERP are considerable decline in inventory, breakthrough reductions in working capital, abundant information about customer wants and needs, along with the ability to view and manage the extended enterprise of suppliers, and group customers as an integrated whole (Wang & Chen, 2005).

An ERP system is one of the most significant investments in today's IT scenery. While there is an existing research on the implementation of these systems, there is less understanding of the post-implementation use of them. (Jacobs & Bendoly, 2003).

In the following picture, we will present a five-stage evolution of an ERP system including even the post implementation phase. (Deloitte, 1998).

![Figure 3-1. A five stage evolution of an ERP system](image-url)

We will only present the stages that are relevant for this paper, and they are the first wave, the second wave and the go live phase.
3.2 ERP systems stages

It has been identified that there are two stages of an ERP system, the first wave and the second wave. Those stages will be explained in this chapter and are presented graphically in the figure 1-1.

3.2.1.1 The first wave

This stage begins when the necessary ERP tools are secured, then it is followed by the implementation of the system and finalized with the go-live stage. During the go-live stage, the system is trusted to support important operational and strategic decisions. A common mistake that many companies make is that they see the go-live stage as the final destination (Willis & Willis-Brown, 2002).

This abrupt end of the implementation is a consequence from when companies wanted to avoid the anticipated Y2K (the millennium bug) problems, because since then many companies have accepted a very basic and untailored system that meet the needs of the unique business operations very minimally (Willis & Willis-Brown, 2002).

The high cost and lack of a skilled consultant are the reason why companies rely too much on in-house expertise. This unfortunately could lead to an improper setup and configuration of the system. Nowadays having a skilled personnel had turned out to be an important critical success factor (Willis & Willis-Brown, 2002).

Something that could also results in failure to implement important features of the system is the lack of knowledge and awareness about ERP systems (Willis & Willis-Brown, 2002). The results of the first wave is that it will support the strategic solutions that will lay the foundation for integrated processes and functions, that is in other words the foundation that sets the stage for the second wave of the implementation. Unfortunately, those benefits can be overshadowed by what the first wave have not provided (Willis & Willis-Brown, 2002).

Companies should adopt a long-term view, this means that the first wave should not be seen as “the end of the journey”; instead this stage should be interpreted as the beginning of a journey towards improvement, innovation, and flexibility (Willis & Willis-Brown, 2002).

3.2.1.2 The second wave

This stage refers to the actions that are taken after the ERP is implemented in order to facilitate the organization to maximize value and return on investment. This stage should lead to growth, greater agility and improved profitability (Willis & Willis-Brown, 2002).

The success of this stage depends on three critical steps: the first step is housekeeping, this means stabilization of the ERP system before implementing post-ERP applications; the second step is to add functionalities and to re-engineer necessary processes; and finally, the third step is to extend and integrate (Willis & Willis-Brown, 2002).

During this stage, organizations build onto ERP platforms and applications more adjusted in order to engage customers. Additions such as SCM, CRM, data mining and demand planning help companies to be more customer-focused (Willis & Willis-Brown, 2002).
3.3 Go live phase

As we named in the definition part the “Go Live” phase according to Günzell & Cronwall (2004) is when the system is put into use.

As it can be seen in figure 3-2 the ERP system suffer a fall when it is going live and it happens depending on different factors.

According to Nicolau (2004), an important reason to the failure is that the implemented ERP system goes through so-called system integration problems such as:

- lack of alignment between people, processes, and the new technology stop the company from realizing expected benefits or improving the cost of the implementation;
- lack of user training and breakdown in appreciate how enterprise applications will change business processes;

When the ERP system goes live, it requires a high degree of discipline from the implied people, a factor that seems be overlooked. The users cannot realize how important their actions are and that the actions had a direct impact on the downstream operations. Further more there is a knowledge gap between training employed and what people needed to work effectively with the new implemented ERP system (Nicolau, 2004). The reason to that is that the training has been afforded too early, it was not sufficient, or the employees were afforded with improper training. Other aspect that can occur is that some users are overwhelmed trained while others were confused by the lack of training about the context of the new work potential (Nicolau, 2004).

3.4 The ERP system post-implementation life cycle

According to Hedman (2003) in the information systems literature, the ERP systems life cycle often refers to the systems development life cycle (SDLC). Hedman (2003) propose a system life cycle based on different life cycles developed by other authors. We will present only Hedman's system life cycle because it is more relevant for our study. The system life cycle consists of four phases and only the last one is relevant for this paper. We will present all phases and further explain the last one.

Phase 1: The selection - activities for determining the need for a system;

Phase 2: The configuration – involves all activities from acquisition to implementation;

Phase 3: The implementation – involves technical installation, testing, users training, and the system's diffusion into the organization;

Phase 4: The use and operation – involves activities regarding the use and administration of the system until the end of his life cycle and it is replaced by another system (Hedman, 2003).

The use and operation of the system is the phase that we in this paper call for the post-implementation stage. And within the paper the term post-implementation will be used in order to not confuse the reader. The post-implementation phase includes the implementation of additional functionalities.
such as integration with other systems, data warehouses, CRM (customer relationship management), SCM (supply chain management) and e-commerce (Hedman, 2003).

Then we divided the post implementation phase in a four secondary stage based on a picture developed by Deloitte (figure 3-2) and further explained by Nicolau (2004) who says that the post-implementation activity is segmented in three major stages and we added the stage four that we developed with help from the picture from Deloitte (ERP second wave; Maximizing the Value of ERP-Enabled Processes), Nicolau's article (2004) and Hedman (2003).

![Figure 3-2. The life cycle of the ERP post-implementation phase](image)

1. In the first stage, the company will experience a 3 to 6 month productivity decline, because of the redefinitions of work routines, establishment of new procedures, modification of ERP software, and take over the new information streams created by the new ERP system.

2. The second stage last from 6 to 18 months, it concerns skills development, structural changes, process integration, add-on technologies aimed to increase the ERP functionality.

3. The third stage presents the business transformations where the synergies of people, process and technologies reach the peak.

4. In the fourth stage a straight line is presented that concerns the performance and development of the ERP system. It is been said (Hedman 2003, own reflections) that every type of development, no matter which area, reaches a maximum point (Delloitte, 1998). After the performance of the system had reached the maximum value during the third stage, can be followed by a period of stagnation (Hedman, 2003, own reflection). According to (Hedman, 2003) this stage is inevitable and in order to “revive” the system and its performance a drastically change is needed, that means that the system must be changed completely or it must be replaced by another system (Hedman, 2003); other option is the one mentioned by Company C. They affirmed based on their own experience that the system can be updated to a newer and better version and that can be achieved in form of a migration (personal communication, 2007).
Further more Willis & Willis-Brown (2002) divided the ERP life cycle in two waves (see figure 3-2), the first wave include Selection, Configuration and Implementation phases and the second wave include the post implementation phase. In the theory chapter, we will further explain the ERP waves based on Willis and Willis-Brown (2002).

In figure 3-2 we presented the life cycle of a traditional way of implementing ERP systems. This picture is the basis for the problem of our project, because we will analyze the ERP systems post-implementation phase and the results of the interview will be related to this phase. That can give us a better understanding for the subject and it will facilitate the structure of the research questions.

3.5 ERP – professional service

The ERP system are usually implemented by ERP vendors or consulting companies. Consulting, Customization and Support are three types of professional services that can be provided when an ERP system will be implemented (Tech Faq, 2007).

- Consulting services - responsible for the initial stages of ERP systems implementation. This kind of consulting helps companies go live with their new ERP system, with product training, workflow, improve the ERP system in the company;

- Customization services - extend the use of the ERP system, if needed even change its use by building customized interfaces, etc;

- Support services - in this kind of professional service are included support and maintenance of ERP systems (Tech-Faq, 2007).

3.6 Post-implementation service

The post-implementation ERP services are designed to help business squeeze every possible financial benefit from their ERP systems (Violino, 1999). The ERP system implementation has grown in the past years; the most of them overshadowed older systems that did not resist all changes within IT in the beginning of the millennium (Violino, 1999).

Violino (1999) quotes Greg Sasaki - IS manager at Nikon Precision who said, "Everyone's business is changing, as is the functionality of ERP software. The changing is so rapid that you couldn't install an ERP package and not go back and adjust it!" In other words, he means that the importance of specialists help is crucial in order to gain benefits from the implemented ERP system. The consulting firms point out the importance of post-implementation service done by specialists who have the “right skills” to manage the job that is not comparable with the different skills that the senior managers of the business have (Violino, 1999).

In order to get maximum value from the implemented ERP system the companies ask for help from different ERP vendors or consulting firms for ongoing management and maintenance of their ERP software and hardware (McGee, 1998). According to McGee (1998), the driving factor that makes companies to seek help
to third parts for maintenance and further development is the desire to get the most out from their ERP systems.

### 3.7 Post-implementation stage review (PIR)

In an earlier chapter, we presented the ERP system as an important aspect in a company's development. In this chapter, we will briefly present the concept of post-implementation review.

The most important activities that organizations would perform during the system life cycle are: PIR, support and maintenance (Nicolau, 2004) and further development (personal communication, 2007). The role of PIR is to analyze the project in order to determine the successes and the needs that will be improved regarding the system or the implementation process itself (Nicolau, 2004).

According to Nicolau (2004), the concept of PIR is defined as “the extent to which an organization carries out a planned set of review activities on a post implementation basis” and the use of PIR is recommended by practitioners in order to “improve the design and effectiveness of an already developed system”.

The post implementation review process is very important in order to make it easier to appreciate that the scope and benefits of the implemented ERP system are compatible with the scope and benefits of the intended system (Nicolau, 2004). The same author mentions that PIR is presented by several industry reports on ERP as an important aspect in the life cycle of system development (see figure 3-2). For a best result and easier evaluation of the ERP system is recommended to conduct PIR within the stage one and stage two in the post implementation stage. The outcomes of the review can be used to resolve possible problems within the stages directly and in this way to move the organization forward to facilitate achieving of additional business benefits (Nicolau, 2004).

At the same time, the results of the study presented by Nicolau (2004) resume that PIR is a very important process that should include an evaluation of the system impacts in a long term in companies. The review should be conducted by the users and made in a formalized manner. The recommendations are that the post-implementation review will be made after the system's maturity to facilitate a better evaluation of the system's impact on the organizations, the users of the system and the system effectiveness (Nicolau, 2004). The same author mentions that PIR is presented by several industry reports on ERP as an important aspect in the life cycle of system development (see figure 3-2). For a best result and easier evaluation of the ERP system is recommended to conduct PIR within the stage one and stage two in the post implementation stage. The outcomes of the review can be used to resolve possible problems within the stages directly and in this way to move the organization forward to facilitate achieving of additional business benefits (Nicolau, 2004).

In the third stage is recommended to check if the implemented ERP packages are completely and adapted for their organizations to get full benefits of their systems. In this stage can be/often happens to implemented post-ERP applications such as sales-force automation, data mining, CRM and SCM systems. This stage is favourable to increase the efficiency in handling transactions, to improve the decision-making, and further transform and develop the ways in doing business (Nicolau, 2004).

In the fourth stage are preferable to analyse the current situation of the ERP system used and decide if the system is to the end of his life cycle and maybe it should be replaced by another system (Hedman, 2003). Nicolau (2004) affirms that a well planned and well executed PIR of the ERP system support businesses to make changes in their plans and processes, help them to avoid implementation risks and realize possible operational and strategic benefits.
3.8 Service Oriented Architecture (SOA)

We have decided to introduce the reader in the SOA domain in order to make it easier to understand what SOA is and how this approach make it easier for Company A to manage its business. We will not enter deeply in the study of SOA because it is not the subject of this thesis.

SOA is the acronym for service-oriented architecture. According to Yusoff (2007), SOA is either a product or technology. SOA is a technique used to design large enterprise application. SOA concentrates on exposing systems as service and not on involving in-depth knowledge of the different systems underlying system’s Application Programming Interface (API). The responsible for the new ERP systems can instead focus on the task they need and on the different data required to perform the task in order to complete the system and, they do not need to think about the programming implications needed for running the job. Other aspect is to avoid the obstacles when integrating disparate systems and that can be done using standard data formats and communication protocols (Yusoff, 2007).

SOA comprises elements that are categorized into functional and quality of service. At the same time, SOA is favourable for building distributed systems that deliver applications functionality such as service either to end-users applications or to other services (Durham, 2004).

SOA provides the business with mobility, flexibility, governance, compliance, collaboration and security. These factors made SOA an approach adopted by many IT departments, it made possible to quickly respond to ever changing requirements (Knights, 2007). According to Durham (2004) in service-oriented design the different services are not designed based on business entities; instead every service is a holistic unit that supervises all operations across a set of business entities.

3.9 Consults

According to Marcia (1997), the consulting process seems sometimes as unwieldy and therefore is very useful to break it down into “easy-to-remember” steps. An easier way to remember the word CONSULTS is by dividing it into specific skills that belong to the consulting process as in the following:

- **Contact**
- **Outcomes**
- **Negotiate needs**
- **Search for data**
- **Understand and feed back data**
- **Layout action plan**
- **Track results**
- **Set in motion** (Marcia, 1997)

3.9.1 The importance of the external consultancy for post-implementation ERP system service

The external expertise done by external consultants refers to all kind of help an organization get during and after implementation of the ERP system and covers
the whole ERP project such as ongoing support, maintenance and upgrades (McGee, 1998).

Most studies refer to the help that organization get during the implementation stage (Thong et al, 1994) but there are studies that point the importance of help and support in the post-implementation stage (McGee, 1998).

The maximal benefits regarding the ERP system that can be achieved with help from external consultants are that they have the competence to provide technical and business expertise, reduce clients knowledge, learning burden and work reliability. That allows the client to configure a suitable ERP system and that will help the users to fully exploit the technology (Wang & Chen, 2005) and no less important that the company's management can concentrate themselves on other activities (personal communication, 2007).

McGee (1998) says that during the time, companies recognized the importance of external support for a successful design and implementation of ERP. However, most of them did not realize how complex it would be to manage these systems. The ERP system post-implementation service is fully grown for smaller business that does not have resources to train and keep internal ERP experts.

According to Thong et al (1994), there are two types of external support approaches that a small company can adopt:

1. the consultant-vendor approach; that means that the company employees a consultant who will provide information requirements analysis and implementation assistance, and a separate vendor who will provide hardware and software solutions (Thong et al 1994)

2. the vendor-only approach - a small business employees a vendor who will combine consultancy service with provision of hardware and software solutions (Thong et al 1994)

The “consultant-vendor” approach is preferable because the companies can get impartially advices from the consultants who have the opportunity to make independent assessments of the special needs of the client and in this way recommend the best solution existing in the market. The disadvantage with this approach is that the business are more likely to go through a formalized approach to IS implementation, the evaluation process of the hardware and software is more longer, the communication between parties is more difficult and need more attention. If the implementation is not successful it could happen that the involved parts accuse each other for the possible mistakes and that can lead to negative consequences for the business (Thong et al 1994).

The second approach is preferable because the companies can get the illusion on saving money by adopting it, because it can be interpreted that the vendor include the cost of consultancy in the cost of system implementation. For the reason that the number of involved parties are smaller the communication and coordination may be better and that can increase the effectiveness of the system. However, this effectiveness can be unclear given that there is a conflict of interest: the vendor acting as a consultant has the inclination to recommend its own solution even if the solution is not suitable for the business (Thong et al., 1994).
3.9.2 Internal support

Internal means in this paper and in generally, people working with each other within the same system. “Internal” mean people working with each other who are within the same system (Marcia, 1997).

What is special with the internal consultant is that this person works inside the company and his/her role is to help other parts of the company. With help means that the consultant has the responsibility to solving problems, enacting changes, giving advices, working on major transformations within the IT sector and in our case even the responsibility on the ERP system used by the company. The internal consultants job is unique because they have no direct authority or control over the people they work with (Marcia, 1997) and have better knowledge about the business compared with the external consultants (personal communication, 2007)

According to Marcia (1997) the organizations use internal consultants because they are supposed to have the following qualities and competencies:

- Fix and install desired components in the system;
- Introduce a new products or services;
- Solve problems;
- Research feasibility of certain changes;
- Reengineer, reorganize, relocate, renovate, downsize, outsource, merge, acquire or shut down;
- Has the ability to create new functions based on clear visions and at the same time the motivation and support to make things happen (Marcia, 1997).

3.9.3 Internal vs. external support of the ERP system

We use in this paper two concepts: the internal and external consultants. The difference between these two concepts is that the “internal consultant” is a person who “lives” inside the company where he/she is consulting (Marcia, 1997) and the external consultant is the person that belongs to other company and can be hired by other companies in order to solve problems that occurs and cannot be solved by them.

According to Marcia (1997), the internal consultants are reporting to the same executive management as their clients. There are exceptions too, and in his case refers to the members of one subsidiary consulting with another subsidiary or merger teams working with an organization that is not integrated. The internal consultants qualities presented in the previous chapter can be applied according to our opinion to the external consultants too. The reasons to why companies prefer either internal or external consultants are mostly based on their experience.

3.10 Personal point of views regarding aspects presented in the theory chapter

After discussing within the group and based on the encouragement we got from our tutor we decided that this chapter is necessary, because we wanted to explain some aspects presented in the theory chapter. That is not applicable for all
parts presented in the theory, without only for those parts that we wanted to illus-
trate with own ideas and reflections.

The article presented by Tech-Faq (2007) offers information about the different
services that can be available for ERP users. However, in the article are not men-
tioned explicitly who can do this kind of services. Therefore, we think that is
very important to mention that “professional service” is also considered the ser-
vice offered by internal consultants too and not only the service offered by ex-
ternal consultants. We wanted to do this specification because it is easy to con-
fuse the reader, especially if the readers do not have knowledge about this do-
main.

The same thing can be remarket during the chapter Post-implementation service,
where the authors present and discuss the ERP service made especially by a
“third part” (ERP vendors or consulting firms) but the internal consultants are for-
gotten. We do not want to say than the internal are better than the external con-
sultants or contrary, we just want to mention that they exist and that the experts
tend to forgot them. Our affirmations are based on the fact that we think that this
phenomenon occurs frequently and it is worth to be taken into consideration.

In the Consults chapter, the author named specific skills that belong to the con-
sulting process (Marcia, 1997). We consider that is very important to point out
that these skills differ a lot depending on the personal skills that the consultant
has and cannot be described as generally consulting skills. The way in which a
consultant choose to do his/her job are based on the presented skills but we
think that the output, the result depends a lot of the consultant's personal skills.

Concerning the importance of the external help for post-implementation phase,
we want to say one more thing, that the authors do not specify the reasons for
what the external consultants have advantage compared to the internal consult-
ants. It is given fact that external consultants belong to a consulting firm or ERP
systems vendor that provide even consultancy job. The advantages arise from the
following reasoning, when a client ask for consulting she/he gets the opportunity
to explain the problem she/he is facing with. At the consulting firm, they analyse
the problem and send to the client the person who is most suitable to resolve it.
That opportunity is not possible for companies that use internal consultants. That
is the reason to why some companies choose to use apart from internal consult-
ants even external help from consulting firms (personal communication, 2007).

Then, regarding the advantages with the internal consultant “who has better
knowledge about the business”. We approve this point of view but we want to
specify that the external consultant does no get the opportunity to accumulate
enough information about the companies’ business if he/she is rarely at the
specified company. Therefore, the choice is depending on not only the consult-
ant’s skills and knowledge without also, on how people in the company are see-
ing on this aspect.
4 Empirical findings

In this chapter, we will present the result of the interviews we have done. As mentioned in the method chapter, we choose to interview SME companies within the Jönköping’s county. Since one of the companies wanted to be anonymous in this paper, we decided that the other two companies should be anonymous as well. We will refer them within the paper as company A, B and C. When visiting the companies we talked with the person that was responsible for their respective ERP system.

4.1 Procedure

Based on the purpose and subject discussion we have formulated the questions for our interview (see appendix 1). The interview list contains questions that would help us to find out:
• What is the reason that some companies choose not to use permanently specialised support for their further development and maintenance of the ERP system?

• What does the management of the company do in order to develop the ERP system to match the companies’ changes?

• How the companies did experienced the fall when the ERP system had gone live?

We called ten different companies and made sure that they corresponded to our research area, which means that the company should not use permanently support from a consultant. Of those ten companies, five did suit our purpose and three of them wanted to be part of our study.

The first company had a negative experience with the firm that implemented their ERP system, but generally, all companies showed a positive attitude towards consulting firms. Still they preferred not to use permanently cooperation with a consulting firm and that depending on different factors such as resources (time, money, and knowledge), reputation (of consulting firms) and preconceived ideas about external consulting. We also found out that the interviewed companies use two different ERP systems. Company A and B use Movex (see appendix 3) and Company C use iScala (see appendix 3).

4.2 Interview result

Since we took notes during the interviews, we have decided to sum up all answers from the three companies that we visited. In order to make easier for the reader we choose to put the number of the question before each answer. For some questions, because the answers were connected to each other, we decided to write them together. The questions in the interview list are related to the research question as following: the introduction part is related to the research question three. The first two questions are background question and are presented during the introduction part in Empirical Findings. Then, the rest of the question we structured as following: from question three too eight we seek answers regarding the first research question; and from question nine too twelve we seek answers for the second research question. The thirteen question to the last one concern points of view that our respondents have regarding the cooperation with the consulting firms. In the Analysis these questions are included in the second research question because we think that the questions are relevant for the companies further development of the ERP system. By that, we mean the following: if the company are aware about the consultants importance for the development and maintenance of the ERP system they choose the best alternative for their company, and that is what we try to present in this part.

4.3 Background for the main research question

Q3 + Q4. Company A decided to use extern support a couple of times a month, and the company that supply this support is not the same company that implemented the ERP system. Company B used during the first year both external and internal support (helpdesk), then the company’s management decided that the
ERP system could be managed internally and ask for external help only when problems cannot solved within the company. The cooperation with the consulting firm is limited to a couple of times a year.

At the beginning, company C used the same strategy as company B, that is external support, but after a while, they decided to use internal support because they considered that they could get more value of their ERP system with help from an internal consultant, because this person should have knowledge both of the ERP system and company's core activities.

Q5. When deciding to use external help the most important factors that influence the companies to choose a consulting firm are that they have a good marketing strategy, plenty of experience, a good reputation, a good price, knowledge about the different laws in different countries, give promptly solutions, and be very competent in the ERP system that the company use. For company C an important aspect was not the consulting firm reputation, but the consultants experience and reputation; if the consultant moves to another firm, the company will follow him/her. According to them the price is not important since they think that it is always negotiable, for them quality is more important than the price.

Q6. In the cases of companies A and B, the vendor company made the implementation. Company A uses support from another firm than the one that implemented the ERP system; this is because they had a bad experience with the vendor company. During the time, that they implemented the system the vendor company was re-structuring the company and this led to a poorer service. Company B is using both types of support, first they ask for help to the vendor and then they ask a consulting firm. In addition, that in order to compare solutions and adapt the one that is more suitable for them. Company C did not implement a new system, instead year 2003 they made a migration, by this they meant that they updated a new version of the ERP system they have used since 1992, and the upgrading was made by a consulting firm. Based on their needs they bought programming solutions from a firm (vendor supplier) and support service from another. The factors that influence the decision on which consulting firm to choose is time of delivery and which consultants have the right knowledge.

A common factor on why the companies wanted to have support from another firm than the one that implemented the system, is that they wanted to have impartial solutions. By impartial solutions the companies meant that they were afraid that the vendor (or partners to them) could try to sell them products or services without taking into consideration the companies needs.

Q7+Q8. For company A it took 3-4 years to acquaint themselves with the system, during this time they did not think about new updated solutions, since they were busy to adapt themselves to the system. Same thing goes for company B, but they did not mention a specific time. In order to identify new solutions company A looked into their customers needs, identify new trends within the IT-sector, which will lead to easier cooperation between the company and their suppliers and customers. They use MOVEX as a platform for SOA in order to develop new functionalities that will help them to manage in a easier way their wide range. In order to keep themselves informed about the latest ERP systems updates, all companies visit trade fair, do study visits to other companies, magazines, discussions with other consulting firms, etc. Company A and B agreed on the fact that they prefer a cooperation with consult firms that belongs to the SME, because a
balance in size between the partners would result in a better communication. For company C the situation is different, because they want to move all functionalities from their own developed system to the iScala system. In order to make the system and the working process more efficient they employed an IT-coordinator (internal consultant). The role of the coordinator was to find out models and working procedures in order to discover the changes and the risks in the system. A good strategy to achieve better results for developing the system is to apply proposals from the employees that use the system. For each process in the system, there is a process owner and this person is responsible for detecting deficiencies and registers them in the system. Later the process owner will take care of those deficiencies directly in the system. The deficiencies are presented at different meetings were all the employees can come up with suggestions.

4.4 Background for the second research question

Q9. All companies have decided to keep working in the current ERP system. Company A argued that instead of changing the ERP system they want to continue improving the system they already have and make it unique according to the companies needs. That can be achieved with help of different adapted solution or components that will strengthen the company's core activities. The company's management means that by using special adapted solutions the firm will lift their uniqueness in order to fight out the competitors. Either company B have no plans of changing or rebuilding the actual ERP system, they consider that the ERP system is optimized in order to sustain changes that are needed to support the business goals. Their goal is to improve constantly the current system and they argued that it helped them to lift the business uniqueness. One reason for this decision is determined by their subsidiaries abroad because every change done in the ERP system can also affect the whole concern system functionality and the communication between them. If needed the system can be reconfigured at only one company, but the changes should not be too drastic. They wanted to point out that when implementing a new ERP system within a concern, it must be taken into consideration the different laws and rules in different countries, for example the way of payments are different depending on the country and this makes the implementation more difficult and it takes more time than the typical implementation. This is the main reason why some companies decide to not change their ERP system too often. Company C has no plans on changing the current system, instead they upgrade the system to the newest version if needed. However, if their current system in time gets useless, they will change it.

Q10. Company A and B said that they are satisfied with the ERP system in the actual state and with the result they receive. The development depends to a great extent on the companies resources (money, time, etc) but they want to adopt systems that have already been tested by other companies to see how they experiment it and this is in order to take advantage on the mistakes and on the best practices too. Company B stated also that they do not want to make updates and changes if the ERP system is working well, they said that it is important to change when it is really needed and not only to follow the trends. Company A use MOVEX (ERP system) only as a platform and when changes are needed they are done in SOA, because they believe SOA makes the communication easier between the customers and suppliers. Company C is not satisfied with the way their system is used, because they still use their own developed system and now they are working on moving all the functionalities to the standard system. The
choice of updating and upgrading is controlled by the needs of the company. At the same time, they keep themselves updated when it comes to the IT domain and try to find functionalities that can be adapted to their business.

Q11. All three companies state that the choice of consulting firm depends on different factors such as experience, reputation, internationality. The consulting firm should also be able to fulfil the company’s requirements specification. The companies prefer to cooperate with consulting firms that do not have a partnership to the ERP vendor, this is because they want impartial solutions and by this, they mean that the consulting firm can be influenced by the vendor to sell solutions that the company does not need. Company C mentioned that the popularity of the ERP systems is also important, but it must correspond to their needs. A common factor for all three companies was that the system should be adaptable and compatible for different companies within the same industry.

Q12. The company A argued that occasional solutions can be seen as cheap, but in the end they will be very expensive. For them it is also considered as expensive having a consultant permanently in the company because he/she would have to expend too much time resolving problems to the employees individually, instead of finding out a general solution. Company B states that it is expensive using a little of everything and occasional solutions. They consider that the external help is expensive and therefore they try to solve the problems internally, if the problem cannot be solved internally then, they search for help externally. As we mentioned this company maintain and develop the ERP system internally, only the very complex solutions are solved with help from a consulting firm. They meet the consulting firm not more than 3 to 4 times a year. An expensive aspect in the sporadically cooperation with consulting firm can be their order of precedence, by this means that the consulting firm choose to prioritize their loyal customers; and depending on time they help others. Company C says that the help from the consultant is expensive, and an example for this is the total cost of the implementation of the system, 1/3 of the costs are for the programs only and the rest is the cost of the implementation. The IT coordinator at Company C said that it is more expensive to have an own developed system and that standard solutions is much cheaper. Other expensive aspect is when the people that use the system do not have the necessary knowledge about it. However, the most expensive option according to all three companies is to implement an ERP system and not use it.

Q13. Company A said that they do not believe that usage of the ERP system would be any different if there have been an external consultant permanently in the company, since the employees at the consulting firm are competent in their respective area and one person does not have the knowledge about the whole system functionalities. This is the reason why the company prefer to not have a permanent consultant and instead to call the consulting firm when help is needed. By doing this they have the possibility to explain the problem they have and receive help immediately and at the same time get the most competent person in the area. Company B said that could not give an answer to this question since they have not tested this option. Company C states that it is cheaper to maintain the system by themselves because the expenses of having a consultant are high and plus the consultant does not have the necessary knowledge about their business. Both company B and C use specialized help only when they plan to further develop the system (optimize the storage functions). The procedure
follows the next steps: at first, they do a requirement specification list (internally), and then they ask for help (externally) and that in order to get the best possible solution.

Q14 a+b. The advantage by calling a consulting firm when help is needed are: cheaper, have access to the wanted consultant. This way gives the opportunity to get better help because the external consultants have experience from other companies. According to company A, the advantage of cooperation with a consulting firm is that they have the IT-knowledge when to buy bigger and faster hardware, they can make it easier to contact the hardware and ERP suppliers. The disadvantage are low priority and to not have access to the wanted consultant.

For company C a way to improve the cooperation with the consulting firms is the opportunity to see their results, and this can be achieved by doing “customers day”, where the consulting firm will present the last activities they have done and the achieved results.

This table concerns companies B and C and was given to us by the company B, but since we got similar answers from the company C, we decided to apply it for them too.

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<td>Extremely high</td>
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<tr>
<td>Loyalty/responsibility</td>
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<td>Risk (sickness, studies, etc.)</td>
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<td>New knowledge (generally)</td>
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<td>Knowledge (internally)</td>
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<td>Promptness</td>
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<td>Situations that rarely happens</td>
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<td>Internal employees responsibility</td>
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Table 4-1. Comparing between internal and external consultants according to Company B

Since company A does not use permanent support from a consulting firm, they considered that it is unnecessary to discuss the positive and negatives aspects with this collaboration. Despite this they still mentioned that the financial aspect as a negative factor in having a permanent external consultant within the company.

Q15. All the companies have a positive attitude regarding the question on having an external consultant on their board meetings. Company B says that they are some advantages to this opportunity since they should get professional help con-
cerning problems that could appear, and the possibility to get in new knowledge because an external consultant is supposed to have a different attitude regarding the application of the system in the company. That can also be applied to the other two companies, since we got similar answers. Company C told us that they have started a new project in order to develop a new strategy concerning IT investments, in this project an external consultant will attend the annual meeting concerning the ERP system automatization and financial investment. Since they have an IT coordinator, the need of having a consultant present at every board meeting is unnecessary because the coordinator have sufficient knowledge and capability to take care of the decisions concerning ERP system application reported on the business.

4.5 Background for research question three

The introduction part is not based on predefined questions. Instead, the respondents told us generalities about their business and a short introduction to their ERP system. We explained that we are mostly interested about the go live stage and therefore we want more information about it. None of the interviewed respondents was in the company at moment when the ERP was installed, reconfigured and had gone live. Still they could give information based on their own knowledge and experience. The most usual problems that occurred are similar for all companies and will be presented in the Analyses chapter. We will not present those in this chapter because it will only be repetition. The reason to present the results regarding the introduction only in the Analysis is that it is easier to understand the problems that companies faced, and analyse it with suitable theories or other studies results.
5 Analysis

In this chapter, we will analyze our research questions with help of the theories presented in chapter three and the result from the answers presented in chapter four. We choose to structure our Analysis based on the research question in order to be easier to follow up.

5.1 What is the reason that some companies choose to not use permanently specialised support for their further development and maintenance of the ERP system?

At first, we will present the main reasons to why the interviewed companies choose the alternatives concerning development and maintenance of their ERP system.

- Internal consulting
- Prefer sporadic help
- The companies’ resources
- SOA

5.1.1 Internal consulting/sporadic help

In an article written by McGee (1998) states that support, maintenance and upgrades of the ERP project implementation is covered by the external support. McGee (1998) says also that most companies do not realize how difficult it is to manage an ERP system and according to him, smaller businesses do not have enough resources to train and maintain an ERP expert. We affirmed based on this article that the ERP post implementation stage support done by specialists is less as important than the implementation stage made also by professionals.

The purpose of this study was to identify the reasons to why some companies choose different solution regarding the post-implementation stage support.

Many of the SME companies decide to reject permanently external support, instead they prefer a sporadic help - from a couple of times a month to a couple of times a year. However, the surprise was to discover that they have permanent support concerning the post-implementation stage in a different way. In addition, two of the three companies we visited used permanently internal support; this fact was noticed after interviewing all three companies. One of them use only sporadic help, for the reason that the company had experienced some negative incidents during the implementation of the ERP system (personal communication, Company A, 2007) or the fact that the firm decided that they could manage the
ERP system by themselves in form of internal consulting (personal communication, Company B & C, 2007).

Concerning Company B & C decision to use permanent internal help, we want to point out that this fact occurs more as a coincidence. That because the person in the beginning was hired as an external consultant. The consultant experience and well functioning of the ERP system determined the company management to find out a new solution. In addition, the result was that the hired external consultant became an internal IT coordinator responsible for the ERP system. These two companies were aware that some problems can occur and that this type of problems cannot be resolved internally. They also specified that these kinds of problems concern the hardware and new functionalities that will be necessary for the system well functioning and further development. That is the reason to why these two companies decided upon internal support and use external support only when needed. The external help is taken when a problem arises and the internal consultants are not skilled to solve the problem. An important fact that was mentioned is that by having an internal consultant they would get more value of the ERP system, since this person would know how the both the ERP system and the company are working.

During the interviews, we found out that Company A decided to use online external help only when they need. They cooperate with a consult firm that does not have a partnership with the company that implemented the ERP system and that based, as we stated earlier on their bad experience.

When it comes to the alternative to take advantage of the experience and competence of the external consultants, the interviewed companies have the same strategy. They ask for external help only when a problem arise and cannot be solved internally. They said that it was important for them to know certain factors about the consulting firm in order to see which one will suit them best. According to our respondents some of those factors are experience, marketing strategy, reputation, price, knowledge about laws in different countries and most important be very competent in the ERP system that the company use. Something very interesting that was mentioned by one of the companies, more exactly Company B was the fact that the consulting firms reputations was not so important, instead, the most important aspect for them was the consultant reputation and competence. Since they will be working directly with the consultant, not with the consulting firm to which the consultant belongs. Further more they started the following fact: “if the consultant leaves his current firm for another one, it is most likely that the company will follow him”.

In chapter 3.4.1 we present two types of external support approaches that are mentioned in an article written by Thong et al (1998), these are consultant-vendor approach and vendor-only approach. If one of those approaches would be applied in the companies we interviewed, it should be the consultant-vendor approach, since all three have decided, in one way or another to use support from a different company than the one that have implemented the ERP system. A common factor for those three companies regarding the decision of choosing a company that has nothing to do with the implementation of the ERP system is that they wanted to have impartial solutions, since they believe that the firm which implemented the system would try to sell solutions that might not suit the company at all. In the next analysis, part we will present more detailed the ad-
vantages and disadvantages of these alternatives in the way they are perceived by our respondents.

5.1.2 Resources

According to Palanisamy et al (2007), companies that invest in ERP software packages make a big commitment in terms of money and time. The ERP system is a time-consuming and expensive process that places great demands on corporate time and resources. This fact was not an impediment, over the past year, for thousands of companies to implement ERP systems. Even if the ERP systems seem to be expensive the companies management are aware that the ERP is a key ingredient for gaining competitive advantages, streamlining operations and running a “lean” manufacturing system (Palanisamy et al, 2007).

Concerning the resources aspect the interviewed companies argued that are very important to take into consideration, especially for their kind of company – SME. They said also that the resources must be prioritized for the well functioning of the company, and that the ERP system may suffer because sometimes it will get less time and financial attention than other business activities. They recognized (company A) that it is not the best alternative but it has happened. All companies agreed on the fact that the ERP system requires a lot of time and money but also that it will pay back if it is used correctly. All respondents said that the most expensive part with ERP system is to implement it and not use it fully. The most expensive refers to the invested time and money with the system implementation and with the post implementation phase, that will cost a lot too (personal communication, 2007).

5.1.3 SOA

Other reason that made that one of the interviewed companies to clarify only with sporadic online consultancy was the introduction of SOA. That made possible for company A to easily manage the ERP system, because they use Movex only as a platform for SOA. All their applications and functionalities are managed in SOA, and the company personnel believe that SOA facilitate the communication with their end-users throughout the world.

According to Knights (2007), SOA provides the business with mobility, flexibility, governance, compliance, collaboration and security but also makes possible to quickly respond to ever changing requirements. These are the factors to why Company A adopted SOA according to our respondent.

Another conclusion we find based on the information we got during the interviews is that companies do not believe that the performance of the ERP system used will end up in a straight line after a couple of years indifferent if they will continue to manage it internally, with sporadic help or if the cooperation with a consulting firm will be of a permanently character. Since they always strive to keep them updated in what is new in the area, especially within software, services and support will help them to keep what is unique in their organization and get maximum value and use a performing ERP system.

The companies do not want a consulting firm inside, because they feel that they would not get a better support, instead they would enter a vicious circle where the consultant would be more occupied with less important issues that in that
moment feels important but in the end would just cost a lot of money and not give clear and improved results. Instead they feel that best alternative for them at the moment is to have a sporadic collaboration with a consulting firm that will understand the company's needs and that has competent consultants. We concluded also that companies, especially them we interviewed, see the perfect co-operation as following: the company wants to have the opportunity to call the consulting firm whenever they want and receive the help they want.

5.2 What does the management of the company do in order to develop the ERP system to match the companies' changes?

This question has the role to show how the companies work with their system. The role of the question is to please our respondents and o tries to explain their choice. They wanted to lift up that they say no to permanently support from consulting firms not because the development and maintaining of the implemented ERP system were less important without they understand to do this job in an other way. They pointed out that this alternative is based on many factors, a part of them presented in the empirical chapter. They do not deny the importance and the quality of the support from the consultants; they only prioritize in a different manner.

According to Willis & Willis-Brown (2002), ERP systems are not an “end all” and not a “be all” either and that is the reason to why companies should not spend excessive time in order to try to retrofit their business to the ERP system. If the ERP system no longer meets the company's needs, the best alternative is to extend the ERP beyond/outside the traditional bounds of the first wave and by doing that would obtain the true value of the ERP system. Every ERP system will be “mobilized” by taking advantages of the new technologies by using different alternatives. In the cases presented, the ERP systems were “mobilized” and the alternatives used were multiples. In each company, the ERP system played an important role and the company's management was aware of that. They know that in order to survive the hard competitions they have to adapt and develop the ERP system to today’s requirements. One aspect was to keep themselves updated with the news in the IT domain by consulting magazines, visiting trade fair, consulting their internal IT coordinators and the consulting firms that they have collaboration with; another aspect was consultancy, discussion with other companies within the branch. The third company without the alternatives presented above has other very good strategy to develop the system too – they use the proposals from their employees. Moreover, that seems to be very regarding for them, for the system and no less for the employees who get the possibilities to be a part of the whole.

5.2.1 Service

As stated in subchapter 3.3 the business and the functionality of ERP systems are changing so rapidly that it makes difficult for user to maintain the system without specialized help. The role of specialized help seems to be crucial for the company if they want to gain economical, financial and ERP benefits. Regarding this aspect we percept a high interest from our respondents. They act different in
some cases but we discovered some common points of view too. All respondents agreed with the fact that specialists must maintain the ERP system implemented, even if they choose to use the specialized help in the way that was most suitable for them.

The personnel from the interviewed companies argued that the service of ERP system done by specialists gain a lot of advantages and benefits because of their competence to provide business and business expertise. In addition, at the same time they argued with the fact that consultancy allows them to configure the most suitable ERP system and help them to fully exploit it. Then they affirmed that by transfer some activities regarding ERP system over to consultants allows them to concentrate to other activities within the company.

5.2.2 Review

According to Nicolau (2004) the most important activities that organizations would perform during the post implementation stage, also from the “going life” phase until the ERP system's “dead” are: PIR, support, maintenance and further development. By checking the answer we can say that in general he companies have a similar attitude but differences came up too, that depending on the companies policy.

The Post Implementation Review (PIR) is very important for all respondents; the way to do PIR was different. All companies stated that a review is done often in order to discover successes and failure in the system in good time. Moreover, that was made often internally and in the cases when they noticed that they could not fix the problem by themselves called for external help. Common for all companies is the fact that they take external help rarely, more exactly a couple of times per year.

During the interviews we could appreciate based on the answers we get from the respondents that all companies have the approximately the same strategy and follow up the above features in order to achieve favourable changes in organizations plans and processes; other point was to realize potential operational and strategic benefits for their companies.

5.2.3 Support and maintenance

The support and maintenance of the ERP system are done different at the interviewed companies. All three interviewed companies choose to support and maintain the ERP system without permanently help from a consultant firm. The first two companies, also company A and B use externally help from a consult firm that is not the same with the consulting firm that implemented the used ERP system. The company C stated that they take help, when they need, from the same consulting firm, which implemented the system. The reasons are multiple and seem to be the same for all companies with very little distinction. We will return to this aspect in a new fragment below.

McGee (1998) says that during the time companies recognized the importance of external support for a successful design and implementation of ERP. Our respondents have accepted this affirmation. The difference is that they choose to use external help no permanently without based on their needs. According to the same article, the external support covers the whole ERP project such as ongoing sup-
port, maintenance and upgrades (McGee, 1998). It seems that our respondents are aware of this fact and they are doing everything to achieve best result internally and occasionally with external help. Company B and C choose an adapted solution and that is the internal IT coordinator. The reason was that an internal consult is more appropriate for their business. Their statements were based on the cost aspects, loyalty/responsibility, risks, knowledge, promptness, availability, rarely happening situations and the internally employees attitude as we presented them in figure 3-1. The summary and explanation of the figure 3-1 are that the internal consultant has better knowledge about the companies business and knowledge about ERP systems. That result according to the respondents in better understanding of the whole process including a better use of the ERP system according to the company's needs and possibilities.

Other point of view regarding the choice of consultant firms was connected to their perception about the cooperation with consulting firm that are partners to the ERP system provider. We refer to Thong et al (1994) article and his two alternatives. Our respondents have mentioned these two alternatives often.

The first one is the “consultant-vendor approach” and the second one is “the vendor-only approach”. For more detailed information about the alternatives see the subchapter 3.4.1 where we presented them. All the respondents stated that they want collaboration with consulting firms that are no partners to the ERP provider because they feared that the solutions suggested would be impartial and not the most suitable solution for their business.

Regarding the aspect that their collaboration with the consulting firm may be affected by their choice (not have permanently consultancy in the company) the respondents presented the pros and cons with these alternatives based on their own experience. As argued in the Result chapter the pros and cons are multiple but very important to take into consideration according to our respondents point of view. For the companies, which have internal consultants the important factor, that support their decisions are presented in figure two. In this figure are presented the pros and cons with internal and external consultants. There is an equal number of pros for having internal or external but that do not impede the companies staff to still choose the alternative with an internal consultant.

The second alternative - the vendor-only approach. The first two companies, also company A and B implemented the ERP system with the alternative “vendor-only”. The company A had an unpleasant experience during the implementation of the ERP system, because the provider was in a restructuring period and that affected their cooperation. Company B said that they implemented the ERP system with the vendor only alternative, because said the respondent in that period were no other alternatives. However, they said also that they prefer a sporadic cooperation and the alternative chosen – internal IT coordinator. They argued with the fact that this alternative can get the illusion on saving money because it can be interpreted that the vendor include the payment of consultancy in the cost on system implementation. However, the respondents said also that it is only an illusion and agreed with the fact that effectiveness can be unclear given that there is a conflict of interest: the vendor acting as a consultant has the inclination to recommend its own solution even if the solution is not the most suitable for the business (Thong et al 1994).
So all the accumulated experience is the basis for their choice, but they also said that the business interest is the first priority and everything can be changed depending on the situation. Therefore, if now they act in a given way, it can be changed if the case requires it (personal communication, 2007).

5.2.4 Further development

To keep focus on the development of their ERP system is a very important aspect for all the companies we interviewed. The developing way is similar for Company B and C, only company A choose an other way to do it. We asked the respondents if they have plans to change the used ERP system. They answered that they do not have such kind of plans. They will continue to use the same system and develop it based on their needs. However Company A chooses to use Movex only as a platform and they work with SOA. At the moment they develop only SOA functionalities because they believe that in this way they get the most outcomes from their business.

5.3 How the companies did experienced the fall when the ERP system had gone live?

The most interesting facts during our interviews were to note that no one of our respondents was in the company when the ERP system had gone live. So the answers we got are based on facts and information that our respondents got from other people within the company. However, we still consider that these answers are very rewarding since the respondents are professionals and have competence within the area. All respondents answered that the main reason that provoked the fall just after the going live stage is the people perceiving regarding the newly implemented system. They affirmed that it seems difficult to change all work routines very fast and that people tend to believe that the older work-routines are easier and may think that everything is unnecessary. If the work functioned well before why should it be changed? So we concluded that the fear for new is a factor that influence the use of ERP system too.

The project plan is very important. If the plan approach and a study concerning the requirements are not well defined it leads to the drastic fall in the go live stage. Still the respondents affirmed that they do not believe that the fall could be completely avoided, without they believe that the curve will be softer. When we asked if they think that support from a specialist could do the fall moderate the answers were similar for all companies. May be but it is not sure. Because they think that even if the consultancy is there and do a perfect job, all the things that may occur are unpredictable and cannot be avoided.

At Company C, people believe that the fall is directly influenced by all the work and routines that the transition implies. Even more they affirmed that a big part of the culpability belong to the company, because they did not use the implemented system completely without they used an own developed system. At the present, they are working to transfer all functionalities into iScala. Moreover, the respondents affirmed that they believe it is the main reason because “the fall” was so drastically.
Common for all companies is a specific work routine, also that in the beginning they printed out all documents even if the system has functionalities that make possible the transfer online.

Company A experienced another kind of problem that affected the system well functioning. They had a production problem and prioritize to lift the production and then to give attention to the implemented ERP system. All these problems affected the going live stage and the fall was drastically.

All respondents want to add that they believe that if they will go through a new implementation process everything would be different, from the consultancy support to all work routines; because they aid that the experience is the most important factor in order to succeed. We asked if they think, in case of a new implementation, to take advantage from permanent support from a consulting firm; the answers were similar and we compile them as in the following; no plans to do that but they do not see the solution as impossible, everything depends on the company situation and expectations at the moment the implementation will occur. The main reason that provoked the fall just after the going live phase is just the people perceiving regarding the newly implemented system.

Based on the answers that we got from the interviews we concluded that the general opinion was that the fall is not inevitable; even if the company would use permanent support from a consulting firm. The companies stated that this fall is inevitable, it is a part of the go live stage of the ERP system, and it is a result of many different factors. It may be possible that with the help of permanent support the downfall will not be as severe as it is today, but to avoid the downfall completely in the eyes of the companies it is impossible.
6 Conclusions

In this part there will be some conclusions drawn from the most important facts that turned up during the investigation and interviews. This is based on the theoretical frame of the thesis and the empirical findings through the analysis.

- The companies that we have interviewed have only personal motivation concerning their choices and they feel that they will have the same result, no matter if they chose to maintain and develop the ERP system by themselves or if they use the external support permanently or ask for help only when needed.

- Resources seem to be an important aspect that companies take into consideration when decide to use external or internal consultants.

- The companies management was afraid that using external consultants that cooperate with ERP system vendor will receive impartial solutions for their business.

- The companies stated that having an external consultant as a permanent support within the company would mean that they would lose the opportunity of receiving the right knowledge concerning the ERP system, since one single person does not have knowledge about all problems that arise, but if the company calls a consulting firm they will be forwarded to the person that has the right knowledge to solve the problem.

- They have no plans to change their type of collaboration with the consulting firm, but if the situation requires that, also if they will feel that more help is necessary, they would not hesitate in taking the help that is offered by the consulting firm.

- A better project plan done by and with a specialist will help the companies to go less risky between the go live phase.

- The post-implementation stage cannot be done by people without experience and we think that the best solution is a consulting firm.
7 Final discussion

In this chapter, we will present some proposals for improvements and in which way the interviewed companies can gain more value and obtain more effectiveness from the implemented ERP system. We want also to discuss about our own reflections concerning this paper and how we succeed or not to fulfill the purpose of this paper, we refer to aspects concerning in most extent Method chapters and the Analysis chapter. The last question that will be discusses concern proposals for further research and investigation within the post-implementation stage.

7.1 Proposals for improvements

In this chapter we will present some proposals that we hope will help the companies to avoid a drastically fall if/when they decide to change their ERP system and even if they only want to recon figurate or make a migration in the system.

7.1.1 What should the companies do in order to avoid the fall at the go live phase?

- Have a better project plan;
- Educate themselves about what an ERP system is;
- Do not follow the trend without taking into consideration the company's needs;
- Use consulting support even during the post-implementation stage;
- Inform the users about the ERP advantages.

7.2 Own reflections

We have enjoyed working with this project during the spring of 2007. This paper increased our knowledge about the ERP post-implementation phase, about the ERP life cycle and the different methods that companies use for maintenance and development of the system. We can also say that our skills about how to conduct a research have also been improved.

7.2.1 Reflection about the method

We cannot say that our results can be applied for a bigger population, but we feel that these results could be of benefit for many SME companies. The data has been collected in a form that is very nearly to a usual and everyday conversation as possible. The respondents got the possibility to answer on the questions based on their own understanding and experience, but the collection of the data was adapted to the investigators situation. That fulfill the validity of the collected data but it is unsure the reliability is also fulfilled. The collected data presents the point of view of the respondents we interviewed but it is unsure that it can be applied to other companies that have not been subject in our study (Holme & Solvang, 1997).
The advantages by doing a respondent interview were that we got the opportunity to ask several questions and get an answer for each one, even when something unclear came up, we could discuss immediately with the respondent so him/her could give a more appropriate answer. The disadvantage afterward was that all the answers and the comments from the respondents were written down and it took time to work up, we had to make a great effort in order to not change the respondents thoughts and ideas and therefore we think that the objectivity is also achieved.

7.2.2 Reflections about the companies’ point of view regarding consultants

Regarding the part where we compared the internal vs. the external consultants, can we say that we did not find any specific factors that can influence the companies decision to choose one or the other alternative. Instead, the companies decision was taken based on their own experience and opinion. We tried to find some theoretical aspects concerning this fact, but we concluded that there was none.

However, we want to point out that none of our respondents had negative perception regarding the external consultants. This is one of the reasons to why we choose to explain what the companies do in order to maintain and develop the ERP system (see Analysis), this is in order to show that they just choose one option prior the another one. Our conclusion, based on the discussion with the respondents is that they recognize, as we named previously, the high competence of the external consultants.

In the Analysis chapter, we presented many factors regarding maintenance and development of the ERP system within the company. We want to say that these activities can be done in the same manner or even better, by a consulting firm, because there are many consultants with different competencies and skills and that can increase the way of using ERP system and the business effectiveness.

7.3 Learning

After working with this paper, we feel that the achieved knowledge is of two different categories, regarding the:

1. Methodology:
   - Interview – we think that we have accumulated more experience about interview applying and analyzing the collected data;
   - Better experience regarding such kind of studies that can be usual for further projects;
   - Apply theoretical knowledge in practical situations.

2. Subject of area
   - Better acknowledgements concerning the post-implementation and go live stage;
• Understanding the way of thinking of some companies regarding ERP systems' and in specially regarding the post-implementation stage.

7.4 Proposals for further investigations

Our proposal is to do a study between systems managed permanently by external consultants and systems managed by internally consultants and try to find if there are any differences concerning the maintenance and development of the ERP system. The study could be done by comparing different companies that are in the described situation. The investigation can be done based on the two-method research presented in Method chapter: qualitative and quantitative research study. Another perspective is to see the point of view of the consultants regarding maintenance of ERP systems.

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E-sources:


Appendices

Appendix 1 - Interview questions Swedish version

Inledande diskussion!

1. Hur många anställda har företaget och hur stor omsättning?
2. Vilket affärsystem använder ni?
3. Vid avslutad implementering, valde ni att underhålla systemet intern eller med extern hjälp?
4. Om ni valde första alternativet, var det något specifikt som gjorde att ni bestämde er för att söka extern hjälp?
5. Vid val av extern hjälp, vilka faktorer påverkade valet av konsult firma? (tidigare erfarenhet)
6. Får ni hjälp av en annan konsultfirma, än den som implementerade ERP systemet, i så fall varför? (vendor)
   a. (om ja) skulle inte vare lättare att använda samma firma som implementerade ERP systemet, eftersom de borde vara kunniga inom systemet de implementerade samt att ni lärt känna varandra under tiden.
7. Hur ska företaget jobba för att få nya, positiva effekter av långsiktigt användande av affärsystem?
8. Hur jobbar företaget för att kontinuerligt identifiera nya behov och förändringar?
9. Ett affärsystem har en begränsad livscykel. Har ni tänkt att byta ut affärsystemet eller fortsätta bygga på det aktuella?
10. Är ni nöjda med de resultaten ni får med hjälp av ERP systemet så som det ser ut idag eller strävar ni efter att ständigt utveckla, adaptera ERP systemet till era behov beroende på vad marknaden erbjuder?
11. När det är dags att skaffa nytt affärsystem, vad påverkar valet av konsultfirma?
12. ERP system är en kostsam investering! Vad är det som uppfattas som dyrt enligt er? (skötta systemet själva, ta hjälp från en konsult firma, dyrt kan uppfattas output som inte ger något nytta för företaget)
13. Tror ni att det finns någon skillnad i er användning av affärsystemet om ni underhåller och vidare utvecklar ERP systemet själva eller tror ni det skulle se annorlunda ut om företaget får hjälp och support från en konsult firma?
14. Hur tycker ni att samarbete med konsult firma ska fungera:
   14a. Ringa till konsult firma (vendor) när ni behöver hjälp. (För- och nackdelar)