To Invest or Not to Invest?
Factors affecting IT investment decisions

Paper within Bachelor thesis in informatics (JBIC18)
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Jönköping June 2009
Abstract

Introduction

Many studies indicate that there are numerous factors that promote or hamper the adoption of IT applications and are a prime concern for many researchers and practitioners (Abrahamson, 1991). Two main factors which need to be examined closely when making decisions about IT investments are the internal and external factors. Since these factors play a great role in decision making of IT investments, it is imperative to study their impact on the strategic planning because this forms the founding blocks for IT decision making.

Problem

As the business environment keeps on changing, managers need to thoroughly scan the environment before investing in an Information technology system. The reason is to identify the major factors that can be detrimental to the organization from reaping the potential rewards from their IT investments. Sutton, (1998) views the process of environment scanning as a technique to identify threats and opportunities while improving long and short-term planning. With the current financial crisis that started in 2007, there seems to be a pandemic concern in the massive. Inevitably, this has lead to a risen concern for organizations to carefully study this particular factor when deciding on investing in new information technology.

Purpose

The aim of this thesis is to establish and evaluate the internal and external factors affecting the decision making in IT investments, in particular ERP systems. It also seeks to contribute to literature on the impact of the current financial crisis on making IT investment decisions.

Method

Our research study took a deductive approach with the use of qualitative data that was collected from semi-structured interviews of three respondents. The interviewed companies were Fagerhult Belysning, Sogeti and Professor Mats-Åke Hugosson.

Conclusion

The evaluation of the internal and external factors affecting the decision making was analyzed with the SWOT analysis. Each potential factor was categorized under internal, strengths or weakness and external, opportunities or threats and then assisted in reducing the weaknesses in the organization and mitigating the potential threat in order to understand these factors influence on ERP adoption in Fagerhult. An advice for organizations is despite the financial crisis, the question they ought to ponder over is firstly the obvious which is, do we have the available resources? And if that is not a constraint, the next issue is how we can get the optimal value from our IT investments and our correspondents laid it out clearly; organizations need to plan ahead and continue making IT investments that aims at creating a suitable balance/ fit or harmonization between their IT and business strategy.
# Table of Contents

1 Introduction ................................................................................................. 1
   1.1 Problem discussion .................................................................................. 2
   1.1.1 Research questions ............................................................................... 3
   1.2 Purpose of study ...................................................................................... 3
   1.3 Delimitation of study ............................................................................... 3
   1.4 Perspective ............................................................................................. 3
   1.5 Definitions ............................................................................................... 4
   1.6 Interested parties .................................................................................... 4

2 Theoretical Framework ............................................................................. 5
   2.1 Overview of the theoretical framework ................................................... 5
   2.2 IT investment Decision making process ................................................ 6
   2.3 Decision Making Environment ............................................................. 7
   2.4 Internal factors affecting IT investment decision ..................................... 7
      2.4.1 Organizational factors ........................................................................ 7
      2.4.2 Business factors ................................................................................ 8
      2.4.3 Competitive advantage and reducing costs ....................................... 8
      2.4.4 Human Resources .......................................................................... 9
      2.4.5 Technological factors ....................................................................... 11
   2.5 External factors affecting IT investment decision .................................... 11
      2.5.1 P.E.S.T Model ................................................................................ 11
      2.5.2 Environmental change, focus on financial crisis ............................... 13
      2.5.3 Framework For evaluating factors: SWOT analysis ............................ 13
      2.5.4 Combination of SWOT and PEST .................................................. 15

3 Methodology ............................................................................................. 16
   3.1 Knowledge Approach ............................................................................. 16
   3.2 Research approach .................................................................................. 16
      3.2.1 Qualitative method ......................................................................... 18
      3.2.2 Observation .................................................................................... 18
   3.3 Case Study .............................................................................................. 19
   3.4 Data Collection ....................................................................................... 19
      3.4.1 Literature review ............................................................................ 19
      3.4.2 Interview ........................................................................................ 20
         3.4.2.1 Interviewee parties ........................................................................ 20
         3.4.2.2 Interviewee correspondents ......................................................... 22
      3.4.3 The link between research questions and interview questions .......... 22
      3.4.4 Interpretation of the Empirical Findings .......................................... 23
   3.5 Research credibility ................................................................................. 23
      3.5.1 Reliability ....................................................................................... 23
      3.5.2 Validity .......................................................................................... 24
      3.5.3 Generalisability .............................................................................. 24

4 Empirical findings ..................................................................................... 25
   4.1 Fagerhult .............................................................................................. 25
      4.1.1 Environmental change, focus on financial crisis ............................. 29
4.2 Sogeti ...................................................................................................30
4.3 Expert: Mats-Åke Hugosson .................................................................31

5 Analysis ...............................................................................................33
5.1 Internal Factors ..................................................................................34
5.1.1 Organizational Factors .....................................................................34
5.1.2 Business Factors .............................................................................35
5.1.3 Competitive Advantage and Reducing Costs ....................................36
5.1.4 Human Resources ..........................................................................37
5.1.5 Technological Factors .....................................................................38
5.2 External Factors ..................................................................................39
5.2.1 Political Factor ..............................................................................39
5.2.2 Economical Factor .........................................................................39
5.2.3 Social Factors ...............................................................................39
5.2.4 Technological Factor .....................................................................40
5.2.5 The effect of the current Financial Crisis on IT investments .............40

6 Conclusion ...........................................................................................42

7 Closing discussion ................................................................................44
7.1 Reflections .........................................................................................44
7.2 Further Research ...............................................................................44
7.3 Acknowledgement ..............................................................................45

List of Figures:
Figure1: Overview of the theoretical framework ........................................6
Figure2: ERP adoption intention model .....................................................9
Figure3: PEST- Analysis Framework, own illustration (Campell & Craig, 2005) 12
Figure4: SWOT model ............................................................................14
Figure5: Research approaches (Lindh. J, 2009) ........................................17
Figure 6 - Distinctions between quantitative and qualitative data (Saunders et al., 2007) .................................................................18
Figure7: Overview of where the empirical findings was collected ..............25
Figure8: significance of the factors and its ranking by Hellman .................28
Figure9: SWOT model applied on Fagerhult ...........................................33

Appendices
Appendix 1: Interview Question (Fagerhult) ............................................49
Appendix 2: Interview Questions (Sogeti) .................................................51
Appendix 3: Interview Questions (Expert) ................................................52
1 Introduction

This section introduces the reader to the introduction of the research at hand, the background of the study and with a funnelled down approach introduces the research questions in which the thesis aims to fulfill. This section concludes by defining the common terms which will be used throughout the thesis with clarification of the acronyms used.

Technological advancement of and the adoption of information technology in organizations is ever growing at an astonishing rate and has reached the point whereby it is embedded in a vast majority of organizations. It is stated that a handful of these organizations are not able to function effectively without the support of IS/IT, which plays a strategic role in organizations (Avison, Cuthbertson, Powell & Nandhakumar, 2000). Lee and Kim (1996) even argue that the role of IS has changed dramatically and is now viewed as a competitive and strategic tool.

IT has become a critical role in the support of the day to day operations and strategic positioning of organizations and investment in Information Technology (IT) within organizations almost invariable results in a wide variety of significant improvements, on the design of the business, the work conditions of employees and economic performance (Doherty & King, 2005). This has lead to IT decision making being one of the most important organizational and managerial activities (Doherty & King, 2005).

A sound decision making practice for technology adoption is very important for organizations due to the fact that it eliminates the risk of committing to IT investments which could have a positive impact, either directly or indirectly on the overall prosperity of the organization (Bacon 1992). Many managers, practitioners and scholars have various methodologies of IT investments, but there seems to be a negative aspect of making IT investments. This brought about the famous debate of the “Productivity paradox” and “IT for value” which is still evident even in today’s investments (Hitt & Brynjolfsson 1996; Brynjolfsson & Hitt, 1998). Many even argue about the significance of adopting IT viewing that it brings no increased business value (Carr 2003). However, the bottom line is that IT investments bring along positive results but the demonstration of its benefits has proven relatively difficult (Wang, 2006; Mahmood & Mann, 2000).

Before investing in any type of IT system, there is the decision phase which must been done before actually picking a particular system. Many academia and industries have proposed different frameworks or methodologies on how to go about making technology investment decisions but a mutual conclusion is that no single, simple methodology will give a consistent, reliable and optimal solution to managers facing an IT investment decision (Schniederjans, M.J. & Hmaker, L.J., Schniederjans, M.A., 2004).

Organizations have three basic stages of planning as viewed in the MIS hierarchical framework namely strategic, tactical and operation planning (Irani & Love, 2002). The strategic planning stages deals with developing specific systems to implement corporate-wide strategy (Adler, 2000). This stage touches issues such as examining the external analysis of the environment and threats and internal analysis of its strength and weaknesses.
Many studies indicate that there are numerous factors that promote or hamper the adoption of IT applications and are a prime concern for many researchers and practitioners (Abrahamson, 1991). Two main factors which need to be examined closely when making decisions about IT investments are the internal and external factors. Since these factors play a great role in decision making of IT investments, it is imperative to study their impact on the strategic planning because this forms the founding blocks for IT decision making.

1.1 Problem discussion

In the past two decades, there has been a substantial amount of money invested in Information technology. The reason for such investments falls under certain factors such as the increased globalization of markets, increased environmental concerns and technological advancement (Turban, Mclean and Wetherbe, 2002). Along with this brought about plethora ways of IT assessment methods and techniques. Some of these techniques have proven credible to use in the evaluation of IT to a great extent but there is still the search for “one” guiding model. As organizations continue investing huge sums of money towards IT, there has been a shift towards the process of IT investment decision making. Adopting a new technology into an organization is a complex and extensive procedure where ranging factors need to be taken into consideration such as economical, technical, operational, legal and political feasibility (Fuller, Valacich & George, 2008).

As the business environment keeps on changing, managers need to thoroughly scan the environment before investing in IT systems. The reason is to identify the major factors that can be detrimental to the organization from reaping the potential rewards from their IT investments. Sutton (1998) views the process of environment scanning as a technique to identify threats and opportunities while improving long and short-term planning.

These steps must been undertaken before adopting any kind of IT system. These decision making steps are affected tremendously by the external/ internal factors due to the influence they have in shaping the outcomes. Laudon and Laudon (2004) states that IT investments and decision making methodologies should be studied because collectively they can be seen as a way of achieving a competitive advantage. These decision making steps starts with the study of the various factors both internal and external, that effects the organization in making the right decision in order to gain its competitive advantage, and sustain business value. As noted earlier, these factors are critical for an organization to investigate because they determine if they should proceed on making IT investments. During downturn times, many companies are going bankrupt and a lot are holding their IT investments spending. With the current financial crisis that started in 2007, there seems to be a pandemic concern in the massive and inevitably this has lead to a risen concern for organizations to carefully study this particular factor when deciding on investing in new information technology. On the other hand, “New research shows that companies that want to continue climbing the productivity curve understand the importance of IT” (Microsoft, 2009, p.4).

The question here is how to evaluate these factors in order to make justified decision? Many theories recommend different methodologies on how to evaluate these determinants, and to give it a value in order to make sense of the exploited factors; such as the SWOT analysis.
1.1.1 Research questions

Based on the discussions above, these questions have been identified intriguing thus worthy of investigation so as to guide us in achieving our goal. They are:

1. How to evaluate the factors affecting IT investment decision making?

From the above research question, a follow up sub question is

2. How the current financial crisis has influenced IT investment decisions?

1.2 Purpose of study

The aim of this thesis is to establish and evaluate the internal and external factors affecting the decision making in IT investments, in particular ERP systems. It also seeks to contribute to literature on the impact of the current financial crisis on making IT investment decisions.

1.3 Delimitation of study

Organizations invest in IT systems due to many reasons such as inefficient existing systems, a desire to match their system with customers, suppliers or simply the need to create a competitive advantage. In our study, focus will be made on ERP investments.

Delimitation to this study is that the empirical data concerning the factors affecting IT investment decision would be mainly collected from Fagerhult, a company based in Jönköping. Delimitation could be the fact that factors affecting the decision making in companies differs from one to another. With this in mind, we are not able to cover all these extensive factors but will aim to cover the most important internal and external factors under this field of study. On what concerns the financial crisis, the delimitation of this section will be that it is only applicable to organizations that are affected by the financial downturn. In addition, our focus will be on a specific time frame of the effect of the financial crisis; mid 2009.

1.4 Perspective

This work will encompass three different actors, a company (Fagerhult), a consultancy firm (Sogeti) and an Expert (Mats-Åke Hugosson). First of all, we will study the internal and external factors affecting IT investment decisions in organizations and base our theory on Fagerhult. With the current financial crisis, we want to study more deeply this factor and its effect on IT investment decision. Therefore we want to interview two actors namely, Hugosson and Mats Ekelund the marketing sales director in Sogeti. Hugosson will give an objective view on the effect of the economical crisis on IT investment decisions and how companies should react in downturn environments. Ekelund on the other hand, will give insights about what is really happening in real life on what concerns IT investments due to his position in Sogeti as Sales director, he will have the data and figures that will give a better insight on how companies are responding to the current economical crisis. In addition,
we will study the effect of the financial crisis on Fagerhult, thus they have already adopted an ERP system in 2006, and this will deepen our study to see whether they are still investing in IT projects.

The view from three different perspectives will increase the credibility of the report. The expert will be more objective due to his non-involvement into a company or a consultancy firm, on the other hand the consultancy firm, if asked 'To invest or not to invest during downturn times? The answer will probably be ‘they should invest’ in order for them to sell their products and services. Therefore we want to see different views and try to analyze these data and make it as valuable as possible for companies thinking about adopting an ERP system.

1.5 Definitions

Information technology: refers to technology in general, it can be both tangible and intangible which facilitates the acquisition, processing, storing, delivery and sharing of information and other digital content (Ward, 2007). In this thesis IT and IS are used interchangeable. Information systems are systems which people in organizations use in gathering, processing, storing and disseminating information (Beynon, 2002).

IT investments: “It is the acquisition of computer hardware, network facilities, or pre-developed software or any “in house” systems development project that is expected to add to or enhance organization’s information systems capabilities and produce benefits” (Bacon, 1992, p.335).

Enterprise Resource Planning (ERP): It is software that enables the automation and integration of an organization major business processes thus sharing real time data across the whole enterprise (Seddon, Shanks & Willcocks, 2003).

Decision making: it is a process that involves a sequence of actions with the identification of an Information system related problem issue or opportunity and ends in the approval of an IT project (Boonstra 2003).

Financial crisis: “A situation in which the supply of money is outpaced by the demand for money. This means that liquidity is quickly evaporated because available money is withdrawn from banks (called a run), forcing banks either to sell other investments to make up for the shortfall or to collapse” (American Psychological Association, 2009).

Evaluation: “Make a judgment based on criteria; determine the value of” (Board of studies, 2009).

1.6 Interested parties

In general, this work would be interesting to anyone who intends of making IT investments. Before commencing into any project, there is usually a pre-study conducted which examines the factors that can be seen as an impediment for the projects’ success. However, our main target will be for organizations seeking to adopt any type of Information technology into their business operations. Literature reveals that there seems to be a lack in research of the factors affecting the decision making of IT investments which greatly influences the failure of IT investments. Schwenk (1995) even argues that research into these factors that affect the decision and strategic decision making equips them in understanding the business and environment in which they are operating thus making better decisions.
2 Theoretical Framework

This section presents the theoretical framework which will be used in achieving the research objectives. The section aims at presenting the chosen theoretical framework and justifying why the chosen framework suits in the authors quest for answering their research objectives.

2.1 Overview of the theoretical framework

The Model (Figure 1) in this chapter is the guiding model on which the theoretical framework is built. It helps the reader in understanding the thinking process of the authors and provides a clear relationship between the different factors and the process of IT investment decision making. The figure depicts firstly the internal and external factors which the authors identified as most significant and relevant to take into considerations when identifying the variables that influence the decision making process of making IT investments. The inspiration of this model is from the MIS hierarchical planning model presented by Schniederjans et al., (2004) in the literature “Information technology investment”. The MIS model is categorized into three stages namely; the strategic, planning and operational. The stage this thesis is concerned with is the strategic stage and it highlights clearly that phase 1 and 2 aims at firstly indentifying the factors then analyzing it so from this we proposed the framework below. After indentifying the factors, the suitable framework for evaluating them was the SWOT analysis.
2.2 IT investment Decision making process

The decision making process of making IT investment for the whole process is quite limited as seen in various studies. Research shows that studies focus more on evaluation techniques for certain stages in the decision making of IT investments and unfortunately has not captured the whole process (Wang, 2006).

According to Wang (2006), the decision making process for IT investment decisions is composed of four different phases:

- Analysis and Planning
- Evaluation of costs and benefits
- Selection and implementation
- Post-implementation evaluation (Wang, 2006, p.17).

The analysis and planning stage is as mentioned before very crucial for the scope of the project, because it presents a road map and enabler for making decisions. In this phase, the
current situation (internal/external environment), the business strategy and IT strategy should be analyzed so as to have a clear vision of the IT investment decision making.

2.3 Decision Making Environment

While embarking in making decisions, it is important to use any available source of data since an organization can analyze this data and use it for future decisions, the data could be either from the external/internal environment. Saunders & Jones (1990) state that decision makers use the whole network of information sources as well as various Medias around the organizational environment.

2.4 Internal factors affecting IT investment decision

2.4.1 Organizational factors

Organizations are generally characterized by high business complexity in regardless of the size, either big or small, which is a critical need for coordination and control of the business activities which in turn, is related to the complexity of the information system (Howard & Hine, 1997; Yasai-Ardekani & Haug, 1997).

There are numerous factors that affect the decision making of adopting ERP systems. Some of the organizational factors that influence the decision making of ERP investments are;

Size of company: Kimberly (1976) argues that the importance of this factor when adopting an ERP system; stating that a different approach should be applied on the industry the organization falls under. Furthermore, “a direct relationship between the size of organizations and the percentage of organizations where ERP has been implemented” (Buonanno, Favero, Pignin & Ravarini, 2005, p.1).

Top Management Support: this factor is considered one of the most important factors in the decision making of ERP systems; it also helps the organization in delivering a successful ERP. According to Wang (2007), the function of top management involves developing an understanding of the capabilities and limitation of the proposed system, setting goals, and then communicating the organization Strategy to all employees which can increase the benefits of the ERP adoption.

Organizational culture. Influences the adoption of Information technology or ERP in organizations. Its significance in the decision making phase of adopting a new IT system is well noted by managers in various organizations. Boynton & Zmud (1987) states that culture has always been one of the prime concerns for organizations right from the inception of organizations, since human actors are involved in the daily operations of the business. According to Boynton & Zmud (1987), an organizations’ culture is closely linked to the success it can expect to achieve thus while planning, they should consider the organizations’ current culture and anticipate how this culture may impact or be used to affect information technology efforts. Organizational culture is defined as a possession, “a fairly stable set of taken for-granted assumptions, shared beliefs, meanings, and values that form a kind of backdrop for action” (Smircich, L., 1985, p.58-59). However for the purpose of this study, we adhere to the definition of culture as a shared set of assumptions, values, and beliefs of people within an organization (Dasgupta, S, 1997).
While introducing a new Information technology into an organization, there is a shift from the organizational innovation perspective to technology based organization innovation since the latter focuses on the adoption of a new Information technology (Boynton & Zmud, 1987). Schniederjans, Hamaker (2004) highlights the fact that culture is a very important in analyzing in the organizations environment due to the fact that it helps identify the strengths and weakness in the company. They further argue that in the cultural aspect, attention to should be focused on “how it promotes a high service level and employee loyalty” (Schniederjans, M.J. & Hmaker, L.J., Schniederjans, M.A., 2004).

2.4.2 Business factors

The market area( local, national, international, local: in wider market areas): the level of complexity intensifies since there is a need to manage more differentiated legal and cultural issues, as well as the facing of competitive pressures characterizing the internal markets (Barlett & Ghosal, 1989; Roth & O’ Donell, 1996; Rumelt, 1974).

The membership an industrial group (either as the holder or as a controlled firm): this variable deals with the extent of the alignment between the different units within the organization and with its suppliers. In other words it is the obligation of common operating systems between the members of the industrial group in order to enhance efficiency and flexibility (Buonanno et al., 2005).

The presence of branch offices (localization and number of branches): this factor deals with the management of information flow in the organizations. Horgan (1997) argues that the use of intranets in large organizations is often characterized by a lack of coordination while other, organizations face issues related to cultural and technological.

The level of diversification (in terms of products, markets, technologies): this factor plays a great role because operating in different product-market combinations introduces a high level of complexity (Yasia- Ardekani and Haug, 1997). In related- diversified firms, the higher number of information processing demands high business unit-interdependencies (Hill & Hoskison, 1987; Kerr, 1985; Michel & Hambrick, 1992; Pitts & Hopkings, 1982).

2.4.3 Competitive advantage and reducing costs

Porter and Millar (1985), states that a business is profitable if the value it creates exceeds the cost of performing its value activities. In order to gain a competitive edge over rivals or in a fierce market, a company must either perform these activities at a lower cost or perform them in a way that leads to differentiation and a higher business value. Investing in an ERP system helps in the automation of business processes, enabling information sharing across the whole organization and enhancing accessibility of information in real time thus creating a competitive advantage to an organization (Seddon, 2005).

According to a study by Deloitte Consulting (1998), in which they conducted interviews with 230 managers in 85 global companies. It revealed that benefits of ERP system on organizations are categorized into two types namely; ‘tangible’ and ‘intangible’ benefits. The tangible benefits include cost savings when it comes to human resources and inventory reduction, productivity improvements and faster processing. The latter being improvement in
information visibility, better efficient processes and improved customer satisfaction (Seddon, 2005).

Davenport, Harris and Cantrell (2002), go on further stating that competitive advantage in organizations is apparent when adopting an ERP system in terms of better management decision-making, cost-savings in headcount reduction, more efficient and faster transactions and thus cycle time reduction. Also, improved customer service and retention and improved financial management (Seddon, 2005).

2.4.4 Human Resources

William R. Tracey (2008), in The Human Resources Glossary defines Human Resources as: “The people that staff and operate an organization ... as contrasted with the financial and material resources of an organization. The organizational function that deals with the people...” (http://humanresources.about.com/od/glossaryh/f/what_hr.htm).

Hwang, Jeong and Nandkeolyar (2008) in their work 'The antecedents of ERP adoption', used the Integrated ERP adoption intention model, to understand the human behavior in a company when it comes to ERP adoption.

Figure 2: ERP adoption intention model (Hwang et al. 2008, p.3122).

Perceived Strategic Value

Perceived strategic value is defined as the person’s view on the opportunity of getting positive outcomes from the IT investment. The ERP positive outcomes can be realized in terms of cost reduction, more efficient and faster business transaction and customer satis-
faction. Thus the Perceived strategic value can result into negative outcomes, Liu and Wei (2003) defined the perceived risk as “a subjective probability of suffering a loss in the pursuit of a desired outcome or a person’s perception of the possibility of having negative outcome or suffering harm or losses associated with ERP” (Hwang et al. 2008, p.3122).

Organizational Readiness:
Organizational Readiness can be underlined under the resources as a company assesses. Resources in terms of costs and expertise are two important factors that should be considered before any adoption of ERP software. Kuan and Chau (2001) highlighted that the financial and technological readiness as perceived elements. Moreover, “fast communication, proper structure to implement, enough financial resources, rich and competent knowledge and skills, and top management support are factors for organizational readiness” (Hwang et al., 2008, p.3122). In turn, these perceived measures will result in a positive outcome on the attitude toward ERP adoption.

External Pressure or Support:
The external pressure according to Grandon and Pearson (2004) are pressure elements in the ERP adoption that has impact on the attitude behavior. Namely these factors are competition, and reliance on their suppliers already using an ERP software and the public sector (Hwang et al. 2008). The external support, on the other hand, is the backup that a company gets when outsourcing the ERP. According to Hwang et al. (2008), external support embraces training, maintenance, and updating. Furthermore, he stresses that the higher the pressure and the support are, the more positive impact will have on the attitude toward ERP adoption.

Perceived Usefulness:
According to Davis (1998), perceived usefulness is “The extent to which a person believes that using a particular technology will enhance his or her job performance” (Hwang et al. 2008, p.3123). The higher the person’s perceived usefulness towards the adoption of an ERP system, the more positive affect will have on the attitude toward the IT investment.

Perceived Ease of Use:
The perceived ease of use is the matter of how much effort the user will put in when using the system. The lesser effort the user will put on implementing an ERP system the higher probability it is on adopting the software.

Aattitude toward ERP Adoption and Intention toward ERP Adoption:
The model presented aim on understanding the reaction towards ERP adoption. Thus many factors plays a role in this adoption, one of them as mentioned above is the attitude of the human resource in the organization. According to Yang and Yoo (2004) the attitude is considered as a mix of cognitive and affective attitude, the affective attitude is about how much a person likes an object, it is more an emotional behavior while the latter is the user reception and evaluation of the object at hand, it is more reasoning behavior (Hwang et al. 2008). The attitude towards an ERP implementation will affect the intention toward ERP adoption in a positive way if the cognitive and affective attitudes are high towards the software.
2.4.5 Technological factors

This factor is seen as one of the major reasons for the adoption of ERP systems. According to Oliver and Romm, (2000); and Ross, (1999), the need to improve the performance of ongoing operations is one of the main reasons for investing huge amounts on ERP system. As a measure to ameliorate the lacking existing systems (inefficiency, inflexibility) the shift towards adopting a system such as ERP system becomes more anticipated. This was apparent during the time of the Y2K bug (Dolmetsch, R., Huber, T., Fleisch, E., Österle, H., 1998) or the switch to the Euro in the countries of the European Union (Kennerley & Neely, 2001). Dolmetsch et al. (1998), further argues that the expiration of a maintenance contract for one of legacy systems is also seen as a strong incentive to adopting a new ERP systems.

Other incentives to adopt new systems could be seen as the need to integrate data and systems together (Raymond, L. & Uwizeyumungu, S., 2007). ERP systems provide this solution whereby it integrates all the different systems in the whole organization together and facilitates in the exchange of real time data Gable and Stewart, (1999). Oliver and Romm (2000) divide the factors that affect the decision in making an eventual ERP system adoption into three categories:

(1) The need to improve the performance of ongoing operations.

(2) The need to integrate data and systems.

(3) The need to avoid a competitive disadvantage or to avoid that a business risk becomes critical. (Raymond, L. & Uwizeyumungu, S., 2007, p.489)

2.5 External factors affecting IT investment decision

2.5.1 P.E.S.T Model

The PEST model is a framework that studies the external factors in an organization, it contains four elements that are crucial for study and analysis for different purposes, one of them is their influence on decision making. It focuses on Political, Economical, Social and Technological
Political factors deal with policies and actions created by government bodies which affect the way in which organizations carry out daily activities. Legislation may hamper an organization in several ways thus it needs to be closely examined. There are different levels in which political institutions generates namely; international, national and regional (Campell & Craig, 2005). Other issues to be examined under the political frame are tax regimes and fiscal policy.

Economical factors deals with the issues relating to the economical environment that can affect the organization tremendously. Key measures that need to be examined in this environment are the Gross domestic power, Gross national Purchasing power, interest rates, inflation, exchange rates, unemployment figures, wage and price controls (Campell & Craig, 2005).

Social factors focus mainly with people attitudes and belief and is closely linked to the demand and supply of the organization (Campell & Craig, 2005). It also covers the size of the market and potential targets to move into it. Demographic factors such as skill and education, birth rates, population growth, regional population shifts etc, play a major role due to the fact that they can help in the increase of sales. Organizations need to be able to position their market in suitable areas so as to gain profit.

Technological factors deals with the rate of technological advancement. With the rapid changes in technology, it is mandatory for organizations to look into the emerging technology in the market so as to adapt to the technological change. The use of technology in organizations helps in numerous ways such as reduction of costs, increased productivity and
enhanced business processes so it is crucial for an organization to be continuously updated with future changes with technology (Campell & Craig, 2005).

2.5.2 Environmental change, focus on financial crisis

According to the Federal Reserve Bank of St. Louis (2008), the financial crisis is caused by three interrelated factors:

- The rapid growth and consequent collapse of U.S. house prices.
- The decline in mortgage underwriting standards, affected the growing proportion of home purchases financed by nonprime mortgages.
- The mismanagement of financial risks by the companies concerned with investing in mortgages, mortgage-backed securities and derivative financial instruments.

The impact of the crisis has a dramatic effect on the whole economy; investors are withdrawing their money due to the uncertainty in the market. Many companies are going bankrupt and a lot more are holding their investments in general and also IT investments. On the other hand, 'New research shows that companies that want to continue climbing the productivity curve understand the importance of IT' (Microsoft, 2009, p.4). According to Forrester Research’s on IT spending for 2009 has shown a growth of 1.6 percent. That is down compared to the 4.1 percent increase in 2008. Furthermore, according to McKinsey and company on a survey conducted on 548 global executives in October 2008, on what concerns 'The outlook for New IT investment'; it showed that 23 percent of executives expect to increase their operating costs in 2009, while 43 percent expect to reduce them. In addition to that, the results for new IT investment showed more interesting results: more than four out of 10 executives' plan is to increase their IT investments in 2009 (Microsoft, 2009).

2.5.3 Framework for evaluating factors: SWOT analysis

This part presents the framework used in the evaluation of both the internal and external factors that affect IT investment decisions. Evaluating the factors affecting the decision making in IT investments is an extensive procedure and various literatures adhere strongly to this fact. Since the research objective was to evaluate the factors affecting the IT investment decision, we felt that the SWOT analysis seems suitable for achieving our aim.

The concept SWOT analysis has been referenced by Mintzberg (1994) as the "design school model"; It is an extensive methodology which seeks to address the question of strategy from two fold perspective: external appraisal which deals with the opportunities and threats in the environment and while internal appraisal relates to strengths and weakness in the organization (Karppi, Kokkonen & Lähteenmäki, 2001).

The inception of SWOT was proposed by scholars in the business management field and is extensively used in even today’s organizations. The aim of SWOT analysis in strategic planning is to allow an organization to maximize the strengths and opportunities and minimize/ avoid the weakness and threats. Kotler ( 1988) views the internal analysis of an organization strength and weakness as a way for creating strategies that they can exploit, by highlighting certain issues that might need to be corrected(Karppi et al., 2001).
The meaning of each component is:

1. **Strength** deals with highlighting the strong aspect of an organization; it could be a look into the resources capacity of the organization and then redirecting it to certain areas so as to effectively accomplish its objectives.

2. **Weaknesses** deals with the limitation or defect in the organization that can result in the organization not attaining its objectives.

3. **Opportunities** capture a situation in the organization's environment that can be capitalized in its favor.

4. **Threat** deals with a devastating situation that can paralyze the whole company and leave it crippled (Karppi et al., 2001).

The actions to be undertaken that can be deduced from these four elements are:

- Build on strengths
- Eliminate weaknesses
• Exploit opportunities
• Mitigate the effect of threats

(Karppi et al., 2001).

2.5.4 Combination of SWOT and PEST

To get the full benefits from this evaluation framework, a combination of the methods is preferable. The interconnection of the PEST and the SWOT analysis will make the outcomes more valuable. The different components in the PEST model can be measured in terms of strengths, weakness, opportunities or threats. By doing, that the organization will be able to outline the different factors affecting the IT investment decision and classify them as positive (Strengths or opportunities) or negative (Threats or weaknesses).
3 Methodology

This section highlights the methodological framework for the whole thesis. It covers major issues such as how the authors went about in carrying out their investigations in close relation to their research objectives. It encompasses the types of research adopted, the type of knowledge that the thesis aims of generating, what kind of data collection would be used and lastly presenting a clear relation of how the interview questions was chosen and the credibility of the research.

A method is a set of tools and techniques for gathering and analyzing data for the aim of new knowledge (Holme & Solvang, 1997). The procedures and techniques are the steps involved in solving the problem at hand or simply finding different approaches in discovering new insights to the issue at hand (Holme & Solvang, 1997). The method of choice in academic writing is very important because it guides the author/researcher in achieving appropriate results in relation to their research objectives. Numerous literatures presents abundant ways of methods to proceed in carrying out a study and in this part justification will be made by the authors of the chosen methods used.

3.1 Knowledge Approach

Thesis writing can generate three types of studies namely; descriptive, exploratory and explanatory. Each study is unique in its nature because it creates or generates new findings with different lenses. According to Goldkulh (1998), it is utterly significant to analyze which knowledge to be used in research because the choice and implementation of the method of the thesis is guided by the generated knowledge. When the appropriate study of knowledge is chosen, it leads to the authors work being more validated in practice.

According to Saunders, Lewis and Thornhill (2007), exploratory study involves finding out “what is happening; to seek new insights; to ask questions and to assess phenomena in new light” (Robson, 2002, p.59).

Explanatory studies are research that is established on causal relationships between variables (Saunders, et al. 2007). In explanatory study, one seeks to study a particular situation or problem with the purpose of explaining the connection between the variables. This method is suitable for our study because we intend of looking at the factors affecting the decision making of ERP investments and with these factors established, study how they affected an organization in making ERP adoption.

In addition, we are going to outline how the current financial crisis is affecting the decision making of IT investments, an explanatory approach will be most appropriate in this study.

3.2 Research approach

The process of writing thesis involves looking into the different approaches in carrying out a research of empirical study, there are two main approaches namely induction and deduction. The deduction approach is commonly known as testing theory. It involves the development of a theory that is subjected to a rigorous test (Saunders, et al. 2007). Deduction approach is an extensive procedure which involves existing theory being tested against col-
lected empirical data to find out if they both correlate to each other. The deductive approach process involves the researcher indentifying a specific theory in reality that needs to be investigated, and then from this theoretical foundation, certain hypotheses are formulated to find out its credibility. With the formulated hypothesis, empirical data is collected and then tested against the proposed hypothesis to see if it was validated in reality or not. When this is achieved, a deductive approach has occurred.

On the other hand, inductive approach is the opposite of deductive approach whereby it follows the opposite cycle. In inductive approach, empirical data is collected then new theories or generalizations are formed.

![Diagram of research approaches (Lindh. J, 2009)](image)

In carry out in this thesis, a look into the comprehensive literature study will be conducted in order to enlighten us with the different concepts involved in the decision making process of making IT investments in general and particular ERP systems. Then from this, we will narrow our literature study to the factors affecting the decision making; thereafter align our problem discussion to the research at hand. This will allow us in defining our research objectives for fulfilling our thesis investigation. After this empirical gathering, different theories developed from the concerning topic factors affecting the decision making of IT investments will be gathered and analyzed in relation to the indentified theoretical framework thus from this a deductive approach is our research approach for accomplishing our research objectives.

Saunders et al. (2007), conclude that there is a clear distinction made between qualitative and quantitative. In contrary to this, it seems to be rather problematic in differentiating the
distinctiveness of qualitative research from quantitative research. When trying to highlight
the differences between both methods, looking at the data produced by qualitative research
reveals the differences in both methods (Saunders et al. 2007).

The indentified distinctions between both can be seen in the figure below:

<table>
<thead>
<tr>
<th>Quantitative data</th>
<th>Qualitative data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on meanings derived from numbers</td>
<td>Based on meanings expressed through words</td>
</tr>
<tr>
<td>Collection results in numerical and standardised data</td>
<td>Collection results in non-standardised data requiring classification into categories</td>
</tr>
<tr>
<td>Analysis conducted through the use of diagrams and statistics</td>
<td>Analysis conducted through the use of conceptualisation</td>
</tr>
</tbody>
</table>

Figure 6 - Distinctions between quantitative and qualitative data (Saunders et al. 2007, p. 472).

Dey (1993), points out that “the more ambiguous and elastic our concept, the less possible
it is to quantify our data in a meaningful way” (Saunders et al. 2007, p. 472). On the other
hand, qualitative data is characterized by its richness and fullness which gives the author the
possibility of exploring the subject in as real a manner as is possible (Robson, 2002).

3.2.1 Qualitative method

As noted above, there is a clear distinction between both methods in the nature of the data
collected. Holme & Solvang (1997) states that this study is given by reasoning, hypothesis,
testing. In achieving the purpose of our thesis, we will adhere to this method because we
will conduct interviews with three players in the thesis. Our study deals with the factors af-
flecting the decision making of IT investments and creating an interview with Qualitative
data seems most appropriate.

3.2.2 Observation

Saunders et al. (2007), acknowledges the fact that observation is an important aspect of re-
search stating that it is rewarding and enlightening to pursue because it adds richness to the
research data collected. Observation basically involves the systematic observation, record-
ing, description, analysis and interpretation of people’s behavior (Saunders, et al. 2007).
There are two types of observation namely; participant and structured observation and
since we have chosen to use qualitative data, participant observation suits our research.

According to (Saunders et al., 2007, p. 283), participant observation is where “the researcher
attempts to participate fully in the lives and activities of subjects and thus becomes a
member of their group, organizations or community. This enables researchers to share
their experiences by not merely observing what is happening but also feeling it” (Gill and
Johnson, 2002:144).
Saunders et al. (2007), states that participant observation involves the researcher having a specific role and these roles are:

- Complete participant;
- Complete observer;
- Observer as participant;
- Participant as observer;

In our research, we took the participant as observer approach. We revealed to our correspondents our identity and clearly explained to them what our research entailed. By doing this, both we and the respondents were aware of the nature of the research and we feel that this helped us gather more concrete data. Apart from reasons such as the time we had to conduct this study and organizational access, we felt that this approach would be suitable because it would allow us to deepen our study by asking following up questions and clarification of certain things which was stated during the interview.

### 3.3 Case Study

According to Robson (2002), a case study is defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple source of evidence” (Saunders et al. 2007, p.139).

In our paper, investigating the factors affecting IT investment decision will be highlighted, and in order to get a deeper and more accurate understanding of these factors a case study will be conducted in an organization. Furthermore another case study will be conducted in a consultancy firm in order to get a better insight on the effect of the financial crisis on ERP adoption.

Moreover, according to Ghauri and Gronhaug (2005, p.116), a case study methodology is to be done “if we want to follow a theory that specifies a particular set of outcomes in some particular situation, and if we find a firm which finds itself in that particular situation, we can use the case study method for a critical test of theory and its applicability to the organization”. Following this guideline of the case study, we will investigate whether the theory presented in this paper is accurate in real life and also as mentioned above investigate the factor of the financial crisis on ERP adoption.

### 3.4 Data Collection

This section presents what kind of data the authors used in their research and the relationship between their research and interview questions.

#### 3.4.1 Literature review

According to Saunders et al.(2007), reviewing the literature will provide the foundation on which the research is built upon. The literature review has many purposes, that need to be fulfilled in order to get the most relevant and accurate data. This purpose according to Saunders et al. (2007), is to review the most relevant and noteworthy research on the topic at hand.
In this paper, we will use the literature review in order to collect the pertinent and accurate theories about the factors affecting the IT investment decision. The theoretical framework part will cover all the theories related to internal and external factors affecting the IT investment adoption.

The sources for the literature review will be collected using primary and secondary data from reports, theses and company reports; also from books journals and newspapers from the internet and trustworthy databases.

3.4.2 Interview

In our work at hand, we will use interviews in order to collect the data needed. The choice for interviews is being made for the aim of getting a better understanding about real life cases when it comes to ERP adoption and the factors affecting this decision. In the problem at hand, the question will be which sort of interview we will conduct, Structured, semi-structured or unstructured interviews?

Structured interviews are to “use questionnaires based on predetermined and standardized or identical set of questions and we refer to them as interviewer-administered questionnaires” (Saunders et al. p.312). The structured interviews are used to collect quantitative data.

Semi-structured interviews are conducted in a way that “the researcher will have a list of themes and questions to be covered… the order of questions may also be varied depending on the flow of the conversation” (Saunders et al. p.312). Semi structured interviews are used to collect qualitative data.

Unstructured interviews has “no predetermined list of questions to work through in this situation… The interviewee is given the opportunity to talk freely about events, behavior and beliefs in relation to the topic area, so that this type of interaction is sometimes called non-directive” (Saunders et al. p.312).

In order to get the best result from our interviews, we think that a semi-structured interview will give us a more desirable outcome. Three different interviews will be conducted in our thesis namely, to Fagerhult to a consultancy firm and to an expert. Each of these parties will be asked different questions in order to get a holistic view and figures related to the factors and the financial crisis affecting the adoption of ERP systems.

3.4.2.1 Interviewee parties

About Fagerhult

The company Fagerhult was founded by Bertil Svensson in 1945 and at that time had a year turnover of 13 000 SEK. A year later, they established their factory in Habo, Sweden. With such a new founded venture they comprised only of six employees and had sales amounting to 53 000 SEK. In 1945, they formed the limited company Fagerhult Electric and started developing and manufacturing fluorescent lighting fixtures which resulted to a turnover of up to one million dollars. Shortly after this in 1968, they opened their first international office in Denmark then Norway and Holland. The following year they purchased Printed in Markaryd (www.fagerhult.se, 2009).
During 1974 till 1976, they purchased studio lamp and the parent company changed its name to AB Fagerhult. They were doing considerable well in terms of their turnover and soon went ahead in registering on the stock exchange and opened their sales offices and showroom in Hamburg (www.fagerhult.se, 2009).

AB Fagerhult emerged with other small groups over the years and is now known as Fagerhult Retail Lighting. They comprise of about 2 000 employees and hold a large portion in the lighting industry. It has the largest group in the Nordic region and one of Europe's leading lighting groups. Their business are involves developing, manufacturing and marketing professional lighting systems for public environments and offers variety of interior lighting. The Group has sales companies in various countries namely; Sweden, Norway, Denmark, Finland, Ireland, Holland, France, Germany, Estonia, Poland, Russia, Dubai, Australia and China. However, their main production (Manufacturing units) is located in several regions in Sweden, England, Australia and China. Their headquarters is located in Sweden Habo and have smaller manufacturing units namely; Habo, Varberg, Falkenberg, Buras and Åhus in Sweden. The group, which Fagerhult Belysning, studio lamp, Belid, Fagerhult Retail, ELENCO, Eagle Lighting, Project Lighting and Whitecroft Lighting is included, sales of approximately 2 500 MSEK. (www.fagerhult.se, 2009)

About Sogeti

The name Sogeti originates from France and is generated from the entire Cap Gemini Group that was founded by Serge Kampf in 1967. Sogeti is an acronym for "Société pour la gestion et le traitement de l'information". Before 2002, the Swedish branch within the Cap Gemini Group was called Cap Gemini Sogeti; and later changed the name to Cap Programator, Cap Gemini and Cap Gemini Ernst & Young. Sogeti Sverige AB was founded in January 1, 2003 (www.sogeti.se, 2009).

Sogeti Sverige AB is a consultancy specializing in local professional IT services. Geographically located close to the local technical decision-makers of large companies, they are present at 21 Swedish locations with a total of about 1 000 employees. Globally there is 20 000 employees in fourteen countries. Sogeti offers a full range of technological IT knowledge and expertise (www.sogeti.se, 2009).

The organization have many years of expertise in many different sectors such as Finance and Insurance, Energy, life sciences, public, Industry and Transport and Logistics. Sogeti offers its clients different services such as:

IT Management - Management and control of IT, the connection between IT and business

IT Design - Requirement specification and design of IT solutions, IT architecture and IT infrastructure, business cases, pre-studies and requirement specifications

IT Build - Development, integration and testing of systems, applications and IT infrastructure

IT Run - Applications Management and Infrastructure Services.

(www.sogeti.se, 2009)
About Expert- Mats-Åke Hugosson

Hugosson is an adjunct Professor of Informatics at Jönköping International business School (JIBS). He is also working as a consultant within the area of development and implementation of business oriented IT-strategies in different companies such as Astra, Stora-Enso, Akzo-Berol, Bofors and Trelleborg. Professor Hugosson has been researching and studying the business and IT environment, his research studies mainly focused on the Coordination of business and IT management, Strategic planning and control of IT-development, Strategic structures of information systems and Governance models for business oriented IT-management.

3.4.2.2 Interviewee correspondents

Getting the right people in order to fulfill our research objectives and answer our research questions was a challenge due to its impact on the credibility that we aim to achieve in this thesis. Thus in fulfilling this purpose, we thought that the CIO of Fagerhult will be the most suitable person to interview in order to get a better insight over the factors that affected the ERP adoption done in Fagerhult in 2006. Moreover, being the IT chief in the company, he is aware of the factors affecting this adoption and played a major role in analyzing a pre-study that outlines these different factors in order to get the best outcome from this IT investment.

Secondly, Ekelund, the Marketing Sales Director, in Sogeti, suits our research objective on what concerns the impact of the financial crisis and its influence on IT investment decisions. Being the Sales Director in Sogeti he has the knowledge and expertise needed to answer the follow up research question: How the current financial crisis has influenced IT investment decisions? His background as a business consultant since 1989, and him being a key actor in the Sales department at Sogeti will make our empirical findings more interesting and valuable.

Thirdly, we decided to interview Mats-Åke Hugosson, an adjunct professor in JIBS due to his profound knowledge and expertise in Strategic IT. Being a professor and a consultant, he contributes to this paper in his expertise around the research objectives of this paper on the factors affecting the decision making of IT investments. In addition, to get a better insight on the financial crisis and its effect on the decision making of IT investment, as a professor and consultant we think that he is the right person to get valuable information around this topic.

3.4.3 The link between research questions and interview questions

A very important ingredient for drawing up concrete conclusions and proving ones work valuable is to ensure that there is a clear match between the research question and interview questions. It is only when this is achieved can the results be seen more useful in broader context.

In developing our interview questions, we first draw up our research questions derived from our problem discussions. Since our research question involved us finding out the factors affecting the IT decisions in making IT investments, the first few interview questions were mainly focused on finding out the factors which affected the decision making in IT investments. Secondly, the interview questions aimed at finding out the significance of these factors since certain factors could me more important than others. The interview question was constructed so as to allow the respondent to rank which of the stated factors, he felt were of uttermost significance in making IT investments decisions.
Thirdly, the interview question aimed at finding out how these identified factors are evaluated. Different evaluation frameworks were presented to the respondent in order to see which framework was used in the company.

Lastly the interview took another approach whereby the interview questions aimed at finding out the impact of the financial crisis on IT investments. Since this a sub question in the authors research, the questions aimed at first finding out the general outcomes of the financial crisis and ways in which organizations are reacting towards their investments and possible ways of re-acting to this instability in order to sustain competitive advantage.

3.4.4 Interpretation of the Empirical Findings

According to Fischer (2007), two problems emerge when analyzing data; the first problem is occurring when the researcher is interpreting his/her empirical data directly after collecting it. Fischer (2007) argues that the researcher in this case will miss the line of argument. The second problem is related to “drafting”, he explains this problem by saying that researchers often do not understand their data and its outcomes until they have written it down on paper, therefore a solution for these problems is the action of sorting the data, filtering it, then writing.

We have devised a plan in the way our empirical data is going to be interpreted. Since we are going to be dealing with huge amount of data and two research questions, we do not intend of interpreting both research questions at the same time due to the fact that we are aware that our judgment can be clouded. Apart from the fact that we ensured that the data we collected from the respondents was understood fully, we will fall back to the tapes from the conducted interviews. By doing this, we wish to get a clearer understanding of the data collected.

3.5 Research credibility

The credibility of the research study is the degree on how much the information that the researcher collect is right. The writer should try to reduce the possibility of getting the wrong answers in order to give his paper a higher credibility. Reducing this possibility means that awareness has to be paid to two main characteristics in the research design: reliability and validity (Saunders et al.2007). With this in mind, the authors ensured that their work was credible to a very large extent. The authors made this a high priority in undergoing their data collection which would later be analyzed with the theoretical framework to draw conclusions.

3.5.1 Reliability

Reliability refers “to the extent to which your data collection techniques or analysis procedures will yield consistent findings” (Saunders et al.2007, p.609). The reliability stage according to Saunders et al.(2007) can be assessed by three questions. First, if the measure will yield the same result on other occasions? Secondly, whether the same insight of the research would be assessed similarly by other observers? Thirdly, if there is a distant way showing how the raw data was achieved?

The reliability factor is exposed to four different threats according to Robson (2002). The first is subject or participant error. Saunders et al. (2007) emphasizes the importance of choosing the right day while conducting the interview or the questionnaires. Different re-
results can be attained depending on the day of the week the observation is being made. Fridays afternoon and Monday mornings are non-neutral days thus employees are looking forward to the weekend or 'high', 'low' where the employees have the working week in front of them. Therefore, while collecting our data, we made sure that our meeting with the correspondents is on Wednesday, to make sure that the person interviewed is in good psychological shape in order for us to get more trustworthy information.

The second threat is the participant bias, when observing employees in organizations answers from them can be a factor of fear, employees end up saying what their bosses wanted them to say Saunders et.al (2007). Our data collection was sampled from two high managers in companies, namely Hellman the CIO of Fagerhult, and the Manager Sale Executive in Sogeti. Fearfulness from bosses is therefore eliminated in the context of our thesis.

The third threat is known as observer error. In this case, an example can be that four persons conduct four different interviews, with the same questions. Nevertheless, these four observers might conduct the questionnaire in four different ways, thus end up with a biased result. If the same observer in the future conducts the same research within the same circumstances, the results will be the same.

The last threat known as the observer bias is a result when data is being interpreted in different ways by the researchers. We intend of avoiding this by sending our collected data to the respective respondents so as to ensure that we the interviewers have not misinterpreted the data given out by the interviewee.

3.5.2 Validity

"Validity is concerned with whether the findings are really about what they appear to be about" (Saunders et al., 2007, p. 149). It answers if the relationship between two variables is a casual relationship (Saunders et al., 2007). Our data collection is being framed in conjunction with our research objective and theoretical framework so we feel that our work is proven valid to a great extent.

3.5.3 Generalisability

This is also known as external validity. This deals with the extent to which the research results are generalisable; that means whether the findings may be equally applicable to other research in the same settings (Saunders et al., 2007). Our research could be considered to be generalisable given the same settings (geographically, time etc) the authors were subjected to was applied during the study.
4 Empirical findings

This section presents to the readers the empirical findings derived from the interview with the three respondents.

4.1 Fagerhult

As revealed from the interview with the CIO Hellman, he had a major role in the decision making of the New ERP system in Fagerhult. Before Hellman took the position as the CIO in the organization, the current IT infrastructure did not support the fast growing business strategy in the organization. As he said “something needed to be done urgently” (K. Hellman, personal communication, 2009-05-06). The CIO of Fagerhult states that before implementing the ERP system, the business process and the IT environment looked like ‘spaghetti’ meaning that the structure of the IT infrastructure and how IT supported the business was cluttered and lacked a governance model.

In regards to the different actors involved in the process of studying the factors that played a major role in the IT investment decision making, there were three main actors namely; Top management, the CIO and Cap Gemini. The respondent states that the Consultancy firm (Cap Gemini) acted as the information provider whereby they studied the environment of the organization and reported directly to the CIO, and his duty was then to discuss the information provided with Top Management.
"The better the information we get, the better the decision we make" (K. Hellman, personal communication, 2009-05-06), was stated by the respondent when asked about the significance of looking into the factors affecting IT investments. He went on further stating that all organizations should perform a pre-study on what concerns the internal and external environment of the organization in order to plan strategically in the fierce environment.

Fagerhult had many reasons effecting their decision in making IT investment in 2006. As of that year, there was a major concern for Fagerhult to use IT to suit their new business strategy. The current business process and IT infrastructure (built on legacy systems) were ineffective and inefficient and adopting a new ERP system seemed like the only means of pursuing their goals. When asked about the factors affecting the implementation of the ERP system in Fagerhult, the respondent highlighted different factors. One of the main factors was the size of the organization. The respondent mentioned that being a large organization was an enabler and factor for them investing in a new ERP system and necessary for them to carry some of the operations global, they needed software that could be used as backbone for the whole organization business processes. Other factors highlighted were business factors such as the market area; this was also one of the factors they considered before adopting the new ERP. The respondent emphasized that extending their business outside the “Swedish borders” and unto international markets such as China made them consider the adoption of a new ERP system that can support the business processes.

When asked about the membership an industrial group, Fagerhult says “focus on suppliers in order to have an efficient supply chain” (K. Hellman, personal communication, 2009-05-06). He further said that enhancing efficiency and flexibility between the member of the industrial group demands standardization of the systems throughout the whole network chain (from suppliers to customers). Also Fagerhult wanted to focus on efficient relation with their supplier, the current IT systems in the company was not able to support that, this also was a factor affecting their IT investment because the organization valued its suppliers as a very important actor. In other words, Hellman emphasized the importance of an efficient Supply chain in the company supported by IT. A follow up question posed to the respondent was if the presence of branch offices was a factor in deciding on ERP system and he shortly answered saying that the new ERP system enabled them to manage the information flow in the organization. Moreover, he stressed the importance of having a standardized system in order to offer the customers a better service and a faster delivery time.

In regards to the Level of diversification, the company was moving from an exporting manufacturer to an international and global business organization where it was growing internationally at a fast and aggressive pace. In addition, the CIO emphasized that the speed and complexity of the environment made them re-think their IT strategies; they needed ERP software that would support their business process in the global environment they were in. Furthermore, Fagerhult decision making was influenced by the need of focusing on rationalizations and efficiency to improve margins in order to enhance a harmonized processes and uniform standards in their international company.

The respondent mentioned also that many technological factors affected their decision making towards an ERP system; he explains that the current IT situation and architecture in Fagerhult did not support their flexible and fast integration with other systems and partners. The production being moved to China and then augmenting their branches into many countries have made them re-think their IT strategy. Also the IT before 2006, was not flexible and was not adaptable to functional changes and additions. He stresses that the organization needed a system and IT architecture that supports the future business processes and the mission of Fagerhult.
The culture in Fagerhult assured that the organization most valued assets contributed in accomplishing their goals. According to the CIO, they share common goals when it comes to IT being optimized efficiently in the organization. Fagerhult developed a common understanding between the business and the IT therefore, they share the same goals, and in order to achieve these objectives, they needed the support of a new ERP system.

When asked about the factor of competitive advantage and reducing cost, the respondent emphasized that an ERP adoption would enable them to automate their business processes, facilitate information sharing throughout their supply chain. He mentioned that one of the short/long term objectives of the organization was cost savings and further went on stating that in order of the organization to reduce lead time, reduce time in production planning, cut cost in terms of personnel, and increase customer satisfaction, the ERP system would enable them.

Human resource was one of the major factors that propelled Fagerhult into adopting a new ERP system. He mentioned the importance of him being a CIO in the organization because Fagerhult lacked any kind of strategic IT planning before he took the position in Fagerhult. In order to gain top management support, he created a good business case which was seemed flawless.

In addition to that there were many factors that didn’t encourage Fagerhult to implement a new ERP system. The employees in the company were quite old and not used to that kind of change and also their level of education was low so implementing a new system posed a threat on them. It was a major concern for them because the new IT system involved lots of changes into the normal way of doing things in the organizations and with a great percentage of the workers being above (50) made this a big issue for Fagerhult. The employees are loyal and want the best for the company, but on the other hand they feel unsafe, unsecured and stressed when dealing with change issues. This was a challenge for everyone in the company to deal with in order to deliver the best outcome from the ERP implementation. The top management in the company had to deal with issues surrounding acceptance and user resistance.

The next phase of the interview was to allow the respondent to rank the significance of the factors and how it affects the IT decision making of ERP investments and the outcome looks like this in figure 8.
The complex environment Fagerhult was working in made their decision making towards a new ERP system more feasible. Their external environment was too complex and in order to support their business processes they needed a new ERP that can manage their business internationally. As Hellman emphasized, the production was moved from Sweden to China and more branches were being expanded therefore one standardized system was needed in order to manage the efficiency of their business processes in Fagerhult.

In terms of the PEST model, Hellman said that this theory was used in order to study the external environment of Fagerhult so as to make the right decision and not be disadvantaged in the market they intended on penetrating. He outlined the importance of looking into the four components of the PEST model, due to the fact it encompasses the whole external environment. Hellman, explained the importance of the political factor and its influence on their decision making on ERP adoption, he stressed that Fagerhult was moving from a national production organization to an international one where the targeted market of the company was being expanded to Europe and some part in Asia. Concerns were directed to different ways of doing business in Sweden and the other parts of the world. The CIO of Fagerhult said that factors related to different tax regimes and fiscal policy affected the decision making in the company towards the adoption of a new ERP system that could handle these issues.
When asked about the Economical Factor and how it affected the decision making of the ERP adoption, Hellman explained how Fagerhult moved their production plant from Sweden to China in order to meet their business strategy by cutting costs.

Furthermore, the social factor being influenced by the market potential targets and how to move into it. The CIO of Fagerhult explained the need for an ERP system that could support the strategy and to be able to govern the different markets in Europe and Asia.

On what concerns the technological factors and its influence on ERP adoption in Fagerhult Hellman said that: “the technological factor mainly concern was if the system could interact with other systems and environment easily and efficiently” (K. Hellman, personal communication, 2009-05-06). He went on saying that the company needs software that could support the business strategy and enhance business efficiency.

4.1.1 Environmental change, focus on financial crisis

The effects of the financial crisis on Fagerhult was outlined in order to get a better insight on the measures the CIO of the company is taking in order to adapt in this downturn. Since they are implementing ERP software (Microsoft dynamics) since 2006, the project will continue to be implemented and even in sister companies abroad. On the other hand, the CIO of Fagerhult emphasized that in the current time and due to the financial crisis they have put on hold all the projects and will wait until the external environment is more stable and safe. He further emphasized that even though Fagerhult is stable in terms of money, they are postponing all their IT projects to 2 or 3 years ahead. He said: “We have money, but we want to be careful about it” (K. Hellman, personal communication, 2009-05-06).

The other question was to find out the implication for the financial crisis and the difference between the decision making of IT investment before and as of present. The respondent stressed that before decisions where being made in order to withhold more efficient processes and to support the business. The factors affecting IT investment decision before were more related to efficiency, effectiveness and efficacy in order to attain a more valuable business processes that support the company and its suppliers. On the contrary, during the financial crisis IT investments are being evaluated in terms of costs. In other words, as of short term actions, Fagerhult intends on holding on all IT initiates and investments until the end of the economical crisis. The respondent voices that being precautious in their IT spending is their strategy and intend of adhering to this until the market situation is stabilized again. As of the long term strategy concerning IT investment strategies, they intend to continue with their IT investments so as to ameliorate their business processes thus increasing the efficiency of the organization with the support of the IT investments.

Lastly, the respondent concluded by recommending advices to other organizations on the journey of Investing in ERP systems given the current financial crisis. He mentioned that there is different type of investments and some should be prioritized in relation to the other, depending on the organizations objectives, goals and missions.
4.2 Sogeti

The result obtained from the respondent (Marketing Sales Director, Ekelund) in Sogeti outlined how the financial crisis of 2007 factor affects IT investment decisions, in specific the adoption of ERP software. As the sole purpose of the interview was focused on finding out the impact of the financial crisis, this section would present the empirical findings derived from the view of the IT consultant Sogeti.

Sogeti view on how the financial crisis affects the decision making varies from organization to organization. The Market Sales Director expresses that mature and economical stable organizations have not really felt the impact of the financial crisis when investing in ERP systems. He goes further saying that the organizations which have been affected are the ones that fall under the non-public sectors and in particular industrial companies unlike those in the public sectors. Since governmental organizations have deeper pockets, they are more equipped in allocating resources into IT investments. On the contrary, they are more cautious on spending resources on ERP software and even software applications. The effect on organizations has taken a different turn due to fact that they do not have enough financial resource. He went on further stating that during hard economical times, organizations with fewer resources have to be more careful while investing in IT because they cannot avoid to carelessly throwing huge sums of money on unwanted IT investments.

Ekelund emphasized that organizations normally invest in ERP systems as a measure to reduce lead times, ameliorate business process thus making work more efficient. However with the financial crisis severely impacting organizations, there has been a shift towards the cost related with the adoption of the ERP system and it is viewed as the main and only reason organizations are willing to adopt an ERP system.

In terms of the difference in the sales figures before and after the financial crisis, there has been a deviation in the figures from before and of present. Sogeti has been affected because a lot of their clients are not investing in ERP systems or application software. He views the point that it is not only their organizations that has been affected in terms of sales and generalizes that it has affected nearly almost all IT consultancy firms. However, he said that the major reason for them not being effected from the financial crisis in terms of cash flow because they have two very strong clients.

Ekelund when asked about the factors affecting ERP adoption outlined, two main factors that he thought are enablers for IT investment and an encouragement for the board directors to put money on the project, namely, a clear business case and a skilled CIO. He went on saying that CIO in the present business environment plays a big role in affecting the IT investment decision, first due to their position in the board of directors and secondly their clear vision concerning ERP investment and their effects on business.

In regards to forecasting ahead to the end of 2009 and into 2010 on what were the most pressing concerns facing investments in their organization and potential customers. The respondent commented about a “must do” versus what they are actually doing in terms of ERP investments. In general organizations are being more precautious and putting their IT investments on hold when it comes to ERP adoption and even additional software applications that they require from Sogeti. His opinion was that “companies are afraid” to invest when the market is unstable, unpredictable and turbulent.

Furthermore, the must do, is that companies should invest in IT in order to be capable to face the market and their competitors when the downturn is over. Moreover, he went on
saying that some companies do not have the resources now, waiting or holding their investment 6 months is not tremulous but rather a strategic weapon for them to stay in business with their competitors.

Also, the respondent talked about the measures they as an organization were taking in order to meet the market in the upcoming year, he said that most of their resources were allocated into marketing activities. “We are forecasting ahead in order to meet the market and the need of our customers after the financial crisis is over” (M. Ekelund, personal communication, 2009-05-12). And the most reasonable way to do this is by putting a lot of efforts on Sales personnel that are out in the market trying to lure new customers.

When it comes to short term actions organizations are likely to take with their investment strategies, He said that they had five big customers that have done the budgeting; planning of an ERP implementation, but the financial crisis has caused these five companies to put their resources on hold. In relation to this a follow up question was to find out the long term action they should take with their investments strategies. He voiced that it is better to continue planning on investing in ERP systems due to the fact that the financial crisis is ever-changing and will be over in the upcoming years.

Lastly, the respondent recommends that organizations should invest in ERP systems if they have the money internally in the organization and strongly feels that investing in ERP systems will be more beneficiary to the organizations in the long run.

4.3 Expert: Mats-Åke Hugosson

The interview with the expert Hugosson shed into light some fascinating insights about how the financial crisis has affected the decision making of IT investments. In regards to presenting his views on how organizations should react to financial crisis, the respondent stated that organizations should be more cautious when it comes to investments during financial crisis. With the financial crisis plaguing vast majority of industrial organization, there is a shift for organizations to justify every IT spending in their organization. He stated that there is no room for mistakes and top management has to be involved greatly in the prioritization of all IT projects. He emphasized on two things and clearly distinguished them namely; Investments and Cost. His view about making IT investments during financial crisis is that IT investments has a negative connotation attached to it due to uncertainty of the outcomes of the involved IT investments. He goes on further stating that in regards to ERP investments, organizations really need to evaluate it in regards to the business value it could bring (which is also applicable to all types of investments). He mentions that ERP investments are prone to failure because of the complexity of the system and it is of uttermost significance for organizations to diligently “lay down” how the ERP investment intends to ameliorate their business processes.

When asked about forecasting to the end of 2009 and into 2010, the response from the respondent was that the most pressing concerns facing the investments in ERP systems is that many organizations will continue investing in ERP systems so as to optimize their business processes and support their IT strategy but however voices the fact that Organizations should not look at ERP systems as a way for competitive advantage but rather as a common information technology tool for achieving business objectives. He went on further stating that the future is volatile and ever-changing so organizations should rather fo-
cus on their current IT investments and see how these investments can enable them to be well armed for the future ahead.

In response to the short and long term actions organizations are likely to take with their investment strategies, the respondent states that for short term strategies, organizations are going to invest in IT projects where they can see the return of investments quicker. He expands on this view by stating that during financial crisis; unfortunately IT is only viewed as a cost and nothing else so organizations will only invest in IT projects which will yield benefits fast. He states that there is a fearful atmosphere diffused into a lot of organizations that IT investments are costly and the only measure to reap the fruits from IT investments is to initiate small scale projects. On the other hand, long term strategies will be directed towards bridging the gap between the organizations business and IT strategies. He mentions that the goal of any IT investments in an organization is to support the business strategy thus investing in IT should be harmonized with the business strategy.

In addition to this, the respondent states that very often organizations see IT “we shouldn’t but we see” as a total cost including both in investment and cost. Organizations tend to put together the total IT spending to a sum which consequently leads Top management to be skeptical about the high cost thus cutting down staff as a measure to reduce cost. In this perspective, organizations consider IT investments as a cost and not an enabler.

In conjunction to this, the next question was for the respondent to render some advice to organizations that are embarking on IT investments and the response was "When you don’t see IT investment as an enabler to change then it is seen as a cost“. However, if the organization does not have the resources, then they should not invest in IT. On the other hand, if they have the allocated resources, then it would be strategic to invest still more in IT to enable efficiency in other parts of the organizations.

A follow up question posed here was if organizations should put IT investments on hold during the downturn and he states that putting IT investments on hold is not easy as it sounds due to the other issues which it brings such as damaging the image on stakeholders. He further says that organizations do not want to put their IT investments on hold because it can be detrimental to the stakeholders investing in them but however, the organization needs to look closely at exactly what kind of IT investments is involved and prioritize it or not.
In this section, the empirical data derived from the qualitative interviews from the three respondents will be analyzed using the authors chosen frame of references.

The model above illustrates the factors that affected the decision making of Fagerhult before investing in their ERP system. It shows the internal and external environment categorized as strengths, weaknesses, opportunities and threats. By doing so, they will be able to have a holistic view about the determinants that can either enhance or inhibit the ERP adoption. In addition, these elements can assist an organization in identifying how an IT system such as ERP can reduce weaknesses in the organization and mitigate the potential threat.

As Kotler (1998) emphasizes the internal analysis of an organization strength and weaknesses is a way for creating strategies that they can exploit by highlighting certain issues that
might need to be corrected. In other words, this method acts as a guiding tool, which allows organizations in evaluating the factors affecting IT investment decision. This model was used by Fagerhult in identifying different internal factors that was categorized as both strengths and weaknesses. As revealed in (Figure 9), the weak factors were greater than the strengths but due to the fact that these strengths were valued more for the business strategy as a whole, it still lead to the ERP adoption. On the other hand, the weaknesses were factors highlighted in the internal environment and Fagerhult saw the opportunity to turn these factors into their advantage, by adopting ERP software. In terms of membership in an industrial group, an ERP system would facilitate the alignment between the different units, suppliers and thus increasing efficiency in the organization. Moreover, the ERP system would help in the seamless co-ordination and management of information sharing throughout the network chain. In terms of the level of diversification, the organization was growing rapidly and expanding internationally and the existing IT infrastructure did not support their business strategy and this was seen a weakness in the organization.

Another point of weakness was the technology factor in Fagerhult, their existing infrastructure and legacy systems was not aligned with their IT and business strategy, the CIO of the company saw an opportunity in adopting a new ERP system that will allow the organization to re-structure their business processes to be better aligned with their IT strategy. Including to this, the market area and human resources were seen as weaknesses to Fagerhult and it is worth mentioning that this factor will not only change by just implementing a new ERP system but efforts need to be in place such as educating/ training of staff members and constant monitoring of the legitimate markets.

In regards to the evaluation of the external factors, the economical and social factors were seen as opportunities for the organization to implement the ERP system. The production being moved to china brought a lot of benefits socially and economical in terms of the cost reduction and cost savings. On the other hand, technological and political were seen as threats for Fagerhult due to the different laws and regulations guiding different countries and the intense rivalry among their competitors in terms of the use of more advanced IT.

5.1 Internal Factors

5.1.1 Organizational Factors

The organizational factors affecting the decision making of ERP investments are categorized under several factors such as the size of the company, top management support and the culture of the organization. The empirical data collected from the corresponding organization shed into light the significance of these factors when investing in ERP investments. The CIO of Fagerhult, mentioned the importance of these factors by stating “the better the information we get, the better the decision we make”. From this statement, we could clearly see that organizations need to carefully study the environment which correlates with Saunders & Jones (1999) whereby they state that decision makers use the whole network of information sources as well as various Medias around the organization environment while embarking on making decision. The different information gathered from the surrounding enables the organization to indentify certain elements which could be used in helping those making strategic decisions.

The organizational factor is important to study because they determine if the organization could be disadvantaged by the size of the organization. Kimberly (1976) acknowledges this
by stating that a different approach should be applied on the industry the organization falls under. In that perspective, Fagerhult is a big size company and this was a plausible reason to why this factor affected their decision making in making ERP investments. Meaning by this, large companies are in need of a software system similar to an ERP system that could store all data in one place and serve as a support for the business processes across the value chain of the organization.

The culture of the organization to a great extent was seen as a crucial factor to why Fagerhult adopted their ERP system. In order for any IT investment whether ERP or a basic computer system, to be adopted, the culture of the organization has to be willing to accept the Information Technology system. The CIO emphasized that their organization had an “open” culture and employees were willing to ensure that the new ERP system being implemented was accepted. The CIO ensured that all the different departments from top management to the ground level had the same beliefs when it comes to the ERP adoption so as to ensure a positive outcome from the IT investment decision. According to Schniederjans and Hamaker (2004), they state that cultural aspects should be addressed because it promotes a high service level and loyalty. From this, we can draw the conclusion that the culture of the organization is utterly important to highlight when deciding to implement ERP software in order to outline the strengths and weaknesses. The culture factor in the company, as revealed in the case study with Fagerhult has the influence of promoting or hampering the thought of adopting ERP. The greater a company share common beliefs, have relationships built on trust and IT is well understood from the business side, the higher the probability of adopting ERP software.

According to Wang (2007), gaining top management support engage a mutual understanding of the potentiality and restraints of the adopted system, further on try to establish an overall understanding of the new ERP system to all the workers in order to communicate the overall IT strategy among all employees. Hellman mentioned that he presented a solid business case which was used to persuade and get top management on board with the IT investments. The business case was divided into two parts namely financial and technological.

In the financial aspect, he presented to the shareholders the positive outcomes, emphasizing the potential revenue that the new IT investment will generate. As for the technological part, he demonstrated how the new IT infrastructure would support and ameliorate their business processes and handle their international activities. Funding onto IT projects demands a dedicated and supportive top management board in order for the project to achieve the intended goal and, if there is lack of commitment from them, the IT project is very much predestined at the very start so organizations need to pay attention to this before investments.

### 5.1.2 Business Factors

The factors range from the Market area, where the organization should study its market complexity in terms of cooperation, whether nationally, locally or internationally. Factors in terms of legacy and cultural issues should be analyzed in order to be able to meet the market efficiently with the support of the new IT software. Hellman emphasized that extending their business internationally enhanced their IT investment decision towards the adoption of a new ERP system that could handle the different legacies in the different continents. As mentioned earlier the culture issue is also to be managed in terms of language, and the adoption of an ERP system will reduce these concerns and help Fagerhult Belysn-
ing communicate with the different offices without restraints related to communication issues.

The next factor which affected the adoption of an ERP system is the member of an industrial group. It was a strong and plausible reason for Fagerhult deciding on adopting an ERP system. The correspondent mentioned the fact that in order to pursue their new business strategy, they needed a system that could help them achieve this. As stated earlier, the business strategy involved them expanding globally which consequently leads to more collaborations between different groups (suppliers/customers). This factor clearly influences the decision making because if Fagerhult did not see the need for this, it could have been a reason for not adopting the new ERP system. With that being said, the presence of branch office is closely related to this because the latter focuses on managing the information flow in the organization. Hellman mentioned that information needed to be handled accordingly and with information coming from different locations, an ERP software was in need. The ERP system would enable them to collect all the data from the various departments into one place where it could be accessed when needed.

The level of diversification can be approached in terms of the product and market the organization is operating in. The more diversified the firm is, the higher demand for information processing in order to maintain an efficient capital market. The CIO explained that the situation of the organization on it being moving from a local exporting manufacturer to an international and global business organization demanded the organization to adapt fast in order to gain a competitive advantage. Therefore, their decision towards the adoption of an ERP system was influenced by the need for harmonized processes and information processing standards in the company.

To sum it up, these factors are important and influence the decision making of ERP investments. As noted earlier, Fagerhult adopted the ERP system because of the global challenges they were facing and as a way to address this issue; increased the likelihood of investing in an ERP system.

5.1.3 Competitive Advantage and Reducing Costs

As mentioned above, the different factors affecting ERP adoption can be structured under business and organizational factors. In order to enhance efficiency in a turbulent and fast changing organizational environment, there is a need for software that automates its business processes; enables information sharing across the whole organization and allows accessibility to real time information to all the branches and departments. In contrary to this, many authors argue that ERP software does not create a competitive advantage to a company, due to its availability to every organization in the market, and also due to the price decrease of this software making it possible for many companies willingness to adopt it. In fact, this statement is too general and does not grasp the reality of ERP software, it is true that companies can adopt the same ERP software from the same vendor, but in real life, the ERP system does not do the job itself, it is up to each company to customize its ERP and try to adapt to it in the best approach possible. It is not the matter of the same ERP, because companies are different (even if in the same business), they have different structures, different cultures, different Human Resources and different skills, and these could be the dividing line between them.

In Fagerhult, the factors affecting the adoption of the ERP software was more related to software automation and information sharing in Fagerhult’s different branches in the
world, making the supply chain between the production and the sales department faster and more efficient. Thus these factors are directly related to cost reduction in terms of personnel, and work time.

5.1.4 Human Resources

The ERP adoption intention model presented in the theoretical framework, outline the importance of the Human Resource factor in the adoption of ERP software. It deals with how the personnel in the company perceive the new software and how they decide to react to this change; Resistance or Acceptance? In the case study on Fagerhult, we tried to relate each of the factors affecting the attitude towards ERP adoption, in order to get a deeper understanding of these elements in reference to Hwang et al. (2008) in their work ‘The antecedents of ERP adoption’, where they presented the Integrated ERP adoption intention model, to understand the human behavior in a company when it comes to ERP adoption.

The perceived Strategic value deals with the person’s view on the opportunity of positive outcomes from the IT investment such as cost reduction, faster business processes and mainly customer satisfaction. This factor deals more with the top management level where decisions and perception towards the new adopted system is being analyzed in terms of strategic value. The CIO of Fagerhult was the one that presented this strategic value of the new ERP software to the top management level including shareholders, where he stressed the importance and the need of a new system that grants a sustainable strategic value throughout the organization as a whole. It is worth mentioning that, before Hellman took the position as a CIO in Fagerhult, such plans concerning the adoption of a new ERP system was not on the agenda. It is his view towards the strategic outcome from the new ERP that influenced the IT investment decision. In other words, a skilled CIO that sees and understands the criticality of an ERP system is a factor that affects the ERP adoption.

In addition, Organizational Readiness is tagged under the resources a company assesses. Resources in terms of skills and money are two important factors that affect the attitude toward ERP adoption. In other words, if a company can afford the adoption of an ERP system then it is more likely to adopt one due to the positive returns it can get from this adoption, also having the right expertise and the skilled personnel is crucial in order to carry out the implementation phase with the least risk of failure. For Fagerhult, capital resources was not a problem, it is financially stable and could afford the adoption. Meanwhile, due to fact that they outsourced the IT software, more professional expertise was guaranteed from the consultancy firm, thus gave the employee in Fagerhult more assistance in terms of technological help.

Furthermore, External pressure or Support encompasses the pressure a company gets from competition and dependency on other firms already using ERP. Organizations faced with this pressure feel the need to adopt an ERP system to stay in business or to sustain its competitive advantage. On what concerns the support element, it is what the company gets in terms of training maintenance and updating when outsourcing. In other words the higher the pressure and the support are the more positive reaction the organization will have towards ERP adoption. Fagerhult was faced with both pressure and support, pressure from its rivals that have adopted ERP system and also pressure on its suppliers. They needed software that could enhance communication with the different suppliers. Including to this during outsourcing, they got the support needed in terms of training and maintenance. Thus all these factors had a positive impact on the adoption of ERP software.
Moreover, the perceived usefulness of new software is the degree the new software is perceived by the organization as a technology that will enhance the job performance. In a matter of fact, when deciding about an adoption of a new ERP system, the perceived usefulness is only seen by the top management. It is not guaranteed that the employees will have the same view on the job enhancement with the new IT. In Fagerhult, top management had a vision and objectives that the new software will improve their business processes, but due to the culture in the company, more than half of the personnel being over 50 years old, unsecure and afraid of changes, the perceived usefulness were not grasped from the personnel. In addition, the Perceived Ease of Use was a challenge in Fagerhult, while implementing the new software, the old system was still up and running, employees felt more secure using the old system instead of the new one. Managing the personnel in the organization is a must in order to get their acceptance and commitment so they get the best outcome from the ERP adoption.

These factors, presented above have a major role and effect on IT investment decision making, the more positive these factors are the more a company is likely to adopt a new ERP system. Furthermore, it is important to mention, that these factors measures only the attitude of Top Management attitude towards ERP adoption. Their attitude can be divided into two categories, cognitive and affective. The affective attitude, deals with how much the person likes the object at hand whether the cognitive deals more with the evaluation of the object in terms of efficiency and effectiveness. The positive outcomes that an ERP offers was one of the major factors that affected the attitude of the top management in Fagerhult, the perceived strategic value of the software gave a positive influence on the attitude towards a new IT software thus influenced the adoption. Even though, the perceived ease of use and the perceived usefulness were disablers for the adoption, Fagerhult dealt with that through training and meeting sessions in order to get the employees’ trust and commitment.

5.1.5 Technological Factors

The Technological factor is viewed by many as one of the major reasons for adopting systems such as the ERP software. Great thinkers in the field of business and IT argue that the technological factor could be seen as the main reason why organizations spend huge sums of money on systems with such a high price tag. This corresponds to what the CIO of Fagerhult said stating that the current IT infrastructure in their organization did not support their business strategy and the only means of achieving a suitable fit between both was the need of an appropriate ERP system. He went on further stating that the IT architecture of the organization was built on old legacy systems which made it impossible for them to pursue their business goals. Moreover, many studies highlight the fact that the technological factor is a major reason that affects their decision making in making ERP investments.

As Gable and Steward (1999) mention, the factors that affect the decision of ERP system is classified into three categories namely; the need to improve the performance of ongoing operations, the need to integrate data and systems and the need to avoid a competitive disadvantage.

These factors were visible in the organization Fagerhult in the sense that their outdated legacy systems were not working to its optimal at the company thus making it a plausible reason for them to adopt the ERP system. Firstly, the fact that the current operation at the organization was very inefficient and ineffective and consequently incurring more cost for the organization.
The latter being the need to integrate data and systems together. As mentioned by the CIO, there is a need for organizations to get the right data at the right time in the right place to ensure that justified decisions are made. The legacy systems at the organization were old and could not support the exchange of data which was detrimental in the business operations. In addition, the legacy systems could not communicate with each another which made it hard for them to exchange data. The need for an ERP system was inevitable and propelled their decision making in choosing the ERP system (Microsoft Dynamics). This ERP system would allow them to share information seamless at real time within their whole supply chain.

5.2 External Factors

5.2.1 Political Factor
The political issue is very important when deciding to adopt a new ERP system. Fagerhult has made a lot of acquisitions in different countries in the world (mainly Europe) and there was a need to extend their business into the Chinese market. Many argue that organizations need to look at these political issues before entering a new market and this should be studied while drawing up a strategic plan. However, the challenge posed here is not to enter a new market but how an organization can handle this problem in order to allow the smooth transition into the new market.

This was a challenge for Fagerhult when deciding to go global. Fagerhult looked at different policies in these countries because of differences in the laws and regulations in the way of conducting business. These factors pushed Fagerhult positively towards IT investments due to the fact that software’s like ERP has the capability to perform such complex tasks such as changes in tax regulations and currency rates.

5.2.2 Economical Factor
The factors affecting the IT decision making of IT investments is quite exhaustive and poses challenges to every organization. Fagerhult had two business objectives; namely to create business value by going globally and reduce costs. The economical factor in the external environment influenced the decision making of adopting the ERP system. Firstly they closed their manufacturing units in Sweden and transferred it to China and this move was seen strategic because moving production to china would mean cheaper production due to the lower cost of labor.

According to Schniederjans et al.(2004), organizations need to study how much competitors are investing on IT in order to not to be disadvantaged by them and this was be another push factor for Fagerhult adopting the ERP system due to the fact that they needed to compete with their rivalries.

5.2.3 Social Factors
The social factor helped in the decision making of the ERP system due a number of reasons. The current goal of the organization was to expand into new markets, primarily China and as mentioned by the CIO, Fagerhult stated they started their production in china due to the low cost of the workforce. As a measure to maintain a governed business processes a need for ERP software seemed appropriate and pushed them into adoption.
5.2.4 Technological Factor

The adoption of an ERP system in organizations has many positive outcomes in terms of cost reduction, increase productivity and enhance business processes (Campbell & Craig, 2005). In this perspective we can relate this situation to Fagerhult in terms of their business objectives and its influence on IT adoption. The company was expanding and getting more complex and as mentioned by Hellman there was a need for software that could support their business strategy and enhance business efficiency. The external technological factor differed from the internal one because it focused mainly on what competitors had as an innovative technology and how Fagerhult intends on positioning themselves ahead of their rivals in terms of the technology adoption.

5.2.5 The effect of the current Financial Crisis on IT investments

Environment shift such as the recent financial crisis has a great impact in the decision making of ERP investment, and any type of investments in general. One of the greatest challenges in making IT related investments is to question if the investment is worth the risk taking due to fact that every IT investment is prone to failure. Changes in the external environment such as the financial crisis makes the decision making of ERP investments even harder because of the number tag attached to such systems. Apart from this systems being very expensive, the systems alone are very complex in nature so endeavors to ensure that the system achieves its goal is put on top Managers priority. This view corresponds also to the three parties (Hellman, Ekelund & Hugosson) involved in this study in order to answer our research sub-question, the effect of the financial crisis on IT investment decisions.

All three parties state that the financial crisis has affected various organizations in the way they make ERP investments. More particularly, Ekelund, stated that organizations that are being mostly affected by the financial crisis are the ones that fall under the non-public sector and the industrial segment. A possible explanation to this will be the educational sector that has not been affected by the financial crisis, due to the lack of job offers which propels people to pursue a degree, therefore this sector is not being affected by the economical downturn. One thing that all three correspondents agree to is the fact that IT investments such as ERP investments are considered IT cost investments during this downturn times. They all view ERP investments as cost related investments and hold strongly to the idea that organizations need to be careful with their IT spending during this times. However, one thing revealed in this study is that both the IT consultant and Expert view that organizations should proceed with their IT investments if they have the resources for it because of two major reasons; firstly they need to be able to meet the market after the crisis is over and secondly, they need to continue making investments which ameliorates their business processes. On the other hand, Hugosson also acknowledges the fact that in reality companies know that they should invest but decision making during economic downturn is a quite a daunting task. The CIO of Fagerhult follows this statement above by postponing all IT investments till the global economy is out of the stormy weather. Many may argue that this move is strategic in the sense that the organization does not put their investments in jeopardy or simply lose the benefits from their IT investments. On the other hand, Microsoft (2009) states that studies shows that in order for an organization to be capable of facing the market and increase in profitability, they need to fully understand the significance of IT and making these IT investments now will help them gain these benefits.
In relation to this there has been a steady decline in sales of ERP software and application as revealed by the IT consultant firm. The views goes against what was said since one party strongly feels that organization should continue investing in ERP investments but as the figures reveal, investments in ERP systems and IT has actually reduced.

In regards to what organizations should do in terms of short term and long strategies of ERP investments. Two of the parties (Fagerhult and Sogeti) voiced the same opinion stating that a short strategy for organization is to withhold all their IT investments and wait for the crisis to be over while a long term strategy is to proceed in investing so as to ameliorate their business processes. In relation to this, Hugosson feels that this Long term strategy is the key for organizations to bridge the persistent alignment problem in organizations. Ekelund strongly feel that as for a long term strategy, organizations should continue investing in areas where their current IT support is viewed ad-hoc and inefficient (in support to both Fagerhult and Sogeti).

Ekelund states that short term strategies should be focused on IT investments that yield the return on value quicker which holds strongly to trends and literature. For decades, organizations have always invested in IT which they see the return of investment on a short period of time (neglecting other issues such as customers’ satisfaction) and given the financial situation, this seems more credible due to uncertainty attached with IT investments. According to Cook et.al (2007) in his book, “making decisions in complex environment”, decisions are made based on three assumptions, and The Third assumption follows a rationalized approach of selection. The choice is made through a methodology whereby different alternatives are being attributed by different values and in the end the highest alternative value is chosen (Cook et al. 2007). In other words, companies when placed in downturn economical times, decision making towards the adoption of an ERP software get more complex, and companies will invest only if they see visible value outcomes from the System. Therefore, this assumption can be seen as to the reason behind organizations making IT investments only based on getting the return of investments as soon as possible.

A popular view among literature and the three parties is that the economic crisis is going to end eventually and organizations need to strategically plan ahead with their IT investments in order not to be disadvantaged with the fierce market when the economy has re-stabilized again. All parties abreast to the developing financial crisis and advices that organizations on the journey of making IT investments should continue if the financial resources permit them to. The CIO of Fagerhult lays down three guiding principles on the how organizations should prioritize their IT investments. He states that organizations can put on hold certain investments while others need to be proceeding in regardless of the financial crisis. The three types of investments are transitions, optimize and technical. The transition investments demands change, and the CIO states that these investments should be put on hold due to the current financial instability. The optimized investments deals with present investments in order to finalize a started project should proceed in regardless of the financial crisis. The technical investments should be re-invested.

With that being said, one of the major issues when it comes to IT investments during hard times is that all IT related projects are viewed as cost. When IT investments are viewed as cost enabled and not IT enabled, it raises concerns on whether they should continue investing or not which gives credibility to what the three parties said. Even though, literature argues that organizations should continue investing in IT investments regardless of the financial crisis, the question most organizations should ponder over is firstly the obvious which is, do we have the resources available? And if that is not a constraint, the next issue is how we can get the optimal value from our IT investments?
6 Conclusion

Concluding remarks from the thesis will be divided into two sections. The first section answers the first research question on the method of evaluating the factors affecting IT investment decisions and latter, deals with the financial crisis and its influence on IT investment decisions.

How to evaluate the factors affecting IT investment decision making?

Based on the analysis of our findings, we have drawn the following conclusions.

Firstly, the decision making/planning stage could be seen as the backbone for the whole IT investment process. This stage could be viewed as a guiding tool for making right decisions in IT investments.

This paper outlined all the potential factors that affect IT investment decision making and we found that some factors are more critical than others due to their importance and complexity to measure. As revealed from the CIO at Fagerhult, the Human Resource and the Organizational (top management support, culture) factors are the two main enablers of their ERP adoption. Moreover, the CIO stressed that their organization was going global and an IT solution supporting their business processes was needed. Lastly, he mentioned that regardless of all internal/external factors that may affect the ERP adoption, the most important thing is that the decision making should be aligned with the business objectives and overall vision of the organization.

The evaluation of the internal and external factors affecting the decision making was analyzed with the SWOT analysis. Each potential factor was categorized under internal (strengths, weakness) external (opportunities and threats) and then, assisted in reducing the weaknesses in the organization and mitigating the potential threat. Moreover, this framework helps organizations in identifying how an IT system such as ERP can reduce the weak factors in the organization and mitigate the potential threat faced by the organization.

How the current financial crisis has influenced IT investment decisions?

The effect of the financial crisis has taken the world by storm and is plaguing a vast majority of organizations. The uncertainties and complexities attached to it has toiled many IT managers, executives into a state of “defense”, which has lead them into doing two things; putting all investments on hold or proceeding with their Investments, only if the resources allows them which holds true to the views by the respondents. IT investments have been labeled with a bad connotation and are now seen as a cost and nothing else. Organizations who continue investing in IT use one main criterion as an incentive which is fast returns of investments. If the IT investments cannot bring back quick wins in a short time frame, it is not even looked upon by Top managers or board of directors which could be a reason to the decline of sales from IT consultant firms.

Literature and experts advices organizations to not stop making investments in IT but on the contrary, organizations have cut down their IT investments due to the fact that they are not willing to put their IT investments in the red zone. There has brought about a dilemma which organizations are faced and challenged with because the “wise” advices on carrying
on but they are not abiding to this. One thing that is certain is even though organizations do not adhere to this; they need to be utterly certain that they are looking at trends in the market so as not to be disadvantaged after the economy has re-stabilized. Nevertheless, if they have the financial resources and skilled human resources, they need to capitalize on these assets and strategically plan for the future. An advice for organizations is despite the financial crisis, the question they ought to ponder over is firstly the obvious which is, do we have the available resources? And if that is not a constraint, the next issue is how we can get the optimal value from our IT investments and Hugosson laid it out clearly; organizations need to plan ahead and continue making IT investments that aims at creating a suitable balance/ fit or harmonization between their IT and business strategies.
7 Closing discussion

This part will focus on few reflections in our thesis, and few recommendations that would have given new insights into our research study.

7.1 Reflections

As an overall perspective from our research, we think that we accomplished our purpose within this research study. Nevertheless, we think we could have taken a different method on the factors affecting IT investment decision making. Firstly, we could have studied more than one company in order to get a better and enriched view on the different factors that affects different companies, because we are aware that factors differ from company to another, therefore we believe that capturing this differences would have increased the credibility of our work.

Secondly, the information gathered from Fagerhult, would have been more concrete if we would have conducted our interview with both the CIO and a representative of the consultancy firm that was involved in studying the internal/external environment of the organization. Getting both sides of the coin on the significance of the making/planning stage would have given us a deeper understanding and more substantial data.

On what concerns the study of the financial crisis and its effect on IT investment, the study we conducted from the three correspondent, Hellman, Hugosson and Ekelund, would have been more interesting if the interview with the three actors was done in a form of a debate, where all actors will be present at the same time and from this we can draw even better conclusions.

7.2 Further Research

This paper is based on a case study from three different actors’ point of view. Fagerhult Belysning has been studied in order to evaluate the factors affecting the IT investment decision making. Further research could be to apply and study these factors on more companies and delineate a rigid framework that companies can employ in order to make the right decision towards IT investments.

Since this paper focuses on the phase before the implementation of ERP software, a further study could be to investigate different companies’ way of conducting the pre-study (internal and external factors) and its effect on the organization after implementation. Thereafter, outline the cons and pros of each method in order to help organizations choose the most efficient method.

The authors of this paper studied the effect of the financial crisis on IT investment decision making and how companies should react in downturn times. A further research could also be, to study and analyze the effect of this investment on companies that have done an IT investment from 2007 when the financial crisis is over. This will justify or disclaim the
findings of this thesis and also help companies in the future when faced with complex and unstable environment in order to place them on the safe zone in making IT investments.

7.3 Acknowledgement

We would like to thank everybody that contributed to our thesis in one way or the other. Our sincere thanks and gratitude to our supervisor Professor Jörgen Lindh, who was genuinely interested in our work, guided and inspired us to achieve this research. Special thanks to Assistant Professor Ulf Seigerroth who gave us new insights and contributed to make this paper possible.
References


Appendices

Appendix 1: Fagerhult

Introduction:
1. Can you describe the purpose of Fagerhult as an organization?
2. How many employees does Fagerhult have?
3. Can you tell us a brief history of Fagerhult?
4. What is your role in the organization?
5. What are your main duties?

Decision Making:
6. What role did you have in influencing the decision making process? (Where you a decision maker or information provider)?
7. Looking at the strategic planning stage on making IT investments, how did Fagerhult embark on making their decision of adopting an ERP?
8. What is the significance of looking into the internal and external factors before choosing the ERP system?

Internal Factors
9. Referring to the literature, how did these internal factors affect IT investment decision in Fagerhult:
   ➢ Organizational Factors:
     Size of the company
     Culture
     Business Factors
   ➢ Business Factors:
     The Market area
     The membership in an industrial group
     The presence of branch offices
     The level of diversification
   ➢ Competitive advantage & Reducing Cost
   ➢ Human Resources
   ➢ Technological Factors
10. What was the most critical factor that influenced the IT investment decision in Fagerhult? And on a scale from 1-5 which factor was seen as most and less significant?

External Factors
11. Referring to the literature, how did these external factors affect IT investment decision in Fagerhult:
    Political:
    Economical: Financial Crisis (Complexity and Uncertainty)
    Social:
    Technological:
12. What was the most critical factor that influenced the IT investment decision?
Evaluation Phase

13. How were these factors evaluated? And how it affected the outcomes?
14. What methods or frameworks were used in the evaluation of these factors?

Study of the Economic crisis effect on the decision making of ERP investments

15. How does the organization cope with the effects of the financial crisis in terms of IT investments, also ERP investments?
16. What implications does the financial crisis have on the decision making process of investing in ERP systems in comparison to the normal ways of making IT investments?

17. What short-term actions are Fagerhult likely to take with their investment strategies?
18. What long-term actions are Fagerhult likely to take with their investment strategies?
19. What recommendations would you give to organizations as they embark on investing in ERP systems?
Appendix 2: Sogeti

Introduction:
1. Can you describe the purpose of Sogeti as an organization?
2. How many employees does Sogeti have?
3. Can you tell us a brief history of Sogeti?
4. What is your role in the organization?
5. What are your main duties?

Study of the Economic crisis effect in decision making of ERP investments: IT consultant

6. How has the recent financial crisis affected the decision making of IT investments (ERP systems in particular)?
7. What is the difference in the sales figures from before the financial crisis and as of present?
8. What implications will the financial crisis have on the decision making of investing in ERP systems?
9. Forecasting to the end of 2009 and into 2010, what are the most pressing concerns facing the investments in ERP systems in organizations?
10. What short-term actions are organizations likely to take with their investment strategies given the financial situation?
11. What long-term actions are organizations likely to take with their investment strategies given the financial situation?
12. What recommendations would you give to organizations as they embark on investing in ERP systems? Should they proceed on IT investments or should they wait till the crisis is over? Why?
Appendix 3: Expert

Introduction:

1. What is your area of expertise?
2. How many years of experience do you have in this field?

Study of the Economic crisis effect in decision making of ERP investments

3. What is your view on how organizations should react to the financial crisis when it comes to investments?
4. Forecasting to the end of 2009 and into 2010, what are the most pressing concerns facing the investments in ERP systems in organizations?
5. What short-term actions are organizations likely to take with their investment strategies given the financial situation?
6. What long-term actions are organizations likely to take with their investment strategies given the financial situation?
7. What recommendations would you give to organizations as they embark on investing in ERP systems? Should they proceed on IT investments or should they wait till the crisis is over? Why?
8. Given the response from the IT consultant in regards to the above question? Do you agree or disagree? Why?