Master Thesis in Business Technology

Benefits management

- How to realize the benefits of IS/IT investments

Peter Sakar and Claes Widestadh
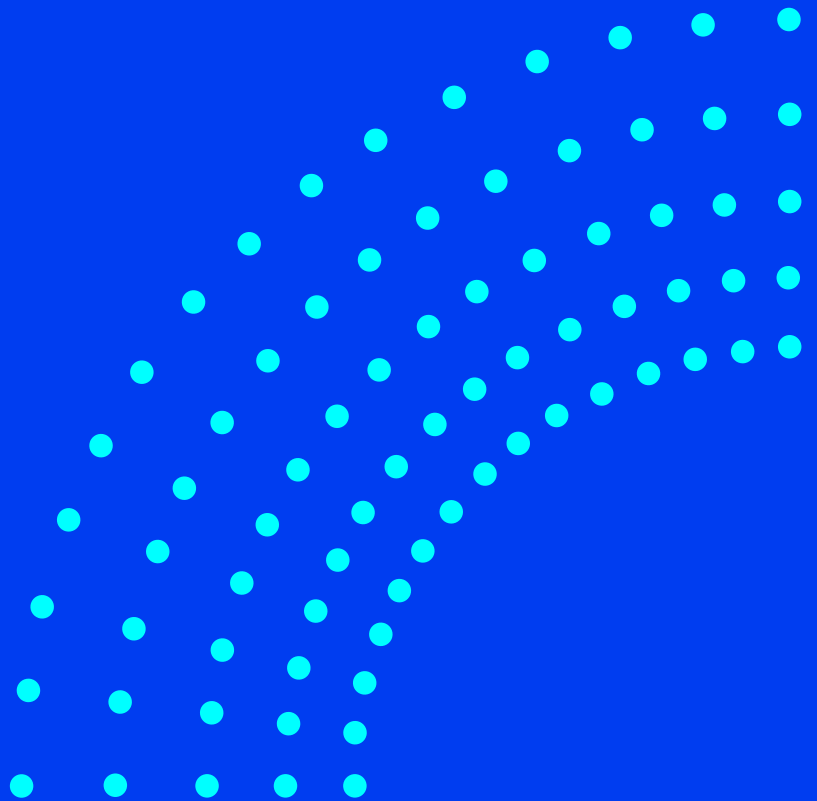
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Department of Informatics

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ABSTRACT
This master thesis has evolved from the productivity paradox and the "silver bullet thinking". The meaning of the productivity paradox is that the investments in IT are growing extensively, but there is doubt that the benefits of IS/IT investments might not be as high as expected. Silver bullet thinking means that when it comes to IT we still act if, once determined, the benefits associated with an investment will automatically happen. Therefore, this thesis aims to look at the differences between the literature and practice and to create a framework of how the benefits of an IS/IT investment can be realized. We have done a literature study as well as an empirical study including 16 interviews at Volvo IT. According to the purpose this thesis focuses on the benefits management process, which stages the benefits management process should include and issues to consider. The result illuminates important aspects of evaluation of benefits of IS/IT investments and a framework for benefits management process is presented.

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ABSTRAKT

Den här magisteruppsatsen har sitt ursprung i produktivitetsparadoxen och "silver bullet thinking". Med produktivitetsparadoxen menas att investeringar i IT växer i omfattning, men det finns en ovisshet om nyttan av IS/IT investeringar är lika hög som förväntat. Med "silver bullet thinking" menas att när det kommer till IT så beter vi oss fortfarande som om nyttan associerad med en investering automatiskt kommer att infinna sig. Därför ämnar den här uppsatsen att behandla skillnaderna mellan litteraturen och praktiken och skapa ett ramverk kring hur nyttan av en IS/IT investering kan realiseras. Vi har gjort en litteratur genomgång och dessutom en empirisk studie omfattande 16 intervjuer på Volvo IT. I enlighet med syftet fokuserar uppsatsen på benefits management processen, vilka steg som borde ingå och frågor att beakta. Resultatet belyser viktiga aspekter av evaluering av nyttan av IS/IT investeringar och ett ramverk för en benefits management process presenteras.

Rapporten är skriven på engelska.

Nyckelord: business value, benefits management, benefits realization, evaluation, IS/IT investment.

Preface

A long journey, with many twists and turns, has now come to an end. This has been a journey of hard work, but also with many long and instructive discussions and interesting interviews.

We would like to thank everyone who has been involved and supported us in the writing of our master thesis:

- Ingrid Rodesjö, our industrial coach at Volvo IT, for her time, guidance and all good advises. She have enlightened the "real-world" problems within benefits management and helped us with generously sharing her experience.

- Our supervisor Elisabeth Frisk, IT-university of Gothenburg, for guidance and advises through the process.

- Finally, we would like to show appreciation to our interviewees for their time. Without their participation we would never have been able to get the "real-world" view of our problem area.

Thanks again for all your help!

Gothenburg, 22nd of February, 2005
Peter Sakar and Claes Widestadh

Göteborg, 2005

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDIX

1 Introduction

This chapter gives an introduction to this master thesis. It intends to give necessary background information and defines our purpose and focal question. Further we give a description of the disposition of the thesis.

1.1 Historical background

Computers were initially perceived to deliver a relatively circumscribed set of benefits or meet limited business objectives. During the 1950s, 1960s and into the 1970s these benefits could be summarized as the ability to handle facts and figures more speedily, more accurately and with lower cost (Remenyi & Sherwood-Smith, 1999). This correspondence to Pearlson (2001) that IS strategy has, from 1960s to 1990s, been driven by internal organizational needs; from lowering existing transaction costs to redesign business processes. Wahlström (2003) argues that now, in the 21st century, everything is about the value of the investments, everything shall pay off and everything shall be able to measure. The fact that the investments in information systems (IS) and information technology (IT) should be measurable leads us to our problem area.

1.2 Problem area

There are three facts that lead us to the question that this thesis revolves around. First the two problems; the "productivity paradox" and "silver bullet thinking", that showed that there are challenges within the area of measuring the value of IS/IT investments.

Second, Truax (1997), see Lin and Pervan (2001), shows that the reason of this might be that there has been a paradigm shift, something that has created a need for a more proactive management of benefits.

Third, the literature shows that very few companies have a process for proactively manage their benefits. (Ashurst & Doherty, 2003)

1.2.1 The productivity paradox and silver bullet thinking

Despite the massive investments in IT, the IT impact on productivity and business performance continues to be questioned. Business managers worry about the fact that the benefits of IS/IT investments might not be as high as expected. This phenomenon is often called the **productivity paradox** or the IT Black Hole (van Grembergen, 2001; Brynjolfsson & Renkema, 1998). Many organizations find themselves in a catch-22 situation. For competitive reasons they cannot afford not to invest in IS/IT, but economically they cannot find sufficient justification. The evaluation practice today cannot provide enough underpinning, for making the investment (Willcocks & Lester, 1997). Willcocks and Lester (1996) reviewed the IT productivity paradox debate and found that an important part, but by no means all, of the uncertainty about the IT pay-off relates to weaknesses in measurement and evaluation practice.

Definition of the productivity paradox (Hochstrasser, 1993, see Lin & Pervan, 2001):

> *"The productivity is static while the IS/IT expenditures are rising."*

Thorp (2001) says that we still exhibit "**silver bullet thinking**" when it comes to IT. We act as if, once determined, the benefits associated with an investment will automatically happen. However, simply identifying and estimating benefits will not necessarily make them happen. Thorp (2001) continues, paying attention to **how** benefits happen is as important, if not more important, than focusing on **what** the expected benefits are. Too often, the **how** is taken for granted. According to Thorp (2001) should not only the implementation process be managed, the benefits management process should also be proactively managed.

These two problems show a need for a better management of the benefits that IS/IT investments are to generate.

1.2.2 A change in the view of benefits

According to Truax (1997), see Lin and Pervan (2001), there has been a paradigm shift in the view of benefits and it is therefore needed to change the management from passively manage the benefits to a proactive management of benefits, see Table 1.

Paradigm Shift for Benefits Realization (Truax, 1997)	
Traditional Benefits Realization Principles	**New Benefits Realization Principles**
Benefits are stable over time.	The potential benefits from an investment change over time.
The investment determines the nature and scope of the benefits.	The organization and its business context determine the benefits.
Financial returns represent the most valid justification for an investment.	All the outcomes of an investment represent potential sources of value.
It is sufficient to manage the investment to generate the benefits.	The organization must be proactive in realizing benefits.

Table 1 *Paradigm shift for benefits realization, Truax (1997) see Lin and Pervan (2001)*

1.2.3 Little work done in today's companies

- Ashurst and Doherty (2003) found in their study that the majority of organizations and projects adopted the traditional measures of project success, namely delivery on time and on budget, and there was little evidence of any explicit focus on benefits delivery.

- According to Ward, Taylor and Bond (1995), see Bennington and Baccarini (2004), IT is not delivering business benefits because only 10% of the organizations have a process for managing the benefits of IT projects.

- Kumar (1990) shows that only 30 % of the organizations realize post evaluation on a majority (75 % or more) of their information systems. He

means that a post evaluation is only carried through on a fraction of developed systems.

- According to Bennington and Baccarini (2004) 76% of organizations believe that there is significant scope for improvement in the management of IT project benefits.

There are some challenges in the benefits management area and this together with the paradigm shift show that there is a need for further work in this area. As Ashurst and Doherty (2003) say there is a little focus on benefits delivery, and very few companies have a process to realize those benefits (Ward, Taylor & Bond, 1995, see Bennington & Baccarini, 2004) but a majority of the companies believes that there can be improvement in this area (Bennington & Baccarini, 2004). This is something that led us to our purpose and our main question.

1.3 Purpose and main question

A great deal of writers have discussed **what** needs to be done to realize the value of IS/IT investments, but it is very few that focus on **how** this should be done. It is our intention to give a proposition of **how** the benefits can be managed through the different stages in the benefits management process.

Frisk and Plantén (2004) have in their paper "Evaluating IT-investments: Learning from the Past" made a review of 44 papers and found that only one fourth of those focused on the whole process which they express as remarkable since evaluation of IT after all is a procedural activity.

The purpose of this thesis is to investigate how the literature handles IS/IT investments from a benefits management point of view and to make a comparison between the literature and how the benefits from IS/IT investments are handled at Volvo IT.

The main question of this thesis work is as follows:

> *"How should the benefits management process be designed to realize the benefits of IS/IT investments?"*

To be able to answer the main question and to illuminate our focus within the research question, five sub questions were identified:

- What is business benefit?
- Which stages should a benefits management process contain?
- What should be considered in the evaluation of benefits?
- When should the evaluation be performed?
- Who should have the responsibility for realizing the benefits?

1.4 Delimitation

Our main scoop was to find models to evaluate benefits but we narrowed the scoop to look at the process of how to evaluate benefits. This thesis focuses on the literature presented in our theoretical framework, which is delimitation in itself as there are a larger number of theories and approaches of benefits management.

Our procedural approach to IS/IT investment evaluation have made it impossible to take a deep look into every little aspect but to be able to realize the benefits of IS/IT investments we can not omit any part of the evaluation process.

1.5 Central definitions

There are a number of recurrent definitions in this thesis which can be seen to be central for the comprehensive understanding of the content. In the literature and within different types of businesses these definitions can have different meanings. This is why we will give our description and view of these central definitions:

Benefits management

In order to achieve and maximize the expected benefits from IS/IT investments, some researchers have come up with ways of evaluating and realizing the IS/IT benefits, Lin and Pervan (2001) call this benefits management.

Benefits management is often defined as *"the process of organizing and managing such that potential benefits arising from the use of IS/IT are actually realized."* (Ward & Griffiths, 1996)

This process contains identification of potential benefits, their planning, modeling and tracking, the assignment of responsibilities and authorities and their actual realization (OGC, Office of Government Commerce, 2004).

In this thesis, on the basis of what Lin and Pervan (2001), Ward and Griffiths (1996) and OGC (2004) say, we have defined benefits management as:

"Benefits management is the approach of how to manage the benefits evaluation to realize the benefits of IS/IT investments."

Benefits management process

This is the process that evolves from benefits management. Many writers use the expressions "Benefits management process" and "Benefits realization process" for the same "process" and meaning. We have chosen to call it the "Benefits management process" and this is the expression we are using in this thesis.

Benefits realization

Similar to benefits management but with the focus of realizing instead of managing. The essence of benefits realization is *"not to make good forecasts but to make them come true ... and IS/IT on its own does not deliver benefits."*

(Ward et al., 1996, pp. 215, see Lin & Pervan, 2001 pp. 16)

Business benefits

Financial and non-financial impacts together determine the (*business*) *value* of an information system. *Benefits* refer to all positive impacts of an IS/IT investment and *sacrifices* to all negative impacts. (Berghout & Renkema, 2001)

A benefit *"is an outcome whose nature and value are considered advantageous by an organization."*

(Thorp, 1998, see Bennington & Baccarini, 2004)

Business value

IS business value is *"the sustainable value added to the business by IS, either collectively or by individual systems, considered from an organizational perspective, relative to the resource expenditure required."*

(Cronk & Fitzgerald, 1999)

IS/IT investment evaluation

"Taking a management perspective, evaluation is about establishing by quantitative and/or qualitative means the worth of IS/IT to the organization."

(Willcocks & Lester, 1996)

"…the weighing up process to rationally assess the value of any acquisition of software or hardware which is expected to improve the business value of an organization's information systems."

(Lin & Pervan, 2001)

1.6 Disposition

Our thesis consists of the following chapters illustrated in Figure 1. The lines indicate the direction in which the information goes. The numbered circles are the chapters in this thesis. The sequence of the chapters is described below:

1 Introduction

2 Methodology
- Scientific theory
- Course of action

3 Theory
- IS/IT investment life-cycle
- Evaluation IS/IT investments
- Benefits management
- Benefits management process
- Theoretical summery

5 Discussion and Analysis
- Introduction
- Theoretical discussion
- Sub questions
- Main question
- Discussion summery
- Continuous research

6 Conclusions

4 Empirical study
- Structure and goals of Volvo IT
- Models and Methods at Volvo IT
- Perceptions of how benefits are managed at Volvo IT (Research)

We begin this thesis by introducing the problem area which this thesis has evolved from **chapter 1**. The methodology **(chapter 2)** presents the background to our scientific choices of method and our course of action.

Figure 1 Disposition of the thesis

The theoretical **(chapter 3)** is divided into three sections; first IS/IT investments with IS/IT investment evaluation and IS/IT investment life-cycle. After this follows a section with benefits management, that introduces the subject, and continues with describing the benefits management process. The benefits management process is divided into five stages, those five stages are followed throughout this chapter. The third section summarizes the models that have been used in the benefits management process.

The empirical study **(chapter 4)** begins with an introduction of Volvo IT and continues with the models and methods used at Volvo IT. Thereafter we present the perception from the 16 interviews that were conducted at Volvo IT.

In **chapter 5**, discussion and analysis, we compare the theory with our empirical findings from Volvo IT. We start with mapping the benefits management process to the IS/IT investment life-cycle. Thereafter we discuss the sub questions which lead us to our main question that is discussed on the basis of the stages in the benefits management process. In **chapter 6**, conclusions, we present the answer to our main question and the findings from this thesis are presented.

2 Methodology

In this chapter we give a short description of scientific methods and approaches. We will give cause for which method and approach we have chosen. Further we describe the course of action and realization of our study.

2.1 Scientific theory

When to choose a scientific research approach Patel and Davidson (1994) state that it is very important to present which methods that have been used and which point of view the writers have used as their standpoint. This is important so the reader knows what to expect from the different interpretations, validity and generalizations that the writers have done.

Within the scientific theory there are two different methodological approaches; *positivism* and *phenomenology*. The **positivistic** view has according to Patel and Davidson (1994) two main sources for knowledge, the things that we can observe with our senses and what we can reason with our logic. It is important to make a difference between belief and knowledge, and only draw conclusions from information that is secure, exact and clear. The scientist should according to the positivistic approach focus on facts and search for causal connections and basic laws.

The aim of **phenomenology** is, according to Esterby-Smith et al. (1991), to study human phenomena without considering questions of their causes, their objective reality, or even their appearances. This means that it is not possible to separate the one who observe from the observation and that the study, whether we like it or not, is going to be flourished by our expectations and previous experiences. (Esterby-Smith et al., 1991)

2.1.1 Quantitative and qualitative method

A distinction is often made between two different methodical courses of action. These two methodical procedures are called quantitative and qualitative method. *Qualitative* research is distinguished from *quantitative* research in that quantitative research is concerned with frequency while qualitative research is concerned with abstract characteristics of events. (Backman, 1998)

Quantitative methods are, in contrast to qualitative methods, more formalized and structured. Examples of quantitative methods are experiments, tests and questionnaires, and they often result in numeric calculations (Backman, 1998).The advantage is according to Easterby-Smith et al. (1991) that they are economic and not so time consuming. The disadvantage is that they are inflexible and do not contribute to a processes or significations that people put on actions.

Qualitative researchers maintain that many natural properties cannot be expressed in quantitative terms; they will lose their reality if expressed simply in quantitative terms

of frequency. The advantage of a qualitative method is according to Backman (1998) that it results in a deep understanding of the situation and contributes to develop new theories. The disadvantage is that it is time consuming and it can be difficult to analyze and understand the data that has been collected. (Easterby-Smith et al., 1991)

2.1.2 Inductive and deductive approach

Researchers often use the word research approach when it comes to tacking a problem area. Based on this fact it is possible to distinguish which type of research that is ought to be done. Backman (1998) means that it in the field of science is mainly used two different strategies to reach a conclusion, *inductive* and *deductive*. The inductive way of gathering information starts with gathering the empirical data to base the conclusions on. The deductive approach takes a standpoint in general principles in the theory to make more specific conclusions of single events in the empiric. (Backman, 1998; Wiederheim-Paul & Eriksson, 1999)

2.1.3 Our approach to the scientific theory

The phenomenological approach has been followed in this thesis since the purpose has been to create understanding throughout interpretation of the theory and the fact that it is impossible to separate the observer from the observation. We have gathered knowledge from persons with great experience within our problem domain. We are aware of that the gathered knowledge is flourished by our own interpretations and experiences but we have tried to stay as objective as possible.

Our main domain is benefits management which is a complex area that is dependent of its context. Since the purpose of the qualitative method is to seek a deep knowledge, where the understanding of the totality is in the centre, we felt that this was an approach that suited us very well.

This thesis has used a deductive approach where we have made an empirical expedition with the theory as our base. In the analysis the empirical reality is tested against the "facts" that are stated in the theory and our thoughts and findings are illuminated.
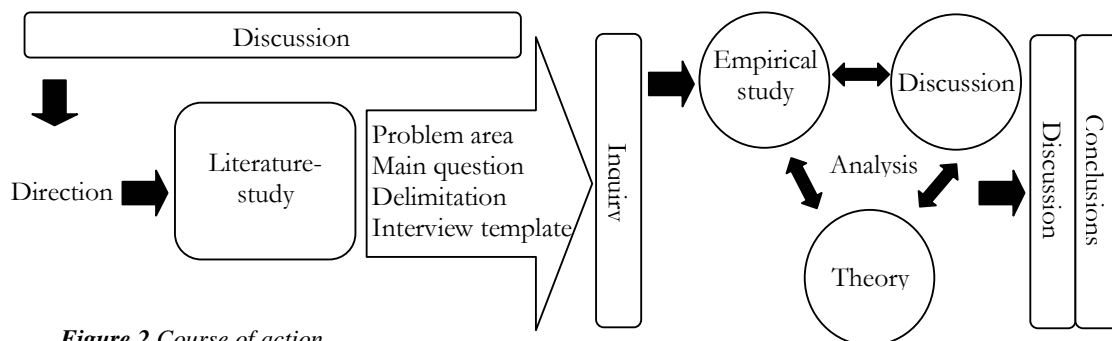
2.2 Course of action

Figure 2 Course of action

After the direction of the work was established a literature study was initiated to obtain a comprehensive picture of the subject. In the literature study and the

continuous discussion the structure and proportion of the thesis developed, see Figure 2. Along with the understanding of the purpose of the thesis the literature study reduced and together with the discussion it resulted in a problem area, main question, sub questions, delimitation and interview template. The analysis was an iterative process where the two information elements of the thesis, the theoretical element (literature) and empirical element (interviews) were brought together and compared.

The purpose with this course of action is to first get a theoretical view and understanding of the problem area, and then look at the reality and compare this with the theory. In the comparison we expected to find line of arguments and answers to the man question of the thesis.

2.2.1 Literature study

The empirical work was preceded of a literature study to get a general view of the subject and an insight of earlier researches within the problem area. Since our problem domain revolves around a subject that is under a constant evolution we aimed to find articles from the scientific frontline. Through scientific literature, articles and dissertations have researches within the subject been penetrated. The articles were obtained from the article database of the Economical library of Gothenburg University. The databases that we mainly used were Academic Search Elite, Emerald Library, Science Direct and Wiley InterScience. Articles were also obtained from different scientific journals as the Electronic Journal of Information Systems Evaluation, European Management Journal, International Journal of Information Management, International Journal of Project Management, Journal of Information Technology and Project Management Journal.

In the literature study the initial search was wide, but gradually it narrowed and was limited to specific literature within the problem area. We narrowed the search to specific words; those words were benefits management, benefits realization, IS/IT investment and benefits evaluation. We also searched for frequently referred articles found in the reference list in our already possessed literature.

2.2.2 Empirical study

The work at Volvo IT started with a comprehensive overview of processes and work flow. We had a continuous dialog with our supervisor, Ingrid Rodesjö, to get a view of Volvo IT. We also used Violin, the intranet at Volvo IT, to further understand and penetrated how they worked and to get a deeper understanding of different work processes.
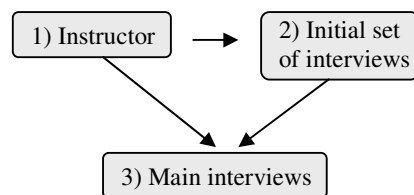
1) A continuous dialog was held with Ingrid Rodesjö to get a view of Volvo IT and to get help to contact people to interview

2) Initial set of interviews were made to get a picture of the problem area and to choose which roles to interview in the main interviews

3) The main interviews which were part of our empirical study

9

2.2.2.1 Interviews

We held a continuous dialog with our supervisor on Volvo IT, Ingrid Rodesjö, since she had a very god comprehensive picture of Volvo IT she helped us to get an insight of how things worked and which roles and persons that was suitable to select for our interviews.

Initial set of interviews
To get an understanding of the models that are used in Volvo IT we started to interview two respondents who had a broad knowledge about the different models that affected Volvo IT's IS/IT investments. We also conducted an interview with a consulting firm, Acandofrontec. This was to get a view of how those matters are handled in other companies and to get a view of the best way of managing benefits of IS/IT investments.

How to select people to interview
We selected people to interview from the roles that the literature suggested as participators in the benefits management process. To get a comprehensive view of how the benefits were handled within Volvo IT and to be able to answer our main question we decided to categorize the respondents that were chosen for our main interviews into three categories. Which categories to choose were outlined from discussions with our supervisor together with the findings from the initial set of interviews. Since our result tended to be in the management area, managers became an obvious role to interview. People in management positions are also in contact with a large amount of projects and know how the benefits are presented in the projects, managers became the first category. The second category that was chosen for interviews was people within the business to capture their opinions of the problem area. People within projects became the last category. This category was chosen to get a more practical view of how the benefits are handled in the projects and project managers were an important role in this category.

Main interviews
We created our interview questionnaire, see Appendix, on the basis of our theoretic framework and according to some instructions from Kvale (1996) that writes about the thematic view, a view that suites well when the interview is attended to circle around a subject. Kvale (1996) writes that the interview gets structured but that the respondent despite this gets the opportunity to answer spontaneously. This view suited us well because we wanted to catch the general opinion and not necessarily get specific answers on every question. This made it a little bit harder to put together the answers but on the other hand the respondent felt more comfortable. The questions were altered many times before the interviews started. In this process we had a continuous dialog with our academic supervisor Elisabeth Frisk to meet the academic standards and to align the questionnaire with the main question, the sub questions and the theory. Our supervisor on Volvo IT, Ingrid Rodesjö, was also highly implicated in this process. She helped us with presenting possible answers to our questions and aligning our definitions with the linguistic level at Volvo IT among other things.

The interview contained a descriptive part, with the purpose of catching the opinions, attitudes and experiences that the respondents possessed within the problem area, and

a normative part with the purpose of getting the respondents picture of how the benefit handling could be improved. Since we were looking for the opinions and attitudes of the problem area the qualitative way of performing interviews was the natural choice.

In our main set of interviews we performed interviews with 16 persons chosen according to the premises described above. The interviews varied from 45 minutes to 1.5 hours. We chose to record the interviews with the knowledge that this might inhibit the respondents. But this made it possible for us to focus on the interviewing instead of getting the answers on paper. To get around the fact that the respondents might be inhibited by the recording we informed the respondents that nothing that they said would be presented with names and we sent a summery of what was said so they were able to confirm our interpretations of their answers. Those confirmations are the only material from the interviews that is used in this thesis.

2.2.3 Challenges to our methodology

Due to the approach that we have chosen in our methodology it is not appropriate to discuss validity and reliability. We will instead discuss different challenges that we had to overcome along the way of our journey between the 'real world' and the 'theoretical world'. According to Seale (1999), *quality* is an important fact in qualitative research, but Seale (1999) means that this is not something that can be encapsulated by the terms 'validity' and 'reliability'. We have tried to maintain quality by providing trustworthiness throughout our work with this thesis; however this has not always been an easy task. Therefore we present some challenges that we had to overcome:

- **Creating the literature framework**
  It has been a challenge for us to clarify all the terms that are used when it comes to handling the benefits of IS/IT investments. The problem was that there is not an established definition of the terms which means that they are used with different meaning by different authors.

  As we have written in our theoretical framework there is a plethora of benefits management approaches. A problem that we had was which methods to choose. But since Bennington and Baccarini (2004), Gartner Group (2002) and OGC (2004) use almost the same comprehensive stages we thought that this was a good base to start with.

- **Gathering interview data**
  It took quite a lot of time before we got a picture of which roles that were suiting to interview at Volvo IT. But with help from Ingrid Rodesjö and our initial interviews we think that we managed to select three relevant groups to interview. By interviewing different roles from the three categories we got a good view of how the benefits are handled within Volvo IT and ideas of how this process could be improved.

- **Balance between academic and empirical demands**
  A challenge that we felt was to contribute both to the theoretical framework that lies within our problem area and to contribute to how the benefits management process could be improved at Volvo IT. Luckily our supervisor at

Volvo IT were very understanding of the demands that were set up from the academia, even since the demands differed we still felt that we managed to strike this balance quite well.

- **What but not how**
  A challenge was that many authors had considered the question of what should be done when it comes to realizing the benefits of IS/IT investment. However we found very few authors that handled the question of how this should be done. Our ambition has been to describe how it should be done, but since it is very few authors that write about how, it is mainly our empirical study that together with our own thoughts that can be used as a base for drawing conclusions.

3 Theory

Since this thesis aims to answer the question; How should the benefits management process be designed to realize the benefits of IS/IT investment, we have chosen to first describe the IS/IT investment life-cycle. A categorization is made between efficiency and effectiveness because the benefits management process is a tool to realize the effectiveness benefits and not only efficiency benefits of IS/IT investments. Further the benefits management process is positioned as a formative evaluation approach.

In chapter 3.2 Benefits management a short introduction is given to the subject. The main chapter, 3.3 Benefits management process, describes a comprehensive benefits management process based on different benefits management approaches found in the literature.

3.1 IS/IT investments

3.1.1 IS/IT investment life-cycle

According to Willcocks and Lester (1997) there are five phases of the IS/IT investment life-cycle:

- Feasibility/Proposal
- Development
- Implementation
- Post-implementation
- Routine operations

3.1.2 Evaluation of IS/IT investments

According to Farbey et al. (1992) evaluation can serve four different objectives:

1. Evaluation may be used as a part of the process of justification of a system
2. Evaluation enables an organization to make comparisons between different projects competing for resources
3. Evaluation provides a set of measures, which enable the organization to exercise control over the project
4. Evaluation and the subsequent measurement and comparison with actual achievements provide the learning experience which is necessary if the organization is to improve its system evaluation and development capability

Because of the growing concern about the effectiveness of information systems expenditure there is an increasing need to re-think approaches to the evaluation of information systems in order to demonstrate business benefits from these investments (Remenyi & Sherwood-Smith, 1999).

Evaluation of efficiency and effectiveness projects

According to Lin and Pervan (2001) it is important to distinguish between the different types of IS/IT investments if appropriate evaluation criteria are to be applied when justifying projects. The way that Fitzgerald (1998) suggests when it comes to categorizing IS/IT projects is to divide them into *efficiency* and *effectiveness* projects.

Efficiency projects are defined as one that seeks to reduce the cost of performing a particular process or task by utilizing information technology. It does not seek to radically change the nature of the objectives that those tasks and processes were devised to fulfill, it simply seeks to achieve the same objectives at lower cost, i.e. to perform existing tasks more efficiently. (Fitzgerald, 1998)

The basic objectives of **effectiveness projects** are not simply to reduce the costs of performing existing tasks but to identify ways of doing different things which better achieve the required results. Effectiveness projects are not addressing efficiency criteria but seek to improve organizational effectiveness. The justification for effectiveness projects must be based upon effectiveness criteria, for example, increased functionality, better products and services, improved presentation or image, enhanced competitive positioning etc. Making such effectiveness justifications is not impossible but it is a much more difficult process than making a financial case on the basis of efficiency improvements. (Fitzgerald, 1998)

The main reason for this increased difficulty is because there is an extra stage of proof to be gone through, see Figure 3. In efficiency projects the benefit is reduced cost and this is relatively easily identified and quantified. For effectiveness projects it is not just necessary to identify the benefits, for example better service, but also that the recipient of those benefits will recognize and value the improvement and change their behavior in some positive way as a result (consider the effects in the business). (Fitzgerald, 1998)
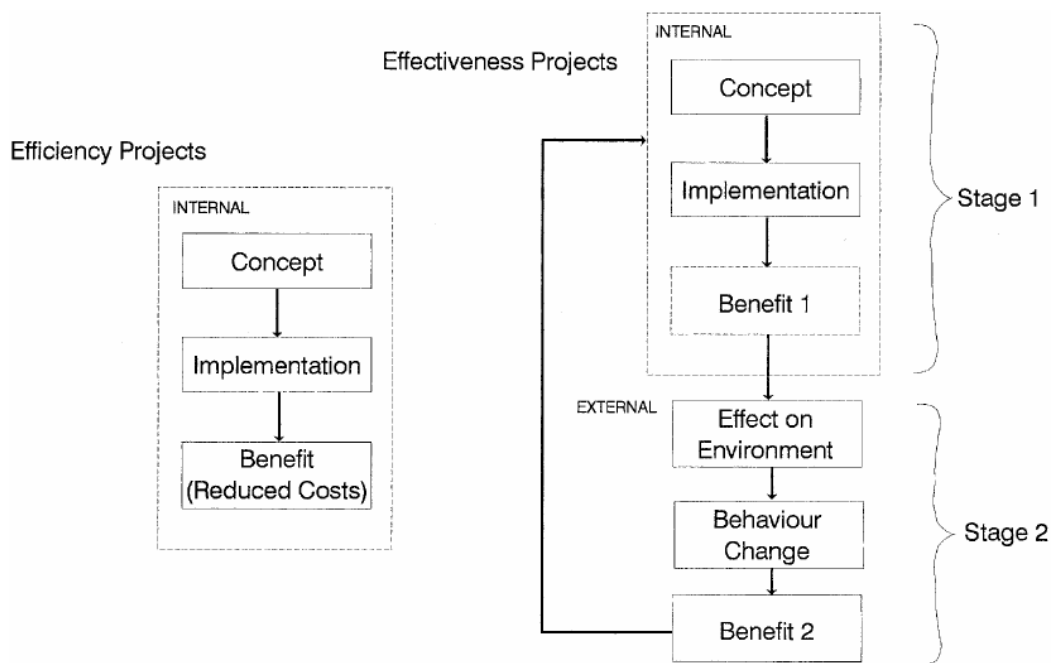

Figure 3 *Evaluation of efficiency and effectiveness projects, Fitzgerald (1998)*

14

Summative and formative evaluation

Summative evaluation, which frequently is only performed once, is not well designed for the purposes of improving the management of an IS/IT investment (Love, 1991, see Remenyi & Sherwood-Smith, 1999). This is not only because summative evaluation is normally not reiterative, but also because it will usually focus on financial or other operating statistics. In order to improve the management of an investment a different evaluation approach is required. This approach is sometimes referred to as *formative evaluation* or learning evaluation. (Remenyi & Sherwood-Smith, 1999)

Kumar (1990) describes **formative evaluation** as a continuous evaluation process that feeds back information during systems development to help improve the product under development. For the most useful results a continuous evaluation process needs to begin during the systems development and continue until the information system is eventually commissioned. In the formative evaluation user staff and operational management are now included in the evaluation so there is a commitment to evaluate how well the technology supports the day-to-day operation and whether the proposed information systems are effective in business terms at operational level. (Remenyi & Sherwood-Smith, 1999)

The focus of this thesis is the benefits management approach, a formative evaluation approach, for evaluation of IS/IT investments with a focus on realizing the benefits. In the next chapters benefits management is introduced. This approach has been a base of our theoretical and empirical study and the process is explained closer in chapter 3.3.

3.2 Benefits management

Benefits management is, according to Lin and Pervan (2001), the procedural approach of how to manage the benefits evaluation to realize the benefits of IS/IT investments. Benefits management complements and overlaps investment appraisal in the business case. While investment appraisal provides the justification for the investment, benefits management allows organization to plan for and achieve the benefits. Costs and benefits cannot be viewed in isolation and the benefits management process and the overall investment appraisal should be planed together. The ongoing costs and risks will usually be monitored, but the anticipated benefits are not so easy to define and quantify. Benefits management ensures that business change achieves the expected results by translating business objectives into identifiable measurable benefits that can be systematically tracked. (OGC, Office of Government Commerce, 2004)

The benefits of IS/IT investments are supposed to generate *business value* for the business. It is not obvious what business value is and how it is created in an IS/IT context. Cronk and Fitzgerald (1999) propose three dimensions of business value:

1. *System dependent dimension***:** value added to the organization as a result of the system characteristics, such as downtime, response time or accuracy
2. *User dependent dimension***:** value added to the organization as a result of user characteristics, such as improved skills and attitudes that may result in more effective usage

3. **Business dependent dimension:** value added to the organization as a result of business factors, such as alignment between system and business goals

Gartner Group (2003) describes five essential perspectives that have to be considered when trying to reach business value of IS/IT, see Table 2.

	Five Pillars of Dynamic Benefits Realization
Strategic Alignment	Weight the importance of midterm/long-term alignment of this initiative to organizational goals.
Business Process Impact	Weight the organization's requirement to have the capacity to rapidly and radically change business processes in line with changing business conditions.
Architecture	Weight the importance placed on adherence to the organization's overall IT architecture as a criterion for the achievement of IT value.
Direct Payback	Weight how important it is to get direct payback from IS/IT investments to the organization.
Risk Assessment	Weight the organization's tolerance for risk to IT failure. If any level of IT disruption would cause serious long-term ramifications, this would be rated highly.

Table 2 Five Pillars of Dynamic Benefits Realization, Gartner Group (2003)

3.3 Benefits management process

There is a plethora of models, methods and approaches that are aimed to assist in the benefits management process. We have reviewed some of the most established benefits management approaches. Bennington and Baccarini (2004) have in their research of the process of benefits management taken five benefits management approaches and distillated four stages. Those four stages, plus the additional stage "Potential for further benefits", are also found in the *Process Model of Benefits Management* (Ward et al., 1996, see Lin & Pervan, 2001). This makes the stages in the benefits management process as follows:

- Benefits identification
- Benefits realization planning
- Benefits monitoring
- Benefits realization
- Potential for further benefits

Since our focus is **how** the benefits management activity is to be done, we have taken another look at some of the approaches reviewed by Bennington and Baccarini (2004) and complemented those with two additional models see Figure 4. Under each stage it is presented which activities the different writers suggest.

3.3.1 Benefits identification

In this first stage of Bennington and Baccarini's (2004) benefits management approach the benefits of the IS/IT investment that will be most relevant and convincing to decision makers are identified and documented.

The identification procedure

The methods, suggested by Bennington and Baccarini (2004), when it comes to identification of benefits are interviews and workshops with key stakeholders. OGC (2004), as well as Bennington and Baccarini (2004), state that the benefits identification should be a joint effort between the project manger and the project stakeholders. According to Remenyi and Sherwood-Smith (1998) a key aspect of this process is that the stakeholders learn to understand better what is required and what is possible.

Ashurst and Doherty (2003) agree with Bennington and Baccarini (2004) that the first thing to do in the benefits management process is identifying and enumerating the planned outcomes of an IS development and decide the means by which they will be achieved. According to OGC (2004) it is very important to optimize the mix of benefits. This is done by choosing the service or system option that delivers the best value to the organization for the given set of business objectives and circumstances. Their proposition to do this is by portfolio management.

Ashurst and Doherty (2003) mean that benefits identification should be conducted, in more detail, for every individual project. In their research of a couple of IS development projects they found that virtually all the projects that participated in the study focused on technology delivery rather than organizational change and benefits realization; in no case were specific measures for benefits defined.

According to Ward et al. (1996), see Lin and Pervan (2001), the potential dis-benefits of the system should also be considered, i.e. what adverse impacts on the business or organization it could have. The benefits should then be structured in order to understand the linkages between technology effects, business changes and overall business effects.

The contribution to business strategy

OGC (2004) suggests development of an investment strategy to identify which strategic outcomes that the IS/IT investment generates, seen from a business perspective. Remenyi and Sherwood-Smith (1998) say that planed outcomes should then be aligned with the IS/IT strategy and so doing directly contribute to corporate objectives. In the Active Benefit Realization approach by Remenyi and Sherwood-Smith (1998) they underline the importance of aligning the business opportunity to the strategy of the organization, as expressed by its critical success factors.

Fitzgerald (1998) emphasize this when he says that an important thing to do is to identify to what extent the project contributes to the overall business strategy of the organization and chooses the project with the highest contribution. This is a key element in the justification of effectiveness projects, which all should make a contribution to business strategy and needs to be established if the project is to be approved. This task also needs to be performed for efficiency projects, not to establish any contribution to business strategy, because it is not necessary that they make any, but it is essential to establish that there is no negative contribution, or unhelpful impact, on the strategy. (Fitzgerald, 1998)

Second order effects

Identification and analysis of what is termed 'second order' effects (Hochstrasser, 1990, see Fitzgerald, 1998); these often appear as surprises when they occur (Willcocks, 1994, see Fitzgerald, 1998). Whilst not all such effects can be predicted many can, and it is worth attempting to do so. It is a case of trying to assess the potential impact of the system, particularly in terms of the social, political and organizational context. Any project that impacts roles, relationships, sources of power or organizational structures is likely to have second order effects. To involve people most directly affected by the system in the task and provide them with the opportunity to influence events is one way to predict and assess second order effects. Another approach is to conduct a pilot study of the system with the express objective of exploring second order effects. (Fitzgerald, 1998)

Implementability

Fitzgerald (1998) also means that it is important to make an assessment of how practical or implementable the project is. Many projects are only evaluated on the potential cost and benefits that they provide, but an equally important factor is whether those benefits will actually ever occur. Most evaluations ignore the fact that some projects are considerably more difficult to implement than others. The potentially most beneficial effectiveness projects are likely to be the most difficult to implement because of the degree of change that they require, not just technically but also organizationally and politically. (Fitzgerald, 1998)

3.3.2 Benefits realization planning

Thorp (2001) says that investing in IT is no longer primarily investing in a piece of hardware or software; it is investing in the *process of change itself*.
The reality of this more complex world is that:

- **Benefits do not just happen** when a new technology is delivered
- **Benefits rarely happen** according to plan
- **Benefits realization is a process** that can and must be managed, just like any other business process

OGC (2004) underlines the importance of doing a management plan that describes how the organization wishes to manage and achieve benefits from any investment in business change. Ward et al. (1996), see Bennington and Baccarini (2004), means that without a plan it is difficult to predict how an organization might effectively realize business benefits. Therefore the planning of benefits must occur prior to the project being approved for implementation. According to Bennington and Baccarini (2004) this plan should outline:

- Where in the business the benefits should occur
- Who in the organization will receive the benefits
- Who in the organization should be responsible for their delivery
- How the benefits are linked to the project output
- Action required by stakeholders to ensure delivery of the benefits
- When the benefits will be realized

According to Ward et al. (1996), see Lin and Pervan (2001), specific responsibility for realizing the benefits is allocated within the business for each benefit, the list of

benefits required must be agreed by the managers whose activities are affected by the investment. The task is to consider the stakeholders affecting delivery of each benefit, and the changes and tasks needed to ensure delivery. In order to make a fully informed decision as to the viability of the proposed project, the required business changes are planned for and assessed, and a benefits realization plan is produced at this stage.

Measurement of benefits

Glideman (2000) states that the fact that business value of IS/IT investments can not be measured is just an illusion caused by three basic measurement misunderstandings:

- The object of measurement is not understood
- The concept or meaning of measurement is not understood
- The methods of measurement generally are not well understood

He means that once these misunderstandings are cleared up, measurement is possible. Glideman (2000) describes a clarifying exercise in five stages of how to do when measurement looks impossible:

1. If something is better, then it is different in some **relevant** way
2. If something is different in some relevant way, then it is **observable**
3. If it is observable, then it is **countable**
4. If it is countable, then it is **measurable**
5. If it is measurable, you can **value** each unit and, therefore, value the benefits

"*If you can't measure it, you can't manage it*" Thorp (2001) says. He means that measurement is the key. According to Thorp's Benefits Realization Approach it is important with relevant, accurate and consistent measures of the performance of each program, and of the projects within them. It must be determined what to measure and when to measure it. The criteria for designing effective measurement systems are according to Thorp (2001):

- Make sure measures exist
- Measure the right things
- Measure things the right way, and
- Make sure measurement systems guide decisions and action

According to Thorp (2001) the fundamental concepts of benefits realization help organizations deal effectively with the issue of measuring value in four important ways:

- Identify the **outcomes** to measure, and how to measure them
- Show the reasoning about the **linkages** relating programs and projects to outcomes, making it easier to understand what's going on
- Make **measurement** come alive by clearly tying accountability to measured results, and
- **Take action** based upon measurements through full cycle governance

Key Performance Indicators (KPI)
Key Performance Indicators are quantifiable measurements, agreed to beforehand, that reflect the benefits of an IS/IT investment. They will differ depending on the IS/IT investment. KPIs help to define and measure progress towards a goal. Once an IS/IT investment has been analyzed, all its stakeholders identified, and the benefits defined, a way to measure progress toward those benefits is needed. Key Performance Indicators are those measurements. (About, 2004)

Bennington and Baccarini (2004) and Ward et al. (1996), see Lin and Pervan (2001), suggest that Key Performance Indicators (KPI) are being allocated to IT project benefits. Bennington and Baccarini (2004) continue to say that benefits without KPIs are of little value and there should be no valid reason why measurement of benefits should be a problem. The advantages in developing KPIs for project benefits include:

- Enables stakeholders to assess whether the planned benefits of IT projects have delivered
- Identifies the project benefits to measure, and when to measure them
- Facilitate action based upon KPI measurements
- Clearly links accountability to measured benefits
- Assists the project in being funded

According to Bennington and Baccarini (2004) more then half of the project managers do not assign KPIs to project benefits. They tend to focus on managing deliverables rather than the benefits that should result from utilization of the deliverables. This is something that Bennington and Baccarini (2004) find very surprisingly because they mean that every benefit should be expressed in terms that can be measured.

Facilitation group
In his approach, Fitzgerald (1998), it is advised that there be a small group within the organization whose role is to facilitate any evaluation process. They should **not** be responsible but they should ensure that the evaluation team is set up in the first place, ensure the on-going process, and guide the team in the approach. They should also be repository of evaluation experience and organizational learning. According to Fitzgerald (1998) the idea is to link closely the tasks and responsibilities of evaluation, development, and implementation together, to ensure success and it is the evaluation team that is empowered to commit to the project and is responsible for ensuring its success in the terms that have been defined.

Evaluation team
Kumar (1990) means that in order to ensure the independence of evaluation and a more global set of criteria than those conceived by the developers, evaluation should be managed and performed by people other than the members of the development team. The mechanism for performing post-implementation evaluation may either be an independent quality assurance group or a multi-stakeholder evaluation team led by the users.

Remenyi and Sherwood-Smith (1999) also suggest that a group of individuals should be established who will be responsible for conducting the work to ensure the success of a formative evaluation. This work is best conducted by a team comprising representatives of the ultimate users, the management and the information systems

developers. According to Remenyi and Sherwood-Smith (1999) it is better if this group is chaired by a user who will accept responsibility for the development. It is important to understand that the evaluators are primarily communications agents facilitating a constructive dialogue between the various stakeholders and therefore considerable care needs to be given to ensuring that everyone understands each other. This means that issues need to be fully aired and that firm positions should not be taken until all aspects of the information systems have been debated in full.

3.3.3 Benefits monitoring

Benefits monitoring compares project results with the benefits realization plan during the project and assesses if any internal or external changes have occurred that will affect the delivery of planned benefits. It is necessary to monitor the benefits of IT projects because issues arise that may prevent the delivery of the benefits. It is also possible that, at this stage, further benefits are identified. (Ward & Griffiths, 1996)
According to Lake (2001), see Bennington and Baccarini (2004), reasons why organizations do not monitor the benefits are:

- Lack of experience and/or business awareness
- Focus on managing the deliverables rather than the benefits
- Insulation from the benefits that come from when business management is responsible for users
- Lack of focus on the people who will enjoy the benefits
- Emotional commitment to the continuity of the project and so not open to changes to benefits that threaten project viability
- Lack of tools to help ensure that benefits will be delivered

According to Ward and Griffiths (1996) to be able to monitor benefits organizations have to actively overcome and handle the challenges with benefits monitoring.

Ashurst and Doherty (2003) call the benefits monitoring stage for benefits delivery and define it as *"the execution of the set of actions necessary to realize all of the benefits specified in the benefit plan"*. Consequently the process of benefits delivery typically runs from project initiation, after approval of the business case or benefits realization plan, through to completion of the project. Benefits delivery focuses upon the organizational change necessary to facilitate benefits realization, rather than the delivery of the technical solution.

Proactively managing change
Thorp (2001) states that organizations will only realize benefits through change, and equally, change will only be sustained if benefits are realized, and seen to be realized. The Benefits Realization Approach by Thorp (2001) requires people to change how they think, manage and act. This will be difficult and often painful changes and they will not happen by themselves. After you got the awareness of the need of change you must understand the full extent of the planned change. Thorp (2001) means that only by understanding of and commitment to the planned change you got the capability to take the right actions.

When we have the understanding necessary to build commitment, to fully understand the scope of what we are committing to, then, and only then, can we act with any reasonable chance of success. Many organizations are looking for simple models for

change, but there are no simple solutions and with the silver bullet thinking organizations will continue to fail. (Thorp, 2001)

Continuous evaluation
The Active Benefit Realization (ABR), developed by Remenyi and Sherwood-Smith (1998), is a process for managing information systems' development through a continuous evaluation approach. This process requires active participation during project development from the primary stakeholders including line managers and users, financial staff and information systems developers.

The ABR-process requires a direct and continuous focus on business benefits realization and is based on a contingency philosophy, which means that the actual information system outcomes as well as the development activities, tasks and participating roles of the stakeholders are dynamic throughout the duration of the project. It is fundamental that the principle stakeholders of the information system are identified at the onset and that they accept and agree their continuous involvement. (Remenyi & Sherwood-Smith, 1998)

3.3.4 Benefits realization

The benefits realization should according to Farbey et al. (1992) be performed in the beginning of utilization of the IT product and once it has been in operation for some time. They mean that it is first then the benefits of the IS/IT investment are actually shown. Benefits realization involves a comparison between planed benefits and the benefits that are actually delivered. This review follows the implementation of the IT project and analysis what was, and was not, achieved. Many organizations fail to review whether the planned benefits of IT projects have been achieved. According to Bennington and Baccarini (2004) possible reasons for this might be that it is too difficult, that the benefits realized are tangled in general business areas and therefore not easily identifiable. Another reason might be that the organization does not have the resources to do the benefit review because of the pressure to deliver other projects. (Bennington & Baccarini, 2004)

Ward et al. (1996), see Lin and Pervan (2001), means that the previously developed business measures are used to evaluate the effects of the project. Review of 'before and after' measures provides an explicit device for evaluating whether the proposed business benefits have actually been realized. This evaluation, which should involve all key stakeholders, has several purposes:

   a) To maximize the benefits of the particular project
   b) To provide experience for other future projects
   c) To identify what was achieved, what has not been achieved and why; and
   d) To identify any unexpected benefits that have actually been achieved

Benefits review
Ashurst and Doherty (2003) use the term "benefits review" in their best practice framework. They define the term benefits review as the *"process by which: the success of the project in terms of benefit delivery is assessed; opportunities for the realization of further benefits are identified; and lessons learned and opportunities for improvement in future projects are identified."*

According to Ashurst and Doherty (2003) the lack of specific focus on benefits earlier in the life-cycle makes the lack of benefits in the later stages quite obvious. The projects that they analyzed were all successful as technology projects but they mean that there is insufficient evidence to assess their success in benefits terms. It is also interesting to note that as the project teams were typically disbanded as soon as the solution had been implemented, there was no on-going provision for evaluation or benefits review.

The empirical results of Ashurst and Doherty (2003) study have shown that there is a significant gap between the best practice framework presented in the theory and the practice of benefits realization management. The majority of organizations and projects studied adopted the traditional measures of project success, namely delivery on time and on budget, and there was little evidence of any explicit focus on benefits delivery of business change.

3.3.5 Potential for further benefits

It may become apparent that, after the benefits realization, further benefits are now achievable, which were not expected in the beginning. This stage provides the opportunity to plan for and realize these further benefits as well as to learn from the overall process. (Ward et al., 1996, see Lin & Pervan, 2001)

When the formative evaluation cycle is completed it is important to update the picture that was established at the beginning of the process (Remenyi & Sherwood-Smith, 1998). Another key aspect of this process is that the stakeholders learn to understand better what is required and what is possible.

The benefits realization may identify opportunities for realization of benefits which were not identified at the start of the process. Such opportunities may arise at any time during or after the process, and mechanisms should be in place to capture these opportunities and exploit them, by bringing these new benefits within the scope of the IS/IT investment. (OGC, 2004)

Organizational learning
There is a growing acceptance that organizational learning should be an important element of IS/IT management (Ward & Peppard, 2002, see Ashurst & Doherty, 2003). It is likely that the ability of organizations to learn will greatly contribute to their success in realizing benefits from IS/IT investments.

The benefits review presents the opportunity for the evaluation team and the organization to learn from the results. This learning, especially after a number of projects have been evaluated, may lead to significant improvements in subsequent evaluation projects. Whatever the outcomes this should be absorbed in the evaluation culture and so engender confidence in future evaluations. According to Fitzgerald (1998) too many post-implementation reviews, if they are performed at all, are treated as witch hunts to identify guilty parties where things have gone wrong, rather than as a valuable learning opportunity. For this to occur, the evaluation culture needs to be made open and non-threatening. The establishment of the evaluation facilitator role in the organization is important in this aspect. (Fitzgerald, 1998)

3.4 Responsibility for the realization of benefits

Fitzgerald (1998) has a discussion about who should perform the evaluation process. He thinks that because of the wide ranging nature of the evaluations proposed it is impossible for this to be purely an IT department task and responsibility; they neither have sufficient business nor line responsibility. The same reasons are applicable for why not the finance department should be responsible. *It is preferable for the area of business with prime interest in the successful outcome of the project to be responsible and have the major role in undertaking the evaluations.* Fitzgerald (1998) means that the nature of the project will determine who should be involved, but for strategic systems that cross departmental and organizational boundaries the process should contain a senior executive who has the responsibility for business strategy and should involve people from all areas of the business that are affected. The IS/IT and finance functions should be involved in an advisory rather than a controlling capacity. He means that the overall responsibility for the evaluation has to be with the people who are going to make it happen in a business sense if the project is approved.

While program and project teams will be involved in projects which deliver business change, the ones that are responsible for managing and realizing benefits, are according to OGC (2004) the business users and the managers. OGC (2004) mean that the project owner is responsible for ensuring the management of the process and realization of the benefits. Individual managers of business areas will be responsible for actual benefits delivery.

WHO?	HOW ARE THESE PEOPLE INVOLVED?
Project Management	Initiation of BM during project implementation Delivery of project outputs Information and measurement data during implementation
Project Steering Committee	Oversee the BM process Identification of improvement or corrective action
Project Sponsor	Continuous evaluation of project Determination of fit to organizational requirements Responsibility for project outcomes
Senior Business Management	Determination of Business Drivers Determining intervention and re-engineering of processes as required
Line Management	Collation of benefits measurement data Implementation of process re-engineering Monitoring progress of business improvements

Table 3 *Who are involved in the benefits management process, Chapman and Loch (2001)*

3.5 Summery of the benefits management approaches

Figure 4 shows to what extent of the benefits management process the different approaches cover. In the x-axis are the six stages of the benefits management process that were distinguished in the beginning of this thesis. In the y-axis are the seven models that we have used to create the theoretical framework. Those approaches focus on different parts of the benefits management process. As shown in Figure 4 most of those approaches have their main focus on the first half of the process.
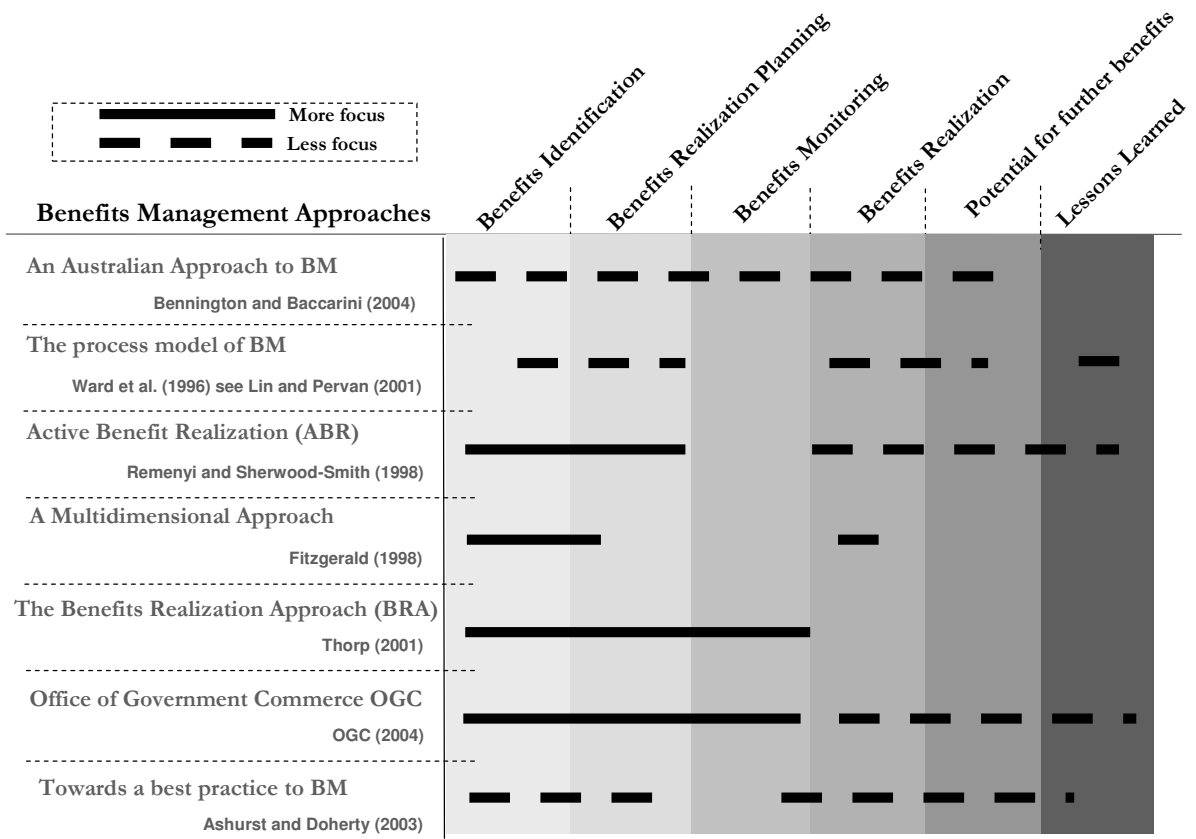

Figure 4 *Summery of the benefits management approaches, by the authors*

4 Empirical study

Within the framework of the empirical chapter we will give a short description of Volvo IT and the models and methods used for management. Further we present the research findings from the interviews we have performed for this thesis.

4.1 Structure and goals of Volvo IT

The Volvo Group was founded in 1927 and has 76 000 employees and production in 25 countries. Volvo Group is one of the world's leading manufacturers of trucks, buses and construction equipment, drive systems for marine and industrial applications, aerospace components and services. The Volvo Group also provides complete solutions for financing and service. Figure 5 shows that Volvo Group consists of eight business areas - Mack Trucks, Renault Trucks, Volvo Trucks, Volvo Buses, Volvo Construction Equipment, Volvo Penta, Volvo Aero and Volvo Financial Services.

To support these business areas there are several business units that provide additional manufacturing development or logistical support. The business units are: Volvo 3P, Volvo Powertrain, Volvo Parts, Volvo Logistics and **Volvo Information Technology**.
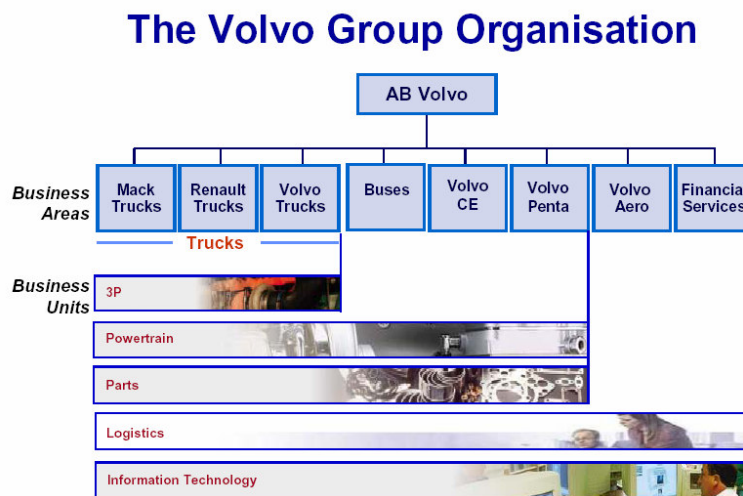
Figure 5 *Volvo Group Organization*

Volvo IT provides IT solutions and services for the entire industrial process, from product development to manufacture, sales, aftermarket and administration, including IT operations and IT infrastructure. The range of services includes Product Life-cycle Management (PLM) and SAP solutions. Volvo IT's experience goes back to the 1960s when computers first were used in the industry. This has contributed to Volvo IT's position as one of the leading IT suppliers in the automobile industry.

4.1.1 Business Operation Development Council

The BOD-council (Business Operation Development) manages the internal business development at Volvo IT. Their assignment is to change or renew Volvo IT business for the purpose to:

- Make customers and co-workers more satisfied
- Increase the quality
- Increase the efficiency
- Achieve the strategic objectives, and
- **Achieve greatest possible business value**

The BOD-council affects the areas: **Process development** and **IT-infrastructure/support**

The capital request process
Capital requests should concern:

- Funding of strategically in-house activities with a large potential of increasing internal efficiency
- Financing of strategic products approved by BOD-council, such as processes models, methods, tools and supporting applications. In order to create an efficient and cost effective organization.

Instructions for requesting capital from a council:

- Make a description of your case, by filling out the IS-GDP documents for the relevant gate; CIG Change Initiation Gate, Concept Study Gate or other.
- You will be contacted by the secretary of the council and you together will schedule an appointment where you will present the request for the council.

4.2 Models and methods at Volvo IT

In this chapter we will present our view of the models and methods at Volvo IT that we have got after we have gone through a lot of material and performed 16 interviews.

4.2.1 IS-GDP

IS-GDP (Information System Global Development Process) is a demand side project control model for IT projects used by the business areas and the business units, see Figure 6. The IT project managers use this model to communicate with the demand side using the terminology of IS-GDP.
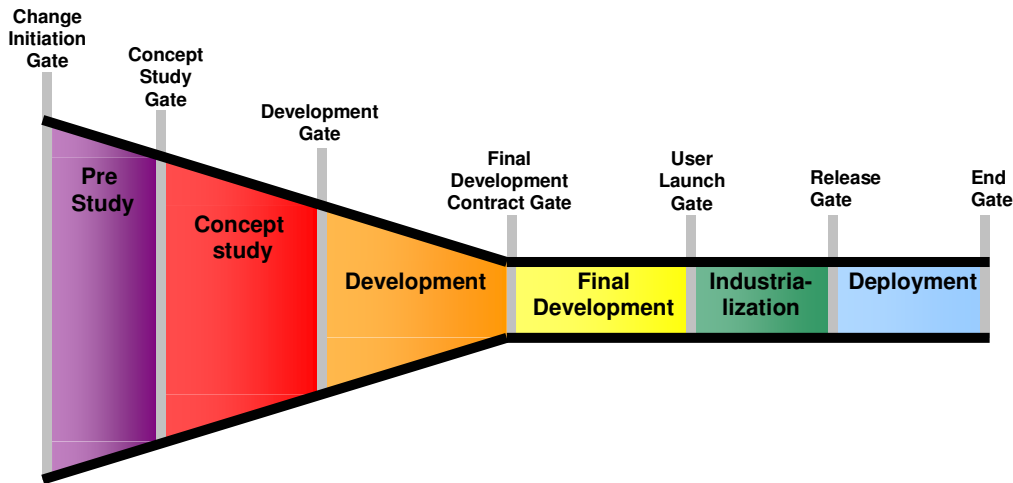
Figure 6 *Picture of IS-GDP*

IS-GDP was born in 2002 at 3P who needed a control model for IT projects. In 2003 the IT Governance started refinements to create a version to be applied in all business areas and business units and since early 2004 IS-GDP is deployed.

How are the benefits managed in IS-GDP? - Description of gates
In the first gate, **Change Initiation Gate**, there is a section that is called benefits where the project manager is told to define what the project will give the company in terms of quality, time and costs and to quantify the efficiency gains.

In the second gate, **Concept Study Gate**, a profitability analysis should be made. This analysis contains an estimation of cost and savings together with a quantification of efficiency losses and gains. An examination of the project's organizational impact, its feasibility and a risk assessment should also be done in this stage of the process. Further the projects alignment with the business and the IS/IT strategy should be examined.

In the **Development Gate** a comparison is made if there is more then one alternative solution. **Final Development Contract Gate** is the next step in IS-GDP. Here is the profitability analysis looked over again to check if anything has changed when it comes to cost and savings. An approval is made if the proposed solution fulfills the business needs. The purpose of the **User Launch Gate** is to approve that the system is ready for certification after integration tests and approve that user validation tests can be run to confirm business relevance. A risk assessment and a migration plan are made at the **Release Gate** to approve the start of the deployment. The purpose of the **End Gate** is to approve; deployment, maintenance organization to take full responsibility, assessments between the plans and reality, lessons learned in final report and to close the project and stop any expense on the project's budget.

4.2.2 PCM

PCM is a model that focuses on IT project management, which includes defining gates and roadmaps, clarifying roles and responsibilities, use checklists and templates, and produce project management results, see Figure **7**. The PCM gates are project

milestones where major decisions are made. All gates are considered closed at the start of a project. At each gate there is a steering committee meeting. The gate decisions are:
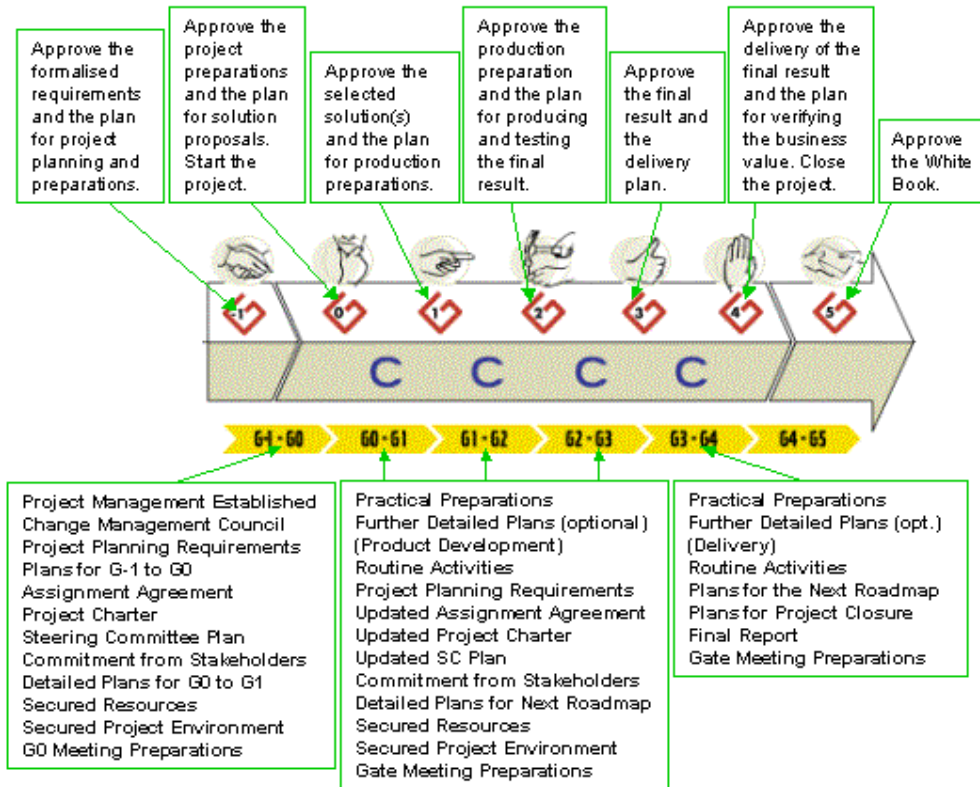
Figure 7 *PCM model with gate decisions*

How are the benefits managed in PCM?

PCM has three mandatory documents and those are: project charter, costumer satisfaction and final report. The business value is mentioned in the project charter but only very briefly. The project manager is told to demonstrate how the customer operations will benefit from the final result of the project.

4.2.3 MCM

The Maintenance and Enhancement Control Model (MCM) is used at Volvo IT to control, support and follow-up a maintenance and enhancement assignment in order to ensure that that the agreed result is delivered and that the customer is satisfied with the Volvo IT efforts, see Figure 8.

Figure 8 *MCM process*

How are the benefits managed in MCM?
The only consideration to benefits in the MCM model is the business manager that answers for the contents in the assignment specification concerning **business value** for the organization, affected by the system.

4.2.4 Project catalogue and project dashboard

The project catalogue and project dashboard have the purpose of monitoring the progress of the projects with focus on time and cost. It is the project manager who has the 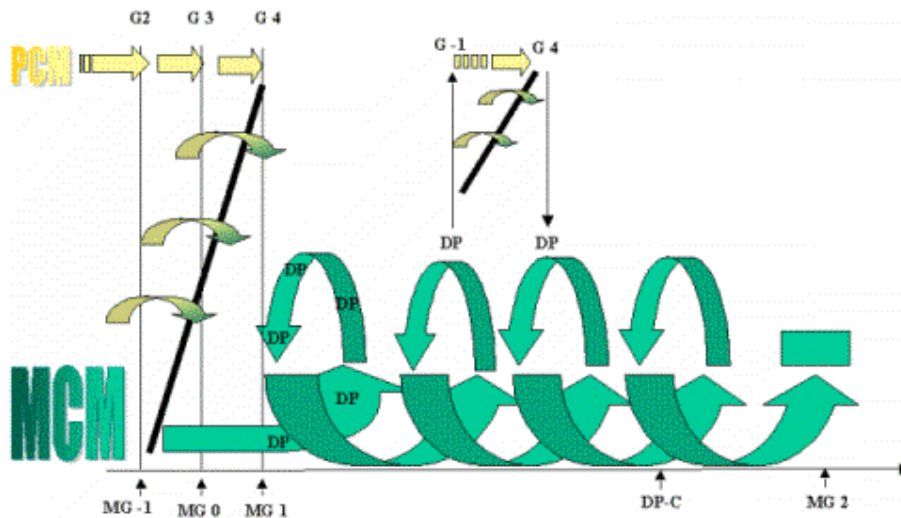responsibility to register and update the project information in the project catalogue, and this is done in connection to each gate. The project catalogue provides information for making assessments of project status and for calculating project delivery precision.

The project dashboard is part of the project catalogue application. The dashboard is a tool for reporting, communicating and assessing the status of projects. The dashboard makes it possible for Volvo IT management to:

- Get a holistic view of projects
- Identify and support projects at risk
- Reduce the number of projects with problems
- Identify problem patterns common for many projects
- Improve the project support from the line organization
- Improve the project delivery precision

4.2.5 White book

The white book is the fifth gate in PCM and the purpose of the white book is to follow-up the impact of the project results with focus on the business value and to ensure knowledge sharing based on the business experiences. The achieved business value is compared with the business value stated in the assignment agreement for the project. The steering committee chairman is responsible for the white book to be written and the white book has to be approved by the project sponsor.

4.3 Perceptions of how benefits are managed at Volvo IT (Research findings)

Here we present a summarized review of our research findings of the 16 interviews we have performed at Volvo IT. The interviews contained both a descriptive and normative part to get a perception of both the present situation at Volvo IT and the respondents thoughts about the future. The questionnaire is found in the Appendix.

We divided the respondents into three different categories to see if there are different opinions depending on which operative "level" in the organization they operate:

- **Management** (Strategy, Business Development, IT Architecture, Management Consultants, Steering Committee Members). Total of 7 respondents
- **Business** (Global Process Managers, Product Area Managers, Manager of Department). Total of 5 respondents
- **Project** (IT Project Managers, Business Project Managers). Total of 4 respondents

4.3.1 Business value

The view of business value is the same in all three categories. It is something that is favorable for the business. The overall view of business value is that it is **cost reduction** and **increased efficiency**. Other criteria of business value for Volvo IT are: increased productivity, personal savings, lead time reductions and enabler for improved IT services for customers. Another common opinion is that the business value has to be quantified. Since it is very important to measure business value, one of the respondents said that business value is cost reductions and increased efficiency, because those factors are measurable. But the respondent continued to say that the real business value is to use new technique to support the business for Volvo Group companies. One of the respondents said that cost and the four key issues in Volvo IT's strategy (Profitability and growth, Customer satisfaction, Global provider and Attractive workplace) are the most important criteria.

One respondent at **management level** said:

> "Volvo IT comes from a situation where business value of IT has a strong focus on cost reduction, this is because within Volvo business value is viewed as an administrative cost where you follow-up and measure certain type of costs. This sets the tone of how business value is seen within the organization"

Another respondent at **management level** said:

> "Volvo IT has a large focus on cost. People do not see IT as an opportunity, but as a cost. You have to a great extent find cost reductions to get an IS/IT investment approved."

One respondent from the **business level** commented the effect of business value:

> "Business value is economic effects or other effects that the business manages to attain. Business value is something that direct or indirect leads to increased profitability."

31

Suggestions about business value

A common thought about the future management of benefits is that Volvo IT has to consider the intangible business value as well. I.e. benefits that are not only cost related. One respondent from the **management level** said:

> *"That projects deliver on time, according to budget and according to objectives should be basic requirements and not crucial."*

One respondent at **project level** pointed out that:

> *"It should be well defined why a project should be initiated and how it should be measured."*

Another respondent at **project level** suggested that:

> *"The business value should be quantified and measurable in money terms. If it can not be measured it has not been defined the right way."*

4.3.2 IS/IT investments and their life-cycle

Here we could see a slight different view on IS/IT investments between the three categories of respondents. The respondents at **management level** saw IS/IT investments as something that should change the business and/or enhance the value of the business to achieve the objectives of IS/IT.

The overall **business level** view of IS/IT investments was that it is a cost. But one respondent in the business level had the opposite opinion and said that:

> *"An IS/IT investment is definitely not a cost. Even if there initially is a cost the IS/IT investment should support a long-term profitability."*

The view of IS/IT investments from the **project level** was that it is investments in hardware and software, infrastructure matters, personal equipment and applications that support the business.

From the answers we found that the phases in the IS/IT investment life-cycle could be distinguished as shown in Figure 9.
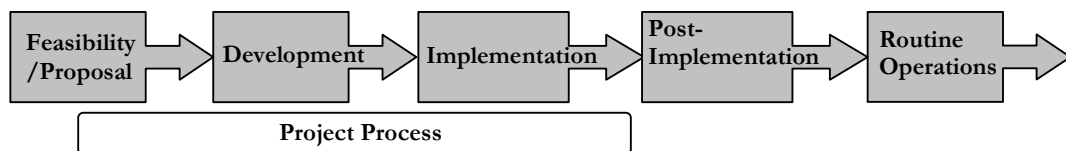
Figure 9 IS/IT investment life-cycle at Volvo IT, respondents' view

4.3.3 Evaluation of IS/IT investments

The view that the respondents presented is that there is no particular process at Volvo IT today for monitoring and realization of benefits from IS/IT investments. The model that is used is PCM, which is a project control model. But a demand-side business model, IS-GDP, has been introduced. The IS-GDP model considers business value briefly. Almost all of the respondents demanded a way to evaluate the IS/IT

investments and the common conception is that there is not done any evaluation with focus on the effects that the investment has on the business.

At **management level** a respondent said:

> *"IS/IT investments are measured by fulfilling the budget and business plan and the business objective is expected to be fulfilled, but it is never measured."*

A respondent at **business level** meant that:

> *"To be able to measure the effects of a project, a way of measure the effects in a process has to be created, which is not practiced today."*

The respondent means that the business must better demonstrate the effects of IS/IT investments to create credibility for new investments.

A quotation at **project level**:

> *"In the beginning of a project a business case is demanded, but no follow-up is made to see if the project result corresponds to the business case."*

One respondent said that during projects, evaluations of time, cost and quality are done, and the project manager continuously checks that the project follows the project plan. The evaluations, the respondents mentioned, that are done for a particular project are: business case, project charter, project final report and **white book**. We found that the only documents that are obligatory are project charter, project final report and customer satisfaction report, according to PCM. But the customer satisfaction report was rarely mentioned among the respondents.

It is the white book that evaluates the effects of the project but almost none of the respondents could remember to have seen a white book. A common answer to why the white book is not written is that the project has finished when it is time to write the white book, about 0.5-1 year after the project deployment. And at those occasions when it was written it was because the project still had money left within the limits of the budget, the project did not go according to plan or it was a large strategic project.

On some projects, with advantage larger projects and often with a strategic nature, an **Audit** is made. But the Audit only focuses on the economic aspects of projects and if the projects are done right, and not if the right projects are done. The Audit is made by independent evaluators.

To summarize it can be said that there is a large focus on that the project is done efficient but the results and effects of a project are not evaluated in a large extent.

Suggestions for improvement of evaluation

All levels of respondents demanded an evaluation of the gap between the benefits that are identified in the beginning of the IS/IT investment and the benefits that really occurs. Many respondents demanded a more rigorous alignment between the benefits that the IS/IT investments are identified to give and the strategy.

Management level

One respondent suggested more preparatory work starting with the business case that needs to be more detailed and that the business case is updated continuously.

Another respondent suggested that KPIs should be defined before the project start and the KPIs should then be evaluated along the project.

One respondent said that the infrastructure projects should be steered of some form of overhead cost which is owned by the business. Other project costs, which are connected to business objectives, should be associated with current business changes and money should be taken from the budget for the business change. In other words there should be a distinct difference between what is infrastructure and what is business driven.

A final quotation from one respondent at **management level:**

> *"Evaluation and follow-up shall be done in the business where the order is made. Since the business value from the IS/IT investment is not visible before about a year after the project has ended the evaluation must be the business' responsibility."*

Business level

One respondent at business level said that:

> *"There should be a demand for the white book to be written until a critical number is done, and then when the good examples demonstrate the value of evaluation, evaluations will be made."*

And another respondent said that:

> *"The BOD-council should demand an evaluation of the investment from the process manager, which is not done today."*

The process managers we spoken to did welcome such a demand.

Project level

One respondent said that:

> *"The control that the right projects are started has to be more rigorous. Someone with a comprehensive view should make the decision of which projects that should be initiated so projects with the same purpose not are initiated and so that the most important projects are initiated."*

The respondent continued to say that the projects have to be aligned with the overall working plan and not initiated to just improve a certain process when there are more crucial things that have to be done. Another respondent said that it should be an objective person that performs the evaluation of the project effects. A third respondent also thought that the evaluator should be a person external from the project and said that:

> *"The person that accomplishes the evaluation should be independent. But the initiator of the project should contribute."*

4.3.4 Learning from the results

From the question how the results that evolve from the evaluations are used all respondents said that it can be improved. In the project final report is a section called "Project experiences" and the goal is that the project final reports and the white books should be red for experience. But this is not done to a large extent and there is today no standardized place where those documents can be stored. The experience stays within the project team. Several project managers asked for a standardized place where to store documentation from projects.

A quotation about learning from the results from the **business level**:

"There is no specific process for organizational learning."

Within the Consulting service at Volvo IT project managers are encouraged to search for "Historical information" from projects similar to the project they are managing for the moment. And the project charter has to be reviewed of two project manager colleagues to get their experience and for approval.

Suggestions for improvement of organizational learning
Management level
One respondent said that:

"A larger focus on learning from the evaluations is required. Today there is no one that reads the white books"

and suggested:

"A seminar where the finished projects discuss what went right/wrong and what could be improved could be established."

Project level
A suggestion was that a database with "Historical information" should be established, where project final reports and white books are stored and where project managers could exchange experiences.

4.3.5 Responsible for identifying and realizing the benefits

From the answers we found that it is and should be the same person who is responsible for defining, monitoring and realization of the IS/IT investments' benefits, and that the evaluation is done. We got a variety of answers, but there were no difference between the three categories of respondents. From the variety of answers we could distinguish five groups that represent the suggestions for responsibility:

The business operations
Business owner
Line organization
Business operations
Customer/Purchaser
Business processes (process owner/process manager)

The project sponsor
Sponsor

The steering committee chairman
Steering committee chairman

The funding council
BOD-council

The project
IT project manager
Business project manager

A majority of the respondents answered that it is the **business operations** that is responsible for defining, monitoring and realization of the IS/IT investments' benefits. The project sponsor and the steering committee chairman were also high represented among the answers. In some cases answers also suggested that the BOD-council and the project manager are involved.

One respondent at **project level** said that the initiator should be responsible for defining the benefits and the initiator is the customer of the project, and continues, it is often a person from the business who sees the possibility for change."

A respondent at **management level** stated that:

> "The sponsor and the steering committee chairman are responsible that projects are approved on the right decisions. The one who has the money and wants something in return for the investment is responsible."

Another respondent at **management level** meant that:

> "It is the sponsor who is responsible for defining the benefits. But the BOD-council checks the profitability that the project is considered to give."

In PCM is "Project sponsor" defined as *"The owner of a project. The sponsor is responsible for the project costs."*

One respondent at **business level** said that:

> "It is the process manager who has the responsibility for evaluation because this is his job. For a single project it is always the steering committee chairman who is responsible, but often delegates the responsibility to the project leader." But adds that: "The sponsor has the final responsibility."

One respondent at **management level** said that:

> "It is not the project manager who has the responsibility for defining the project benefits. The project manager just leads the project after the objectives that are posted."

The only two roles that have said that themselves are responsible are the process manager and the steering committee chairman.

> "The steering committee chairman shall see that the project progresses and is responsible for the benefits to be realized."

As we could see were the respondents not of the same opinion when it comes to who is responsible or should be responsible for managing the benefits. More about this in the discussion (chapter 5.3.5.)

Respondents' perceptions of who should be responsible

Management level

The respondents' perception is by common consent that the comprehensive responsible should land high up in the organization where the strategies are made. One respondent thought that the project sponsor should have the responsibility, but for each specific project it is the person responsible for the business operation that is responsible for the realization. The business owner should put together the business case so that the focus is on the effects in the business instead of the IS/IT cost.

"The business operation should be responsible that evaluations of the IS/IT investments are made." There is, according to the respondent, no one else able to measure the benefits.

One respondent said that:

> *"The steering committee chairman should have the responsibility of defining and realizing the business value."*

One respondent suggested:

> *"A change management person that is responsible for the business development within the business operations or business processes."*

Another respondent suggested that:

> *"The business owner is responsible and the effects/benefits should not be measured within the project but within the change that is wanted in the business, and that the demand for evaluation should come from the project sponsor."*

Business level

One respondent at business level suggested that:

> *"It is the recipient of the project that should define the business value."*

Another respondent thought that:

> *"The business value should be defined of the purchaser of the project and IS-GDP is a major step in the right direction."*

A third respondent said that:

> *"The council that has approved the investment should be responsible of the realization of the business value. But the responsibility can be delegated to the process manager."*

Project level
The common consent in the project level is that the **business operation** (processes, line organizations or departments), which is the customer, and the **steering committee chairman** should be held responsible for defining and realizing the benefits of IS/IT investments.

One respondent said that:

> *"The steering committee chairman and the customer both have the responsibility. The customer should always be the process owner and the acquisition should come from the process and be aligned with the strategies. The process owner should be responsible to the steering committee chairman that the business value is realized."*

5 Discussion and analysis

In this chapter we link the theory and empirical findings together through a discussion to answer our sub questions and main question. Further we discuss each stage in the benefits management process and give a proposal for Volvo IT.

5.1 Introduction

None of the processes and methods in this thesis is the only way to reach a result. They should rather be seen as a framework that can be used as described, modified or combined, based upon an organization's specific business situation and needs. We had Volvo IT as our case company to apply the theoretical thoughts on. We start this chapter with a theoretical discussion and the benefits management process is mapped against the IS/IT investment life-cycle. Then we discuss and answer our sub questions and finally we discuss our main question. In the discussion we are going to compare the theoretical view to the view of Volvo IT.

5.2 Theoretical discussion

The fundamental phases that the IS/IT investment life-cycle that Willcocks and Lester (1997) present have also been distinguished in our study. Figure 10 shows the benefits management process mapped against the IS/IT investment life-cycle.
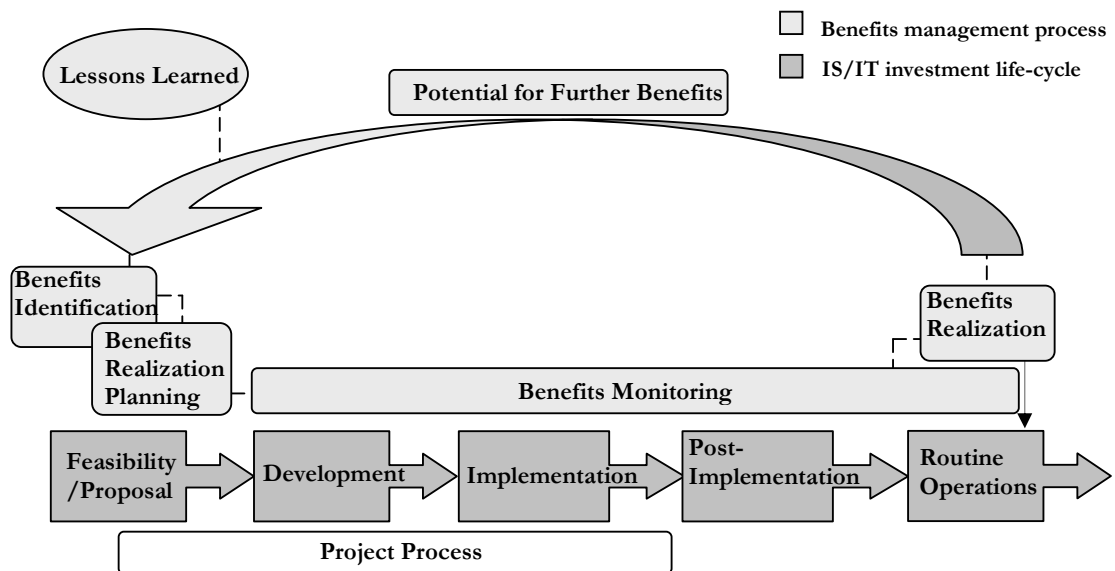

Figure 10 Benefits management process

The phases Feasibility/Proposal, Development, Implementation, Post-implementation and Routine operation are taken from Willcocks and Lester (1997) "IS/IT evaluation life-cycle". Most of the stages in the benefits management model are distinguished from Bennington and Baccarini (2004). Almost the same stages are shown in OGC

(2004) and Ashurst and Doherty (2003). But the idea to the stage "Potential for further benefits" is taken from Ward et al. (1996) see Lin and Pervan (2001). We have added *Lessons learned* as an own stage because our study showed that learning from the results is an incentive for people in the organization to perform a benefits evaluation. Each stage is described in detail in chapter 5.4 Main question – The benefits management process.

The first stage, **benefits identification**, should be performed in the beginning of the IS/IT investment life-cycle. It is important that the identification is tightly connected to the feasibility phase so that the benefits that the IS/IT investment shall deliver are aligned with the business strategy.

The stage **benefits realization planning** should occur during the feasibility phase in the life-cycle. The benefits that the investments shall deliver are already identified. Now it is time to plan for how these benefits should be managed to be realized.

This is the stage, **benefits monitoring**, where the benefits that were identified and planed for are monitored. This stage in the benefits management process reaches over many phases in the IS/IT investment life-cycle. The benefits should be monitored during the phases; development, implementation, post-implementation and routine operations.

The **benefits realization** or benefits review, as Ashurst and Doherty (2003) has chosen to call it, should according to Farbey et al. (1992) be performed in the beginning of utilization of the IT product (the post-implementation phase) and once it has been in operation for some time (the routine operations phase). Because it is first then the benefits of the IS/IT investment are actually shown. Ward et al. 1996, see Lin and Pervan 2001, say that when this benefits review is performed it may become apparent that **further benefits** are now achievable, which were not expected in the beginning. Our study has also shown that it is important to take care of the **lessons learned** from this process.

5.3 Sub questions

In the beginning of this thesis we chose five sub questions to find the answer to. This was to better answer the main question. Those sub questions will now be answered.

> 5.3.1 What is business benefit?
> 5.3.2 Which stages should a benefits management process contain?
> 5.3.3 What should be considered in the evaluation of benefits?
> 5.3.4 When should the evaluation be performed?
> 5.3.5 Who should have the responsibility for realizing the benefits?

5.3.1 What is business benefit?

We felt that to be able to understand how the benefits of an IS/IT investment can be realized we first had to define its meaning from a theoretical view and then compare this to the view that is established at Volvo IT. According to the Cronk and Fitzgerald (1999) information system business value is the sustainable value added to the business by IS, either collectively or by individual systems, considered from an organizational perspective.

When we asked the respondents of their view of business value the responses were quite similar in the three categories (management, business and project). They all saw business value as something that is favorable for the business. But when they were told to define what business value is, it became quite clear that Volvo IT has a strong focus on cost and efficiency increases.

According to Conk and Fitzgerald (1999) there are three dimensions of business value: **Business, System** and **User**. Gartner Group (2003) presents five perspectives that they think needs to be considered when it comes to business value:

- *Strategic Alignment*
- *Business Process Impact*
- *Architecture*
- *Direct Payback*
- *Risk Assessment*

According to Cronk and Fitzgerald (1999) companies can gain a lot if they think of the effects of their IS/IT investments in those three dimensions presented above. The first thing to consider is according to Cronk and Fitzgerald (1999) how the investment contributes to the overall **business.** Today there is an ongoing work with *strategic alignment* at Volvo IT. A project portfolio and request process that focuses more on the effects in the business is under construction. But our study showed that there is a demand for more work in this area. This is something that should be given a high priority because a working portfolio management strategy would give Volvo IT the comprehensive view of their IS/IT investments. This is something that according to Bennington and Baccarini (2004) is a fundamental component to establish a working benefits management process.

Gartner Group (2003) also mentions that it is important to consider the impact that the investment will give on the *business processes*. For Volvo IT this is very important since they have a process focus, or are going towards a more process focused organizational strategy. We have seen the need for, and some of the respondents has requested, someone that has the overall view of which IS/IT investments that are initiated in each process (for the internal IS/IT investments).

The second dimension that Cronk and Fitzgerald (1999) mention is how the IS/IT investment affects the IT architecture legacy of **systems**. One of the respondents pointed out the importance to have a map over all the systems to get a comprehensive picture of the systems and applications and their contribution to the business. The *architecture* perspective that Gartner Group (2003) mentions revolve around the same thinking, meaning that, it is important to consider the contribution that the IS/IT investment gives to the overall system map.

Our study showed that Volvo IT can broaden the view of what business value is and what an IS/IT investment can generate. The dimensions and perspectives presented by Conk and Fitzgerald (1999) and Gartner Group (2003) is a way for Volvo IT to broaden the view of what kind of benefits that an IS/IT investment can generate.

5.3.2 Which stages should a benefits management process contain?

Our study showed that there is no specific process at Volvo IT that manages the benefits but respondents from all the three categories understood the idea of such a process and mentioned two things that showed that they had the knowledge and understanding for the value of a benefits management process:

- Some of the respondents talked about that an **identification** should be done in the beginning of the IS/IT investment life-cycle

- The other thing that the respondents mentioned was a follow-up that should be performed half a year to a year after the implementation has been done, to **evaluate** which benefits that have been realized (the white book)

We mean that this shows that many of the respondents have an understanding for the totality of benefits management and we have used our theoretical framework to tie those activities together into a process, the benefits management process. Volvo IT have the knowledge of **why** and we present a framework for **how** this could be done.

According to Bennington and Baccarini (2004) and Ward et al. (1996), see Lin and Pervan (2001), should a benefits management process contain the following stages:

- Benefits identification
- Benefits realization planning
- Benefits monitoring
- Benefits realization
- Potential for further benefits
- Lessons learned

We have chosen to put *Lessons learned*, which in the theory is mentioned in Potential for further benefits, as an own stage to point out its importance.

5.3.3 What should be considered in the evaluation of benefits?

In our empirical study and after creating our theoretical framework we found that the question of what should be considered in the process is difficult. There are many things to consider and some are dependent on which company and which IS/IT investment that is managed. The literature and our study showed that the most important factors to consider are:

- **Consider effectiveness and not only efficiency** Today Volvo IT has a strong focus on efficiency parameters. According to Fitzgerald (1998) it is important that IS/IT investments are not only motivated by the efficiency aspect but also by effectiveness aspects which are the impacts in the business. We mean that if those benefits are identified, planed for and monitored it will be possible to show a larger value for each IS/IT investment. Our proposition to how this could be done is found in chapter 5.4

- **Contingency focus in the evaluation process** The contingency philosophy is based on the fact that the benefits that an IS/IT investment generates are dynamic throughout the duration of the project and if they are managed the

benefits will increase. It is important to look at the management of benefits as a procedural activity and the benefits must be managed throughout the whole process

- **Responsibility for realization** There are many roles that are participating in this process and it is important to determine which role is responsible for the benefits realization. Many of the respondents and authors (Fitzgerald, 1998; Thorp, 2001) thought that this is an important aspect. The responsibility issue is discussed closer in chapter 5.3.5

- **Lessons learned** According to Ward and Peppard (2002), see Ashurst and Doherty (2003), for a benefits management process to work, it is important to take advantage of what the benefits realization stage presents and to make this an opportunity to learn from the result. This is something that our study underlines and that is the reason for why we have put lessons learned as an own stage in the benefits management process. Lessons learned is discussed closer in chapter 5.4.6

5.3.4 When should the evaluation be performed?

We have found that there should be a continuous evaluation throughout the whole process. According to the objectives of evaluation that Farbey et al. (1992) imply that exists should evaluation be done:

- In the **benefits identification stage** for justification of a system and to enable an organization to make comparisons between different projects competing for resources
- In the **benefits realization planning** and **benefits monitoring stage** to provide a set of measures, which enable the organization to exercise control over the project
- In the **benefits realization stage** where evaluation and the subsequent measurement and comparison with actual achievements provide the learning experience which is necessary if the organization is to improve its system evaluation and development capability

Our study showed that the evaluation at Volvo IT that is done with focus on benefits is the "white book" and that the white book is done very sporadic. The white book is written by the project instead of representatives from the business. The common view is that it is done on projects that did not go according to plan. We would like to see that this white book is done on every internal IS/IT investment and as one of the respondents said *"when the good examples demonstrate the value of evaluation, evaluations will be made"*.

5.3.5 Who should have the responsibility for realizing the benefits?

Our study showed that the opinion at Volvo IT of who is and who should be responsible for realizing the benefits differ among the respondents. We interpret this difference of answers as the issue is not predetermined or just not well spread in the organization. Some of the respondents suggested the business operation to be responsible:

> *"For each specific project it is the one responsible for the business operation that is responsible for realization."*

Thorp (2001) means that if we accept that we are no longer simply implementing technology, but implementing business change, then it is clear that the business must own the benefits from such an activity. The business operation must be involved and accountable. Fitzgerald (1998) means that responsibility never can be purely an IT department or a finance department task. He advocates that **the area of the business with prime interest in the successful outcome of the project** should be responsible for the benefits to be realized.

With the launch of IS-GDP there will be a clear focus of the fact that the benefits of IS/IT investments must be owned by the business operation. The question now is who within Volvo IT will take this responsibility? The ones that are responsible for managing and realizing benefits are according to OGC (2004) the business users and business managers. They mean that the project owner is responsible for ensuring the management of the process and realization of benefits. Individual managers of business areas will be responsible for actual benefits delivery.

At Volvo IT we found that the responsible should be the **line-, function- or process management** dependent on where in the business operation the effect of the IS/IT investment will take place.

Facilitation group

Since the benefits management process is a very complex process we agree with Fitzgerald (1998) when he advises that there should be a small group within the organization whose role is to facilitate any evaluation process. He means that this group should ensure the ongoing process and guide the project team and the evaluation team in the benefits management process. This group should also be repository of evaluation experience and organizational learning. They should be responsible for ensuring that the benefits management process is followed and that an evaluation team is established for each project, but they are not responsible for the actual management of benefits. We suggest that the BOD-department should take the role as a facilitation group, at least in the first period. A project portfolio should also be established for a comprehensive overview of the ongoing projects and this project portfolio can also assist in the selection of projects.

Evaluation team

An evaluation team should be established for each project. The evaluation team should contain representatives of the ultimate users, the management and the information systems developers, as Fitzgerald (1998) and Remenyi and Sherwood-Smith (1999) propose. The facilitation group should facilitate such an evaluation team. The facilitation group should also demand evaluation of benefits to be done, as some of the respondents suggested and they wanted someone higher up in the organization to come with that demand. Kumar (1990) says that the evaluation should be performed by someone outside the project team, and this was also suggested by some of the respondents. This is to ensure that the evaluator is objective.
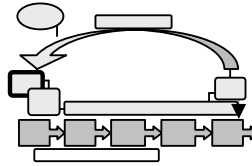
5.4 Main question - The benefits management process

The aim in this chapter is to answer our main question *"How should the benefits management process be designed to realize the benefits of IS/IT investments?"* We will under each step in the benefits management process present our ideas of how a benefits management process could be designed to realize the business value (**A**). This will be followed by how each stage looks like at Volvo IT (**B**). We have after 16 interviews ascertained that there is a gap between theory and practice, this gap has also been acknowledged by Ashurst and Doherty (2003). We will finally give a proposal for how to overcome the deviation between theory and practice (**C**).

One of the questions that we asked ourselves in the beginning of this thesis was *"Which stages should a benefits management process contain."* When we now have gone through an endless amount of literature and seen how those matters are handled in practice we have come to the conclusion that those stages are:

5.4.1) Benefits identification
5.4.2) Benefits realization planning
5.4.3) Benefits monitoring
5.4.4) Benefits realization
5.4.5) Potential for further benefits
5.4.6) Lessons learned

5.4.1 Benefits identification

A. Theory

According to Ashurst and Doherty (2003) the first thing to do in the benefits management process is to identify and enumerate the planned outcomes of an IS development and decide the means by which they will be achieved.

According to Ward et al. (1996), see Lin and Pervan (2001), must the list of benefits required be agreed by the managers whose activities are affected by the system. At the same time, potential dis-benefits of the system should be considered, i.e. what adverse impacts on the business or organization it could have.

The methods, suggested by Bennington and Baccarini (2004), when it comes to identification of benefits are interviews and workshops with key stakeholders. OGC (2004), as well as Bennington and Baccarini (2004), state that the benefits identification should be a joint effort between the project manger and the project stakeholders. According to Remenyi and Sherwood-Smith (1998) a key aspect of this process is that the stakeholders learn to understand better what is required and what is possible.

Identification and analysis of what is termed 'second order' effects should be done (Hochstrasser, 1990, see Fitzgerald, 1998). Any project that impacts roles, relationships, sources of power or organizational structures is likely to

have second order effects. To involve people most directly affected by the system in the task and provide them with the opportunity to influence events is one way to predict and assess second order effects. Another approach is to conduct a pilot study of the system with the express objective of exploring second order effects.

The planed outcomes should then be aligned with the IS/IT strategy and so doing directly contribute to corporate objectives. If there has to be a choice between many investments that meet the same specifications the one that makes the largest contribution to the business strategy should be chosen Fitzgerald (1998). This requires a project portfolio.

B. Volvo IT

According to the respondents there is not an established way of how the benefits are identified. The benefits shall be mentioned in the business case and are briefly mentioned in current models. But the focus is on efficiency parameters such as cost savings.

But there is quite a lot of ongoing work is the area. Three master theses have been written within the Volvo Group with focus on business cases and on the first stages in the benefits management process. The BOD-council is establishing a new request process that focuses more on benefits and the effects in the business. This thesis is a part of that work.

C. Proposal for how to overcome the deviation between theory and practice

To make it easier to identify the benefits Volvo IT need to change the overall mentality that benefits are more than just costs. It is also important for Volvo IT to establish a benefits identification procedure for IS/IT investments focusing on the impacts on the business operation so that there is a unified way of how this should be done. The request process that is under development is a good example of how this could be done; therefore Volvo IT should continue this work. Second order effects should also be identified for projects that impact roles, relationships, sources of power or organizational structures. The identification of benefits can be done through interviews and workshops with key stakeholders.

The benefits that have been identified should then be aligned with the strategies and a tool to support this is the project portfolio. Therefore, to be able to evaluate the different projects Volvo IT should continue the work with establishing a project portfolio where all projects can be prioritized and evaluated against each other.

5.4.2 Benefits realization planning
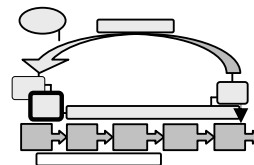
A. Theory

According to Thorp (2001) benefits do not just happen and therefore they need to be carefully planed for. OGC (2004) underlines the importance of doing a

management plan that describes how the organization wishes to manage and achieve benefits from any investment in business change. Ward et al. (1996), see Bennington and Baccarini (2004), means that without a plan it is difficult to predict how an organization might effectively realize business benefits. The benefits realization plan is essential for the benefits management process to be accomplished. Therefore the planning of benefits must occur prior to the project being approved for implementation. The benefits identification and benefits realization planning can with advantage be done at the same time. According to Bennington and Baccarini (2004) this plan should outline:

- **Where in the business the benefits should occur**
  It has to be clear where in the business the benefits will occur so the business change can be monitored and managed. The answer will often surface during the benefits identification stage. This is important so the affected business is aware of the prerequisites of change to realize the benefits that will be delivered.

- **Who in the organization will receive the benefits**
  It is fundamental that the principle stakeholders of the information system are identified at the onset and that they accept their continuous involvement (Remenyi & Sherwood-Smith, 1998). It is important to have those key stakeholders that are affected by the investment agreed that the benefits can be realized and that they are willing to participate throughout the whole process. Do a review with the key stakeholders to identify additional opportunities and second order effects. Fitzgerald (1998) argues that it is **important** that the key stakeholders are involved in the identification of benefits because it is them, and only them, that can identify and at the same time estimate if the benefits are realistic to realize. This is a factor that Fitzgerald (1998) calls *implementability*. A key aspect in this process is that the participating stakeholders get a better understanding of what is required of them and what is possible to execute.

- **Who in the organization should be responsible for their delivery**
  It should be decided who shall have the responsibility for the realization of the benefits that the IS/IT investment will generate. It is preferable that this person is someone from the area of business with prime interest in the successful outcome of the IS/IT investment and have the major role in undertaking the evaluations.

- **How the benefits are linked to the project output**
  Once an IS/IT investment has been analyzed, all its stakeholders identified, and the benefits defined, a way to measure progress toward those benefits is needed. Key Performance Indicators are quantifiable measurements, agreed to beforehand, that reflect the benefits of an IS/IT investment. (About, 2004)

  In the ideal case those KPIs can be measured throughout the whole process but in some cases it might only be possible to measure the KPI "before" and "after" the implementation of the project. The development of KPIs

tends to shift the focus from managing deliverables to managing the benefits that should result from utilization of the deliverables.

- **Action required by stakeholders to ensure delivery of the benefits**
  The action required by the stakeholders to ensure delivery of the benefits has to be agreed. It should not come as a surprise for the stakeholders later on. So they have to commit to the participation in beforehand and those actions should be documented.

- **When the benefits will be realized**
  A time schedule should be developed with important dates for evaluation and realization of the benefits.

Measurement of benefits
Most of the respondents expressed that the business value should be quantified in measurable terms, and if this is not done the business value has not been defined the right way. Glideman (2000) declares that measurement is possible. He describes a clarifying exercise in five stages of how to do when measurement seems impossible:

1. If something is better, then it is different in some **relevant** way
2. If something is different in some relevant way, then it is **observable**
3. If it is observable, then it is **countable**
4. If it is countable, then it is **measurable**
5. If it is measurable, you can **value** each unit and, therefore, value the benefits

Our study showed that it is not easy to measure benefits but this exercise can act as guidance when measuring the benefits.

Establishment of an evaluation team
An evaluation team should be established in the benefits realization planning stage. This team should consist of representatives of the ultimate users, the management and the information systems developers, and perform the evaluations during the benefits management process. (Remenyi & Sherwood-Smith, 1999)

Facilitation group
It is advised that there be a small group within the organization whose role is to facilitate any evaluation process. They should **not** be responsible but they should ensure that the evaluation team is set up in the first place, ensure the on-going process and guide the team in the approach. They should also be repository of evaluation experience and organizational learning. (Fitzgerald, 1998)

B. Volvo IT
Our study showed that some of the information that the benefits realization plan contains is already considered by Volvo IT.

C. Proposal for how to overcome the deviation between theory and practice

A benefits realization plan as well as an evaluation team should be established for each IT project, according to the principle that is described above, and for the whole organization should a facilitation group be put together.

5.4.3 Benefits monitoring
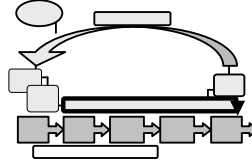
A. Theory

This is the stage where the benefits that were identified and planed for are monitored. Benefits monitoring compares project results with the benefits realization plan during the project and assesses if any internal or external changes have occurred that will affect the delivery of planned benefits. It is necessary to monitor the benefits of IT projects because issues arise that may prevent the delivery of the benefits. (Ward & Griffiths, 1996)

Ashurst and Doherty (2003) call the benefits monitoring stage for benefits delivery and define it as *"the execution of the set of actions necessary to realize all of the benefits specified in the benefit plan"*. Consequently the process of benefits delivery typically runs from project initiation, after approval of the business case or benefits realization plan, through to completion of the project. Benefits delivery focuses upon the organizational change necessary to facilitate benefits realization, rather than the delivery of the technical solution.

To realize the benefits it requires people to change how they think, manage and act. To understand that it is important to consider the effects that investments have on the business and to measure this instead of only focusing on the project deliverables. This will be difficult and often painful changes and they will not happen by themselves. After you got the awareness of the need of change you must understand the full extent of the planned change. This process requires active participation during project development from the primary stakeholders including line managers and users, financial staff and information systems developers.

B. Volvo IT

Volvo IT has tools to monitor the projects like PCM, IS-GDP, MCM and project dashboard. The opinion we got after the interviews are that those tools are focusing more on costs and project progression than on the benefits. Some respondents said that there is no demand that the benefits should be measurable during the life-cycle and since there is no clear way to describe the business value/benefits in the beginning evaluation during the life-cycle is difficult.

C. Proposal for how to overcome the deviation between theory and practice

To monitor benefits will help Volvo IT to discover any possible scope changes and to take appropriate actions. It will also help in the decision to stop any IS/IT investment in time. To be able to monitor the benefits the key

stakeholders have to be involved. The KPIs that were allocated to each benefit in the benefits realization planning stage shall be measured during the whole process. This will give early warning if the project is not delivering the benefits that are expected. This monitoring philosophy should be integrated into the existing models (IS-GDP, MCM, Project dashboard).

5.4.4 Benefits realization
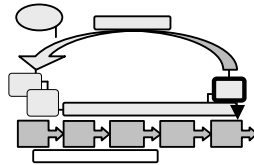
A. Theory

This evaluation, which should involve all key stakeholders, has according to Ward et al. (1996), see Lin and Pervan (2001), several purposes. Those factors are important as motivators to why the benefits evaluation should be done. The factors are:

    a) To maximize the benefits of the particular project
    b) To provide experience for other future projects
    c) To identify what was achieved, what has not been achieved; and
    d) To identify any unexpected benefits that has actually been achieved

Benefits realization should involve a comparison between planed benefits and the benefits that are actually delivered. The benefits realization should be performed when the investment has been implemented and has been in "routine operation" for some time. According to Farbey et al. (1992) it is first then the benefits of the IS/IT investment are actually shown.

Ashurst and Doherty (2003) noted in their study that the project teams were disbanded as soon as the solution had been implemented and that it therefore was no on-going provision for evaluation or benefits realization. This is something that our study can confirm and as a solution for this we agree with Kumar (1990) when he says that; in order to ensure the independence of evaluation it should be managed and performed by people other than the members of the development team. As proposed earlier in the discussion this should be the person within the business who has prime interest in the outcome of the investment together with the rest of the evaluation team.

B. Volvo IT

Our study showed that there is no particular process at Volvo IT today for realization of the benefits from IS/IT investments. As shown in the research done by Ward et al. (1995), see Bennington and Baccarini (2004) there are very few (10%) organizations that have a process for managing their benefits. But our interviews showed that Volvo IT has a good base to build on. Almost all of the respondents demanded a way to evaluate the IS/IT investments. This shows that there is an understanding for the importance of evaluation but the common conception is that there is not done any evaluation with focus on the effects that appears in the business.

The evaluation that is done with focus on the effects in the business is the white book. But our study showed that the white book is done very sporadic,

that it is performed by the project team instead of representatives from the business and that it focuses more on project deliverables then on business value.

C. Proposal for how to overcome the deviation between theory and practice
There seems to be an understanding in the organization of why an evaluation should be done. It is important to spread the knowledge in the organization of the importance to have a benefits management process so that everyone that participates is aware of the value. The evaluation should be conducted by the person that is responsible for the benefits realization together with the rest of the evaluation team that was established in the benefits realization planning stage.

In our study we have found that there are audits made that focuses on economical aspects of the projects and that the projects are performing according to schedule and delivering the economical "promises". We would like to see an independent audit with focus on the benefits that the projects deliver. But before this audit is established a working benefits management process needs to be established so that the audit has anything to make an audit of. And this audit should be made in the routine operations phase to ensure that the benefits actually are realized.

5.4.5 Potential for further benefits
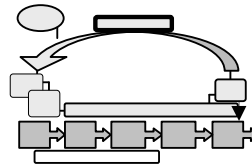
A. Theory
After the benefits realization further benefits may now be achievable which were not expected in the beginning. This stage provides the opportunity to plan for and realize these further benefits. (Ward et al., 1996, see Lin & Pervan, 2001) Even second order effects that were not identified in the beginning can become apparent. Those second order effects should be evaluated because they can be potential for further benefits. New projects might start to realize potential organizational benefits that have been discovered.

B. Volvo IT
After our interviews we have not distinguished any activity that can be compared to this stage "Potential for further benefits".

C. Proposal for how to overcome the deviation between theory and practice
If Volvo IT performs a benefits realization (white book) this stage will come natural because the benefits review will be the perfect opportunity to capture the potential for further benefits and by this the opportunity to realize them will arise.

5.4.6 Lessons learned
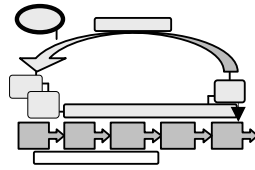
A. Theory

The benefits realization presents the opportunity for the evaluation team and the organization to learn from the results. This learning, especially after a number of projects have been evaluated, may lead to significant improvements in subsequent evaluation projects. Whatever the outcomes this should be absorbed in the evaluation culture and so engender confidence in future evaluations.

Fitzgerald (1998) says that too many post-implementation reviews, if they are performed at all, are treated as witch hunts to identify guilty parties where things have gone wrong, rather than as a valuable learning opportunity. Therefore the evaluation culture needs to be made open and non-threatening.

The facilitation group that we have suggested earlier in the discussion should contribute with guidance and assistance of how the experiences should be taken care of.

B. Volvo IT

Our study showed that there is not much done in this area, or it is not well spread in the organization. The experience that is considered is project oriented. We could not find any learning from the results, regarding the evaluation of benefits, at Volvo IT. The respondents thought that a larger focus on learning from the evaluation is required. The white books and project final reports must be red for experience; otherwise will the experience stay within the project team.

C. Proposal for how to overcome the deviation between theory and practice

We agree with the respondents when they say that there should be a demand for the white book to be written and there should be a standardized place where the white books can be stored and they should be red for experience. The project final reports are not concerning our problem area because they are considering the management of the project and not the evaluation of benefits. But the project final report should also be stored for project experience. The white book should be written by the evaluation team (supported by the facilitation group) that was set up in the benefits realization planning stage and it should be made open and non-threatening. The white book should contain a section about what went right/wrong and how to improve the evaluation for next time. It is important that organizational learning becomes a part of the evaluation culture and by doing this the evaluation of benefits will be enhanced for every evaluation.

When a quantity of evaluations has been done, and this way of work has been established, it will be possible for interested parties to search in this database to see if there are earlier projects that have treated the same subject and which

problems and suggestions that have been dealt with. When people within the organization discover the value of such a database they will also help with the contribution.

5.5 Summary

Ashurst and Doherty (2003) found in their study that a majority of the organizations and projects that they studied adopted the traditional measures of project success, namely delivery on time and on budget, and there was little evidence of any explicit focus on benefits delivery of business change. Virtually all the projects that participated in their study focused on technology delivery rather than organizational change and benefits realization, in no case were specific measures for benefits defined. This is something that we recognized at Volvo IT as well. But our goal was not just to recognize this gap but to give proposals of how to overcome the gap, and the benefits management process can be used as a framework to overcome this gap. It seems to be a shift at Volvo IT towards a larger focus on benefits. Our study showed that Volvo IT has got many of the right tools to establish a working benefits management process. There are tools in progress to support the benefits identification and the benefits realization activity is established in the white book. There are also tools that can be used for monitoring the measures, such as a project portfolio, IS-GDP and MCM.

We have distinguished three different attitudes to managing the benefits of IS/IT investments:

- **Passive**
  Presumes/expects that the benefits will be realized without identifying them
- **Establishing**
  An establishment is done to whether or not the result was better or worse then expected but not learning from the results
- **Proactive**
  A proactive management to increase the amount of benefits that are to be realized and learn from the results

With this thesis and other work at Volvo IT they are approaching a more proactive attitude to managing benefits of IS/IT investments.

5.6 Continuous research

Our research is not in any way exhaustive. There is still need for much research concerning this subject. Every stage in the benefits management process could be examined more. Because the literature does not describe any companies with a benefits management process it would be interesting to make further research of how this process could be implemented and established in a company. It would also be interesting to apply the benefits management framework on real cases at Volvo IT to see if the ideas revolving this area would work as expected. There is also a need to research around general measures that can be followed through the benefits management process. We know that this is a very difficult task because the things to measure are very dependent on both the company and each specific IS/IT investment.

6 Conclusions

In this chapter we give our conclusion to the question this master thesis is aimed to answer.

The goal with this master thesis has been to investigate the benefits management process to realize benefits of IS/IT investments. Our research showed that Volvo IT, as many other organizations, is focusing on traditional measures of IS/IT investments, namely **cost, efficiency** and **time**, instead of the business change delivered by the IS/IT investment.

Our study showed that there is a significant gap between theory and practice. There is no process at Volvo IT today that threats the realization of benefits of IS/IT investments, but there are necessary qualities such as tools and routines to be able to establish such a process. The evaluation at Volvo IT that is done with focus on benefits is the white book but the white book is done very sporadic. Companies of today have to **proactively manage** their benefits of IS/IT investments to increase the business value. The benefits management process framework that we have conducted from the literature review is one way for Volvo IT and other companies to proactively manage benefits and by this realize the benefits of their IS/IT investments, see Figure 11.
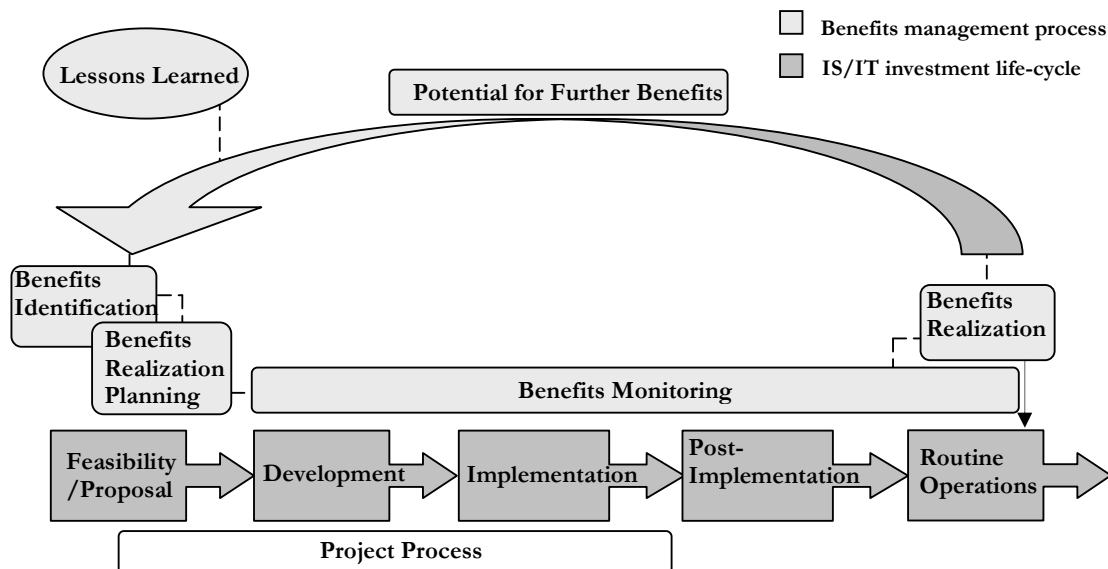

Figure 11 Benefits management process

Two important issues that our study and our literature review showed are:

- The most important issue is the responsibility issue. Thorp (2001) says; Benefits do not just happen. There has to be a clear responsibility for the benefits to be realized. Fitzgerald (1998) means that responsibility never can

be purely an IT department or a finance department task. He advocates that **the area of the business with prime interest in the successful outcome of the project** should be responsible for the benefits to be realized. At Volvo IT we found that the responsible should be the **line-, function- or process management** depend on where in the business operation the effect of the IS/IT investment will take place.

- Our study also showed that learning from the results is of importance. This learning, especially after a number of projects have been evaluated, may lead to significant improvements in subsequent evaluation projects. The experience that is considered at Volvo IT is mostly project oriented. The white books and project final reports are not read for experience as they are supposed to be. So the experience stays within the project team. The white book should be written by the evaluation team (supported by the facilitation group) and it should be made open and non-threatening, and be stored in a standardized place to be red for experience.

By establishing a benefits management process, on the basis of what is concluded in the discussion, companies will overcome the "**silver bullet thinking**" when it comes to IS/IT. This will also manage companies to realize the benefits of IS/IT investments and therefore be able to justify the investments and avoid the catch-22 situation that the **productivity paradox** implies.

7 References

About : Business : Management : Key Performace Indicators (KPI). [Electronic]. Accessible: http://management.about.com/cs/generalmanagement/a/keyperfindic.htm [2004-12-18].

Ashurst, C. & Doherty, N.F. (2003). Towards the Formulation of a 'Best Practice' Framework for Benefits Realisation in IT Projects. *Electronic Journal of Information Systems Evaluation*, vol. 6:2, pp. 1-10.

Backman, J. (1998). *Rapporter och uppsatser*. Lund: Studentlitteratur.

Bennington, P. & Baccarini, D. (2004). Project benefits management in IT projects – An Australian perspective. *Project management journal*, June 2004.

Berghout, E. & Renkema, T-J. (2001). Methodologies for IT investment evaluation: A review and assessment. In Grembergen (Ed.), *Information technology evaluation methods & management*. Idea Group Publishing. Pp. 78-97.

Brynjolfsson, E. & Hitt, L.M. (1998). Beyond the productivity paradox. *Communication of the ACM*, vol. 41:8.

Chapman, S. & Loch, S. (2001). *Benefits Realization: the untold story*. Oceania cacs.

Cronk, M.C. & Fitzgerald, E. (1999). Understanding "IS Business value": derivation of dimensions. *Logistics Information Management*, vol. 12:½, pp. 40-49.

Esterby-Smith M., Thorpe, R. and Lowe, A. (1999). Management Research : an Introduction. Redwood Books, Trowbridge, Wiltshire.

Farbey el al. (1992). Evaluating investments in IT. *Journal of Information Technology*, pp. 109-122.

Fitzgerald, G. (1998). Evaluating information systems projects: a multidimensional approach. *Journal of information technology,* 13, pp. 15-27.

Frisk, E. & Plantén, A. (2004). *Evaluating IT-investments: Learning from the Past.*

Gartner Group, (2002). *Benefits Realization: A Key to Delivering Value*, Gartner Symposium ITexpo.

Gartner Group (2003). *The Business value of IT*. Brochure.

Glideman, C. (2000). *Total Economic Impact Workbook: Performing a TEI study to Evaluate Technology Initiatives*, Giga Information Group.

van Grembergen, W. (2001). *Information technology evaluation methods and management.* Hershey, PA: Idea Group Pub.

Kumar, K. (1990). Post-implementation evaluation of computer-based information systems: current practices. *Communications of the ACM,* February, vol. 33:2, pp. 203-212.

Kvale, S. (1996). *InterViews – an introduction to qualitative research interviewing*, SAGE Publications, London.

Lin, C. & Pervan, G. (2001). A review of IS/IT investment evaluation and benefits management issues, problems and processes. In Grembergen (Ed.), *Information technology evaluation methods & management*. Idea Group Publishing. Pp. 2-24.

OGC (Office of Government Commerce) : STDK Home : Delivery Lifecycle : Benefits management. [Electronic]. Accessible: http://www.ogc.gov.uk/sdtoolkit/reference/deliverylifecycle/benefits_mgmt.html#benmangement1 [2004-10-13].

Patel, R. & Davidson, B. (1994). *Forskningsmetodikens grunder* (2a uppl.). Lund: Studentlitteratur.

Pearlson, K.E. (2001). *Managing and Using Information Systems: A Strategic Approach*, John Wiley & Sons, Inc., New York, NY.

Remenyi, D. & Sherwood-Smith, M. (1998). Business benefits from information systems through an active benefits realisation programme. *International Journal of Project Management*, vol. 16:2, pp. 81-98.

Remenyi, D & Sherwood-Smith, M. (1999). Maximise information systems value by continuous participative evaluation. *Logistics Information Management,* vol. 12:½, pp. 14-31.

Seale, C. (1999): *The quality of qualitative research.* Sage Publications Ltd., London.

Thorp, J. (2001). A benefits realization approach to IT investments. In Grembergen (Ed.), *Information technology evaluation methods & management*. Idea Group Publishing. Pp. 25-43.

Ward, J. & Griffiths, P. (1996). *Strategic planning for information systems*. John Wiley & Sons Ltd, Chichester, UK.

Wiedersheim-Paul, F. & Eriksson, L. (1999). *Att utreda, forska och rapportera.* Malmö: Liber Ekonomi.

Willcocks, L. & Lester, S. (1996). Beyond the IT productivity paradox. *European Management Journal*, vol. 14:3, pp. 279-290.

Willcocks, L. & Lester, S. (1997). Assessing IT productivity: Any way out of the labyrinth? In Willcocks, L., Feeny, D.F. & Islei, G. (Eds.) *Managing IT as a Strategic Resource*. McGraw-Hill, London.

Appendix - *Interview questions (main interviews)*

Introduction
1. Name of the respondent, background, position/role and which projects they are involved in?

Business Value
2. What is business value for you?

    a. Which perspectives and criteria's of business value do you think are important to consider?

Internal IS/IT investments
3. What signify/is included in the term IS/IT investment?

4. How does Volvo IT's IS/IT investment life-cycle look like?

5. Who defines the value and the effects that an internal IS/IT investment is aimed to give? And how is this done?

6. Is there a process to monitor and realize those benefits that an internal IS/IT investment should give?

    a. Is anyone responsible for monitoring and realizing those benefits?

Evaluation of internal IS/IT investments
7. Is there any evaluation and/or follow-up of those benefits that an internal IS/IT investment should give and if it is, which purpose does this follow-up have?

8. When during the IS/IT investment life-cycle is this evaluation done?

    a. What is evaluated?

9. Which methods are used for this evaluation?

10. Which person/role is responsible for that this evaluation is done?

11. How is the result that evolves from the evaluations used?

12. Are the internal IS/IT investments handled any different from the external IS/IT investments when it comes to management of benefits?

Models

13. Which models are you in contact with and how are the benefits handled in those models?
   a. IS-GDP
   b. PCM
   c. MCM
   d. Any other model

14. How do you think that the business value should be handled in those models?

The future – normative part

15. Is there anything that you would like to change in the IS/IT investment life-cycle?

16. Who do you think should *define* the business value of IS/IT investments and how do you think that this should be done?

17. Who do you think should be responsible for that the business value of IS/IT investments really is *realized*?

18. If you were the one to decide, what would you change when it comes to *evaluation* and follow-up of internal IS/IT investments at Volvo IT?

19. Is there anything that you think is important that we have forgotten to ask?