CLOSURE IN IT PROJECTS
– A NEVER-ENDING STORY

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Abstract

IT projects serve as the foundation through which a number of organizational Information Technology benefits can be created. However, it appears to be a complicated task with great economic consequences at stake to finish a project before positive results can be reached. Project closure, the very last phase of the project life cycle, seems to be underrepresented in current research compared to the other phases of the project life cycle. The research regarding postponed closure, meaning that projects, which technically are finished, are still allowed to continue, or projects that are directly unfeasible and therefore should be prematurely terminated, is even more absent. This indicates that problems arise somewhere, which is what will be investigated in this study.

The aim of this study is to gain an understanding to the underlying reasons why certain projects face a delayed closure, when they in reality should be finalized earlier. In order to do so, a semi-structured interview study was carried out and presented in a qualitative data analysis. The results of this study, based on empirical findings and support from theoretical frameworks, and presented in an analysis and discussion, indicates that there are a number of reasons that are causing postponed closure. Among others, it has been noted that the planning for project closure may begin too late in the process, that poor governance from the project manager and the steering committee could be the result of hesitation to strict decision-making, and an unprepared receiving organization as a result of unsuccessful communication and documentation between internal and external stakeholders.

Keywords: IT Project, Project Closure, Postponed Closure, Project Manager
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1 Introduction

1.1 Background

Lewis Carroll, the author of Alice in Wonderland (1869, p. 81) once said “begin at the beginning, and go on till you come to the end; then stop”. However, Carroll (1869) must not have been referring to the complex world of information technology \(^1\) where projects often seem to take on a life of its own through continuous organizational investments (Keil, 1995). In business environments that are constantly becoming more technically advanced and resulting in larger sized projects, the many struggles surrounding proper project closure are more present than ever (Flyvbjerg & Budzier, 2011).

According to Whiteley (2004) an information system can be described as a complex computational application aimed towards business operations which incorporates their own systems and activities, such as business transactions and data processing. Due to this, information systems have an important role in most types of businesses regardless if the company is in the private sector, public sector, or a non-governmental organization (Whiteley, 2004). All of these institutions, no matter big or small, depend on a variety of IT applications to be able to execute their daily business activities (Sodhi, J. & Sodhi, P., 2000).

Initiatives for organizational change are most often done through internal or external projects, with the aim of fulfilling an idea or to meet one or many unappeased organizational needs (Krohnwinkel-Karlsson, 2009; Stampe & Tonnquist, 1999) The general definition of a project is exemplified as a temporary undertaking that requires an explicit beginning and end, where the main premise is to create a service, product, or result that previously did not exist (Burke, 2003; Gaddis, 1959; PMI, 2008; Tonnquist, 2012). As most projects, IT projects consist of a life cycle with different intertwined phases that can vary in extent depending on the specifics of the given project (Burke, 2003). Though, the general project life cycle consist of four main steps that can be summarized into project initiation, project planning, project implementation, and finally project closure (Hormozi, McMinn & Nzeogwu, 2000).

The possibility to generalize the closure phase of an IT project is nonexistent, simply due to that all projects approach the end differently, and some projects never make it there at all (Meredith & Mantel, 2010; Dvir, 2005). Further, Meredith and Mantel (2010) mention that certain projects end immediately, while other projects are gradually decreased over a longer period of time until the activities associated with the project appear to have ceased. A third and final way is derived using remaining parts and allocated personnel from the former project to initiate a new project, where both projects will run parallel with each other (Meredith & Mantel, 2010).

To keep an IT project moving forward there are many involved key figures such as the project manager, developers, customers, and testers among others, who all will be involved in the interactions (PMI, 2008). Chemuturi (2013) means that there are two main domains of human resources competence involved in an IT project, management and engineering. The engineers are solely focused on the technical activities throughout the project, while the management team’s main task is to ensure that the project runs efficiently while meeting both time restrictions and functionality demands (Chemuturi, 2013). Görling (2009) mentions that

\(^1\) Information technology will further be shortened to IT
projects can be described as a tug of war between many opposing wishes, agendas, problems, and viewpoints, which most likely will have an impact on the project’s progress and final result.

de Bakker, Boonstra and Wortmann (2010) state that once a project has been carried out there are different potential outcomes. The Standish Group (2014) estimate in their Chaos Report that approximately 31.1% of initiated projects will be discontinued before they reach completion. Even though this number seems high, Staw and Ross (1987) discuss the possibility that even more projects beyond hope should be terminated prematurely to avoid the potential consequences of postponed closure. On the opposite side, the considered average success rate of all initiated projects is 16.2%, which in this specific context refers to being delivered on time, within budget, and with desired functionality (Staw & Ross, 1987). The majority of projects, 52.7%, are accounted for as challenged (Staw & Ross, 1987). This means that the project was completed and sent off to the customer but with some constraints such as exceeded budget and timeframe, or poor deliverance of desired functionality and features. (The Standish Group, 2014).

The Standish Group (2014) explain in their Chaos Report that indicators for a successful outcome stems from three primary factors of having involved users, support from executive management, and that the requirements are outlined clearly from the outset. Project management refers to the skills, techniques, tools, and knowledge that are applied to activities within a project in order to meet the stakeholders’ visions and expectations (Burke, 2003). The main responsibility of achieving these objectives is embodied in a project manager, who ensures that the project is conducted with a purpose and that the project is moving forward in the right direction (Sodhi, J. & Sodhi, P., 2000). However, these particular tasks along with the complexities of project closure are not easily pinned down as all projects carry individual characteristics (Dvir & Lechler, 2004).

1.2 Previous research

Agarwal and Rathod (2006) explain that in contrast to the importance of project closure the amount of literature covering the topic is fairly thin. Furthermore, the available literature concerning IT projects with a lack of closure is even slimmer whereas the theoretical focus is frequently on relating topics (Havila, Medlin & Salmi, 2013). For instance, the three criterias of cost, time, and functionality are often repeated when there is an evaluation of an IT project (Havila, Medlin & Salmi, 2013). The notion of successful versus unsuccessful IT projects is another commonly emphasized approach (Verner, Evanco & Cerpa, 2007; Procaccino, Verner, Overmyer & Darter, 2002; Rodriguez-Repiso, Setchi & Salmeron, 2007).

Havila, Medlin and Salmi (2013) discuss the lack of literature devoted to project closure and mention that existing project management literature frequently concentrates on initiation, planning, and implementation, rather than the closure phase. Sanghera (2006) explains that in order to officially end an IT project there are a multitude of activities that have to be completed before a project can be considered finished, and prepared for send-off to the customer. Consequently, Dvir and Lechler (2004) state that there are distinct difficulties involved when trying to understand the processes and activities that project closure entails as the ability to generalize the process of closure is too complex.
Meredith and Mantel (2010) disclose that the project life cycle starts off with the formation of a new project which is allocated with resources, a project manager, and a project team along with the establishment of a work plan and project directive (Meredith & Mantel, 2010). Meredith and Mantel (2010) explain that the initial work of a project usually proceeds effortlessly and the progress goes well until the later stages of the life cycle, where the smooth development takes a different turn for numerous reasons. The final activities take more time to complete due to the necessity of wrapping up the final tasks as the team members prolongs the closure by requiring more time than necessary (Meredith & Mantel, 2010).

Meredith and Mantel (2010) suggest that these difficulties can stem from confusion caused by the many aspects of closing down a project and the variety of approaches to be used depending on the characteristics of the termination. Additionally, Hormozi, McMinn and Mzeogwu (2000) emphasize that the specific way in which an organization approaches termination of a project can have a major and lasting impact on the organization.

1.3 Problem discussion

In general, the project closure phase is described as a fairly uncomplicated task which is strategically outlined (Tonnquist, 2012; Maylor, 2005). Though, there are indications that the closure of a project can be puzzling work depending on the specific characteristics of the project (Meredith & Mantel, 2010; Dvir & Lechler, 2004). On a further note, Havila, Medlin & Salmi (2013) point out that less than five percent of all pages in related literature is devoted to providing a discussion regarding project closure, which suggests that there is a need for further research within the area. Consequently, Dvir and Lechler (2004) explain that the topic of project termination is not mentioned in the same extent as other phases of the project life cycle.

According to Hormozi, McMinn and Nzeogwu (2000) it is revealed that almost 50% of organizations have carried out IT projects that resulted in premature abandonment. Additionally, the amount of resources spent on the abandoned projects ranged from 10% to 100% of the total allocated resources, and the resources spent during the project cannot be restored (Hormozi, McMinn & Nzeogwu, 2000). The authors argue that it is crucial to allocate the factors that indicate when to actually terminate a project when facing implications of failure (Hormozi, McMinn & Nzeogwu, 2000).

One of the driving forces behind this particular research is provided by Havila et al. (2013) and Tonnquist (2012), who both state that more projects should face premature termination if they are on to a failing course of action where the chances of final success are minimal. Further, there are indications that organizations have a tendency to not realize when enough is enough, instead letting the project drag on, while continuously investing more resources into the project, even after the project is considered finished (Boehm, 2000; Maylor, 2005). According to Keil (1995), 35% of troubled IT projects go on long into the implementation phase and will cause great organizational and financial trouble for not being aborted within reasonable time.

The problem that has been identified in the aforementioned discussion revolves around the potential economical investments and tied up resources that are required for projects that are not terminated at an appropriate time. These problems occur regardless if the termination is of premature or escalated nature, which conjointly can be described as a postponed project
closure. As projects are allowed to continue when the potential negative economic and organizational consequences of allowing that to happen are tremendous, the prevention of delayed closure can be of great importance to numerous organizations.

Therefore, research of project closure and the termination phase with emphasis on the underlying features of postponed closure in IT projects is needed to fill the gap with a fundamental approach. As previous research suggests, more knowledge regarding the termination phase and the problems involved in closure can help organizations understand the root of the problems, see potential warning signs, and thereby avoid costly postponed project closures.

1.4 Research question

A lack of information solely focused on project closure and emphasis on postponed closure is regarded as an existing gap in the literature. As previous research and problem discussion describes, postponed project closure can cause tremendous economic consequences and organizational damages. This provides the study with an interest in examining the underlying reasons behind postponed closure.

The research question has therefore been defined as;

*What are the main reasons behind postponed closure in IT projects?*

1.5 Purpose

The purpose of the study is to create an understanding of the main reasons behind postponed closure in IT projects, and the underlying reasons to why this happens. Furthermore, the study aims at describing how organizations handle postponed closure to facilitate a decreased knowledge gap regarding this matter. If the roots behind the problems connected to postponed closure are identified, organizations are able to detect early warning signs and consequently avoid overspent financial and human resources, prolonged schedules, and faulty functionality.

1.6 Limitations

IT projects consist of multiple phases that are intertwined and which the study will discuss, however the focal point is on closure phase. The main focus will not be aimed towards the actual successful or failed outcome of a project, however these outcomes will be presented and discussed as they are important contextual factors. There are numerous possible IT projects that can be undertaken, thus this study’s attention will be placed on internal and external projects. Additionally, the introduction mentioned two main domains of human resources competence. This study will solely focus on the management side, therefore the engineering aspect will not be investigated.
1.7 Target audience

This study will provide knowledge regarding postponed closures in IT projects. The insights derived from this study will be of primary use to researchers within the field of IT project management, which will fill the gap of project management literature with emphasis on project closure. The majority of participants involved in an IT project, such as project managers, their teams, and organizations currently undergoing or planning a development project will likewise benefit from this study.
2 Research method

2.1 Scientific perspective

According to Bryman and Bell (2015) there are two different considerations regarding the choice of research perspective referred to as an epistemological or ontological perspective. Davies and Hughes (2014) define epistemology as a fundament which can be put in relation to how an individual is aware of his or her knowledge, how knowledge is created, and how knowledge can be expanded upon. Epistemology is then further broken down into positivism or interpretivism. The latter can also be termed as hermeneutics, which implies an interpretation of science by the people who are immersed in it (Robson, 2011). Oates (2006) clarifies that unlike a positivistic study, where the main purpose is to test a pre-existing hypothesis, interpretative studies aim towards identifying, exploring, and explaining how all factors in an environment are intertwined.

Wallén (1996) explains that a hermeneutic perspective allows researchers to interpret and clarify human life situations, actions, and experiences. This study assumed a hermeneutic perspective to be able to answer the research question as the perspective interprets human life situations on a deep level. This perspective was thought to provide the study with a standpoint from the individual's perceptions, in contrast to the positivistic perspective, which limits the view on humans as objects separated from feelings, opinions and values. Thus, as the aim of this study was to locate the main reasons behind postponed closures, the hermeneutic perspective offered the possibility to understand the individual’s perception of this type of closure and the contributing factors of it. Widerberg (2002) argues that through clarifying the expectations and understandings that are brought into the research process, and if thoroughly executed, the hermeneutic perspective will provide the study with knowledge that is easier to value and consequently more reliable in terms of knowledge claims. Conclusively, Robson (2011) states that the essence of the hermeneutic perspective is to translate and interpret data, which according to Recker (2013) is complementary to qualitative research.

2.2 Research approach

According to Recker (2013) research methods within the informatics field are either quantitative or qualitative, and where the choice of pursued method will impact the final success of the research project. Hence, it is suggested that the choice of research strategy should be dependent upon and guided by the research question, and the qualitative or quantitative nature of it (Recker, 2013; Bryman & Bell, 2015). Walliman and Baiche (2001) explain that qualitative and quantitative research can be considered two fundamentally opposing research approaches, where the main differences are located in both differing philosophical logics as well as how the empirical data should be collected and analyzed.

As the purpose of the study is to facilitate a greater understanding of a social occurring phenomenon a qualitative research method was deemed suitable, thus the research question reflected a qualitative strategy. Further, Bryman and Bell (2015) explain that a qualitative approach emphasizes vivid and contextual data where the focus is on description, interpretation, and understanding the complexities involved in human behavior. According to Walliman and Baiche (2001) the qualitative research approach is unstructured, highly flexible,
less predictable, and more suitable for explorative research rather than a quantitative methodology which is often resulting in numerical and measurable data put to test through experimentation (Dybå, Prikladnicki, Rönkkö, Seaman & Sillito, 2011; Golafshani, 2003). Decisively, a qualitative research strategy is according to Recker (2013) portrayed as contextual and holistic, which will contribute to developing a detailed and accurate description of a complex situation from different perspectives. According to the portrayal of the benefits of a qualitative approach, and in terms of the research question of finding the underlying factors contributing to a postponed project closure a qualitative approach was considered applicable with the greatest chance of success. The qualitative approach left room to be flexible throughout the research and understand the deep rooted reasons, which a quantitative approach would have failed to provide.

Bryman and Bell (2015) claim that there are potential limitations of a qualitative research strategy. The impending empirical findings may be too closely connected to the researcher’s own previous experiences and knowledge, which will have a direct impact on how the data will be interpreted and analyzed. Hence, it is crucial for the researcher to be aware of this and try to diminish his or her own subjectivity and biases to maintain the objectivity of the whole study (Bryman & Bell, 2015).

### 2.3 Research Strategy

Bryman and Bell (2015) state that research arguments are traditionally divided into two different strategies, either deductive or inductive. Walliman and Baiche (2001) mean that deduction translates to the steering of the research process based on the theory that leads it; hence it is more commonly used in quantitative research. Bryman and Bell (2015) elaborate by explaining that a deductive approach to theory is based on the formulation of a hypothesis, which is then scientifically tested through experimentation or observation.

Thus, Wallman and Baiche (2011) state that inductive research can be seen as an opposing strategy where universal truths are gathered from the particular, and theories are generated based upon the findings throughout the research process. Bryman and Bell (2015) elaborate by mentioning that the inductive approach is closely related to qualitative data analysis as an approach to the generation of new theories. Thomas (2006) explains that an inductive research strategy is more often found in qualitative research and based on the aforementioned reasoning this study followed the typical parameters of induction. The research question was formulated with the absence of a hypothesis, instead the findings will stem from the actual research process. The aim of the inductive approach was therefore to formulate a theory based on empirically collected data, rather than putting a pre-existing theory to test.

### 2.4 Research design

According to Bryman and Bell (2015) a research design is a sort of schedule or template through which data can be collected. Qualitative research is often to seek out small samples since the method builds upon rich and high quality data from people regarding their feelings, thoughts, or experiences about central phenomenon (Bryman & Bell, 2015). The typical form of cross-sectional design is mostly applied in quantitative research, although with some alterations it can be appropriate for qualitative research as well (Bryman & Bell, 2015).
Davies and Hughes (2014) explain that the design of the cross-sectional study refers to a type of observational study, which suggests that data should be collected from a sought-out population. The characteristics of the cross-sectional design are that the data is collected at a defined time, from more than one case, and with two or more key concepts. The concepts are then examined to detect some sort of pattern of association and common themes (Davies & Hughes, 2014). By combining the typical features of a hermeneutic scientific perspective, a qualitative research method, and an inductive strategy, which all rely on rich and interpretative data, a cross-sectional research design was considered relevant to the study and to answer the research question.

2.5 Data collection

Throughout a research project there are two kinds of main data sources that can be used. Bryman and Bell (2015) explain that primary data refers to information collected, observed, or recorded in the real world by the researcher themselves without interference by other intermediaries. This particular type of data is then most often presented as surveys, measurements of results, or observations (Walliman & Baiche, 2001).

Rabianski (2003) further clarifies that secondary data is derived from information collected by others with the intent of fulfilling a different research purpose. Secondary data is most often presented in published sources such as books, journals, and other publications (Walliman and Baiche, 2001). However, when using secondary data collected by others it is important that the researcher keeps in mind that the data may be of poor quality, missing vital information, no longer accurate, or that there are shortcomings in the original research design (Whiteside, Mills & Mccalman, 2012). To bypass this potential problem the use of data from well-documented research ventures are preferred (Whiteside, Mills & Mccalman, 2012).

In this study secondary data was collected through an investigation of various theoretical frameworks such as articles published in scientific journals and books connected to the area of the study. These theoretical frameworks then served as the foundation from which questions for the qualitative interviews were formulated and later served as the primary data source.

2.5.1 Literature review

In order to successfully carry out an interview and collect relevant theoretical sources it was necessary to perform an extensive literature review (see chapter three). Throughout the study there has been a need to examine related literature and previous research within the chosen topic. This was performed to reach a theoretical foundation on which the empirical study could be built upon. As the study progressed there was an iterative approach to re-evaluate existing theory regarding project management and IT, as new topics arose during the interviews.

Most of the used literature has been found in the various databases that were provided through the collective database Summon facilitated by the library at the University of Borås. Examples of used databases include but are not limited to ScienceDirect, Proquest Central, SAGE Journals, and Emerald Insight. With the help of relevant search queries such as ‘IT project’, ‘project closure’, ‘project life cycle’, ‘project escalation’, ‘postponed project closure’ and ‘premature project termination’, peer reviewed scientific journal articles written in
English were uncovered. Beyond this, books found in the university library along with course literature from previous classes have been providing the study with a deeper theoretical background. A delimitation was made to try and avoid using literature written in non-English languages, with the exception of a few valuable sources written in Swedish. A further delimitation was made to maintain an absence of information searches using generic search engines to eliminate the risk of using poor sources providing low quality data. The published works that have been encountered and referred to in this study have their roots from a large variety of geographical origins to ensure a wide and international perspective.

According to Oates (2006) qualitative studies tend to result in large amounts of data. Hence, Robson (2011) emphasizes the importance of carefully documenting all literature collected throughout the study. Therefore the full bibliography was organized and archived in an Excel sheet before being imported into the referencing software program EndNote. Iteratively, obsolete sources were disposed of, as new ones were added. Through the use of the software program a clear overview of all titles, authors, and years were provided, which facilitated finding the right sources. EndNote also ensured that all referencing was done according to the parameters of the Harvard System.

2.5.2 Sampling

Onwuegbuzie and Collins (2007) explain that sampling is the way of deciding an appropriate smaller segment that can be representative of a larger population. In this study generic purposive sampling was used to identify interviewees, which according to Bryman and Bell (2015) is one of the most commonly used sampling choices for qualitative studies, aside from theoretical sampling which is associated with grounded theory data analysis. This was deemed reasonable as purposive sampling directly entails a selection of units, such as people, documents, and organizations, who have a direct reference to the research question. Purposive sampling is a type of non-probability sampling where the selection of participants does not occur on a random basis due to the importance of their relevance to the research question (Bryman & Bell, 2015; Walliman & Baiche, 2001).

One of the most prominent struggles connected to sampling choices refer to the sample size. Bryman and Bell (2015) say that knowing how many samples are required before theoretical saturation is reached is impossible. It is stated that there must be a fine balance between the magnitudes of collected data in relation to the analysis efforts (Bryman & Bell, 2015). The size of the sample should not be too extensive as it will complicate the task of performing a deep analysis, nor too slim as it will be difficult to achieve data saturation, theoretical saturation, or informational redundancy (Onwuegbuzie & Collins, 2007).

Onwuegbuzie and Collins (2007) explain that the main focus of deciding a sampling size in qualitative research should not be concerned with generalizability. Instead, it is proposed that reaching insights into particular settings and practices within certain fields are more important when deriving meaning from collected empirics.

In order to find suitable participants for the study, a selection of different IT companies in the vicinity of Borås were pinned down through Internet and each company’s website. One criterion that was present during the selection process was that the participators should preferably work in a project-oriented manner and provide customers with different kinds of in-house and external IT services. The separate positions of the employees were also ranked
in order to clearly establish who would suit the sampling the most. Another crucial aspect was that the interview would emphasize the past and present experiences of the participants to a greater extent, rather than solely focus on the processes and operations evident in the current company they represent. This resulted in a range of four positions held at three different companies which were deemed to provide the study with a broad foundation of input related to postponed project closure. After a joint formal agreement three interviews were scheduled.

2.5.3 Semi-structured interviews

In order to collect empirical data, semi-structured interviews were conducted with four employees representing perspectives of IT projects in order to investigate experiences surrounding project closure. As there is an existing gap in the literature regarding postponed closure, theory has been unable to provide the study with potential reasons behind postponed closure in IT projects. Theory has rather displayed a multitude of factors that all affect the closure procedures of a project. Hence, the justifying factor behind conducting interviews was to identify the main reasons behind postponed closure directly from the interviewees’ perspectives.

The choice to move forward with interviews as the main data collection method was derived from Robson’s (2011) suggestion to put the interviewees’ experiences, opinions, and feelings in relation to the context of postponed project closure. Bryman and Bell (2015) elaborate by saying that no single interview stands alone and that meaning can be derived only if the interview is put in context with other interviews and observations. Moreover, semi-structured interviews are the most common data collection method within flexible qualitative research, where the inclination is to gain a richer understanding of a phenomenon by exploring meanings and perceptions through interpretations and analysis (Bryman & Bell, 2015; DiCicco-Bloom & Crabtree, 2006). Further, Barriball and While (1994) suggest that interviews are appropriate for investigating complex, sensitive, and diverse matters by examining interviewees’ opinions and underlying perceptions. Additionally, interviews allows for the use of probing, which may be a necessary tool to clarify answers and act as a facilitator when assuring reliability of empirical data (Barriball & While, 1994).

When conducting interviews there are certain guidelines that require adherence in order to ensure that no ethical considerations are bypassed. Walliman and Baiche (2001) mention that ethical considerations can arise in two different ways. The first one is concerned with personal integrity where the premise is to establish a foundation for trust and credibility, which will enable open communication between participants (Walliman & Baiche, 2001). Secondly, the researcher must be aware of aspects connected to the participants, such as privacy, confidentiality, and courtesy (Walliman & Baiche, 2001). The most prominent concerns connected to the participants are outlined by Bryman and Bell (2015) who state that the researchers must contemplate whether the study can contribute to overstepping any boundaries of personal privacy, to proceed without informed consent, if the study is performed on deceptive grounds, or if the study will cause any harm to the participants.

Robson (2011) elaborates through an extensive list of ethical principles. The main points include elimination of threats to participators’ well-being, making the objectives of the study clear from the beginning to refrain from misleading the participants, as well as providing the participators with the right to exit the study at their convenience (Robson, 2011). In this study this matter was handled through the distribution of a consent form (see appendix two)
following the recommendation of Oates (2006), who claims that the participants should be informed about the purpose of the study, their potential contributions to the study, along with their rights throughout the entire research process. These rights can be summarized as having the rights to confidentiality, anonymity, providing informed consent, withdrawal, and the choice to not participate further in the study (Oates, 2006).

The companies were first contacted with a formal email explaining the general purpose of the study, the researchers’ background, the topics that would be covered, the potential practical implications surrounding the study, as well as contact information to all participants included in the study. Three days later the same companies were contacted through a follow up phone call to the local offices where the previously sent out email was referred to. After this the communication took place through email and resulted in the scheduling of two face-to-face interviews and one phone interview. A few days before the scheduled interview, the interviewees were provided with an interview guide (see appendix one) to help them prepare for the type of questions that would be asked. It was also explicitly stated that the interview would not consequently follow the exact metrics of the guide, but instead there would be an adherence to interesting topics that may arise. Furthermore, it was expressed that the main interest of the interviews were not found in the policies and history of the specific companies, but more accurately in the personal experiences of the interviewees regarding project closure.

The first interview was conducted with Company X² and interviewees Jonas Sellin and Peter Mellqvist, at the company’s branch office in Jönköping during approximately one hour. Sellin holds the position of site manager, while Mellqvist is a project manager. The second interview was carried out with Make IT and the Chief Technology Officer Andreas Tärnegård, and was scheduled at the company’s office in Borås during one hour. The third interview was performed with Handelsbanken IT and interviewee Conny Johansson, who is the manager for the Project Management Office. Unlike the first two interviews, this interview took place over the phone due to the inconvenience of differing locations since Johansson is located at the headquarter in Stockholm. The phone interview lasted approximately thirty minutes.

Robson (2011) stresses that interviews should stay within certain parameters in terms of duration to ensure that the data is valuable. Oates (2006) warns that an interview lasting substantially over one hour may result in ‘interviewee fatigue’ where the interviewee simply will not desire to continue to participate in the interview, though an interview shorter than thirty minutes is unlikely to contribute with valuable data.

Robson (2011) mentions that phone interviews are rarely used in deep qualitative interviews. However, performing a phone interview can be considered when there is a lack of resources to carry out a face-to-face interview. When conducting an interview over the phone there are some considerations that differ compared to a face-to-face interview. The advantages presented by telephone interviews can be attributed to a surpassing of geographical distance, increased supervision of the interview, shorter duration, and the removal of possible biases against one another (Bryman & Bell, 2015; Robson, 2011). The disadvantages are that it may be difficult to carry out the interview for longer than thirty minutes, the impossibility of observing the interviewee and thereby the absence of visual hints, a lack of contextual cues, and the possibility of poorer empirical data compared to face-to-face interviews (Bryman & Bell, 2012; Robson, 2011). It may also be more difficult to establish rapport with the participants (Robson, 2011). Lastly, Bryman and Bell (2015) explain that rapport refers to the

² Anonymity is granted upon request from the company
establishment of a relationship between the interviewer and the interviewees, which will encourage the interviewee to answer the asked questions.

All interviews shared some common characteristics such as beginning with a general presentation of the study’s purpose and the distribution of a consent form written in Swedish, which was carefully read through and signed by all parties. The actual interviews began with a few introductory questions before moving to the thematic questions following the division of topics in the interview guide (see appendix one). Further, all interviews were conducted in the participants’ native language, Swedish, to simplify the participation of the interviewees. All interviews were recorded and notes regarding interesting concepts and answers were taken by one of the interviewers to provide a basis for new questions off the interview guide. The questions were asked in thematic sequence which sometimes lead the conversation into another topic before moving back to the starting position, which Robson (2011) explains is typical for a flexible semi-structured interview. Both interviewers were involved in the formulation and asking of questions, as well as making spontaneous and appropriate elaborations on the answers. This is what would be considered probing, meaning that the interviewers try to derive more information from the interviewee by certain cues, which is common in semi-structured interviews (Robson, 2011; Bryman & Bell, 2015). All interviewees were presented with the possibility to receive a copy of the Swedish and the English transcription as well as the chance to read through the finished thesis and approve it before the final publication, to ensure validity and reliability of the data. At this stage, the interviewees decided if they wanted to remain anonymous or if they would allow the publication of both the company name and their own names and positions within said businesses. This resulted in wished anonymity of one company name, hence the reference to Company X.

2.6 Data analysis

Given the qualitative nature of the study a decision was made to perform an analysis with inspiration from Oates (2006) qualitative data analysis. The premise of this analysis was to find the additive factors which would fill the existing literature gap surrounding the main reasons behind postponed project closure. Theory has presented interesting factors which all influence closure but has failed to provide distinct and explicit reasons behind this occurrence. Therefore, the analysis was built upon the interviewees’ answers regarding questions related to the affecting factors presented in theory. In the discussion the main reasons were verified and enhanced through complementary support by the contributing factors encountered in existing theory.

Oates (2006) explains that a qualitative data analysis is conducted when the collected material is read thoroughly to gain a general understanding of the material accumulated in the data collection method. This initial categorization can result in a number of themes, ranging from unrelated to this particular research, to general descriptive data, to material highly relevant to the research question (Oates, 2006). As qualitative research tends to consist of rich and detailed data it is important to reduce the amount of data by extracting the key material which is of direct use to the research question and purpose of the study. Further, Oates (2006) suggests that the extracted data should be categorized continuously to enable the study to provide an answer to the research question.
In order to establish a formulation of categories the initial step in the analysis was to transcribe the audio recording from the interviews followed by translating the transcripts from Swedish to English. This resulted in a general overview of the data, which then could be narrowed down into the three themes previously discussed by Oates (2006). The data which was deemed highly relevant to the purpose of the study was initially processed through careful re-reading of the material, carrying out discussions, and writing notes regarding interesting findings. Bryman and Bell (2015) suggest that the next step should be to divide the highly relevant material into concepts and themes. In this study this was performed by following the thematic structure presented in the interview guide available in appendix one, which also has been the ground for the thematic structure in chapter four. The categories observed in the material were then allowed to stand on their own with the aim of formulating a theory, which is a typical feature of Oates (2006) idea of induction.

These themes all touched upon the interviewees’ own experiences of various aspects that influence the postponement of project closure in order to uncover the main reasons. The separation between potential and main reasons behind postponed closure was made in the discussion. This was performed by incorporating the theoretical frameworks that served as the foundation for the interview guide to elevate, verify, and gain a deeper understanding of the interviewees’ reasoning.

To clarify the material, data from all three interviews were jointly presented in both the analysis and discussion to follow the thematic division from the interview guide rather than the sequential and chronological order in which the interviews were conducted.

2.7 Evaluation method

Bryman and Bell (2015) suggest that the quality of both quantitative and qualitative research should be evaluated through assessing reliability, validity, and replicability. Golafshani (2003) discusses that the main purpose of reliability in qualitative research is to generate understanding through analyzing results and judge the actual quality of the data. However, when using a qualitative evaluation method these criteria are not necessarily the only choice available. Instead qualitative research should be evaluated through authenticity and trustworthiness as the two primary criterions (Oates, 2006; Bryman & Bell, 2015). Golafshani (2003) summarizes by stating that reliability and validity should not be viewed individually in qualitative research, but more as a substitute to the concepts of credibility, transferability and trustworthiness.

Trustworthiness consisting of four criteria, confirmability, dependability, credibility, and transferability, is an appropriate evaluation technique in qualitative research (Oates, 2006; Bryman & Bell, 2015; Golafshani, 2003). Oates (2006) explains that confirmability is parallel to objectivity hence it entails that there should be enough information regarding the study to understand the settings in which it took place. The study should also be separated from the researcher’s own opinions and biases. Dependability is concerned with adequate documentation and records of all research proceedings, which Bryman and Bell (2015) propose should be available to those who wish to trace the research. Credibility suggests that a study should be carried out with adherence to both good practice and provide a correct portrayal of the findings to the people of the social surrounding that were studied (Oates, 2006; Bryman & Bell, 2015). Transferability is concerned with establishing whether the results of this particular study can be of use in other contexts outside this specific research
scope (Oates, 2006; Shenton, 2004). However, as the possibility to generalize a qualitative study is slim, the study should provide enough descriptive and contextual factors for a reader to transfer the settings and relate the results to their own purpose (Shenton, 2004).
3 Theoretical framework

3.1 IT Projects

IT is a wide term that incorporates a number of different technologies such as computing and telecommunications (Mohsenzadeh & Isfandyari-Moghaddam, 2009). According to Rajaraman (2003) IT can be defined as a type of powerful technology that can be used to distribute data, or the use of collected, stored, systematized, and processed data in specific applications. Marimuthu and Paraman (2011) state that the likelihood of an organizational unit being uninfluenced by IT today is very slim, as real-time access to different types of information systems and databases can be fundamental for an organization’s success. Furthermore, IT can be seen as one of the actualizations behind the change that has occurred during the last centuries in how people and organizations work, carries out their business processes, and conducts internal and external communication (Marimuthu & Paraman, 2011).

In today’s globalized and technically evolved business environment, IT projects of different sizes and varying technical advancement are common in most organization (Sodhi, J. & Sodhi, P., 2000). An organization’s visions and business goals are often attained through project-oriented work, which can be carried out on behalf of an external client, or to handle organizational change through internal or external resources (Tonnquist, 2012). The characteristics of a project can be defined as a specific undertaking which is limited in time with the purpose of achieving a result (Tonnquist, 2012; Burke, 2003; PMI, 2008; Tesch, Kloppenborg, Frolick, 2007). As long as these criteria are fulfilled there are no outer limitations for the scope of a project or the number of people involved (Tonnquist, 2012).

Burke (2003) explains that for the sake of convenience projects should be compartmentalized into different parts. This will make the overview and work of a project more manageable. The parts are phases that follow a sequential order formed as the project life cycle (Burke, 2003). PMI (2008) additionally state that one phase does not necessarily need to be completed before the other phase starts, thus at times the phases are overlapping each other. The project life cycle usually have four following phases such as initiation phase, planning phase, execution phase and finally a closing phase (PMI, 2008).

Hahn, Kim, Bredillett and Taloc (2012) state that IT projects exist in a dynamic and unpredictable environment where the included tasks are uncertain, unpredictable, and under the pressure of time. However, despite minor differences in planning and management practices, requirements elicitation, and need for resources, most development processes are essentially alike (Verner & Abdullah, 2012).

In order to increase the success during the implementation of an IT project Hahn et al. (2012) argue that the scope of the project should be defined in the initiation and planning phase with regards to both partial and final deliverances, and allocated schedules and financial resources. Hahn et al. (2012) elaborate by saying that the stated objectives are more likely to be met if the goals and requirements are clearly defined, and if there is a clear division of labor and responsibilities for all project members in each phase of the project life cycle.

Contradictory, it is stated that the majority of project estimates are made in the early stages of a project, before the problem is fully understood (Glass, 2012; Savolainen, Ahonen &
Richardson, 2012). Glass (2012) also mentions that these assessments are often faultily done by high level management or marketing divisions where there may be potential shortcomings of knowledge. Hence, it is suggested that it should be of minor concern when the cost or time limitations are not met in the development project (Savolainen, Ahonen & Richardson, 2012).

Despite these critical success factors it is not unusual that IT projects result in disappointment due to exceeded budgets, delayed implementation, technical problems, prolonged time schedule, or fail on more than one account (Shore, 2005). Studies performed by Martin, Pearson & Furumo (2007) derived from the Chaos report presented by the Standish Group (2014) implies that a large percentage of IT projects encounter problems along the way, resulting in projects being bestowed with additional financial resources, expanded schedules time, and staff. This occurrence is often summarized as the phenomenon of escalation.

3.2 IT project management

Project management is a wide term that can be successfully embraced in many kinds of organizational divisions in various industries (Martin, Pearson & Furumo, 2007). The joint factor of most IT projects, regardless of development method, is the need for supervision stemming from project management practices such as increased coordination and control (Martin, Pearson & Furumo, 2007). Burke (2003) specifies that project management refers to the skills, techniques, tools, and knowledge that are applied to activities within a project in order to meet the stakeholders’ visions and expectations (Burke, 2003). Consequently, PMI (2008) mention that the tasks involved in managing a project primarily includes identifying requirements, addressing the various needs, concerns, and expectations of the stakeholders as the project is planned and carried out, and lastly to balance the competing project constraints including but not limited to scope, quality, schedule, budget, resources, and risks.

According to Martin, Pearson and Furumo (2007) project management practices can be divided into hard and soft skills where the majority of them have a joint formal approach to project practices such as proving the team with objectives, explicit plans, and formalized documents and rules. Hard skills are technically inclined and incorporates planning, coordinating, and monitoring, while soft skills are more human in its nature revolving around building team spirit, solving conflicts, and keeping the project moving in the right direction (Martin, Pearson & Furumo, 2007). All these procedures are undergone to fulfill the project’s objectives and goals while staying within the scope and the allocated resources (Görling, 2009). Tesch, Kloppenborg and Frolick (2007) conclude by mentioning that effective project management is vital to the success of any IT project.

3.2.1 Project manager

A project is ordinarily run by a project manager whose main responsibility is to define the purpose of the project as well as making sure the project moves forward in the right direction, however the specific embodiment of these tasks can differ (PMI, 2008). Roepke, Agarwal and Feratt (2000) declared that whilst leadership may be pointed out as one of the key triggers of failure, it surpasses all organizational factors.

Sodhi, J, and Sodhi, P, (2000) imply that it is of great importance that a project manager has the ability to identify and respond to changing external environments as the project
progresses. Thus, the project manager's main responsibility is not only to cope with change through motivating and inspiring project members by setting a direction, but also to handle the complexity of planning and organizing, budgeting, and controlling the various business processes throughout the entire project life cycle (Hahn et al., 2012). According to Hahn et al. (2012), 86.5% of involved project participants agree that the use of a project manager is a fundamental factor in order to successfully complete an IT project according to stated objectives.

In order to maintain the high number of team members supporting the importance of a project manager, Meskendahl, Jonas, Kock, and Gemünden (2011) suggest that managing single projects well is not enough for the project manager as it is also necessary to find and move forward with the right projects, to identify and to take advantage of possible synergies, and to discontinue unfeasible and unnecessary projects at the right time. According to Meskendahl et al., (2011) over 32% of organizations had to commit to redundant work due to a lack of synergy exploitation between projects. The role of the project manager and the project management team can be summarized into a few seemingly simple rules, though a large number of companies fail to adhere to them (Meskendahl et al., 2011).

### 3.3 Project closure

It is stated that an IT project consists of a life cycle with different phases, customarily starting with project initiation, followed by planning, execution, and termination, but the specific phases may differ depending on the specific project and scope (Maylor, 2005). To endure and tick off the activities in the last phase of the life cycle some tasks requires coordination and these can essentially be summarized into closing financial records, distribute resources, reassign project personnel, and produce a final report that incorporates a discussion about the project’s successes and shortcomings to be given to the senior management (Hormozi, Mcminn & Nzeogwu, 2000).

Due to the importance of reaching a closure, the planning for project closure should be a top priority already in the inceptive stages of a project as it elevates the chances of a successful completion (Gardiner, 2005; Maylor, 2005). Moreover, De (2001) infers that in certain projects it may become a necessity to employ a specific termination manager who possesses an appropriate set of skills and knowledge and thereby can terminate the project in a desirable way.

Meredith and Mantel (2010) suggest that the likelihood of a successful termination is increased if the project organization is divided into subparts who manage smaller segments of the closure and the activities that belong. Meredith and Mantel (2010) claim that when the project is approaching closure the organization's responsibility is to hold a closeout meeting, prepare a reassignment plan, and produce personnel reports. Further, the financial department should issue charge audits, collect receivables, and a final report while the purchasing department’s obligation relies with compliance documents, supplier notifications, and final payments (Meredith & Mantel, 2010). Lastly, the site department is intended to close down facilities and dispose of equipment material. This explains that closing down a project is a crucial and complicated procedure. By understanding the design for project termination one can realize the many aspects of closing down a project and that it is not as easy of a task as many may consider (Meredith & Mantel, 2010).
Meredith and Mantel (2010) state that project closure can be actualized through extinction, addition, integration, or starvation and that the method of choice is dependent on the implementation. The extinction approach infers that a project is simply stopped, as a result of either reaching stated objectives or not. When the project has reached its success it is simply deployed to the customer (Meredith & Mantel, 2010). To close down a project by addition is somewhat alike extinction. Meredith and Mantel (2010) mention that closing a project as a consequence of addition entails that the challenged project is transferred to another organizational division. The process of terminating by integration means that the project is deployed to the parent organization, and is therefore more commonly encountered with successful projects. Termination by starvation can be viewed as a slow death by steadily decreasing resources (Meredith & Mantel, 2010).

Another possible termination technique is the natural project closing meaning that the goals have been attained and the end is reached (Meredith & Mantel, 2010). One final potential outcome is the premature project closure. This occurs when the project manager reaches the conclusion that the project is unfeasible and that the objectives are out of reach, resulting in a prematurely closed down project (Meredith & Mantel, 2010).

3.3.1 Project closure activities

Maylor (2005) argues that the activities that are due in the closure phase should be planned early in the project; however uncertainty in the project timeframe may increase the difficulty of planning specifically what should be done and at what time. Regardless, Chemuturi (2013) suggests a number of crucial activities that should be completed before deployment to ensure that the project is ready to move into maintenance at the receiving organization. First the project manager should carefully document the acquired knowledge and the best practices from the project along with a final project report in the organizational knowledge depository. Chemuturi (2013) continues that the project manager should also coordinate a protocol together with the project management office after inviting other project managers to a knowledge-sharing meeting. A postmortem should be compiled along with a performance evaluation of all team members before the project manager and team members can be released and assigned to the next project (Chemuturi, 2013).

Once all these activities have been completed, the project can be seen as completely closed. The outlined activities are crucial, but there should also be an enquiry to ensure that there is satisfaction among the stakeholders (Chemuturi, 2013; Maylor, 2005). Maylor (2005) stresses that all project systems should be shut down to minimize the possibility of unauthorized expenditure from customers and suppliers when the project is waiting for final sign-off. Further, Maylor (2005) states that proper project closure requires discipline from all involved project members.

3.3.2 Project closure challenges

De (2001) claims that closing a project is a challenging task in the project life cycle where challenges often lead to substantial problems. De (2001) divides these problems into emotional and intellectual, where emotional problems can be broken down into two subcategories, either being staff-related or client-related. The emotional problems that the staff might have to face could result in loss of team identity, loss of motivation, loss of interest in
remaining tasks, and fear of no future work (De, 2001). For clients it could cause loss of interest in the project, change in client’s attitude to the project, and non-availability of key personnel (De, 2001). Intellectual problems can be divided in internal problems or external problems. Screening of partially completed tasks, certification needs, and disposal of unused materials are examples of internal problems, while external problems can be derived from agreement with clients on deliverables and closing down facilities (De, 2001).

Maylor (2005) discusses that it is important to finish all project tasks to be able to keep down associated closure costs and to re-allocate resources for other projects. At this stage, there may be a desire to rush through the closure and move on the next project. The other possible route of execution is that the project closure phase is extended over a longer period of time, where nothing really is accomplished or finished, but the costs of running the project start adding up (Maylor, 2005).

### 3.3.3 Premature project closure

A premature project closure is a way of closing down a project earlier than expected as the result of events such as the project no longer being feasible, a need to disperse the allocated resources to higher prioritized business ventures, failed test results, or strong competitive forces appearing simultaneously as the project is about to be deployed (Tonnquist, 2012; De, 2011). Additionally, premature closure may be the result of new technological developments within the IT field, organizational changes in the top management and among the stakeholders, or a change of business objectives. Tonnquist (2012) argues that if involved managers added more preciseness in the iterative reviewing of a project’s progression more projects would, and should, be abandoned. Further, Tonnquist (2012) adds that there is an overrepresentation in the number of projects that are initiated and a severe underrepresentation in how many unfeasible project that are prematurely abandoned.

Some companies do not always realize when ‘enough is enough’ in these circumstances, meaning that if a project is doomed to fail, it should be killed and closed prematurely (Havila & Medlin, 2012; Tonnquist, 2012; Royer, 2003). Additionally, Meskendahl et al. (2011) state that in 67% of the cases unsuccessful projects fail to be terminated and are allowed to continue. In order to minimize the potential economic consequences of an unfeasible project it is advisory to discontinue the project at the earliest convenience (Royer, 2003). By doing so stakeholders will receive quicker return on investments by transferring funds to more feasible projects (De, 2001).

A common and problematic theme regarding premature project closure is according to Tonnquist (2012) a withheld sense of pride in not discontinuing projects prematurely, since it can be viewed as a personal failure of the project manager. Instead more financial resources are allocated to try and save the doomed project. This creates a downward spiral where it becomes even more difficult to close down the project, in hope of recovering the escalating investments (Tonnquist, 2012). Maylor (2005) identifies an additional problem with premature project closure when the staff involved in the project is dispersed and assigned new projects without the possibility of an evaluation and review from the former project. This may result in the same mistakes occurring yet again in future projects leading to poor organizational improvement over time (Maylor, 2005).
Staw and Ross (1987) state that it appears as some managers and organizations persistently hold on to dying projects, indicating that complete organizations may become trapped in a certain course of action. Keil (1995) raises the same question by speculating why it takes so long for organizations to abandon or force control upon a troubled project.

3.4 Escalated projects

Staw and Ross (1989) reveal that it is becoming increasingly common for organizations to try and disguise a failing course of action within a project by investing more money to cover up bad initial investments, as a result of being overly committed to a failing project. Hence, project escalation can be seen in the event of pessimistic informational forecasts along with strong continuous commitment among stakeholders and project members (Keil, 1995). Mähring and Keil (2008) agree by stating that escalation can be summarized as the choice made by decision makers to hold on to an unsuccessful path.

Staw and Ross (1989) suggest that project escalation can occur through four different classes of determinants. Typical project factors refer to the perception of the project itself among management members with regards to cost, duration, potential benefits, and complexity of the project (Keil, 1995; Staw & Ross, 1989). When managers choose to hold on to a continuously optimistic outlook, psychological factors such as previous successful experiences, biases, and a feeling of personal responsibility appear (Staw & Ross, 1989). Social factors are according to Keil (1995) stemming from rivalry between different entities in the organization and when the stakeholders believe that the project is staying its course because of a persistent management team. Lastly, organizational factors refer to current external political and structural environments that either directly or indirectly may have an impact on the project (Keil, 1995; Staw & Ross, 1987, 1989).

Furthermore, Staw and Ross (1989) divide the escalation process and four determinants into three phases. Staw and Ross (1989) explain that phase one entails mainly economic aspects where the project is planned in accordance with the potential economic benefits that the project will reap. If the economic benefits from phase one brought a negative consequence into phase two that phase will be infused by not only the economical driving force but also added influence of both psychological and social factors. It is believed that in phase two the negative outcome of the economic estimation could be diminished by added investment from these new factors (Staw & Ross, 1989). Unless these investments are successful even further negative results are to be expected, and the desire to abort the project increases as phase three is entered (Staw & Ross, 1989). However, the persistency arising from the organizational units may be too biased to allow for withdrawal at this late stage of project progression, due to the previous economical resources that were poured into the project. Altogether the combined momentum of failing economical outcomes and increased pressures from social, organizational, and psychological determinants can create a strong desire for project persistence (Staw & Ross, 1989). Ultimately, the presence of escalation may lead to an entrapment of the manager due to constantly increased project scope and engulfed resources (Mähring & Keil, 2008).
3.5 Requirements

Hughes and Cotterell (2009) declare that all project undertakings have to start somewhere and are usually the result of a number of requirements outlined by the customer, which are based on the customer’s vision. In the initial stages the elicitation of requirements can be complicated. The involved parties and stakeholder may have ambitions of what they want to achieve, but may not have a clear understanding of how to do it or how to communicate those needs (Hughes & Cotterell, 2009).

Al-Hothali, Al-Zubaidi, and Subbaro (2012) explain that requirement elicitation refers to the incorporation and communication with users, customers, and stakeholders during the process of discovering possible requirements for an implementation of a new or updated system. The purpose of doing so is to study and comprehend the needs among the stakeholders in order to inform the system developers of what is expected and what should be done (Al-Hothali, Al-Zubaidi & Subbaro, 2012). Consequently, the visions of what a project should entail and what is feasible can differ fairly much between the many stakeholders (Al-Hothali, Al-Zubaidi & Subbaro, 2012).

According to Agarwal and Rathod (2005), requirements incorporate not only the primary functionality and features of the software, but also secondary functionality features such as speed, scope, reliability, accuracy, and maintainability. Further, Agarwal and Rathod (2005) mention that a proper requirement elicitation is a prominent success criterion for IT projects, though the meaning of success can be perceived differently between members internal or external to the project group.

However, it is not uncommon that the customer has an unrealistic expectation that has grown from inadequate requirement specifications (Procaccino et al. 2002). Instead, Davis (2013) proposes that requirements facilitation should happen throughout the life cycle as an iterative process to avoid the many risks associated with poor initial requirements specifications.

3.6 Change Management

As technology is advancing, the economy fluctuates from recession to inflation, manufacturing techniques are improved for increased efficiency, and geographical distances can be surpassed by the use Internet, change is inevitable (Hashim, 2013). One way to actively deal with these issues is according to Hashim (2013) a properly implemented and rooted change management policy. Successful change management requires a successful leader who will adapt both management skills and organizational matters with a focus on achievement and implementation (Hughes, 2014; Kumar, S., Kumar, N., Deshmukh & Adhish (2015).

However, Worley and Mohrman (2014) propose a new approach to managing change, which is more closely connected to the complex, connected, and somewhat chaotic environment surrounding IT organizations. Worley and Mohrman (2014) suggest that the new approach should consist of four determinants; awareness, designing, tailoring, and monitoring. First, both the organization and its members should be vigilant regarding problems, challenges, opportunities, and the history of the company as a fundament. Second, the designing should be behavior-centered, meaning that there should be an adaption based on the world in which the company exists that facilitates quick actions (Worley & Mohrman, 2014). Further,
tailoring refers to that one way is necessarily not the right way, which requires unique and specific solutions to allow for the organization to continue growing. Lastly, monitoring is required in order to discover errors and quickly adapt the processes (Worley & Mohrman, 2014).

3.7 Risks

According to Flyvbjerg and Budzier (2011) the size of undertaken IT projects is constantly increasing. As the projects grow larger and face increased complexity, more organizational units are affected and more risks can occur. According to Burke (2003) risks within projects are defined as issues or factors that can influence the route of achieving a project’s goals. In a time of transition the ability to understand and steer a project is crucial, otherwise substantial losses, failure, and reduced ability of accomplishing an organization’s business objectives are the potential outcomes (Verner & Abdullah, 2012). Furthermore, Tesch, Kloppenborg and Frolick (2007) mention that proper risk management should be recognized as a critical success factor as well as one of the potential pitfalls of a project. Tesch, Kloppenborg and Frolick (2007) present that the majority of risks occurring in IT projects relates to areas concerning poor requirements elicitation, lack of supporting and guiding documentation, and issues related to human resources and staffing. In supplementary research conducted by Kumar (2002), there are indications that the most common risks include overlooked requirements specifications, technical uncertainty, and unrealistic budgets and schedules. These ideas are supported by Flyvbjerg and Budzier (2011), who stated that the average budget is overrun by 27%. Further, one in six projects reaches a 200% budgetary overrun as well as a schedule overrun of up to 70% compared to what was expected at the outset of the project (Flyvbjerg & Budzier, 2011).

The most outstanding risks differ depending on the current position of the project in the project life cycle. According to Burke (2003) the level of risk is at its highest in the beginning of a project, though he also mentions that this is where the opportunities are the greatest. This is due to uncertainty regarding the future, which is the most present at the conceptual and design phases of a project. When the project moves into the next stage of development the situation becomes less uncertain since more decision have been made, and the unknown aspects of the project starts migrating into clarity. This continues until there no longer are any unknowns left, which would indicate that the project is finished. Burke (2003) discusses that the investments at stake begin low but increases throughout the phases as a result of further investments in human resources and financial capital. Summarily, the phases of implementation and termination are the most vulnerable to risk and where the risk impact is the highest since it could result in great financial losses (Burke, 2003).

3.8 Customer and supplier involvement

Agarwal and Rathod (2006) argue that there can be differences in how the meaning of success is perceived among stakeholders and that the indicators of success comes from the projects internal and external characteristics, which may create a biased view. According to Verner and Abdullah (2012) the vendors may try to increase potential earnings by maximizing the time spend on the project, while the customer will do the opposite to save both financial resources and time.
An opposing view is presented by Procaccino et al. (2002) who mention that management and developers sometimes fail to see eye to eye. The managerial unit is prone to judge a project to be successful if the project meets the stated objectives of being within budget and delivered according to schedule (Procaccino et al., 2008). In contrast, the developers tend to perceive a project as successful depending on if the project is prematurely canceled or completed. Procaccino et al. (2002) also mention that developers tend to be more critical of undertaken projects. On average developers considered fewer projects successful (44%) than they believed the managerial unit did (77%). This indicates that there may also be differences of perception within the project team (Procaccino et al., 2008). To resolve this issue Procaccino et al. (2002) suggest that realistic expectations are crucial to avoid conflicts and will increase the likelihood that both the developers and the managers will agree on whether a project can be deemed successful or failed.

3.8.1 Defining success in IT projects

Procaccino et al. (2002) reveal that top management tend to distinguish between successful and failed projects based on the criterion of being finished on schedule, within budget, and meeting targeted functionality. On the contrary, Agarwal and Rathod (2006) state that a project can be characterized as successful despite not meeting all the criteria while, Procaccino et al. (2002) mean that the developers simply judge a project to be successful or failed depending on whether the project is completed or canceled. Yeo (2002) claim that a project should be recognized as failed if the project is subject to development or operation termination. According to de Bakker, Boonstra and Wortmann (2010) there are several point of views regarding success that can be considered depending on the specific perspectives of whoever is asked. However, Verner, Evanco and Cerpa (2007) argue that approximately 69% of projects face revision during the life cycle and that changes are not necessarily a negative factor.

Linberg (1999) mentions that a project should only be seen as a failure if the customer is unsatisfied with the final result. The project may not be completely successful if project exceeded budget or was finished behind schedule, but it should not automatically translate into a failure (Linberg, 1999). The same reasoning applies to premature termination of projects where Linberg (1999) argues that cancelled projects may not be failed if the project can contribute with knowledge, which can be encapsulated and applied in upcoming projects. Lastly, Verner and Abdullah (2012) mention that when determining success in software projects one must look beyond the technical aspect and instead also incorporate the role human behavior plays, organizational problems, and project management.

3.9 Maintenance

According to Grubb and Takang (2003) software maintenance occurs after the delivery has been deployed. The purpose of maintenance is to modify the product, to solve noticed problems, adapt the product to the new setting, or improve overall performance. As described by Grubb and Takang (2003) maintenance is the last phase of a life cycle and usually appears under the collective term of installation and maintenance. It is also pointed out that maintenance should be seen separated from the continuation of a new development and exist on its own (Grubb and Takang, 2003). Glass (2012) considers maintenance as an important aspect of the project life cycle as approximately 40-80% of the software costs lies within this
field; hence the planning for maintenance must be incorporated in the initial stages of the project. Otherwise, Meredith and Mantel (2010) explain that a last minute panic can occur. Last minute panic (LMP) arises when maintenance has not been involved in the initial stages of the project but rather is accomplished hastily in the very end, which will have implications on the present work.

Whenever poor requirements are established and later discovered in maintenance, these errors will have a major impact on the project’s progress as the costs of adjusting the problems increases the later they are discovered (Procaccino et al., 2001).
4 Empirical study

In this section the results from the collected empirical material will be introduced. The areas that will be presented have been selected from the empirical findings as they are deemed to be relevant to the purpose of the study and can be connected to the theoretical framework presented in chapter three. The presentation follows the thematic structure found in the interview guide (see appendix one), which was based on interesting aspects from the theoretical framework. Hence, the thematic sequence will move through IT projects, project closure characteristics, premature closure, postponed closure, customer and supplier, and lastly conclusive remarks. Each section will present a joint compilation of the answers from the three interviews.

The presentation begins with the interviewees’ general perceptions of IT projects and the initiation of them before moving to project closure characteristics where it was discussed what project closure practically and theoretically entails and the potential difficulties connected to closure. Further, the interviewees’ experiences and thoughts of premature and postponed closure will be discussed. Lastly, the results derived from the customer and supplier theme will be presented before some conclusive remarks.

Based on the sampling method described in chapter two, four interviewees were identified based on their relevance to the research question. Jonas Sellin and Peter Mellqvist are both employees at one of Company X’s branch offices in Sweden. Sellin has an education in IT and is today employed as the site manager. He has been with Company X for a just under thirty years. Most recently, he was involved in two projects as the Business Project Manager. Mellqvist is an Engagement Manager and Project Manager who previously worked on the customer side of IT, before crossing over to the supplier side. Andreas Tärnegård works at Make IT in Borås. Fundamentally, he is a graduate from the School of Social Sciences, who then worked as an IT consultant, project manager, and consultant manager. Today, he serves as the Chief Technology Officer whose main responsibility is to establish organization-wide policies and principles on how to handle internal and external projects. Conny Johansson is a manager at the Project Management Office of Handelsbanken IT located in Stockholm. Conny Johansson follows all IT projects connected to the bank and supports involved project managers and executives. He also works with Handelsbanken IT’s own development model as well as with associated training for involved parties.

4.1 IT projects

During the interviews the topic regarding the initiation of an IT project was discussed and revolved around whether the interviewees usually initiate projects based on a fixed budget and time frame, as these two factors are considered to be cornerstones in project initiation. Jonas Sellin expressed that a time frame and a budget is almost always incorporated, however, the budget can be a bit unclear. This is a result of the uncertainty involved at the initial stages of a project, before the requirements and specifics are fully agreed upon. A time frame refers to a deadline which states the time of when the project should be finished, which is the more common one to outline clearly from the beginning, as the budget is more likely to fluctuate throughout the project’s progress.
The second question given to the interviewees regarding the initiation phase concerned the preparation for project termination and when in the life cycle this particular activity takes place, whereas Andreas Tärnegård states:

“As I see it, project closure begins at the same time as the project is initiated by making a clear requirement specification of what to include and what to exclude in this specific project. The requirement specification will then be the basis for the closure meeting.” (Andreas Tärnegård, Make IT, 2016-12-17)

Sellin has a collateral opinion as he points out the relevance of clearly preparing the termination phase already in the beginning of the project, and then maintains emphasis on the closure throughout all of following phases. Furthermore, Conny Johansson explains that the need to start planning for the project termination early lies in the importance of making sure that the organizations or the people who will be affected by the project’s termination are well-prepared to handle what happens after the closure.

All interviewees emphasize the importance establish an explicit and detailed plan for project closure in the early stages of the life cycle, as this increased the opportunity of actually reaching a closure. It was also discussed that in case the project closure is set too late, and is a bit unclear, it could result in that the team members or project manager does not know when the project ends and where maintenance takes over.

### 4.2 Project closure characteristics

Further the interviewees were asked to characterize a project closure. The purpose was to perceive in what way they carry out the last phase of the life cycle and which initial steps that are required to be undertaken in order to reach an end. All interviewees agree that in order to close down a project, the project must have achieved what it was intended, either in form of functionality aspects or as a finished product. According to Johansson, another important aspect of project closure is having some sort of definitive end of the specific staff constellation within the project.

“To me, project closure refers to the actual dissolution of the project organization. A project is temporary, unlike the typical work in a line organization, so you initiate a project to create something special, a special task, and solve it. When the project is over you dissolve the temporary organization, and the people who worked on the project returns to the line organization or are reassigned to other projects.” (Conny Johansson, Handelsbanken IT, 2015-12-28)

The interviewees also discussed the importance of project documentation, whereas you can check off a number of activities to confirm that all stated objectives and functionality claims have been implemented properly. If this turns out to be faulty the remaining tasks should be transferred to a residual list which then will be given to the maintenance organization. At this stage the organization can choose if they wish to initiate a new project where the aim is to solve the remaining issues identified on the residual list. Sellin explains that a final report should be concluded where financial monitoring and results will be presented. He further mentions that this report is something the project manager should maintain focus on. Furthermore Sellin emphasizes the importance of getting final approval from the stakeholders.
“The most important thing is that you have received a final approval from the client on what is delivered. Everyone should say "yes this is okay, now the project is completed". After you get this confirmation it is okay to quit. Otherwise the termination will be very unclear and you will ask yourself – Can I quit or not? Can I make the decision, and if not, who makes the decision?” (Jonas Sellin, Company X, 2015-12-16)

For Peter Mellqvist closure of a project can mostly be derived from the importance of proper documentation. This should incorporate both system documentation, user documentation, and release documentation, which all must be continuously maintained and updated. However, he adds that handling the extensive documentation properly is not a belief or skill held by every developer.

4.2.1 Difficulties with project closure

Another area that was encountered during the interviews was whether the interviewees have experienced any difficulties with the project termination phase. Sellin explain that in his professional life he has encountered a hesitance towards closing a project before all tasks are completed, but sometimes one must accept that there will be a few tasks that have to be transferred to a residual list or put in the next project. Sellin insist on the importance to be tough as a project manager and let people know when it is time to close the project even though there may be some activities left, which will have to be transferred to a residual list, before the project can be moved to maintenance. If the project is very close to ticking off all activities and being completely finalized, there is no point in delaying the project closure. If you do not come to a complete stop, the project will just maintain status quo around and waste both time and money.

“For a project to be really good and a textbook example, one should prepare for closure already at the beginning when setting up the project, and this is actually quite difficult to do. It may be hard to think so far ahead. If you begin with preparations for the end in the midst of the journey, it may be easy to postpone the planning for closure, or not do it at all. So plan for it and make the closing procedures clear from the outset.” (Andreas Tärnegård, Make IT, 2015-12-17)

This led the interview into if the activities or features that were not completed within the first project would be passed on to another project. Sellin confirms that is what likely could happen unless the organization decides that the remaining features are irrelevant, henceforth he explains:

“I find that if you have a project, whatever project it may be, you must from the beginning think about what happens after the project and ask ‘is there someone who can take over the delivery?’. If that is not the case, there has to be an activity in the first project to build up an administration or receiving organization with the right people. I think it is very important for the management to work, so you must bring someone over to the maintenance at the receiving organization in order for it to work, someone who has been involved in the project and has the right knowledge.” (Jonas Sellin, Company X, 2015-12-16)

Johansson have a similar view as Sellin. He explains that once a project is finished it will be handed over to maintenance, and the people at the receiving organization must have been participating throughout the whole project and not just be handed over a finished product or
result. If this happens the chances are that the maintenance organization is unaware of what the finished product really is and how it works. This scenario could lead to potential problems in terms of a lack of proper documentation that describes the changes, but that maintenance will not be able to comprehend this since they were not involved from the beginning, or that the project organization consisted of a large number of temporary consultants. The complication that can occur when having temporary consultants is once they are done with that particular project, they will leave for their next assignment and their valuable knowledge will leave with them. It is crucial to have an organization that can carry out a proper handover to maintenance and will push for the developers and testers to learn and be involved as a project elaborates.

“It can easily become so that the project was not finished as planned, because the maintenance organizations did not learn what they were supposed to learn, which results in that they cannot take care of the system once it has been deployed. This can lead to that the project has to be extended for some time before a good handover can be made, which also will affect the closure.” (Conny Johansson, Handelsbanken IT, 2015-12-28)

Further Johansson finds another problem with project closure, as he see it a project may not be ready to be delivered simply because the result contains too many errors. There will always be a few errors, however, especially large errors or a larger number of important errors, must be resolved before the handover occurs. This is one of the scenarios which can cause the project to be delayed, and thereby also postpone the closure.

Mellqvist links this back to the difficulties with project closure by expressing that once a smaller change within the project has been approved, the customers occasionally want to incorporate additional functionality, which forces the project out of the initial time frame and scope, yet does not change the closure date. Furthermore, he believes that when the change management is not handled properly, a project closure cannot be reached. If this occurs, the project will build on and the difficulties of reaching proper project closure increases.

The interviewees were asked if they consider the closure of a project as a simple process, as it is often stated in theory. Neither Sellin nor Mellqvist agree that project termination is a simple practice. Sellin rather thinks that the closure can be even harder than the project initiation. He also explains that when discussing closure you must consider the post-project survival of the result and this includes what happens after the project has been delivered. If this activity is not well-established the project may lose its purpose. Mellqvist feels that keeping the right quality in the end can be a bit challenging, as the focus among the project team members may have shifted. He elaborates that the reason behind this can be that the processes move slower and the results become less visible, which will reduce the motivation within the team. However, Tärnegård and Johansson has a slightly other opinion.

“As such, I do not see project closure as very complicated and it is quite simple in theory. Therefore it should also be so in practice. In certain cases the focus may be distorted towards the end and then you are just pleased to have managed to produce a deliverable. But closure should not be very complicated.” (Andreas Tärnegård, Make IT, 2015-12-17)

Johansson is in line with what Tärnegård explains. Closure is not considered to be the most difficult task out of the life cycle, nor is it the easiest one. It all depends on how well prepared one is for the closure per se and what type of project one is dealing with. It all comes down to preparing for the end from the outset to ensure that the closure will be a clear process.
Johansson continues and explains that towards the end of the project, especially when working with roll outs for Handelsbanken, the work is very extensive and many offices will be affected by the final output. Huge rollouts like this can in some ways be complex since many users and offices are involved. He also points out that it can be difficult to distinguish clear lines of whether a launch or rollout is a part of the closure phase or not, as the activities can be a bit tricky to define at times.

The previous discussion between Sellin and Mellqvist lead the interview to the question of what other factors affect the termination phase of a project, in addition to what the interviewees said regarding the staff, which can be a bit problematic. Mellqvist discusses the importance of clear leadership and the need for acceptance of a potential residual list. Sellin refers to exceeded budgets and explains that the process of closing down a project will suffer due to the decision to pre-terminate a project, which is presented in the next theme of premature project terminations.

4.3 Premature project closure

The next part of the interview covered premature closure of projects. The interviewees were given the question if they have been involved in a project that should have been terminated earlier than it was, after the realization that the goals will most likely not be reached in the end unless there are dramatic changes in functionality, schedule, or budget. Tärnegård did not have any experience of projects that should be terminated earlier in the process. However, Sellin exemplifies from his own experience with a quality project he worked on and admits that the project should have been terminated earlier since the firm where he was employed did not manage to reach the solution they set up for. He explains why it was not terminated despite the understanding that it probably should have been:

“There were some organizational changes which resulted in that everything broke down anyway. I have managed a whole lot internal projects, and the most problematic thing is that suddenly people involved in the project will disappear because the project level is not as high as it were to be a an external project towards a customer. Some projects should simply be terminated earlier because you may have started on the wrong foundation. You will discover that nothing good can come from this, and then it is better to just terminate it than to let it drag on and cost money, absolutely.” (Jonas Sellin, Company X, 2015-12-16)

Mellqvist describes an experience from a project he was working on in the late 90’s before the new millennium there the termination phase was begun earlier than planned. The project that Mellqvist was involved in, whilst he still was on the customer side, was one of the world’s largest installations and Sweden’s first installations of an ERP system from a specific supplier. The millennium project had to be cancelled since it was crucial to get ready before the actual turn of the millennium to adhere to the uncertainty of what the new century would affect. Further he explains that the company came to the realization that the project would not be able to be delivered before the new millennium, hence they had to cancel the project. This problem was resolved by an alternative solution that would work for the millennium shift and then the organization pursued the initial project after the alternative solution was launched, to satisfy the customers in the long run. Further he points out that:

“You have to lay out an alternative solution, if not; the organization will go down the drain.” (Peter Mellqvist, Company X, 2015-12-16)
Johansson’s experience of premature closure is that a project is granted an approval to start and is provided with various resources, but once the project has been initiated the resources that were brought in from the beginning might be transferred to another project, which leaves the current project understaffed and with a lack of other resources. The project might still continue regardless of the lack of resources, but this can have tremendous impacts on the project and result in that the project has to be prematurely discontinued with major consequences. If this outcome is inevitable the very best solution is to terminate the project as early as possible in order to not cause any more organizational or financial harm. This is a vital action that will save both money and time. Although, Johansson raises an interesting point in relation to the high uncertainty of potential success in IT projects and says:

“I do not think there is anything wrong with terminating a project, since not all bets will be made with a 100% chance of success.” (Conny Johansson, Handelsbanken IT, 2015-12-28)

4.4 Postponed project closure

The interview continued with questions regarding projects that continue a little too long, despite that the project will not achieve the desired objectives. Sellin immediately referenced leadership aspects and states that the reason behind this is could be some lack of authority within the top management or from the project manager. Sellin explains the potential reason behind this:

“Poor governance, I would call it. You do not have the right people to make the right decision, you are not authorized to make the decision, or you do not dare to make the decision to terminate. Such projects exist, absolutely.” (Jonas Sellin, Company X, 2015-12-16)

Johansson has been involved in a few projects just like these and in his opinion this is often the result of a changed business case. After quite some time the organization will notice that the project is no longer feasible and then a decision to terminate the project should definitely be made. The potential problem with this is that by then the project will already have engulfed substantial resources that could preferably have been allocated to another more feasible project.

“It is a decision that you are dreading and not looking forward to making.” (Conny Johansson, Handelsbanken IT, 2015-12-28)

Regarding projects that are already considered finished, ergo having reached the desired functionality, but have failed to receive a formal closure Tärnegård claims that this reflects upon the project manager, who should be the responsible party to prevent a project from dragging on for longer periods than necessary. When a project does not receive a formal closure although the deliverables are considered finished, he states:

“It probably depends on that the involved parties are pretty unskilled at the closure phase since it is a part that is easily forgotten.” (Andreas Tärnegård, Make IT, 2016-12-17)

The core lies in a formal closure and a closing meeting and whenever this is not achieved a project closure has not been met. Another important detail, as Tärnegård sees it, could be the the symbolic meaning of a simple gesture such as a handshake, which will officiates an actual
closure by implying that all parties have come to terms and are satisfied with the result of the project. However, this symbolism is sometimes overlooked but could function as a factor for an increased sense of completion among the key decision makers.

Johansson believes that the responsibility behind postponed closure can oftentimes be attributed to the customers who have a desire to step away from the initial agreements regarding requirements without re-evaluating them. Rather, they wish to continuously add extra features and functions that will impact the scope of the project and thereby also the potential closing date. There should be some room for flexibility regarding features or functions; however, Johansson explains that it is highly important to inform the customers of which parts of the contract that will be affected by the changes. Once this is agreed upon the project will have changed in scope and perhaps budget and time as well.

In other cases when a project does not receive a proper closure it may be due to an exclusion of representatives from the maintenance organization. If the right people are not involved from the beginning they may not ready to take over the results, which directly will delay the project. Another contributing factor is an overly optimistic time schedule that are set by the project managers who are responsible for the planning the project. Johansson believes that these two factors are highly present in the root behind postponed closure in IT projects.

The interviewees received the question if they think it is possible that the project manager stays overly attached to the project for personal reasons in fear of the actual termination. As a closed project results in a sense of uncertainty of future work possibilities, the interviewees were asked if they believe selfishness could potentially be a reason behind why some unfeasible projects are exposed to postponed closure.

Both Sellin and Mellqvist agrees to an extent by inferring that whenever a project manager holds onto a project it could be the reason that the managers are not sure what to do after a particular project is completed in terms of future work opportunities. However, they argue that the responsibility does not solely lie on the project manager as the whole project organization are contributing factors to the problematic issue of projects that proceed a little too long. Sellin and Mellqvist discuss that perhaps this is a case resulting from a lack of knowledge and that top management are not always included enough to fully grasp events that led up to postponed closure. There is also controversy of decisions and change, which can be a bit vague and frightening from the human relations side. There is a combination of a project organization that do not realize what happens during the process of a project, people that do not feel comfortable taking over what they are about to receive, and project managers that are not capable of making the right decisions, there will be an issue which contributes to the prolonged project closures or the complete lack of closure.

However, Tärnegård and Johansson do not share the same view. Tärnegård explains from experiences of delayed closures the plausibility of it to be caused by managers who hold on to the project in fear of the actual termination.

“Spontaneously, I do not believe that. I think that the project manager is quite keen to move on. It is the experience I have had.” (Andreas Tärnegård, Make IT, 2016-12-17)

Johansson believes it is very unlikely that a project manager will hold on to a project in fear of the actual termination. Rather he thinks that the project manager is keen on running a project that will be of a more successful nature. Therefore Johansson believes that the project
manager will express a positive attitude to the closure of an unfeasible one, as it means that they have the opportunity to take on another project where there are new chances of success.

Furthermore Johansson clarifies that when realizing that a project needs to be terminated prematurely, the people behind that decision may find it difficult. This difficulty will arise when the project has already been put in operation and initial amounts of money has been invested and more investments are to come, people behind the decision find it tough to admit that the project is no longer feasible and that is has to be shut down immediately. As an outcome of this the investments will not result in any revenue and the responsible manager may find the decision burdensome to make.

Although, Johansson agrees to a small extent that a project manager might be a part of the reason why a project is not discontinued earlier.

“Instead, one might hope that it will be a good project anyway in the end and keep going, but by that time it is better to invest a small amount and then break off all plans and accept a smaller loss, instead of investing all funds and then come in afterwards realizing that is was a bad business decision. It is very important to evaluate if the goals are still there. So much happens in our world that a project that was good one year ago might not face such an optimistic outlook anymore. So it is incredibly important to constantly evaluate the effectiveness objectives to see if the project can be considered good business. But I think it may be difficult to decide when large amounts of money have been lost, you feel like you have spent money on nothing. I think this can be the reason as to why some projects go on for a little too long at times. You hope that in the end it will add up to something good worthy of the investments.” (Conny Johansson, Handelsbanken IT, 2015-12-28)

In the discussion whether the interviewees feels that there is a need for a formal closure, both Sellin and Mellqvist agrees. Sellin goes on by explaining that in his recent business projects he had to receive a formal approval from the Swedish top level manager before he was eligible to deliver the result to the customer and receive the customer’s approval for what was delivered. He emphasizes that a formal closure is highly important and should always be reached.

In the interview with Sellin and Mellqvist there was also a discussion whether it is more common that a project ends prematurely than projects that are not completed at all. Sellin thinks the latter is most common, meaning that the closure procedure drags on, whereby Mellqvist agrees. Mellqvist proceeds by explaining that he thinks that dragging out a closure may be due to many reasons, for example that there is no receiving organization or perhaps that the receiving organization is not accepting of the residual list. Sellin clarifies by explaining that it is the steering committee that is in line to make the decision regarding the residual list. The project directive should entail that any residual list has to be accepted by the receiving organization from the outset of the project. Furthermore he states that it is the steering committee who decides what should be incorporated in the residual list, and it is highly important that the committee approves the points. At times, some tasks can be questioned and discussed whether how relevant they are and to reach a decision you may have to go back and re-evaluate the objectives, the business case, and the deliverables.
4.4.1 Project escalation

The interviewees received questions regarding project escalation, whether they knew what escalation incorporates and if they have any experience of it. From their answers it did not fully seem as they understand the meaning of the phenomena. Their interpretation of the concept of escalation is that the problems are lifted up higher up in the organization.

“That you lift the problems higher up in the organization. But that is not what you mean here? You mean escalates as in pulling away and growing? That is another type of problem.” (Jonas Sellin, Company X, 2015-12-16)

However, once they were presented with the definition of escalation relevant to study, meaning that a project escalates in terms of scope and unnecessarily spent resources when following a troubled course of action, a different reasoning occurred.

“Yes, I have experienced that. Though, it has not happened here in the last few years. What really drives an escalation is the customer and it usually happens after the customer finally gets approval. Then they want to push the project a little bit further because they already have a foot in the door.” (Peter Mellqvist, Company X, 2015-12-16)

With further explanation of the term project escalation Tärnegård says that he has no experience of that specific phenomena, which otherwise seems to be very common in the IT industry. Tärnegård points out that in his case they have not always kept the budget or time frame, however the projects have not resulted in anything massive like an escalated project. In his experience, the projects that he has been working on are usually quite boxed in and a fairly proper estimation can be set from the start.

4.5 Customer and supplier

Sellin, Mellqvist and Tärnegård all agree that the customer is absolutely highly involved in the project closure, which can have certain implications. Tärnegård addresses that one major problem involved in the closure phase can come from disagreement between customers and suppliers. He mentions that if the supplier has delivered what was ordered, the customer may want to postpone the actual closure to facilitate for further add-ons, which can be a major source of concern in the project. Mellqvist supports this reasoning by stating;

“In my experience, the customer usually wants to keep the project open. In many cases, the customer's steering committee, specifically those who are financially responsible, want to finalize the project. On the other hand, the ones who are responsible for the receiving organization would like to postpone the closure. Hence, those who are usually in favor of carrying out the project closure are the suppliers and the top management of the customer's side.” (Peter Mellqvist, Company X, 2015-12-16)

Mellqvist explains that the reason behind this can be that the customers lack a certain level of maturity and that customers at times are not willing to accept a residual list. Furthermore he says that problems can arise when supplementary features and changes are not handled in a proper way. This is usually due to unclearness and vagueness of the added functional requirements. When this occurs, the outcome is a changed project scope and redundant documentation that is no longer accurate for the new scope. In his perspective, when
customers and suppliers are not on the same level regarding the scope and in terms of what should be delivered within that scope, is a common source of failure.

Tärnegård agrees to a certain point that, historically speaking, sometimes the customers may have difficulties in the requirements elicitation process. It may be so that they do not have the proper knowledge or that they have the knowledge but lack the skill to articulate the needs. In this case building a bridge between business and technology may be difficult, which certainly can be a reason why the two parts do not agree in the end.

Mellqvist, Sellin and Tärnegård all agree that the key to overcoming this issue is extensive communication in the beginning followed by proper documentation throughout the project. This will simplify the process of deciding what should be delivered, the purposes, and what the customer can expect to win from the delivery. Mellqvist justifies that documentation is the solution.

Further, Tärnegård suggest that having the customer involved in the development process from the start would also make the project closure easier. Sellin expands by saying that there should absolutely be some kind of agreement or contract where the efficient delivery date is discussed. Sellin continues;

“The customer is definitely involved in the project closure because their approval is important. It can be approval to 100% and then in a decreasing scale, such as getting approval with the exception of x, y, and z. [...] One should have a formal project closure where both parties attend a steering committee meeting and signs off that the project is delivered and finished.” (Jonas Sellin, Company X, 2015-12-16)

In the same meeting, Tärnegård says, there is often some kind of feedback on how the customer experienced the project as a whole, though he wonders if this should not be dealt with earlier, before the closing meeting.

4.5.1 Success in IT projects

Further the interviewees were asked if they viewed a project as failed if it did not meet the requirements, budget or timeframe. There was a discussion revolving the 2014 CHAOS report from The Standish Group, who has the previous as an argument for successful and failed projects.

Johansson completely agrees that if a project has not met the previously agreed upon requirements, budget, and time frame, it most likely should be considered a failure. As he sees it, there has been an agreement from the start in terms of what to deliver, at what cost, and at what time, once you agree to these terms and you not capable of delivering, the project itself is not successful. He further mentions that the project can indeed still result in a good product, though, delivering a product at a 50% higher price than initially agreed upon is unacceptable. He states that if the customer would have known that the price would increase to this extent, perhaps the project would not have been granted to start. It is difficult nonetheless important to reach estimates in the vicinity of both time and money, but it is hard to accomplish complete accuracy.
Tärnegård’s opinions regarding successful and failed projects are not completely unanimous with the ones expressed in the Chaos report. He further says that the view of success is whether the importance lies within the project’s process per se or is found in the delivery. The success should connect to the purpose of the project and if the product is something that the user, client, or organization really wants. The outlook on success differs depending on which side one sees it from; supply side or customer side.

Projects that do not meet requirements set from the beginning, within the time frame, or budget do not necessarily need to be unsuccessful, says Sellin. There are multiple things that can happen along the way, such as miscalculations and added feature, which in certain cases can be justified. Sellin points out that a project is successful as long as you have delivered what was agreed upon, and should not be viewed as a failure simply because some things are prone to change in the process.

Further he explains that these justifications can contribute to a better product in the end. The issue should be discussed with the customers and if they feel that extended time or budget is okay, even when you need to cut back on some functions, their approval could still lead to success. Mellqvist argues that what can be considered a failure is when the change management is mismanaged which leads to missed communication. If you want to change the scope, this has to be communicated towards the top management and receive an approval, if the approval is dismissed, then it is not okay to change the functions, time frame, or budget.

Sellin and Mellqvist emphasize that the core of success is determined based on what type of project one is working with. There are projects that are more crucial in terms of time, just like the millennium project Mellqvist was working on, where it became necessary to cut back on certain functionality aspects to avoid crossing the timeframe. This is a type of deadline project which did not meet the initial requirements in terms of functionality. However, the project managed to be done on time, and that is, as they argue, a success for this particular project type.

“Normally, in our case, we outline these criteria of what is most important - time, functionality or cost.” (Peter Mellqvist, Company X, 2015-12-16)

“You will outline this in the project directive already from the beginning, stating what type of project it is. Then when one looks for a project manager, you want someone who has run such projects before, or similar ones, because this is usually where a project fails – because you have a project manager who is too inexperienced for a particular type or project. This means that we can succeed very well with the project if we add the right project manager.” (Jonas Sellin, Company X, 2015-12-16)

### 4.6 Conclusive remarks

Some interesting points regarding topics related to the many aspects of project closure arose during a loose discussion at the end of the interviews when the interviewees were asked to submit any final remarks that had not been brought up in the interview.

Sellin wanted to steer the conversation towards organizational matters in both the receiving and the supplier organization. Based on experience, he mentions that the project manager must design the project as well as the organization surrounding it according to the scope of
the specific project. Stakeholders, third-party suppliers, internal resources to both supplier and customer should all be included and there should be clear connections and communication between all parties.

“Establish clear supplier and customer relationships – i.e. who is talking to whom in the organization, both vertically, and horizontally. Do not run diagonal contacts because you will easily go past people. A question should also always be taken at the right level in the organization and this is important because it can simplify the project closure. It is also important to have the right organization and that one is not afraid to change something if you see things are starting to go wrong.” (Jonas Sellin, Company X, 2015-12-16)

Tärnegård is also concerned with organizational issues mainly stemming from his years working as a consultant and mentions that sometimes it is difficult to relate to when the customer should be both the project manager and run the project. He continues;

“I have come up with that you need to have some kind of order from the beginning so that we both know what is ordered, what has been selected, and what the purpose is. Then you should have a fairly brief project reporting practice during the journey and then a clear termination form. [...] It is really important to reach the end so you can actually close the project and move on, both in internal projects but also external related to billing and so on.” (Andreas Tärnegård, Make IT, 2015-12-17)

On the opposite, Mellqvist stresses the importance of proper change management:
“If you have a project directive and if have managed change then the project directive is always updated. You will also be clear about what should be delivered. If you fail here, the final outcome will not be good.” (Peter Mellqvist, Company X, 2015-12-16)

Correct change management is also related to evaluating risks, which Mellqvist explains all project managers do at the outset of a project. Some risks are also connected to the organizational considerations Sellin mentioned. Mellqvist elaborates by saying:

“This does not really have anything to do with project closure, this thing with risks, but there are these different pieces where everything affects the closure indirectly [...] Often you fill your organizational function just as you did before, plus the idea of working on a project, which is tough for many. This will not lead to quality or cost problems but can lead to poor communication in urgent matters. You can say that when doing a risk analysis you have to establish what the current risks are, and then how to handle them based on your experience. If it is important that the project is delivered on time and you as the project manager feel unsure about the resources, then you have to control the project very strictly. In that case, I as a project manager, have to see that this will not be good which is why our version of the escalation routine arises. Thus, the problem runs up a level to the very top or until it is clears.” (Peter Mellqvist, Company X, 2015-12-16)

Sellin clarifies this seemingly different version of escalation by explaining that he is familiar with two types of escalation. First there is a hierarchical escalation, which is when you need a decision from a higher instance or when there is a problem that needs to be solved, i.e. when the supplier is ready to close a project but the customer is not. Then the problem is escalated to the next level of the steering committee or the top management. Sellin specifies that there is also technical escalation, which requires an expert's advice on a technical matter and concludes that;
“All things regarding escalations may have an impact on how the project is progressing.”
(Jonas Sellin, Company X, 2015-12-16)

Lastly, Tärnegård presented an interesting observation supporting the fact that project closure can be seen as the forgotten phase. During a recent three-day project-training course he noticed that there was an absence of focus on project termination.

“Where one should go through the entire project phase, the particular termination phase was not discussed at all, it strikes me now. Proper termination of a project was not included during the three days at the training. It focuses a lot of time talking about risk assessments, feasibility studies and so on, but probably not even 5 minutes was spent on the view of the last phase.” (Andreas Tärnegård, Make IT, 2015-12-17)

Further, he claims that it is not the brief information about the termination that one remembers after participating in such classes. Instead, Tärnegård explains that you remember all the flowcharts, activities, Gantt charts, and mini risks that are more deeply discussed. It is not that the material does not exist in the educational material, but the training adds no focus towards that aspect, hence the belief that project closure can be seen as the forgotten phase is supported.
5 Analysis and discussion

As mentioned in chapter three the data analysis was inspired by Oates (2006) qualitative data analysis with the aim of uncovering any potential reasons behind postponed closure. Three semi-structured interviews with four interviewees served as the foundation of the analysis as theory has failed to provide probable reasons resulting in postponed closure. In the discussion, the main reasons will be identified and extracted with support from the theoretical framework.

5.1 Analysis

5.1.1 IT projects

Jonas Sellin states that during project initiation two commonly present determinants are budget and time frame, though the budget tends to be a bit more unclear and differ in the specific type of budgetary means. The budget also appears to be more prone to fluctuation than the schedule, which is usually set from the outset of the project and with the presence of an effective deadline which will enforce an actual closure. During this initiation, Andreas Tärnegård means that the preparation for closure is at its inceptive stage and that this is characterized by explicitly stating which requirements should be included and excluded in the project. This is considered important as this requirement elicitation will serve as the foundation for the closure meeting. Without a proper requirements analysis and delimitation, the closure will be diffuse and the difficulties of reaching a closure will be more prominent. This reasoning is supported by Sellin and Conny Johansson, who agree that the termination process must be clearly outlined and planned for, from the initiation, throughout all other life cycle phases.

The preparation should also incorporate a clear portrayal of what has been ordered and selected by the customer along a definitive purpose of the project. Project reporting should be planned for continuous follow up and ultimately result in a termination document presented at the closure meeting. A way to avoid postponed closure is to schedule a physical closure meeting already during the planning stages. During this meeting a suggestion is to incorporate some sort of symbolic gesture to convey that all parties agree on the satisfactory nature of the project and to ensure that the purpose has been fulfilled.

Further, Johansson discusses that all parties who will be affected by the closure should be presented with the opportunity to fully prepare for what will happen after the closure has taken place. These planning measures are considered important by all interviewees as it increases the overall chance of reaching a closure, and help distinguish between the termination phase and the maintenance phase. If this separation is not clearly outlined it may cause the project to be prolonged without achieving more than what already has been accomplished.

5.1.2 Project Closure Characteristics

The typical characteristics of a project closure reflect upon the planning that should be done in the initial stages of the project. All interviewees have the perception that a project must have attained the goals and objectives that were stated in the planning, before a closure can be
reached. However, trying to achieve all stated objective within a certain time frame can potentially lead to implications. Peter Mellqvist believes that one of the driving forces behind postponed closure is flawed documentation, which may be a lower prioritized task among certain project members and developers. To ensure that all tasks have been accomplished there is a need for proper and continuous user, system- and release documentation, which can be used as a schema to check off each separate activity and see the current state of the implementation. If the documentation proves that there are remaining activities, it is considered important to transfer these activities to a residual list. The maintenance organization will then have the option of closing the current project with minor lacks and initiate a new project in order to develop the final functionality, or to extend the current project until all parts are included, which will delay the closure.

Sellin explains that before activities are transferred to the residual list at the maintenance organization it is crucial to get final approval from the stakeholders on the functionality that has been delivered. Only after you have received a formal confirmation the project can be closed down, which suggests that a formal closure always should be emphasized. If this formal decision fails to be delivered, there may be hesitance towards whether the project can be considered completed. To reach a closure someone must make a strict final decision, after which project members are allowed to return to their individual role in the line organization or be assigned to a new project.

5.1.3 Difficulties with project closure

Related to what was discussed regarding the transference of activities to a residual list, Sellin speculates that there tends to be a hesitance towards closing a project before all activities have been completed, which causes project to be prolonged in the hope of achieving everything that was intended. To avoid this, a tough project manager with leadership skills is required. The role of the project manager is to carefully balance what already has been achieved, what is further achievable, and what the potential consequences of not closing the project are. Sellin claims that the project manager must consider how close the project is to actually be completed. In terms the needed additives are minor, the project manager should decide not to postpone the closure as the additional time will require both time and financial resources while achieving minor results.

Contradictory to what Tärnegård previously stated regarding how project closure should be performed theoretically, it may be difficult for the project manager to prepare for closure early in the project. He states that occasionally the planning for closure begins once the project is already in motion, which makes it easier to postpone the planning for closure, or to not plan it at all. There must also be preparedness in the receiving organization, which requires that the right people from the right divisions are incorporated from the right point in time and possess the right operational knowledge, according to Johansson. A secondary problem connected to the involvement of the right staff is if maintenance is involved too late in the process. Johansson thinks this problem is derivative from a lack of acquired knowledge causing an inability to handle the delivered result. To ensure that the deliverables can be correctly maneuvered the closure might have to be postponed to provide the receiving organization with enough time to educate themselves and for the handover to occur on good terms. This relates to both the issue of maintaining proper documentation standards and definite planning skills, which was previously discussed.
Mellqvist explains that a further driving force behind postponed project closure is the result of poor change management. This entails that the project will be subjected to a growing scope as the result of a customer’s wish to add more functionality into the project once a smaller change has been approved. However, the delivery date is not likely to be altered to reflect the new changes and the impact on closure is inevitable. One way to reduce the complexities involved in change management is to keep the documentation accurate and ensure that the project directive is always updated. This will be beneficial to the entire organization as the scope will stay relevant.

As theory have stated, project closure is seen as a fairly simple process. This is opposed by Sellin and Mellqvist who think closure may be even more difficult than project initiation, as there is more to the closure phase than initially expected. It is not enough to plan for the actual handover but one must also consider what happens to the organization post-project. Another complicating factor in this context is the absence of clear leadership, presented by Mellqvist. Tärnégård is more inclined to agree with theory and means that closure is not very complicated, neither theoretically nor practically, but there may be affecting factors that will make closure come off as more complex. One of these factors is a distorted focus among the team members towards the end, which will challenge the emphasis on final quality, and decrease motivation among the staff as the progress becomes less evident. Johansson concludes by saying that the simplicity or complexity of the closure depends on the specifics of both the project and the closure, and how well the project manager has prepared both the sponsoring organization and the receiving organization for the result and deliverance.

5.1.4 Premature project closure

As the potential consequences of not reaching closure can have major impacts on organizations it is sometimes necessary to terminate a project prematurely instead of letting it drag on and consume resources. This can be the best alternative if the project is started on the wrong foundation, if the planning is inadequate, or if reaching the stated objectives is impossible. Another premise of prematurely terminating a project is if there is a presence of an immobile deadline where certain functionality must be delivered before the deadline. If this occurrence is inevitable, the leadership must come up with an alternative solution to satisfy the stakeholders momentarily, until a more long-term plan can be established.

To prematurely close down a project does not automatically have to translate into failure of the project. Johansson informs that the uncertainty involved in IT projects plays a big part in premature termination; hence not all projects will be completely successful and one should not fear premature termination in certain situations. After a project is granted to start the project is provided with resources suitable for the current purpose and scope of the project. However, after the commencement of the project some of these resources may have been relocated to other more urgent projects, leaving the current project with fewer than the necessary resources. The project is likely to continue until it simply is impossible to continue any further, but the consequences of doing so will be noticeable. An organization is less likely to find itself in this position if there is strong leadership from the project management and clear communication between involved parties, both horizontally and vertically.
5.1.5 Postponed project closure

Sellin assumes leadership and governance are crucial factors if a project should reach closure, regardless if the project has achieved the objectives or not. By letting projects stay alive and evolve even after they could have faced closure can according to Sellin be due to a lack of authority, that someone is not authorized to make the decision, or if the authorized party simply do not dare to make the decision. The postponement of closure can also be derived from substantial amounts of changes incorporated in a project without any related changes being made to the scope. This result in a changed business case where the initial requirements are no longer recognized, hence the project is no longer feasible. It may be a difficult decision to make for the concerned party, but nonetheless an important one as a formal decision to terminate, even prematurely, will facilitate a transfer of resources to another project with greater chances of success.

A further possible reason behind postponed closure is if the project manager is too optimistic when working on schedule in the planning stages. A potential explanation for this is that the project manager is too inexperienced to be the decisive force in a specific project and accentuates the need for involvement of the right people. Additionally, the project manager must design the temporary project organization in a way that is compatible to the scope, and where clear connections and communication routes are present as it will simplify the closing procedures.

The customer can also be a driver behind postponed closure if flexibility of the project is overestimated. As previously touched upon, the customer may want to make smaller changes which incrementally increase in scope as a result of the foot-in-the-door technique. If these further changes are approved there must be an open dialogue between the suppliers and customers to highlight how this will impact various contractual factors, including closure. Another potential outcome of the foot-in-the-door technique is the phenomenon of escalation, which is summarized as continuous investments being made into a project which is facing a failing course of action. This means that the project is expanding in terms of scope and complexity while the chances of delivering a high quality product remain the same.

If the progress of a project does not live up to the positive expectations found during the project’s initiation the closure may be absent. A potential underlying reason for this is an aversion to letting go of the doomed project in the hope that the project will eventually result in something good. However, if an organization is experiencing this, it is better to sacrifice the smaller investments which have already been made, rather than continuously adding more and more resources and further postpone the closure. Though, in the midst of the project this may be difficult for the project manager to grasp and the will of surrendering to failure is diminished as a result of lost financial capital. A way to tackle this problem is to evaluate how accurate and effective the business goals are to see if the project potentially can become good business if more resources are included.

A final way of approaching closure is by not reaching closure at all. This is particularly evident if the receiving organization is not at the level of preparedness that is required to be able to accept the delivery, or if the customer is unwilling to accept the residual list, how minor or major it may be. Ultimately the issues behind a lack of closure can be attributed to a lack of documentation whereas potential outcomes like these are not clearly outlined or in the presence of a contingency plan. It is also important to maintain proper communication with
the steering committee, especially at signs of troubled closures, as the steering committee is the ultimate decision-maker.

5.1.6 Customer and supplier

It is often stated that the customer is always right, but what happens if the customer and supplier fail to see eye to eye, while forcing the closure of a project to be delayed? It appears that the customer wants to keep the project open in the hope of extra last-minute features, which can be tied back to flaws in the initial requirements elicitation process. If this process does not result in a clear establishment of precise requirements the final outcome will not match the initial scope and the documentation may be inaccurate. If the customer’s level of technical maturity or the ability to articulate specific needs is too low, the closure will often be affected. The key to overcoming this issue is by ensuring that communication takes place at the right place in the organization and between the right people, especially in the beginning of the project, and that documentation is prioritized towards the end to tie up any loose ends. By following these suggestions the purpose of the project will be emphasized and postponed closure can be avoided.

However, sometimes the last minute changes can lead to the final creation of a better product from which postponed closure can be justified. This requires an open and communicative discussion among key stakeholders to determine whether the potential outcome of the delayed project is worth the postponed closure, which also will impact both the schedule and budget. Promptly after this decision has been approved the new strategy and incorporation of change management can be developed. If the request is denied it is mandated that the closure is not postponed.

5.2 Discussion

In this section a discussion regarding the main reasons behind postponed closure will be presented. The aim of the discussion is to emphasize the potential main reasons collected in the empirical findings presented in the analysis with the added enhancements of relevant theory. This was done to distinguish between general reasons and main reasons behind postponed closure. The discussion will follow a division different from the previous structure to highlight the main reasons behind postponed closure.

Poor planning
As stated repeatedly throughout the study the typical characteristics of a project is that there is some kind of temporary undertaking which will result in something that did not previously exist, through an allocation of organizational efforts and resources (Tonnquist, 2012; Maylor; 2008, Meredith & Mantel, 2010; PMI, 2008; Tesch, Kloppenborg & Frolick, 2007). Collected empirical material support that a project is carried out as a task limited in time and with some budgetary and schedule constraints. In theory it is suggested that when the project is approaching closure, all phases and activities of the project life cycle should be completed before the finalized project can be delivered and the project can be considered closed (Hormozi, McMinn & Nzeogwu, 2000). The closure phase incorporates the creation of a number of activities, documents, reports, and deliverance of a finished product or functionality. It is suggested that the planning for these concluding activities should begin in the initial stages of the project and follow the project iteratively, rather than beginning
towards the end, to ensure that the project can be transferred to maintenance successfully (Maylor, 2005; Gardiner, 2005).

The theory presented in this regard is unanimously supported by empirics where it is emphasized that planning for closure should be a top priority already from the initiation of the project (Gardiner, 2005; Maylor, 2005; Hahn et. al., 2012). Additionally, theory explains that it is of high importance that the scope of a project must be planned from the outset and should be handled by the project manager (Hahn et al. 2012). Hahn et. al. (2012) also mean that the planning process is a complex process to undergo. The empirical findings suggest that project closure should start at the same time as the project is initiated, by the outlining of a requirements specification where it is explicitly stated what has to be achieved before a project can be considered closed, which then will be used as the basis for the closure meeting. It is also emphasized that if the goals and objectives, which were planned for from the outset, have not been reached, clearly a closure cannot be attained. Contradictory, in reality it is plausible that the project manager brings up project closure later in the process when he or she realizes that the project is soon to be finished and should be handed over to the receiving organization. This correlates to the last minute panic which Meredith and Mantel (2010) explain as when the maintenance organization is involved at the very end of the project.

Lack of involvement
If the closure and handover is not properly planned the last minute panic can result in complications for both the actual handover and future operational running if the right people have been involved at the right stage in the project (Meredith & Mantel, 2010). Maylor (2005) explains that a proper project closure requires discipline from all involved project members. The study has found indications that a project may suffer from a postponed closure if representatives from maintenance have been left out throughout the life cycle, resulting in unpreparedness when receiving the delivery. If the knowledge regarding involving the right people, such as maintenance, and skills to acquire these people is not possessed by the project manager, important people may be left out. However, this problem is not exclusive to the maintenance division. Empirics suggest that the involvement of the right people at the right time can help distinguish between the termination phase and the maintenance phase, which otherwise can cause the project to continue without achieving more than what already has been accomplished. It is also suggested all parties who will be affected by the closure should be presented with the opportunity to be fully prepared of what will happen during and post-closure, which is not mentioned to a great extent in examined theory.

Poor governance
Based on the theory related to governance and leadership there are different qualities and skills that should be embodied in the project manager or other decisive force (Martin, Pearson & Furumo, 2007; Burke, 2003; Görling, 2009; Sodhi, J. & Sodhi, P., 2000; Hahn et al., 2012; Roepke, Agarwal & Ferratt, 2000). The empirics are inclined to attribute postponed closure to the absence of strong leadership or leadership inexperienced in this particular project context. The task of the project manager is to carefully balance what already has been achieved, what is further achievable, and what the potential economical and organizational consequences of postponing the closure of the project are. To avoid letting projects go through postponed closure vast leadership skills are required and should incorporate the establishment of clear communication routes, a division of responsibility, and motivating and preparing both the sponsoring and the receiving organization for the closure. Further, the governance must be realistic in their estimations and disregard from holding on to an overly optimistic outlook for what can be achieved in a specific project when the remaining time is short. This realistic
outlook must reflect the current state of the project and not thrive on the idea of what could be accomplished by additional resource allocations and postponed closure. Therefore, it is crucial that the project manager dares to make strict and dreary decisions.

The aforementioned perception is providing a hint of why poor governance is a key aspect behind postpone closure. This can be considered to follow the reasoning by Staw and Ross (1987) who insinuate that the decision to terminate a project lies in the hand of the project manager and top management involved in the project. The project manager has the decisive role in both premature and postponed project closure, and the decision to terminate a project can sometimes be bypassed because the project managers are completely immersed in their professional roles. The project managers can potentially see it as a personal failure to close down a project which has failed to reach all stated objectives, hence they are more prone to postponing the closure.

**Lack of communication**

Theory explains that if both the supplier and customer have a clear understanding of the requirements and deliverables at the outset of a project, the chances of encountering major problems during the closure are significantly decreased. If the requirements are correctly captured early, and are expressed correctly and realistically by the customer, chances are that the involved organizations will not need to suffer substantial additional expenditure to correct the previously specified requirements which will impact the closure (Al-Hothali, Al-Zubaidi & Subbarao, 2012; Procaccino et. al., 2002).

The study’s empirics appear to correlate with the theoretical statements emphasizing the importance of a joint vision and understanding followed by proper communicative skills between the involved parties, especially in terms of seizing the right requirements. Though, in disagreement with examined theory the empirical findings suggest that the customer must possess a certain level of technical and operational maturity to communicate the requirements. Further, the empirics recommend that the requirement elicitation process is not rushed through. A way of overcoming this issue is by ensuring that communication takes place at the right place in the organization and between the right people. Another suggestion is to design the project organization in such a way that clear communication routes are inevitable. Hughes and Cotterrell (2009) describe that a customer's requirements are based on their vision and that these visions are aspirations of what they would like to attain. However, specifying the right requirements can be rather complicated and can be assumed to be a contributing factor to the lack of communication. If the requirements are rather visualized than thoroughly communicated, the chances of reaching a closure on time is minimized. Thus, when involved parties approaches the end and the customer feels unsatisfied of what the project has achieved, the closure may be delayed in time.

However, theory suggests that the initial communication should leave certain room for flexibility in terms of making smaller functionality changes as long as the deadline can be met (Davis, 2013; Hashim, 2013; Linberg, 1999). Moreover, literature proposes that flexibility in terms of schedule and budget throughout the project may be preferred since the problems and requirements may be poorly understood at the outset of the project (Glass, 2012; Savolainen, Ahonen & Richardson, 2012).

The study’s empirics agree that initial requirements should not be written in stone if the changes are manageable within the budget and deadline. Depending on the nature of the proposed requirement changes it may be necessary to place the changes in a project of its
own, sequential or parallel, rather than postponing the closure of the initial project to satisfy the customer. If changes coming from the supplier’s perspective are crucial, these must be discussed with the customers, while troubled closures require proper communication with the steering committee. Empirics further propose the project manager to not go awry in terms of internal communication among the team members, external communication with the stakeholders, and hierarchical with the steering committee. Conclusively, empirics propose that proper communication is presented as as a risk-reducing and success-increasing measure, which according to theory presents itself as a result of poor change management (Hashim, 2013).

**Lack of documentation**

As a result of the empirical study is has become evident that documentation is a key determinant behind postponed closure, and most often closely related to the previous four main reasons. This has not been supported by the examined theory, which only suggests that inadequate documentation procedures are one source of risk in IT projects along with other relating factors (Tesch, Kloppenborg & Frolick, 2007). The empirical findings depict the idea that proper documentation is one of the main contributors to postponed closure and can be considered vital to a project’s final success. To increase of chance of reaching a closure relevant types of documentation must be continuously maintained and updated by the right people and at the right time. This will later simplify the process of deciding what should be delivered as a result of the project, the purpose of the project, and what the customer can expect to gain from the deliverables. This reflects upon involvement of the right people and adequate communication as a direct result of planning.

Parallels can also be drawn between change management and documentation as a result of the empirical study. Documentation should be up to date and eliminate any inaccurate redundancies. Without the correct documentation the project scope and project directive will not be relevant for the project’s purpose. A potential reason behind the lack of documentation is according to the empirical findings the low priority that documentation can be given by certain project managers and team members. This can be related to theory which claims there may be a lack of guiding and supporting information. The project manager should emphasize the necessity of documenting the project’s progress along with the best practices, final metrics, and acquired knowledge the project has resulted in for future evaluative measures (Chemuturi, 2013).

The discussion of the study insinuates that the potential reason behind postponed closure can be of different nature, where some seem to have the potency of resulting in larger organizational voids than others. It is also discussable whether each force can be separated from each other, as they all seem to impact each other.
6 Conclusion

6.1 Answer to research question

This study has examined the research question *what are the main reasons behind postponed closure in IT projects?* Thus, this study has identified five main reasons to why the closure phase is delayed. The most prominent five reasons that are concluded from this study are poor planning, poor governance, lack of involvement of the right people, lack of persistent communication, and a shortage of proper documentation.

**Poor planning**

The procrastination of closure is the result of poor planning in the initial stages of the project life cycle. If the planning for termination is addressed in the midst of the project it is problematic to organize a proper transfer to the receiving organization.

**Lack of involvement**

By not involving the right people from both the customer side and the supplier side problems regarding project closure can occur. If the receiving organization is not prepared to take over and approve what they are about to receive, timely project closure is unlikely. All involved parties should work towards a common goal as one cohesive unit.

**Poor governance**

The study shows that poor governance from the project manager and the steering committee is one of the key concerns. A possible reason for this can be that the project manager is hesitant to make crucial decisions to terminate a troubled project, since it may reflect badly upon the project manager her- or himself. Moreover, uncertainties regarding the future directly following a terminated project can be present within the project team, which creates a desire to hold on to the project. Another potential reason is that the project manager holds on to the project in the hope of achieving a successful outcome worthy of the postponing the closure.

**Lack of communication**

The interviewees emphasize that a lack of persistent communication between and among internal and external levels of the project results in a postponed closure. In order for a project to reach closure it is important that all communication is clear and highly understandable to all involved parties. If this is flawed the visions among the stakeholders are likely to differ which will require revisions of requirements later on.

**Lack of documentation**

Further, it is stated that a shortage of proper documentation throughout the entire project life cycle impacts the termination and thereby the potential handover to the maintenance division in the receiving organization.

**Correlation between main reasons**

The five main reasons that have been identified should be viewed as strong individual factors that contribute to a postponed project closure. Nonetheless, one separate factor can be put in a context of other factors that jointly impact each other and thereby resulting in postponed closure.
If the closure of a project is poorly planned from the outset this will directly influence all other factors and reflects directly upon the leadership that is bestowed in the project. If there is a lack of strong leadership it will become difficult to distribute responsibilities and tasks among the project members, which will impact the direct and indirect communication between and among top management, the project manager, and the team members. If the communication is handled poorly it will be problematic to establish standard procedures for proper and accurate documentation throughout the research process. A common denominator between all factors is a lack of involvement of the right people. If not the right people, at the right level, and at the right time, are actively present in the project, connections can be made back to poor governance and planning, and yet again act as an instigator to lacking documentation and communication.

The synergy and combined momentum of these five main reasons is stronger than each individual force, which separately can have potential impact on a project’s closure, thus the seriousness of them should not be overlooked.

6.2 Contribution

As this study was initiated with the aim of identifying the main reasons behind postponed closure in IT projects, and eventuated in five central reasons that delay the closure phase, this study has contributed with knowledge to the field of Informatics. The contribution can be stated as providing theoretical insights in order to decrease the existing literature gap regarding the reasons behind postponed project closure, which will be of primary use to researchers within the field of IT project management. Further, this study has contributed with practical knowledge which is of use to involved parties in projects, such as project managers. The project managers can keep these five factors in mind, either as individual factors or as a unity of reasons, when initiating new projects in order to avoid the unnecessarily spent resources and extended deadlines that postponed closures often result in.

6.3 Evaluation of study

The study was conducted in a qualitative manner and was inspired by Oates (2006) qualitative data analysis, where rich descriptive data is preferred. The study was pervaded by a hermeneutic approach to science which suited the qualitative measure and the formulated research question. The interpretations typical of a hermeneutic perspective served as the foundation for the inductive approach. This resulted in that no hypothesis was present from the beginning; rather an analysis made from the empirical findings with added support from theoretical framework would generate a theory. The hermeneutic consideration further enabled the interviews to be performed in an appropriate semi-structured and flexible way in order to accommodate the purpose of the study and to answering the research question. Post-study the semi-structured interviews were considered successful as the interviews were able to provide an answer to the research question, which would have been unlikely to occur through another data collection method. Success is also found in the usage of an analysis method inspired by Oates (2006) qualitative data analysis. A number of possible reasons behind postponed closure were identified before the reasons were put in the context of theory, and the main reasons could be distinguished.
At the beginning of the three interviews all interviewees were provided with a consent form depicting the purpose of the study, the value of their contribution, and their rights. In the consent form the interviewees were also presented with the opportunity to remain anonymous before the interviews began, as a tool to protect personal and organizational integrity of the participants. At that stage all interviewees choose to have both their names and the company name stated in the thesis, but a request was put in to review the material before final publication. In order to adhere to the interviewees’ wishes, the material was sent to all interviewees via an email attached with a draft from chapter four, in which the empirical findings are presented. These findings are the result of careful transcriptions and translations and are therefore considered both reliable and trustworthy. In this draft a decision was made to disguise the personal names and the company name of the fellow interviewees, until all parties submitted a final approval, which gave the interviewees the opportunity to verify and validate the material before publication. Furthermore, the interviewees were offered copies of their transcribed interview as an additional claim for credibility. These actions are thereby considered to cherish the value of ethical aspects discussed in chapter two.

Oates (2006) describes that a qualitative research may lead to heavy amounts of rich and detailed data, which was encountered in the study. To reduce the data, only the material relevant to the research question was chosen and added to the empirical chapter. Additionally, studying such a small sampling frame reduces the possibility to generalize the results and therefore the interviewees’ experiences and knowledge is to be taken with caution since they may be subjective.

As Robson (2011) mentions, a disadvantage of phone interviews, as this study performed on one occasion, is the lack of visual hints, contextual cues, and poorer empirical data in comparison with face-to-face interviews. Evaluating this, the phone interview was cut back in questions to solely focus on the most relevant ones to gain as much understanding as possible in order to answer the research questions. The interviewee was informed that the interview would last for approximately thirty minutes, however the interviewee reserved one hour, and led the interview to take a relaxed pace.

According to the evaluation criteria stated in chapter two this study emphasized trustworthiness, which Oates (2006) suggest should be viewed as the primary quality criteria for qualitative research. The study was conducted with a restriction from the preconceptions and biases by strictly following the theory as a foundation, which Oates (2006) mentioned in regards to confirmability. According to Bryman and Bell’s (2015) suggestion with reference to dependability, the study has been continuously documented and can be traced as appendix one and two along with detailed transcriptions available in both Swedish and English. Material collected from interviews must be analyzed in a correct manner, as this signifies credibility (Bryman and Bell, 2015; Oates, 2006). Therefore the interviewees were given the opportunity to proofread the material that consisted of the empirical findings, and changes according to the interviewees’ wishes were done instantly. Credibility can also be connected to the distribution of the consent form available in appendix one. Transferability is an important aspect of qualitative research (Oates, 2006; Shenton, 2004). In this study transferability is considered prominent as the results of the study can be applied in contexts outside this particular frame of research, as a result of the meticulous descriptions of the settings surrounding the study’s progress.
6.4 Suggestions for further research

During the study it became evident that research on the project life cycle is well existent but the focus on project closure and postponed project closure is still quite an untouched topic. Since the sample that was used in the study consisted of four interviewees representing three fairly similar companies there is a great interest in approaching the central phenomena and explore it in more detail. A suggestion is to increase the number of participants in the study by reaching out to people holding different positions, not only connected to IT project management practices, within both supplier- and customer organizations. Further it is suggested to explore the phenomena in public organizations and not solely restrict it to the private sector. This can result in a broader perspective on the many characteristics surrounding project closure.

Another field that is of interest is to conduct research on whether the three criterions for success (delivering desired functionality, on schedule, and within budget) should be redefined to accommodate the typical characteristics of an IT project, where change during the progression almost appear to be inevitable. In this particular study there are indications that limiting the definition of success to meeting all three of these demands is setting organizations up for theoretical failure, however the project may still be implemented with great success in practice. A suggestion is to examine whether the customer's final approval and the organizations potentially increased benefits of an undertaken IT project should in some cases outweigh firm budgets, predetermined functionality, and time frames.

A further suggestion for future research is to use one of the smaller segments presented in this study where the closure itself is not the main focus. An alternative is to research the responsibilities held at different levels within a project carried out by an organization. If more decisions regarding IT were made by people closer to the actual implementation and core processes instead of decision-making by top management, steering committees, and vice presidents, would the reasons behind delayed project closure change?
7 Bibliography


Appendix 1 Interview Guide

Introductory Questions

- Is it okay if we record the interview?
- What is your role at the company?
- What are your duties at the company?
- What is your background in IT?
- Have you recently been involved in any major IT project?
- What was your role in this project?

Questions regarding IT projects

- Initiation phase
  - Do you usually initiate projects based on a fixed budget and time frame?
  - When do preparations for a project termination begin?

Characteristics of project closure

- How would you characterize a project termination?
- Which steps should be taken for to close a project?
- Have you experienced any difficulties with the project termination phase?
- Would you say that there is a need for a formal project closure?
- Which factors can have an impact on project closure?
- Would you consider the closing phase easy?

Premature closure

- Have you been involved in any project that should have been completed earlier than it was?
- Why do you think it was not terminated earlier?
- Has it happened that you have began the closure of a project earlier than expected? (Meaning that the project finished well within time)

Postponed closure

- When it comes to delay projects and delayed closures, have you been involved in a project that never really received a formal closure although, under the criteria, it is considered ready? Meaning that the project has been dragged and not ended when it should have?
- Why do you think certain projects drag on for too long?
- Do you consider projects that do not meet the requirements, the budget or the time frame to the failed projects?
- What are the reasons for this?

Customer and supplier

- What problems can arise between the customer and the supplier in the project closure process?
- How are these problems dealt with?
- Despite the fact that the customer does not agree, may the project still be successful from your point of view considering the three criteria previously mentioned?
Finishing questions
• Is there anything you would like to add that has not been brought up in this interview?
• Can we use your and the company’s name?
• Is it possible to do a quick follow-up in case something is unclear?
• Would you want access to the finished thesis once it is completed?
• Would you want a copy of the transcriptions?
Appendix 2 Consent form

Consent form for participation in study

Who is the study done by?
We are two students currently partaking in our senior and fourth year under the Business Informatics Programme at the University of Borås. As of now we are getting close to graduating, hence we are writing this this paper within the field of Informatics, one of our two majors. During our studies both at the University of Borås and in Shanghai respectively Jinan, we became interested in the field of project management but wish to maintain a close connection to IT. The group consists of Emelie Czari and Ida Jarander.

The purpose of the study
The aim of the study is to examine and get an understanding of project closure, which sometimes is referred to as the forgotten phase. The gap of information regarding this specific matter became evident during the literature review and is the reason we are pursuing this topic.

Your contribution to the study
Through this interview you will provide us with important practical information and the many relating topics surrounding project closure. Your knowledge and experience will contribute to invaluable insights and further research and we are grateful for your participation.

- I hereby leave my consent regarding the following points
- I have read and understood the purpose of the study
- I have the possibility to ask the researchers about the study and my participation in it at my convenience.
- My participation in the study is completely voluntary and I am entitled to stop the interview at any point in time
- I have the right to refuse to answer certain questions
- If desired, the company and I have the right to remain anonymous and no information can bind my company or me to the study.
- I have the possibility to discontinue my participation in the study at any time up until the paper is handed in for examination on January 28th.

Interviewee’s Signature ________________________________________________________
Clarification_________________________________________________________________
Place and date ______________________________________________________________

Researchers’ Signatures _______________________________________________________
Clarification_________________________________________________________________
Place and date ______________________________________________________________
University of Borås is a modern university in the city center. We give courses in business administration and informatics, library and information science, fashion and textiles, behavioral sciences and teacher education, engineering and health sciences.

In the School of Business and IT (HIT), we have focused on the students’ future needs. Therefore we have created programs in which employability is a key word. Subject integration and contextualization are other important concepts. The department has a closeness, both between students and teachers as well as between industry and education.

Our courses in business administration give students the opportunity to learn more about different businesses and governments and how governance and organization of these activities take place. They may also learn about society development and organizations’ adaptation to the outside world. They have the opportunity to improve their ability to analyze, develop and control activities, whether they want to engage in auditing, management or marketing.

Among our IT courses, there’s always something for those who want to design the future of IT-based communications, analyze the needs and demands on organizations' information to design their content structures, integrating IT and business development, developing their ability to analyze and design business processes or focus on programming and development of good use of IT in enterprises and organizations.

The research in the school is well recognized and oriented towards professionalism as well as design and development. The overall research profile is Business-IT-Services which combine knowledge and skills in informatics as well as in business administration. The research is profession-oriented, which is reflected in the research, in many cases conducted on action research-based grounds, with businesses and government organizations at local, national and international arenas. The research design and professional orientation is manifested also in InnovationLab, which is the department's and university's unit for research-supporting system development.