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Expected Benefits in Business Development Projects

How to Formulate and Evaluate

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Abstract

Expected Benefits in Business Development Projects - How to Formulate and Evaluate

Sofie Josefsson

Working in projects is a common work-method of many companies today, and project portfolios, a tool to manage all projects and ideas, are frequently used. When choosing which project idea to start as a project the expected benefits have to be valued, because they are what motivate a project to start. The expected benefits are effects of the project result and should be well formulated and well prepared. It is the orderer's responsibility to both formulate and evaluate them when project result has been delivered. The problem with orderers is they often lack knowledge in project management and they believe the project manager should formulate the project idea, with its benefits. This misconception can be handled by providing relevant information to anyone having an idea for a project. The information should be handled by the project office's because they are what orderers first turn to when having an idea. The evaluation after project execution has to be demanded by the Project Portfolio Management that manages the project portfolio, to make sure it is performed. Many orderers claim they lack time to perform it and lack interest because they have already gotten what they requested. However, an evaluation is of greater use than for the single orderer, it will able the company to learn from both mistakes and successes made in the project formulation. The Forum will also be able to know if the investment has paid off.

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SAMMANFATTNING

Projekt är en vanlig arbetsmetod på många företag idag och projektportföljer är ett vanligt verktyg för att hantera alla projekt och idéer. Effektmålen ska värderas vid val av vilken projekttid som ska få starta som ett projekt, eftersom de är vad som motiverar ett projekt att starta. Effektmålen är effekter av projektets resultat och bör vara välformulerade och genomarbetade. Det är beställarens ansvar att både formulera och sedan utvärdera dem när projektets resultat har levererats. Problemet med beställarna är att de ofta har otillräcklig projektledningskunskap och de tror att projektledaren ska formulera projekttiden med dess effektmål. Denna missuppfattning kan hävas genom att tillhandahålla relevant information till de som har en projekttid. Informationen bör tillhandahållas av projektkontoren då beställarna vänder sig till dem när de har en projekttid. För att säkra att utvärdering efter projektets avslut genomförs måste det krävas av projektportföljgruppen som förvaltar portföljen. Många beställare hävdar att de saknar tid att genomföra en utvärdering och de har redan fått vad de önskat genom projektets resultat så är de inte intresserade. En utvärdering är dock till större nytta än för de enskilda beställarna. Den medför att företaget kan lära av både sina misstag och framgångar som gjorts i projektet grundformulering. Det är därför störst intresse för projektportföljgruppen att en utvärdering genomförs. De kommer även att veta om deras investering lönade sig.

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1. INTRODUCTION AND PROBLEM STATEMENT

This opening chapter is intended to provide the reader with an introduction to the background and the scope of this thesis. The problem this thesis aims to unravel is discussed and followed with presenting the purpose. Finally, it provides the reader with an outline of the thesis for an overall view.

1.1. BACKGROUND

Working in projects is an efficient way to make changes or develop a new product, and is a very common work method in businesses of today. The benefits of working in projects are that it helps an organisation reduce product development time to market, utilise limited resources, handle technological complexity, respond to orderer satisfaction and increase global market competition (Patanakul, Iewwongcharoen, & Milosevic, 2010). Because it is a common work method, it is important to study improvements a company can adopt to become more efficient with their organising of projects.

The company in focus of this thesis is Scania CV in Södertälje, which is a large production company of trucks, buses and engines. Scania has several project offices that manage different kind of projects. This thesis is based at the IT Project Office R&D (UTIX). They manage business projects with IT-support to support the Research and Development area (R&D) in their daily work. This group is a part of the IT Coordination and Support R&D (UTI) department. As Scania is a large company, there are many business needs. These business needs are valued against each other to decide which goes on as a project. It is important that the valuating is correct and set in a business perspective of Scania. This will secure the most beneficial projects starting.

UTIX consists of eight project managers, a senior adviser and a group manager. They noticed a business need in examining the expected benefits of projects managed by them. Even though it is known in theoretical project management that orderers shall express the project and its benefits during the initiation, the project manager often does it. This made them understand that the benefits of projects are not carefully considered. The orderers know they want the result but cannot express why. Therefore, they requested a student performing a master thesis and give recommendation of how to formulate and evaluate the expected benefits. Many projects do not follow the conventional way and problem rises later in the process. This will be eliminated with a common process.

1.2. PROBLEM DISCUSSION

The focus of this report is how expected benefits of projects shall be expressed and evaluated. It is important they are well thought-out and defined, because when a project's expected benefits are incorrect it will be valued as either more or less important than it should be. This

can result in; a project with a lower value for Scania is chosen to start instead of a more important. Because of this valuing process, the expected benefits have to be easy to grasp and put in a Scania business perspective. They also have to be evaluated after every project has closed, for Scania to be able to improve their process, by learning from its mistakes and its successes.

The difficulties with expected benefits are that they shall be measurable and put in a larger business perspective. It is important they are well thought-out. To fulfil these requirements it usually takes a lot of time and effort by the orderer of the project. For various reasons, a clear definition and calculated benefits of a project is often not written by the orderer. The reasons are often that the he or she does not have enough time or understand the purpose of the expected benefits. Specifically with IT-projects, the business benefits are not always thought out because the new software functions are considered a benefit in itself, because their daily work becomes easier.

Orderers are often line-managers at different levels and does not consider the formulating of expected benefits being as important as the project managers think. The orderer is closer to the business and knows the benefits by heart, while a project manager want it to be clearly defined. In a large business as Scania, it is important the benefits for the company is calculated as there are many business needs, not all can be performed, and therefore, the projects with the highest value for Scania should get to start.

1.3. PURPOSE

The purpose of this thesis is to present a model and a method for improvements of the definition and evaluation of expected benefits in projects performed at the IT Coordination and Support R&D. This shall be done with consideration of how it is at Scania today and how they manage their projects. The benefits of this thesis are that the valuing of projects at Scania shall improve and therefore the most beneficial projects are decided to start. The valuing will mainly improve because the expected benefits will be equally formulated and handled.

The reason for making me, an engineering student, investigating this is that I have knowledge in project management and I am an objective outsider. It is easier for me to see problems and present objective solutions.

1.4. DELIMITATIONS

The thesis addresses project organisations at large organisations where the needs and requirements are both from the operational level and from the management level. Projects addressed are IT-projects. Projects in this thesis are viewed as internal services and not as a product for the end customer.

1.5. DISPOSITION

This thesis is divided into six chapters were this first chapter is an introduction to the thesis. The second chapter include information about the work method of this thesis to inform how

the purpose has been fulfilled. Chapter 3 consists of the theoretical framework that will be used to analyse the empirical findings in chapter 4. The empirical findings consist of information gathered about Scania during the conduction of the thesis. In chapter 5 an analysis of the empirical findings are performed with the theoretical framework as a reference frame. The thesis finishes with chapter 6 about conclusions of the result and recommendations for Scania.

2. METHODOLOGY

This chapter aims to provide the reader with an understanding of the methodological process, which has been conducted in this thesis. It will provide a motive to what has been done and that it has been conducted in an appropriate way. Initially the case is presented, followed by theoretical study and the empirical study. Finally, a review of how the analysis has been performed is given along with a discussion of the choosing of method.

2.1. CASE INTRODUCTION

This thesis was conducted as a part of the Engineering in Physics programme at Uppsala University in Sweden, specialising in expected benefits of projects. It was based at the IT Project Office in the Research and Development area at Scania. The purpose, presented in section 1.3, was addressed by a theoretical point of view, case studies conducted at Scania and a minor case study at the company Alfa Laval. The collection of data was performed in the spring and the summer of 2011.

In the beginning of the work, the scope and the time plane was set. It was decided that it would be beneficial to start studying Scania's organisation of projects, how they manage their business needs and their projects. After the initial data collection at Scania, a theoretical framework was gathered before conducting interviews of Scania personnel. An external benchmarking interview was also conducted, to investigate how another company works with expected benefits. The final theoretical framework was gathered at the end of conducting the thesis to make sure it would explain the core problems.

2.2. METHOD FOR EMPIRICAL COLLECTION

At the beginning of conduction this thesis, information was gathered at Scania by asking the assigned Scania tutors of Scania's processes and methods, by attending appropriate meetings and by reading information at Scania's internal pages. At the end of the data collection, interviews were performed with Scania personnel and with a project office manager at Alfa Laval. These interviews gave a more depth view of Scania and the other company's methods. All information given in chapter 4 is gathered at Scania, either by asking the personnel or by reading the internal pages.

2.2.1. UTIX

UTIX is the IT Project Office group within the IT Coordination and Support (UTI) department. The group consist of a group manager, a portfolio adviser and eight project managers. Two of the project managers were assigned as tutors to this thesis. As tutors, they have told about the portfolio, the managing of projects, the process before projects are started and of problems noticed by them. They have also been sounding boards to findings and thoughts, and have told which meetings are interesting to observe. The portfolio adviser at

UTIX has held a presentation about the assignment of the IT Portfolio Management Forum. She has also read the final text about Scania to make sure it is correct.

2.2.2. INTERVIEWS

For a more depth knowledge of projects at Scania, interviews were executed with business personnel, orderers and a project manager. An interview with an external project office manager was also conducted, to investigate how other companies may think about expected benefits. Table 1 contains a brief of the interviewed people in this thesis.

Name:	Interviewed as:	Area:
Christer Nygren	Business personnel, Rebus-project	Sales and Services Management
Ann-Christine Palm Granroth	Business personnel, Rebus-project	Sales and Services Management
Jorge Soria Galvarro	Business personnel, WVTA-project	Research and Development
Magnus Jalkesten	Business personnel, WVTA-project	Research and Development
Linda Pukk Berggren	Business personnel, IMYA-project	Research and Development
Karin Linjo	Orderer	Franchise and Factory Sales
Jan Danielsson	Orderer	Research and Development
Mikael Ahlstedt	Orderer	Sales and Services Management
Sonja Persson	Internal benchmarking, project manager	Production and Logistics
Tommy Myrvang	External benchmarking, Head of Project Office	Alfa Laval

Table 1. People interviewed during this thesis.

2.2.2.1. Business Personnel - Three Projects

Three projects were investigated more thorough to understand how the expected benefits are formulated and later evaluated after the closing of a project. All three projects have been finished and closed before the time of conducting this thesis. The interviewed personnel are working with the applications and/or methods developed in the three projects. With one of the projects, no personnel could be interviewed, and a questionnaire was sent instead. At the interviews, two persons answered questions about the project scope, the project result and the expected benefits. They were asked to evaluate the expected benefits and comment. After the interviews, the material has been sent back for a check and a chance for them to correct it.

At the beginning of the thesis, it was decided by the head of UTIX that these three projects would be investigated. The decision was based on the three projects being the only finished projects that had used the recently updated version of the Initiation Report. It was a good idea not using the old version because it would be unnecessary for me to recommend improvements on the old version. The three projects turned out to differ much from each other, which was good in an investigation purpose. One was a legislative requested project, one was changing the work process between two different departments and had well defined

expected benefits, and the last one was a project that included new software to phase out an old system. This means that the three projects provide a wide base for investigating possible problems with expected benefits in Scania projects. Different kinds of projects often mean different kind of approaches on the problem.

2.2.2.2. Orderers

The orderers are responsible for formulation of the expected benefits, and are those most interested in them being true. Because of the orderers involvement it was considered a good idea they should be interviewed about their thoughts and knowledge in the subject. The Scania tutors chose three orderers to be interviewed that they had collaborated with at some time before. The three orderers were chosen because they differ in experience, the department they were working at and in leadership styles. Because of the decision to interview these three different orderers, a wide base was provided of how orderers think.

2.2.2.3. Internal Benchmarking

It was interesting investigating how they work with expected benefits in other areas at Scania. Because of this, a project manager was interviewed from the area of Production and Logistics about their approach to expected benefits. An interview was held at her office asking her about their managing of projects, their organising and their expected benefits in projects. An e-mail was sent to her manager asking about an interview with a project manager, and he recommended her.

2.2.2.4. External Benchmarking

It was interesting investigating how they work with expected benefits at other companies than Scania. The department manager at UTI has a contact at the Research and Development area at Alfa Laval. The contact works as a project office manager and agreed on a telephone interview. During the interview, he told about their organisation behind all projects and was questioned about their thoughts and methods of expressing and evaluating the expected benefits. In retrospect, a telephone interview was not the best way to receive information about their work. An interview face-to-face is more dynamic and therefore it provides more interesting information.

2.3. METHOD FOR THEORETICAL COLLECTION

For more background about the thesis' subject and a better analysis of Scania's processes, a theoretical framework was needed. This framework has been gathered from articles and books found in Uppsala University's digital library, Google Scholar and at Scania's library. The literature has been gathered with consideration of the empirical result, i.e. the findings at Scania. The theoretical framework is for making an analysis of the empirical result and giving recommendations about the future work at Scania.

It was difficult finding essential information for the result of this thesis. A lot of project management literature is focusing on the individual project and about project manager's work. Finding information about the orderer's role, about the importance of expected benefits and

about how to formulate and evaluate was difficult. Information was therefore gathered about the expected benefits, project management in general and project portfolio management. This information, the base of how to work with projects, is a good base to evaluate the empirical collection at Scania. Because the expected benefits are not yet measurable or evaluated at Scania, it is important to start with manageable improvements and if needed improve more in a latter state when the new process have been tested and evaluated.

2.4. METHOD FOR ANALYSIS

The analysis has been an ongoing process during this thesis. During the initial empirical collection, ideas were born and supported by the tutors of this thesis during informal discussions. With these ideas in mind, a theoretical base was formed to support the ideas in a scientific approach. The empirical collection continued at Scania and more theoretical framework was collected. Discussions have been performed during the entire thesis with tutors, Scania personnel and those being interviewed.

2.5. CREDIABILITY

Valid measures are desired when measuring exists, and refers to how accurate the conduction of the research has been. Is it really the thing that was intended to be measured that were, or a related concept instead, e.g. has the response been influenced by the mood of the respondent? Reliability refers to the stability of the measures, i.e. would another researcher get the same findings with the same method? Another way of describing reliability is repeatability (Ghauri & Grønhaug, 2005) (Maylor & Blackmon, 2005).

This master thesis can be seen as a pre-study to what can be improved at Scania IT Coordination and Support R&D department, within their work with expected benefits in projects. The empiric result of this master thesis is based on qualitative interviews, because those interviewed are working within their field on an every day basis and can be considered as experts in their areas. Because of the qualitative interviews conducted, this thesis is valid. The interviewed people have been able to read the material once again to make sure there have been no misunderstandings between the interviewer and the interviewed. This approach makes sure that possible errors are reduced and a more accurate result is provided. Because more than one person has been interviewed with the same purpose, the thesis has reliability. The people interviewed have been complementing each other's answers.

3. THEORETICAL BACKGROUND

This chapter aims to provide the reader with the theoretical framework used in this thesis. Expected benefits of a project is described first and followed by project management with roles and templates described. The chapter is finished with a description of project portfolio management.

All theoretical background is general project management theory. It is not Scania or IT-project specific, if nothing else is stated.

3.1. EXPECTED BENEFITS OF A PROJECT

A project exists because a customer has a need to achieve a change, achieve expected benefits for the business of the company. Expected benefits are effects of a project's result, and what motivates to start a project. The orderer of the project is responsible for formulating them during the initiation, and make sure they are measurable and actualised in the business. They shall be achieved at a given time in business, and after the project's result has been delivered. The time of this varies and the expected benefits are often dependent on contributions other than the project result. They shall be close to the project to motivate and guide the work in the project (Jansson & Ljung, 2004 and Tieto, 2011). If the primary business problem or opportunity is not correctly understood, the resulting IT system will probably be of little value to the business because different aspects have not been considered (Remenyi & Sherwood-Smith, 1998).

The development and formulation of a project's expected benefits are important to a successful project outcome (Sutterfield, Friday-Stroud, & Shivers-Blackwell, 2006). "It is better to be approximately right rather than absolutely wrong" (Andriessen & Tissen, 2000). A survey of unsuccessful information technology projects showed three reasons for project failure; poor project planning, a weak business case and lack of top management involvement and support. A weak business case means that the need of the system has not completely been derived and justified in ways that relate directly to the organisation's business needs, i.e. the expected benefits has not been derived (Whittaker, 1999). Remenyi & Sherwood-Smith (1998) says that the expected benefits are often substantially or even completely lost sight of, forgotten and/or ignored, during the progress of the project. This gives that between 30-40% of information system projects provides no net benefit, however measured. In contrast to this, IT-projects are often seen by the orderer as having ends in themselves, with the functioning of the technology being the paramount objective. This means that the expected benefits are not even considered and the strategy of the organisation are not being met.

Projects shall implement the organisational strategy and it is important that it is achieved successfully, with a clear link between the organisation and the project. Since the expected benefits are formulated when the initial idea and expectations are only estimates of the future, the project should be reviewed to ensure the benefits of the project. It is also important to be

aware of negative and/or unexpected outcomes that can lead to disbenefits. These need to be discussed as well as the positive to agree if they are worth for the positive benefits (Nogeste, 2011).

3.1.1. MANDATORY PROJECTS

Even mandatory projects have options to consider before starting a project. With mandatory, it means a project is required to be done, e.g. legislative demands or demanded by the CEO. In these cases, the expected benefits may not seem necessary because the project has to be performed anyway. However, there are multiple ways to meet the mandatory requirements and the different ways can give different benefits that should be considered (Pennypacker & San, 2009).

3.2. PROJECT MANAGEMENT

There are different ways to manage a project and its surroundings, and there are different roles in a project that contributes in different ways. The success of a project is dependent on all of this.

3.2.1. PROJECT SUCCESS

Several studies have suggested that the proper use of project management tools and techniques (PMTT) affects the success of a project, while inappropriate use can be counterproductive. Many PMTT are used in different phases of a project, but it is shown that only some of them enhance the success of the project. The success of a project can be categorised into three major groups: internal factors (times, cost and performance), customer-related factors (satisfaction, actual utilisation and benefits) and organisation related factor (financial and market benefits). In the conceptual phase, two PMTT contribute to positive project success; analogous estimate and communication plan. Significantly contributions to success in the planning phase are those that serve the purpose of developing detailed scopes, schedules or budgets. PMTT with project success during the execution phase are those that support monitoring and control activities. In the termination phase, cost baseline, WBS, lessons learned and milestone analysis show significant contribution to project success. However, there are many more PMTT used during the different phases because project managers still use PMTT without understanding their impact on project success. It is important the project manager use the PMTT that impact on the success of the project and not only those commonly known or frequently used by others. (Patanakul, Iewwongcharoen, & Milosevic, 2010). When a project is a success it does not necessary mean the tool or technique used will be the best suited with the next project because every project is unique and dependent on its historical and organisational context. Projects are open systems and very much dependent in its surroundings (Engwall, 2003). There is no approach of how to formulate the expected benefits that fits all projects or companies, because every project is unique (Nogeste, 2011).

3.2.2. DRIFTING ENVIRONMENT

It cannot be assumed that originally intended outcomes will necessarily remain relevant during project execution. Relevance can become eroded when the environment of a project starts drifting, e.g. when customers change their preferences, when competitors change their strategies or when corporate management change their commitment. Relevance issues are often neglected during the project execution phase. It is often only an initial concern by the orderer or other interested parties.

With drifting environment around a project, it is necessary to monitor a complexity of relationships not necessarily around the project itself. This can contribute to the project being less prioritised as time goes, because the strategy of the company changes and other projects or ideas becomes more important (Kreiner, 1995).

3.2.3. ORDERER

An orderer of a project has ordered an assignment to be performed as a project, and is usually a line-manager. The orderer is responsible for the short- and long-term effects, by the project's resources and result, in the organisation using the result. The orderer can be seen as a customer of the project and is responsible for the project objectives, focus, extent and priority. A possible closure or scope changes of the project shall be discussed and agreed with the orderer. The orderer requests the project result with the following benefits and is responsible for formulating an Assignment Directive with the project's specifics. He or she initiates and finances the process of the result. A benefit with the orderer being a line-manager is that it can open a way for the project in the organisation in a way the project manager cannot. This also supports the credibility of the project and project manager (Tieto, 2011) and (Jansson & Ljung, 2004).

The orderer is always within the same company as the project, he or she is not an external part. If the project is ordered by an external customer there has to be an internal orderer that decides how the result shall be delivered, taking both the external customer and own organisation in mind. There shall not be several orderers because this often creates misunderstanding and/or contradictive orders. A project manager benefits from having only one responsible to talk to when needed, otherwise he or she has to take a decision of who to comply. The orderer also decides to which degree the project manager can act on its own (Jansson & Ljung, 2004).

A success factor of projects is the commitment of the orderer to the project. It is important the orderer maintain the vision of the project during the entire process (Sutterfield, Friday-Stroud, & Shivers-Blackwell, 2006). In the termination phase, it is important the orderer use the tool "lessons learned" at its contributions, for future project successes (Patanakul, Iewwongcharoen, & Milosevic, 2010).

3.2.4. PROJECT MANAGER

A project manager has been given the responsibility to lead a project to the finish by an orderer (Jansson & Ljung, 2004). The project manager agrees with the orderer about its authorities and makes sure the project objectives are not too ambiguous or implementations are too inefficient (Kreiner, 1995). When the project has been delivered and closed, the project manager's responsibility and authority ends. The responsibilities of the project manager are to deliver the project result at the agreed time and with the agreed cost. He or she is dependent on the project members' achievement because the manager shall not create the result, it shall only manage the project. The project manager uses the skills of the project members to achieve the common goal as efficiently as possible, and has to be a leader that can create a good work environment and commitment to the project (Tieto, 2011) and (Jansson & Ljung, 2004).

3.2.5. ASSIGNMENT DIRECTIVE

During the project initiation the problem or opportunity statement are formalised to validate the project being worthwhile (Remenyi & Sherwood-Smith, 1998). The Assignment Directive is a document written by the orderer and given to the project manager, and can be seen as a contract between these two. It describes the desired result, limitations, time plan, cost frame and expected benefits of the project. It is important the orderer and project manager agree on the Assignment Directive before the project start, because there may exist misunderstandings otherwise. The Assignment Directive makes the project visible in the organisation and provides a base to discuss it by the managers or by the orderer. The Assignment Directive is estimates of the cost, time and result. They shall be more precise in the Project Definition, written by the project manager after the pre-study phase (Jansson & Ljung, 2004).

The Assignment Directive is often poorly executed. This can be because of many different reasons:

- The orderer does not have a clear idea of the project.
- The idea needs to be handled with great discretion and not many can work with it.
- The orderer wants to see what a pre-study can lead to.
- Anyone within the organisation has a strong opinion and succeeds in starting a project without any clear idea of the project (Wisén & Lindblom, 2001).

3.3. PROJECT PORTFOLIO MANAGEMENT

When a company has many projects in progress and many project ideas, a project portfolio is a tool to manage all these projects and ideas. There are usually more ideas available for selection that can be undertaken within the physical and financial constraints of the company, so choices must be made in making a suitable project portfolio (Archer & Ghasemzadeh, 1999). Project Portfolio Management (PPM) is responsible for the project portfolio, with maximising it against corporate objectives, make sure it is balanced and ultimately aligned with the company's strategy (Bonham, 2004). Strategy can be considered to go through an organisation, linking portfolios and projects in a systematic and hierarchical manner. A strategy is implementing the goals and objectives of a company (Nogeste, 2011).

Many possible methodologies can be used in selecting a portfolio but there is no consensus on which are the most effective. It is important every company chose the methodology that suits its culture and allow it to consider the project attributes it believes are the most important (Bonham, 2004). An overall balance needs to be achieved between the need to simplify and the need to generate well-founded and logical solutions (Archer & Ghasemzadeh, 1999). It is important the project review process be only for review, and not a platform for micromanaging projects (Bonham, 2004).

3.3.1. PRIORITISING PROJECTS

Most PPM's use ranking methods, by assigning initiatives and projects scores and put them against each other. The initiative with the highest score is usually approved to proceed. However, when considering a balanced portfolio, it may require some initiatives with lower rank to proceed, because it may support a long-term balanced strategic direction more (Bonham, 2004). This is the balancing act between prioritising the business strategy, the limiting budget and knowing when it is the right time to start a project. In this balancing act, the projects in progress need to be monitored to make sure they fulfil the expected benefits, or they can be closed. If the corporate strategy has shifted or the project scope has changed, the project would be considered more risky if it is not satisfying the company's strategy. In the case of a closed project, their remaining capital can be applied to other more beneficial projects at the time (Pennypacker & San, 2009). To help orderers remove their "blind spot" they tend to have with their own projects, their project should be reviewed when major gates are reached. The PPM shall ask if they are investing in the right things, if they are optimizing its capacity, how well they are executing, if they can absorb all the changes and if the promised benefits are accomplished. With drifting environments, the strategic objectives may vary over time and some projects may not be strategically aligned anymore. This means that PPM must be a dynamic process (Pennypacker & San, 2009).

To make sure an initiation will be reviewed fairly and consistently against other proposals the review process will have to be communicated to the orderers. They need to balance between the corporate culture that encourages innovative ideas and an environment that ensures rigorous strategic assessments. Orderers will be assured their hard work in the initiation phase will get the due diligence it deserves if they know the prioritising of projects process by the PPM. This insurance is important because a project declined by the PPM is definitely closed and will never be seen by the executive review committee (Bonham, 2004).

4. EMPIRICS

This chapter provides the reader with information about the IT Coordination and Support R&D department work with the process of the projects; the decision structure, the process from need to delivery, the managing of projects and the corporate culture.

4.1. R&D METHODS

R&D methods visualises the decision structure of councils, process forums and maintenance groups involved in the Research and Development (R&D) IT-processes. Figure 1 visualises this structure.

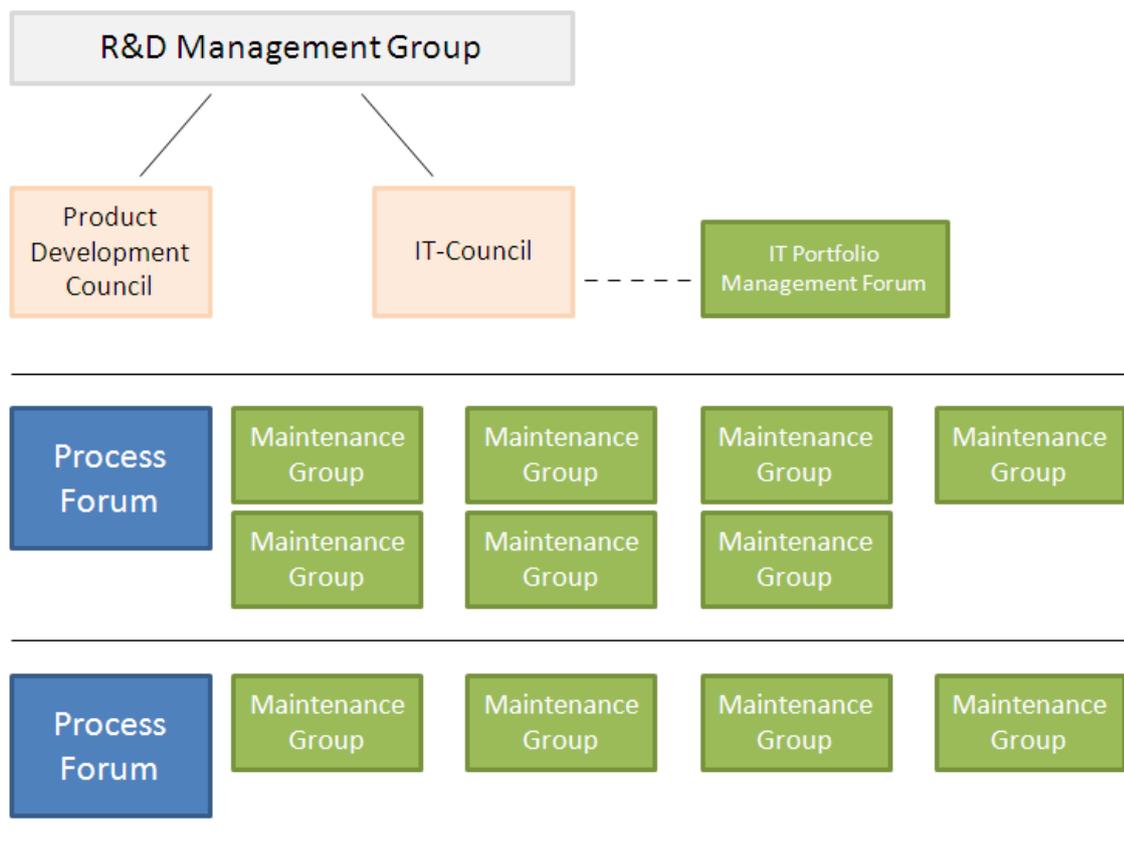


Figure 1. R&D Methods.

4.1.1. MAINTENANCE GROUP

The maintenance groups manage and administrate all of the applications and/or methods that are developed and used at Scania R&D in their daily administration work, i.e. not IT systems used in the vehicles. All maintenance groups consist of representatives from involved groups, i.e. people using the applications and methods in their daily work, and from the IT Coordination and Support R&D department (UTI). The representative from UTI participates as a business maintenance manager and makes sure that they, as a part of a supporting

department, discuss business needs and ideas with these groups. When a need is bigger than the group have mandate to manage within their management organisation, it is presented as a project idea to the process forum.

4.1.2. PROCESS FORUM

The process forums are responsible for prioritising business needs and project ideas from their associated maintenance groups, and regard the entire process of their responsibility. As seen in Figure 1, the number of associated maintenance groups varies. The process forums decide which needs should go forward, be merged or be sent back to the maintenance groups for either more information or for them to manage within their management organisation. When a need fits the criteria of a project, it is sent to the IT Portfolio Management Forum, which prioritises between project ideas from all process forums. The process forums' members are from the business of the process, the representatives from UTI in the maintenances groups, and a representative from InfoMate. InfoMate is a Scania subsidiary and R&D's IT-provider.

4.1.3. IT PORTFOLIO MANAGEMENT FORUM

The purpose of the IT Portfolio Management Forum (PMF) is to manage the tactic steering of the R&D IT project portfolio. This includes responsibility for valuing, selection and planning of projects recommended to the portfolio. They shall also set the pace of the active portfolio and subsequent follow-up of benefits. The PMF shall work towards a portfolio containing only those projects that deliver a clear and measurable benefit to Scania. They shall also make sure that all projects are aligned with the IT-strategy, the product values and the R&D Factory (described in section 4.4). The result, cost and time are followed by the PMF to make sure they are still aligned with the Project Directive. Projects are recommended to start or not at this forum. When the PMF recommends a project to start, the members of the project begin to work even though the formal decision, taken by the IT council, has not yet been taken. The members of the PMF are the chairpersons of the process forums and the head of IT Solutions at InfoMate. The forum's chairperson and secretary are from the IT Project Office R&D (UTIX).

4.1.4. IT COUNCIL

The IT Council at R&D is responsible for the IT project portfolio at R&D. They shall ensure that an IT-strategy and an IT-activity plan is created and updated, and that it complies with the business plan. They are responsible for identifying and deciding on needed changes in the IT-environment and shall take the efficiency of the employees as well as economical IT solutions in to account. The recommendations from the PMF are pursued and discussed before the formal decision of a project's start is decided, and how resources shall be divided and prioritised. The IT Council meets four to five times a year. Members of the IT Council are the head of R&D and the executives from the different business sections within R&D.

4.2. FROM NEED TO DELIVERY

The IT Coordination & Support R&D department works with visualisation in their process of choosing projects and when managing ongoing projects.

4.2.1. VISUALISATION ROOM

The visualisation room is a room to visualise needs, ideas and projects in progress. It is easier for the IT area R&D to discover problems early with this method. The room consists of whiteboards with information from and about the organisation, from need to delivery. You can follow a project from when it is raised by a process forum, as a business need, to its finished result that is returned to the business, for the maintenance group to manage. All process forums write their needs on small pieces of papers and place them on a whiteboard with a time estimate. Similar needs are linked together and an idea for a project is born. This idea is written as a “project on a page” - a short summary about the project idea, timeline and cost estimate. The PMF makes a short and preliminary value of every project idea and when resources are available, the idea with the most value is initiated. During an initiation, the idea is further investigated and when finished, presented at the PMF. The PMF values the project idea, described more thorough in section 4.2.3, and if it is approved as a project, it is placed in the Evaluation Graph and on the Project Board. The Evaluation Graph, seen later in Figure 2, is for mapping the project against ongoing projects and project ideas. The Project Board is where a project’s progress is visualised with different coloured dots, for the management to get an easy status report of every project. This is explained more thorough in section 4.2.4.

4.2.2. INITIATION REPORT

The Initiation Report is a power-point template used at R&D about the findings from the initiation. It is presented at the PMF by the orderer. The report is Scania specific and used instead of the Assignment Directive – a template in Scania’s project steering model, PPS. However, when a project is approved, the Initiation Report will be called the Assignment Directive. It consists of information about the timeline, idea, objectives, limitations, resource estimation, consequences if not started and potential risks.

The expected benefits shall be written under the headline “project idea”. The instruction says; “describe the improvements (benefits) the project will contribute to the business. The cost shall also be estimated.” A fuzzy and not measurable example is also given.

4.2.3. VALUATING A PROJECT IDEA

The PMF value every initiated project idea before it is approved or denied as a project. The meeting starts with the orderer presenting the Initiation Report and answering questions, with the project manager as support. When the presentation is done and all questions answered, they leave the room, and the members of the PMF discuss the project idea and value it. The valuing is done with help of the Evaluation Matrix, as seen in Appendix A. The benefits, strategic fit and risks are valued and mapped against ongoing projects in the Evaluation Graph, as seen in Figure 2. The graph and its values are used for knowing how the projects are prioritised against each other. Where the project is placed in the graph is the base for the

decision about approving a project idea or not. The graph is also good for knowing how the resources shall be divided between the projects, provided they fall short. The valuing is done in two steps, first in smaller groups and then within the whole group, because of the benefits of smaller groups where everyone is more likely to express their opinions. When the smaller groups have graded differently, they may have discussed different aspects and this will make the grading more accurate in the whole group. The whole group has to agree on a common point from zero to ten, with ten different criteria. These criteria are seen in the Evaluation Matrix, in Appendix A. The total value of the project idea are added up and temporarily placed in the Evaluation Graph to see its position against other ongoing projects. The orange circles in Figure 2 are not initiated project ideas, they are project ideas that have been temporarily valued. With the valuing of these ideas, the Evaluation Matrix is not used; the PMF instead makes an approximation and place it in the graph.

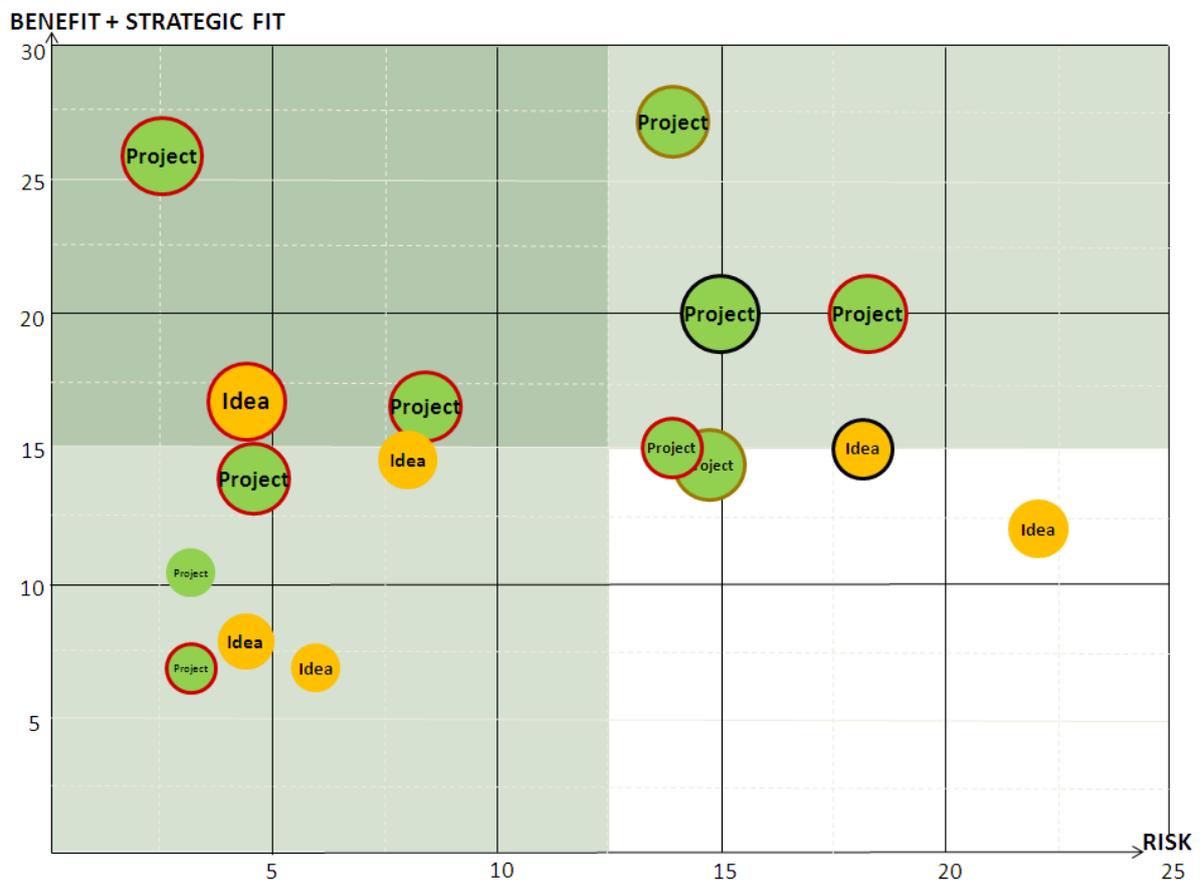


Figure 2. Evaluation Graph. Green is ongoing projects and yellow is project ideas – “project on a page”.

The axes on the map are benefits and strategic fit against risks. A project with too little benefit or too high of a risk will not be recommended to start. With an approved project, the temporarily note is removed and a green circle is placed in the graph instead.

4.2.4. IT-AREA “PULSEN” R&D

An approved and started project is placed on the Project Board where the project manager maps the project’s progress with its allocated resources, time, cost and result. The presentation of this board is done at the IT-area “Pulsen” every other Friday. The department manager, all group managers and the project managers of UTI participate, as well as representatives from InfoMate. All ongoing projects are viewed and any problems are discussed briefly. The project managers share how their projects are progressing and answer questions from the meeting participants. To visualise the progress of the projects on the board, they use red, yellow, green and white dots. A red dot represents a deviation from the Project Definition in time, cost, result or resources, without a plan of how to return to the initial plan (the Project Definition). The plan shall be about the problem, who shall solve it, what solutions should be investigated and when it should be ready. A yellow dot also represents a deviation, but with a plan. A green dot means that everything is going according to plan and a white means that there are no allocated resources from that group/area. The groups represented at the board are InfoMate, UTI groups and some other departments and areas. It is mainly red and yellow dots discussed, and the representative from the concerned group shares why they have not been able to provide the resources. When a project is finished and closed, it is removed from the board at this meeting.

4.3. PROJECT MANAGEMENT AT SCANIA

Scania’s IT coordination and support R&D is working with two models in their business projects with IT-support. Practical Project Steering (PPS) defines how the project shall be managed while the Software Development Process (SDP) defines how the development of software shall evolve, whenever new software is developed.

4.3.1. PRACTICAL PROJECT STEERING

Practical Project Steering (PPS) is a project steering model developed by Tieto, a consulting firm from Finland. The model is suited for all kind of industries that work with projects. PPS is about simplicity and has many checklists and templates to help with the everyday work and decisions. It is divided into three phases; prepare, execute and conclude. The phases are shown in Figure 3. During preparation phase, the requested result and how the work shall be executed, is described and agreed. The second phase, execution, is about the work towards the project objectives and is managed with feedback and an organised handling of changes. Conclude is a phase where the project is returning its resources and writing a Final Report with information about the project progress.



Figure 3. Three project-phases in PPS and the decision points.

There are eight decision points (DP) in PPS and the steering committee determines when the project has completed them. They show where in the process the project is and it is shown in Figure 3 how they are placed towards the three project phases. The decision points are described in Table 2 below.

DP1	Decision to start a project and set the framework for the project's preparation work. Covers the agreement regarding the undertaking to DP2 and/or DP3, as well as the criteria for the approval at DP3 (where possible). The basis for decision is the Assignment Directive (exchanged at R&D by the Initiation Report, described in section 4.2.2).
DP2	Decision to continue, terminate or alter the preparation work. If needed, new conditions and a revised budget.
DP3	Decision as to whether or not there is a sufficiently good basis for undertaking the remaining parts of the project. The basis for decision is the Project Definition.
DP4p	Part of execution starts (before DP3). Agreement on risks and commitment for the parts in question.
DP4	Decision to start execution phase.
DP5	Decision to continue, change the project's undertaking or terminate the project. Covers the agreement regarding the undertaking to DP6 or the next agreed DP, in accordance with the Project Definition.
DP6	Decision to approve delivery of the project's partial delivery or result.
DP7	Decision to approve the transferral of responsibility for the project's results.
DP8	Decision to conclude the project. Covers the approval of the Final Report.

Table 2. Eight decision points in PPS.

The Project Definition and Final Report are PPS templates and are always used at UTI. Both documents are written by the project manager and approved by the steering committee. The purpose of the Project Definition is to identify, define and limit the project's commitment. The document is divided into nine main sections where important results, deliveries, time plan, cost and the working methods are described. The purpose of the Final Report is to summarise achievement of objectives and experiences and to give recommendations for improved working methods. The report includes comments regarding the work process, tools, organisation et cetera. This feedback contributes to good conditions for success of future projects.

4.3.2. SOFTWARE DEVELOPMENT PROCESS

Software Development Process (SDP) is a process for development of IT-systems, both for new and existing systems. It is to be used in an iterative and incremental way and shall develop a new functionality at every step. The lifecycle is inherited from IBM Rational Unified Process (RUP) and can be seen in Figure 4. The four phases are inception, elaboration, construction and transition.

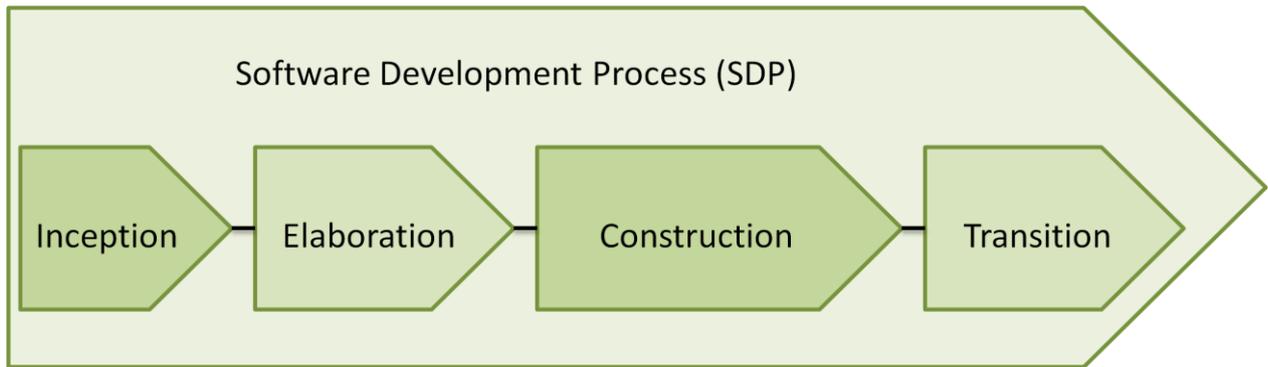


Figure 4. The Software Development Process.

Each phase has a different purpose and finish with a milestone. Inception is about setting the scope of both the project and of the software to be built. During elaboration, technical risks shall resolve and an executable architecture shall be established. In construction, the main part of the software is developed and tested. Transition is about transferring the software to the operation environment, training end-users and hand-over the responsibility for the software to maintenance.

4.4. THE PROCESS OF LEAN PRODUCTION AT SCANIA

Scania uses Lean Production as a corporate culture. At R&D, they call their interpretation the R&D Factory.

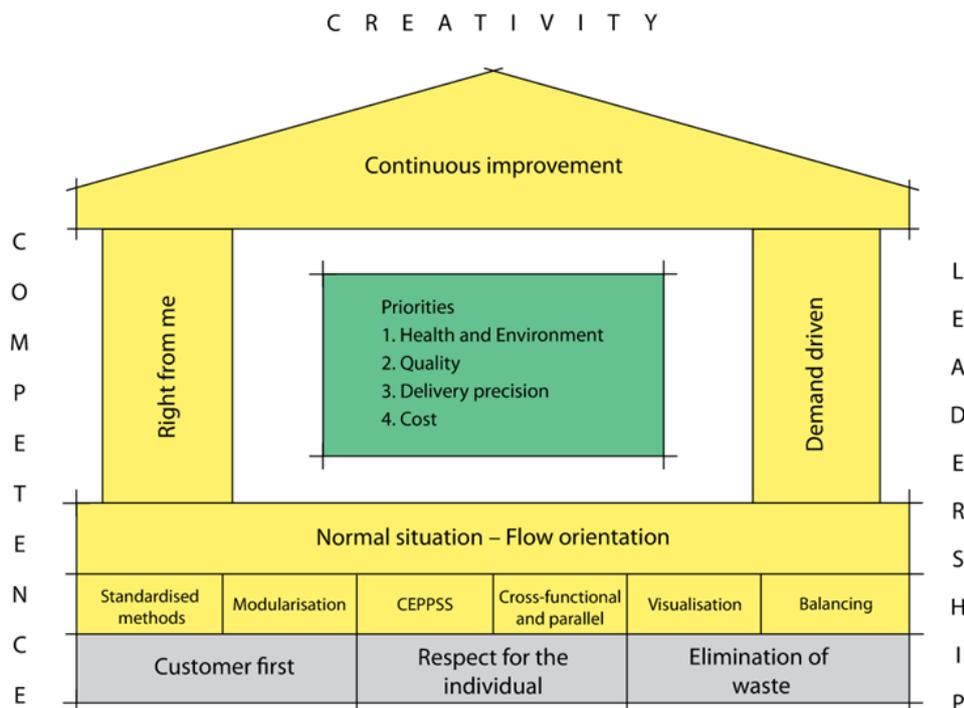


Figure 5. R&D Factory.

As seen in Figure 5, the factory's ground consist of three values; customer first, respect for the individual and elimination of waste. These values are the core values that represent the company's culture and they are equally important and always applied in unity. Customer first means that it is the customer's values and desires that matters and everyone shall have the end-customer in focus through the entire value chain. In practice, with many internal customers, this applies as having the internal customer in focus and the end-customer in mind. The focus of the end-customer always remains because the internal customer closest will have them in focus when requesting work from other units and so on. Respect for the individual means that every co-worker's knowledge and experience shall be acknowledged and used. With elimination of waste, everything not adding value or providing benefits for the customers shall be eliminated. R&D Factory also says that it is allowed to make mistakes as long as you learn from them. The roof of the factory represent continues improvements and this is a reason why Scania is such a successful company. Every employee is told not to settle and be satisfied with how he or she is working and therefore stop making improvements. They are taught to try improving all the time and this makes Scania constantly improve within their three core values (R&D Factory Office, 2010).

4.5. THREE PROJECTS

Three projects have been investigated more thorough to understand how the expected benefits are formulated and evaluated after the closing of a project.

4.5.1. REBUILD OF S-ORDER VEHICLES (REBUS)

Rebus changed part of the IT work process for vehicle reconstructions at Scania. When a vehicle is reconstructed, its personal embedded chip with the vehicle's specifics is reprogrammed. This is important because the chip communicates with the vehicle's IT-system and checks that everything in the vehicle is working correctly. This makes it possible for warning lights at the dashboard to shine when something is wrong. In connection with the reprogramming, it is investigated if the requested reconstruction is possible and safe in traffic. How the reprogramming is being handled depends on the vehicle, if it is a standard-order (A) or a special-order (S) vehicle. With an A-order vehicle, everything follows a standard and nothing extra needs doing. With an S-order, engineers at Scania need to calculate if the requested vehicle is possible and safe in traffic. By all of Scania's vehicles produced a year, approximately 10% is S-orders. Examples of S-orders are fire trucks, vehicles with a lowered entry and vehicles with an extra axle.

Reprogramming of A-orders and S-orders are performed at two different departments, Global Technical Support (BTT) and Product Adaptions (RTBK). The BTT-group handles the A-order reprogramming and works automated with a reference system. RTBK is the group reprogramming the S-orders; they do rigorous calculations with every vehicle, and have no reference system because every case is unique.

A business need was noticed by RTBK about the S-order vehicles requesting a reconstruction to an A-order detail. They were a standard request and needed no calculations. Both time and

cost could be reduced if BTT's IT-system was changed to handle S-order vehicles with an A-order reconstruction.

Expected benefits in REBUS were to reduce response time with this kind of request from 16 to 5 days, work-hour reduction from 4 to 1.25 hours on each reconstruction case and correct modifications by first attempt. The correct modification was motivated with the process at BTT being automated and therefore no human-errors would occur.

4.5.1.1. Result of the Rebus-project

The project is considered a success and all project objectives were met. BTT is now managing S-order vehicles with reconstructions to an A-order detail. The amount of vehicle chips sent to RTBK has been reduced by half. BTT are also able to verify more complex rebuilds today. The negative effects of the project are that the workload has increased at BTT because of the more complex rebuilds. This was not included in the expected benefits of the project. It is not possible to investigate exactly how accurate the expected benefits are because BTT cannot extract the data expressed in the Initiation Report. BTT are however satisfied with the project and says it is a success for Scania, however they cannot specify how in numbers (Granroth, 2011) and (Nygren, 2011).

4.5.2. WHOLE VEHICLE TYPE APPROVAL – CERTIFICATE OF CONFORMITY (WVTA-COC)

WVTA-CoC was a project that started because of a legislative demand, an EC-directive (2007/46/EC). The directive is about the European type approval process of both buses and trucks. European Whole Vehicle Type Approval (EC WVTA) sets the standard for safety and environment levels according to the EC directive. It places different kinds of vehicles in different groups. A vehicle not fitted in a WVTA-group is not standardised, but can still be both safe and adequate environmental-friendly. Because of this legislative demand, Scania had to, amongst other, produce a Certificate of Conformity (CoC). CoC is a document with the individual vehicle specifics, stating that the vehicle fulfils the EC WVTA. When the vehicle is being registered, the CoC-document is checked against the WVTA-certificates. If it matches Scania WVTA certificates, the vehicle can be registered within all of EU with an easier process than before the directive was introduced.

The project objectives were to make it possible to produce a CoC-document, in English, for all complete and incomplete vehicles, produce instruction material about the solution and start a new maintenance group within R&D.

The expected benefits given in the Initiation Report were; Scania should meet the EC-directive 2007/46/EC, it would be easier to type approve vehicles and a vehicle only needs the CoC-document to be registered in one EU country. The easier type approval process was motivated with the fact that the EC WVTA certificate is produced at the factory and does not need to be done in every country where national type approval is mandatory. The CoC-document can be produced at the same time as the vehicle. The new process is better for both Scania and their costumers because it is automated and faster.

4.5.2.1. Result of the WVTA-project

All of the project objectives were met and CoC-documents are being produced for those requesting it today. The EC-directive has an implementation timetable where it is only required for buses to have EC WVTA today and recommended for trucks. It will be required for trucks in 2012. This means that there are not many requesting a CoC-document for trucks today. The legislative demand has been met, and therefore the most important expected benefit is fulfilled. The expected benefit about the easier registration process is harder to evaluate because the directive is regulating the type approval and not the registration process. Most countries demand additional information than what is included in the CoC-document for their registration process. How this will change when the registration directive is updated cannot be evaluated today (Jalkesten, 2011) and (Soria Galvarro, 2011).

4.5.3. ISSUE MANAGEMENT YELLOW ARROW (IMYA)

Issue Management Yellow Arrow (IMYA) was a project about administration of yellow arrow cases. Yellow arrow is a term at Scania for initiations and project ideas. There are also green, red and gold, which stands for ordinary projects, urgent problem projects and legislative requirement projects. Before IMYA, an Excel-list contained all information about the yellow arrow assignments. This was critical because there was no traceability, only one could make changes at a time and it used to collapse. It also included more administration because of the collapses, because similar lists were developed at other areas and because it was no integration between the Excel-list and other systems.

The project objectives were; to replace the Excel-list with a new simple and easy to use system and that it should be able to replace other Excel-lists used for yellow arrow assignments.

Expected benefits were more secure information, reduction of administration, reduction of misinterpretations, increased availability of information, shorter time from idea to product, no need for an extra back-up and only one IT-support. This was motivated by unauthorized personnel not being able to read or write, only responsible personnel updating and the list not being able to be erased.

4.5.3.1. Result of the IMYA-project

The project objectives have been met, and the Excel-list erased. The information is more secure because the owner of the system has to approve everyone before they get access. This means that the correct people are able to write and only the owner can erase information. InfoMate is responsible for the status of the system, and is the only IT-support. The owner of the system is responsible for administration of users. It is possible to search within the database and the administration has decreased (Pukk Berggren, 2011).

4.6. INTERVIEWS

Interviews with orderers, and an internal and an external benchmarking interview have been executed to investigate the knowledge and thoughts about the expected benefits.

4.6.1. SCANIA ORDERERS

Three orderers from Scania were interviewed about their experiences. They work at different areas and have different amount of experience as orderers. The reason for them being interviewed is that they have all ordered projects managed by UTI.

4.6.1.1. Orderer 1

The first orderer is male with little amount of experience as an orderer, he has ordered two projects. He also lacks experience in project management, both academic and practical. When he discovered a business need in a system owned by him, he did not know how to make it in to a project because he did not know about R&D methods. He realise that he probably would have found information at Scania's internal sites but he asked a contact at the IT Project Office R&D instead.

The project manager told him what to consider and how to formulate the expected benefits. With both of his projects, he formulated the expected benefits along with people working with the system, not managers. It was easier to formulate them in one of the projects because he knew more about it. He spent a lot of time on the initiation phase. He started by sending a questionnaire to users of the system asking which changes they considered most important. These change requests (CR) were discussed further at two workshops. At the first workshop, they prioritised between the CRs saying which were most important. After the workshop, he sent the result to all participants asking once again if they agreed, and for them to value the most critical CRs in how much time they would save. At the second workshop, they discussed these valuations in the group, and agreed on the project objectives and expected benefits. To be sure, they had not exaggerated, he asked for help by someone outside the project to review it. He thinks it is easier to follow up the result and benefits when this amount of work has been spent in the beginning.

In his opinion, it is evident that the orderer shall formulate the expected benefits, not the project manager. The orderer knows about the idea and has the depth knowledge. He also thinks, because they shall be followed-up, they shall be measurable. In his original plan, he wanted to follow-up the result and benefits from his two projects, but he did not. With the first, it is because he left for another position at the company before the project closed. With the second, he did not prioritise it, because he had many other tasks and nobody requesting a valuation before he changed position.

The Initiation Report was presented at the IT Portfolio Management Forum (PMF) by him. He pointed out that a project with expected benefits closer to the end-customer is more likely to be approved. The risks associated with this are that people might misuse it. He thinks that the orderer should be forced to explain the Initiation Report more at the PMF, e.g. if the expected benefits are not measurable it should be explained why. If they have a good reason or explanation to a deviation, it can be approved anyway (Ahlstedt, 2011).

4.6.1.2. Orderer 2

The second orderer is female with experience as a project manager from Capgemini/Ernst & Young, Ericsson and Scania. She has worked at Scania for six years and has been an executive for three years at a different area than R&D. During these last years, she has ordered a reasonable amount of projects. She has studied external courses in project management and is well aware of Scania's project organisation. She has adjusted to the fact that a project idea has to be initiated before it is approved as a project, but she does not understand why it is like that. The benefit, for her, is that a project on a page is shorter than an Initiation Report and takes less time to write. "If people are pleased with a project on a page, I am happy".

She is aware that the expected benefits shall be measurable but does not always follow that, e.g. customer satisfaction is often fuzzy. She thinks it is important they are well thought-out, which they usually are. She uses workshops where they define the current status and what they want to achieve. With a well-performed initiation, the expected benefits are well formulated before the project starts.

When she worked at Capgemini/Ernst & Young, she used a method called OTACE (on time and above customer expectation). It is a method where you sit down with the customer before the project to grade their priorities on a scale from 1-5. This is repeated when the project is closed to see if they were met. This is a tool she likes and thinks Scania would benefit using.

When the projects are finished and closed they are practically forgotten, there are no follow-ups. As an orderer, she is interested in knowing how the project result has worked, but does not do any follow-ups. She thinks that it would be a good idea to have a discussion with the project manager during the project execution to change the expected benefits if needed (Linjo, 2011).

4.6.1.3. Orderer 3

The third orderer is male with a lot of experience as an orderer. He is chairperson of a process forum and therefore, also a member of the PMF. The last years he has been orderer for many of the projects from his process forum. He has no academic or internal project management education, he has instead learned by doing. As an orderer, he is either an ordinary or a silent orderer. A silent orderer means that an informal orderer does the preparation work. The informal orderer is typically closer to the business and not a manager. He thinks it can be advantageous having him, a manager, as the formal orderer because he controls the money.

The expected benefits are usually not formulated by him, but he always reviews them and shares his opinions i.e. he is often a silent orderer. He wants to be sure that they match his thinking, and cares about them being understandable and reasonable. When reviewing, he does not think about them being measurable or not and is not aware that they should be. He is only concerned with the benefits for the company, "if the benefits can be proven or not is not so interesting, as long as it is good for Scania."

As chairperson of the process forum, he usually asks if closed projects have contributed as planned. He asks in an informal way and does not request an investigation. It can be difficult to value the project's contribution because of the changing environment. Distinct expected benefits are easier to follow-up, e.g. when a process has been eliminated. Customer satisfaction can be difficult to value when the orderer is a customer. He thinks that if the orderer is responsible for the follow-up it probably will not be done. "Many orderers know if a project is a success or not and will not feel the urge to evaluate if they are pleased as it is". It is probably better if the PMF is responsible for the follow-up being done and analysed. They can request an evaluation from the orderer.

A good idea would be if the orderer and project manager meet during the project execution to value the expected benefits once more. If orderers know they will be followed-up, they may not exaggerate them. As a PMF member he sees a problem with many orderers, they are very passionate about their idea and it is difficult to know when they exaggerate (Danielsson, 2011).

4.6.2. INTERNAL BENCHMARKING – A PROJECT MANAGER

The project manager is working at the Production and Logistics area and has worked at Scania for 20 years, with one year as a project manager. She has academic experience of project management, both internal and external courses. Before her position as a project manager, she assisted InfoMate when starting their project office. She manages projects for production development, e.g. new lines and production units. She uses PPS with additions for IT development. The addition is built by Scania in collaboration with Tieto. They are using the Assignment Directive (AD) template from PPS, in contrast to UTI, which has its Initiation Report instead. The AD is sometimes written by the orderer, but most often, it is the project manager or them together. An experienced orderer is often better at formulating the expected benefits. "Inexperienced does not know the business and who to ask for help". With an inexperienced orderer, she usually helps them interview people to get needed information. Orderers often blame on lack of time but she thinks it, in many cases, is lack of knowledge.

The expected benefits are used to get a project approved, and are usually measurable and set in time by the management. They are sometimes fuzzy and she thinks it is because they do not want to measure them. A fuzzy example is that people will feel better. They usually have the same benefit posted in every AD, "X number of units produced a year by the year of 201Y". This is more of a vision, but it is posted as a benefit in many projects. Every project has their specific expected benefits as well, which will take them a step closer the vision, e.g. decrease time on line by one minute. The expected benefits of different projects are valued by the manager group at a workshop and discussion forum. When management has approved a project, it is placed in the project portfolio.

They do not follow-up the expected benefits but she thinks it would be great if they did. She thinks it is important for the orderer and the maintenance group to know the result.

She recognises some problems with expected benefits, different cultures, problems with understanding English and when someone is good at gaining approval of their ideas. Scania is an international company and collaborating with e.g. France, Brazil and Holland. Every country formulates the expected benefits differently, which can make the valuing of them more difficult. Scania's corporate language is English and this can be problematic when it is not the first language of the person expressing them. They can be translated or interpreted incorrectly. People have different presentation skills and can benefit when knowing what to push with their idea, to get it approved (Persson, 2011).

4.6.3. EXTERNAL BENCHMARKING – ALFA LAVAL

Alfa Laval is an international company creating heat transfer, separation and fluid handling technologies. Alfa Laval's products and solutions are used in such areas as food and water supply, energy, environmental protection and pharmaceuticals. They have been developing for more than 125 years (Alfa Laval, 2011).

An interview was performed with a project office manager at the Research & Development area of Alfa Laval in Tumba, Sweden. They have three different kind of projects; minors, existing product development (EPD) and new product development (NPD). Minors are small projects with commonly secured resources. They have a changing portfolio, because the projects are constantly started and stopped regarding the market. It works fine and they produce 12-16 new products a year with this kind of projects. A project manager manages 7-8 of these projects at a time. The second and third kind is EPD and NPD, which are traditional and large projects. "The reason for this partition between minors versus EPD and NPD is because large companies usually do not prioritise small projects, but they can be very lucrative because of few resources and little time spent".

The projects are not closed until the expected benefits have been fulfilled and they are always measurable. The project manager only checks them during the closure phase, nothing else. The steering committee remains until the project is closed. The benefits of this system are that extra resources can be ordered if they have not been fulfilled and it can be difficult to measure them after the projects have been closed. However, the manager does not like this concept with many open projects because it is a lot of managing (Myrvang, 2011).

5. ANALYSIS

Successful projects are what motivate this thesis being performed. A successful project is not only delivering the requested result, it is also providing customer satisfaction and benefits for the company. There are different project management tools and techniques that are beneficial to use in the different stages of a project. Some examples are given in section 3.2.1. It is, for example, a success factor to develop a detailed scope during the initiation and to use the lessons learned-tool during the termination phase. However, it is important to consider the project and its current surroundings to know what will most contribute to a success. It may not be the same as with the latest projects being performed. Another factor of success is the involvement and interest of the involved people. The interest of this thesis' result, with measurable expected benefits and evaluations after closure, are from the IT Portfolio Management Forum (PMF) and the IT Coordination and Support R&D (UTI) department. This is clear from the interviews with the business personnel and orderers. All the interviewed business personnel have stated that they are pleased with the project result and its implementation in business. This means that they know their project has been a success without the expected benefits being measurable or formal evaluations being performed. The reason for them knowing the success is that they work with the implementations every day and therefore experience the improvements. They are not requesting formal evaluations, because they are already performing informal ones every day and therefore know its success. It is the same with the three interviewed orderers; they do not request evaluations to know the success of projects. They perform informal evaluations by asking business personnel and get an idea if it has been a success or not. It is the PMF and UTI department, further from the business, that need to confirm their investments and work in the projects. They also need to make sure their valuing process benefit the most beneficial projects for the organisation.

5.1. ORDERER

At Scania, there are many orderers, and they differ in experience and theoretical project management knowledge. A problem is that they usually do not know about the advantages of well-formulated and well thought-out expected benefits, or they do not prioritise it. Noticed in the three project interviews is that everyone is pleased with the result of their projects, even though the expected benefits were not measurable or completely evaluated. This is because the orderers and business personnel notice the good changes in their daily work and are satisfied with the result, even though they cannot define the changes in numbers. This means that orderers often lack understanding in the advantages of evaluating the expected benefits after completion of a project, because they already know if the project was a success. A reason for their lack of knowledge or low prioritising in the subject is also due to shortage of information and demands from management. In the Initiation Report template, it is not stated that the expected benefits shall be measurable or evaluated and the importance of them being well prepared. This is most problematic whenever orderers lack experience or theoretical knowledge in the subject; because they cannot understand the importance of an evaluation when they already know if it has been advantageous. A common claim is also with difficulties of making the expected benefits measurable, and lack of time to prepare them. Especially

when they themselves know the importance of the project before hand, they want it to be approved based on their word. It does take some time writing a well-written Initiation Report and when already knowing advantages, it can be seen as time better spent elsewhere.

When a project is approved without well-formulated expected benefits, it can be because the orderer is good at making its voice heard. This is not beneficial to the company in long term because the one sounding the most does not always has the best ideas. If every orderer has to go through the exact same process it means that every project are valued against each other and therefore the most beneficial projects will start instead of the one with the most sounding orderer.

Scania's corporate language is English and as appeared in the internal benchmarking interview, this makes it problematic in some cases when English is not the first language of the writer or reader. For example, it can be difficult to understand the exact meaning of the instructions given in the Initiation Report template. The expected benefits can also be misunderstood, because either the writer has made a dangling modifier or the reader does not understand them completely.

5.1.1. FORMULATING THE EXPECTED BENEFITS

As Kreiner (1995) and Nogeste (2011) say, every project with its surroundings is unique and there is no all-around method appropriate for every project when formulating the expected benefits. It is during the initiation phase the expected benefits shall be formulated and the project is best known by the orderer in this phase. Therefore, the orderer should be the one deciding which method is most appropriate. Most important is the orderer spending time working them through e.g. in a workshop, with a discussion forum or asking appropriate people. As stated in section 3.1, it is important the expected benefits are measurable and set in time as to when they will be accomplished, for an easy evaluation. The orderer need to be informed about this. The IMYA-project had very unspecific expected benefits and were therefore hard to evaluate if they have been accomplished or not. Although the business is satisfied with the result, it is important the IT Project Management Forum knows its investment has paid off and it was the correct project to choose.

As Scania has a very clear corporate culture with the R&D Factory, stating what must be prioritised at Scania. It would be beneficial to incorporate them in the expected benefits when possible. This also applies to the IT-strategy of R&D. Both the R&D Factory and the IT-strategy has been developed by management with focus of the Scania business and its progress. When they are incorporated in the expected benefits, it will make the process of choosing projects to the portfolio easier because it will be clear which projects are most beneficial for Scania.

Evaluating the expected benefits can be difficult when someone else than the evaluator has formulated them and/or if the business conditions have changed since the project was initiated. Problems with someone else evaluating can be because the area/group managing the result may not be the same as the area/group ordering it, or the orderer has changed

employment. The two different areas/groups can work and report in different ways and are therefore not able to value the expected benefits e.g. because they cannot confirm their calculations. Alternatively, they simply do not understand them. Rebus was a project with clear and measurable expected benefits that could not be evaluated exactly because the group handling the result did not measure their productivity in the same way. It is therefore important the orderer is communicating with the area/group managing the result of the project, to agree the expected benefits are understandable and measurable. In the case of a drifting environment with changed business conditions, a definition of the conditions during the initiation phase would make an evaluation easier because the ground conditions are stated and it can be valued how the drifting environment has changed the conditions of the project and therefore the expected benefits.

Mandatory projects are also important the expected benefits be well prepared, because there can be benefits not noticed otherwise as stated by Pennypacker and San (2009). However, many do not think those projects through, because they are going to be performed any way. A well thought-out mandatory project can have other, not obvious, benefits that result in another valuing at the portfolio, when considering the project's alignment with the IT-strategy. This can in turn result to other projects being valued different because this project accommodate a specific part of the IT-strategy not needed by other projects. The WTA project was a legislative demand project that was not prepared as well as it should have been, because they knew, it needed to be done. This resulted in a difficult evaluation and perhaps missed benefits.

5.1.2. EVALUATING EXPECTED BENEFITS

In the R&D Factory, it is stated that mistakes can be beneficial as long as you learn from them. Improvements are made when you acknowledge your problems or mistakes and make improvements. This is true for when successes are acknowledged as well, as it will be known what to continue with in the future. When expected benefits have been formulated as either higher or lower than they ended up as, it will be beneficial evaluating why. As Scania learn from every project, the expected benefits can be formulated more correctly as time passes. It should be decided by the orderer when the evaluation of them should be performed and how it should be done. As they shall be formulated in time, the evaluation should be performed after that date. An evaluation of the evaluation result can be performed in a workshop, if the orderer does not already know the reason for a possible deviation.

It is also important the expected benefits be evaluated during the progress of the project to make sure they are still aligned with the IT-strategy. This evaluation should be performed at the decision points. The result of this evaluation should be displayed at the "Pulsen" meeting where every project is already displaying its result, time, cost and resources. This is a quick and easy forum where the portfolio senior adviser can take notice of the evaluations and report to the IT Portfolio Management Forum. In this case, they will be aware of possible changes and make sure to discuss them with the orderer and the project manager if they are changing too much. This will also make sure the orderer and the project manager does evaluate them, when they have to report them.

5.2. PROJECT PORTFOLIO

It is the IT Portfolio Management Forum's (PMF) responsibility to value each project and make sure they are aligned with the IT-strategy and the R&D Factory. This is already done today but it can be improved and made easier if the expected benefits are made measurable. It is easier for the PMF to value a project against the IT-strategy when they are distinct. The PMF should demand them being measurable because it would give a more justified valuing of projects when it is easier to detect the alignment. They need to demand it because orderers knowing the expected benefits should be measurable do not always do it because no one is demanding it, e.g. orderer 2. When they are not made measurable, the orderer should need to motivate why and the PMF value if they approve it.

Scania will benefit from the expected benefits being evaluated after closure of projects, because the investment can be confirmed as a success or not, and Scania can learn from its prior investments. To make sure they are evaluated, the PMF should be responsible for it and request it from the orderer or the person assigned by the orderer. Orderer 1 did not evaluate the expected benefits of his projects even though he had decided to do it. His reason for this was that he had other things more urgent to do and no one requesting an evaluation. In other words, it would have been done if the PMF had requested it.

With evaluations of the expected benefits during the project execution the PMF need to be able to close a project not aligned with the IT-strategy any more. A changing portfolio would be beneficial for Scania as projects not aligned with the IT-strategy are not beneficial for the company. As seen at Alfa Laval, they succeed in producing several new products a year with a changing portfolio. They follow the market with their portfolio. Scania should benefit a changing portfolio as well, because they are also dependent of the market.

An orderer that is excited about its project idea may exaggerate the expected benefits, knowingly or not. This may be for various reasons, but can be the small push to get it approved as a project. An exaggeration may be because someone knows it will not be evaluated and he or she will therefore not be confronted with its miscalculation. It can also be because the orderer is passionate about its project and thinks it is amazing. He or she can therefore, unknowingly, miscalculate the expected benefits. Because of these possibilities, it is important to evaluate them to make sure it does not happen again, or that the orderers think twice before formulating them.

6. CONCLUSIONS AND RECOMMENDATIONS

The result of this thesis has been requested by the project managers at the IT Project Office R&D (UTIX). The orderers do not request the result from this thesis, because they already know by heart if their project was a success or not. UTI and the IT Portfolio Management Forum (PMF) want to confirm they are investing in the correct projects and that they are managing the projects correctly. The main conclusion of this thesis is therefore that the orderers need to be informed about the importance of well-prepared expected benefits, of them being measurable and of them implement the IT-strategy and R&D Factory. Because of the difference in experience and theoretical knowledge of orderers, it would be beneficial with an information sheet about what is expected and needed by an orderer. A suggestion of an information sheet is in Appendix B. Depending on experience and theoretical knowledge, they could take advantage of the information sheet in various degrees. A short summary of the information sheet should be inserted in the Initiation Report, where the expected benefits should have an own slide, because it is important they are highlighted. This information would benefit being written in both English and Swedish for it being clear to everyone.

Because of a more justified valuing process when every project idea has well-thought out expected benefits, the PMF should demand it from every orderer. Whenever they are not measurable, it should have to be explained and motivated why, when presented. This is because it will be easier for the PMF to value projects against each other.

The orderer should decide the best way to derive the expected benefits and set time of when they will be accomplished. A guide of how they have been derived should be written to make it easier during the evaluation. It should be stated who is responsible for performing the evaluation to make sure it is customised to that person/group. The PMF would be responsible for making sure the evaluation is performed at the planned time. The planned time shall be the time as the last expected benefit has been derived to be accomplished. The evaluation shall then be reported to the PMF and the UTI-department to make sure they can benefit the evaluations.

Evaluations of the expected benefits during project execution would ensure every project to continue being aligned with the IT-strategy and the R&D Factory. This evaluation should be performed during every decision point and reported at the “Pulsen” meeting. The senior portfolio adviser should report the result to the PMF. A project not aligned with the IT-strategy or R&D Factory anymore, the PMF should be able to close, to make sure the portfolio follows its objectives.

7. FURTHER STUDIES AND OUTSIDE OF SCANIA

This thesis has delivered the main conclusion that Scania would benefit measurable expected benefits and evaluations being performed. The benefits will derive from, the valuing and the comparing of projects will be easier. It is important the IT Portfolio Management Forum, at Scania, implement the result, so they can be able to confirm their investments and learn from possible mistakes. However, this thesis is only the first step in the improvement phase. It is important the evaluations be evaluated as well, to make sure that lessons are learned and that the process of the expected benefits continue to evolve. The Forum may be able to conclude one method most appropriate, at their department, to derive the expected benefits by learning from past initiations. At least, together with the IT Project Office R&D, they will be able to give advice on the process, based on experience. The result of this thesis needs to be evaluated after implementation and possible improvements continually investigated.

The result of this thesis is not only applicable at Scania; other large companies can benefit implement measurable expected benefits and evaluations after completion of projects. With a large company, the administrative work generally increases, in comparison to small companies; and they usually generate more project ideas, because there are more people working and thinking about improvements. A portfolio forum is a good technique to make sure all their project ideas are administrated in the same manner. A portfolio forum benefits from expected benefits being measurable because it will make the valuing easier and therefore the choosing of projects more correct. This is applicable to every company with a portfolio forum. With evaluations, they will be able to learn from both its successes and mistakes.

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APPENDIX A - EVALUATION MATRIX

Area		Criteria	0-10
Benefit	Customer value	The extent to how the project results create benefit to Scania customers? <i>(Will the customer notice any difference when the project is delivered?)</i>	
	Efficiency	The extent to how the project results create benefit to Scania? <i>(Will we within Scania notice any difference when the project is delivered?)</i>	
	Mandatory	The extent to how the project results fulfil the mandatory demand? <i>(8 or higher only goes to those that will stop business)</i>	
	Other benefits	The extent to how the project results create other benefits not covered by the previous headlines?	
Area		Criteria	0-10
Strategic fit	Long-term strategy	To what extent does the project's result fit against the R&D Strategy, Capabilities, BRV	
	Dependencies	How important is the project for other, ongoing or planned projects in the portfolio?	
Area		Criteria	0-10
Risk	Risks with the expected benefits	How big risk is it that the expected benefits will not be fulfilled?	
	Risks with the project objectives	How big risk is it that the project objectives will not be fulfilled with the approved resources? <i>(time, cost and quality).</i>	
	Risks with the surroundings	How big risk is it that the project can be negatively affected by other projects, products or parts of the organisation?	
	Technical risks	How big risk is it that the project cannot achieve the technical specifications?	

APPENDIX B - INFORMATION SHEET FOR ORDERERS

As an orderer of a project, you are responsible for the short- and long-term effects of the project's resources and result. You shall formulate the Initiation Report, which will be presented by you, at the IT Portfolio Management Forum (PMF). Among other things, the Initiation Report contains information about the project's expected benefits. These are important in the valuing of the project idea at the PMF and are important to be well thought-out, measurable and set in time as when to be accomplished. It is important the project is aligned with the IT-strategy and the R&D Factory, and this should therefore be incorporated in the expected benefits when possible. The PMF is responsible for making sure the projects in the portfolio are aligned with the IT-strategy and when the degree of alignment is stated in the initiation report the valuing process will be easier.

Different suggestions for deriving the expected benefits are e.g. with a workshop, a discussion forum or asking experienced about advice in the subject. If they have not been derived carefully and made measurable, the PMF will not agree with the project.

When the project is finished and the expected benefits would be fulfilled, according to the time-plan in the Initiation Report, they shall be evaluated. An evaluation is enforced by the PMF and the planning of it shall be done during the initiation, by you. A guide of how the expected benefits have been derived is necessary, and when any other than the initial orderer will perform the evaluation, a guide of best practice of the evaluation process shall be produced.

The expected benefits shall be evaluated during project execution as well, to make sure it is still aligned with the IT-strategy. These evaluations shall be performed during every decision point and presented at the "Pulsen" meeting. When a project is not aligned anymore, it is of risk at being closed by the PMF to give place to a new project.

Any Questions? Ask UTIX, they will help you.