Towards the introduction of fit-for-purpose project management

An explorative case study on implementing central planning and risk log
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The front-page picture is a visualisation of words from an initial study on the perceived problems in the project execution group of the improvement program of Huisman Equipment. The perceived problems have led to the research propositions for this empirical study on fit-for-purpose project management. The size of each word is determined by normalized word frequencies.

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1 Normalized word frequency visualization with Tagxedo.com (excluding the words; project, management, process, risk, planning, Huisman, PM and improvement)
Preface

This research report on fit-for-purpose project management is the result of my internship at B.V., and also serves as thesis for my Master in Construction Management and Engineering (CME) at the TU Delft.

I consider myself lucky to be given the opportunity to do my graduation project with Huisman Equipment. Combining my graduation thesis with an internship has always been my wish, because I saw it is a unique chance in life to link scientific paradigms you learned about at the university with practical reality. My interest in Huisman Equipment began out of admiration for the highly innovative offshore equipment the company builds. I was very eager to learn more about the strengths and weaknesses of initiatives for organisational improvements, which the company had communicated in an improvement program folder.

My internship at Huisman Equipment offered a great learning experience in ‘real-world efforts’ of project management implementation and organisational changes in general. I like to thank Huisman Equipment and especially Dirk and Robert who are also the members of my graduation committee working at Huisman Equipment for offering me this opportunity, sponsoring this research and giving me all freedom to do my research. I also would like to thank all respondents for their time and openness during the interviews, and my colleagues at Huisman Equipment, particularly those of the project management department, for making me feel at home in the company.

The research turned out to be more sociologically oriented than I had expected, and this proved to be a major challenge but also added to my learning experiences. In facing this and other challenges I am thankful for the guidance and assistance, especially by Marian and Herman, also members of my graduation committee, who kept me on track and on schedule and were good sounding boards when discussing my views and mind-boggling ideas about my research. Not all of my ideas proved as flawless and viable as I initially thought, thus causing some thesis frustration at some moments, but fortunately my roommates and friends have always been great in providing timely distractions and entertainment. I am grateful to Roy and Hans for their proofreading and joint efforts and advice on how to improve the final draft of this thesis. Above all I want to thank the members of my family for acting as my greatest fans and who were the most appreciated supporters and sponsors during my entire study adventure.

Tjeerd,

Delft, December 2013
List of abbreviations and list of definitions

**List of abbreviations**
- CP: Central Planning
- ERP: Enterprise resource planning
- IP: Improvement program
- KPI: Key Performance Indicators
- PE: Project Execution
- PM: Project Management
- RL: Risk Log
- WBS: Work Break-down Structure

**List of definitions**
- **Control**
The power to influence or direct people's behavior or the course of events (Dictionary Apple Inc.)

- **COO**
Chief Operational Officer

- **Coordination**
The organization of the different elements of a complex body or activity so as to enable them to work together effectively: an important managerial task is the control and coordination of activities. (Dictionary Apple Inc.)

- **Culture**
The ideas, customs, and social behavior of a particular group of people or society. (Dictionary Apple Inc.)

- **Formal**
Having a conventionally recognized form, structure, or set of rules (Dictionary Apple Inc.)

- **Obstacles / shortcomings & barriers**
Shortcomings and barriers were pragmatically chosen in chapter 4 and the cross-case matrix to categorize the outcomes. In this study barriers are defined as shortcomings or deficiencies that make it impossible to reach certain targets or to achieve certain goals. Barriers thwart or prevent change. Obstacles are defined as shortcomings or deficiencies that make certain targets or goals as yet difficult to reach. Obstacles hamper or delay change, but can in principle be removed or overcome.

- **PM culture**
The ideas, customs, and social behavior of people within a company related to the knowledge, skills, tools and techniques to project activities to meet the project requirements

- **Project management**
The application of knowledge, skills, tools and techniques to project activities to meet the project requirements. (PMBOK-guide, 2000)
Thesis summary

The plan for this research originated from the improvement program (IP) of Huisman Equipment. Particularly important are its goal statement for project execution with increased quality and efficiency through uniformity, clarity as well as with project management (PM) improvements (Huisman, 2012). Huisman Equipment provides an example of countless companies, which are continually looking to improve PM practices. Improving project management practices is considered essential for project management organizations (PMO’s) to ensure project delivery on time and within budget, and to stay competitive (The Economist Intelligence Unit, 2009). Although many companies acknowledge the need for PM improvements they often fail in implementing well-defined PM practices (The Economist Intelligence Unit, 2009).

The scientific relevance of this report derives from a lack of research on conflicts with PM implementation and a general deficiency in the up-to-date major project management journals on empirical research to test project management theories which have the tendency to repeat underlying assumptions of previous research (Hällgren, 2012).

Huisman Equipment is a fast growing offshore company successful in highly innovative products and in search for organisational improvements. The entrepreneurial character of the company, reflected in its highly innovative offshore equipment innovations, offers a favourable opportunity to study entrepreneurial characteristics affecting PM implementation with this case study.

In the Improvement Program document (Huisman, 2012) it is stated that the organization has not kept up with developments that came with the growth of the company. This has resulted in some of the inefficiencies and organizational misalignments that are often found in fast-growing companies and which can be addressed by PM.

Numerous PM practices are described in leading PM guides like PMBOK, Prince2 or CMMI. This research was limited to planning processes and risk processes. This scope as well as the research questions followed from an pilot study of perceived problems amongst those employees responsible for project execution within the problem execution group in the Improvement Program (Huisman, 2012). The focus on planning and risk is in line with the professional interests of the case-study company and the graduation commission.

Interviews form a large part of the case-study research. Central planning (CP) and risk log (RL) are used not only as more tangible subjects for the respondents, they also allow for cross-case evaluation of interview results. CP was introduced in the case-study company around 3 years ago together with the appointment of a new COO. A RL is currently non-existing in the company and was pragmatically chosen by Huisman Equipment as potentially interesting future PM practice for the company, where currently risks are not uniformly documented and considered individually. The elements that are explored in the interviews are illustrated in Figure 1 and derived from the following research questions:
What is a fit-for-purpose approach for implementing risk log and central planning PM practices, without losing entrepreneurial strengths within the company?

a. What benefits does PM potentially offer and what defines a PM work culture?
b. What defines the company culture and how does this relate to a PM culture?
c. What are the possible obstacles for the implementation of PM?

PM methods are dependent on usage by project managers and the handling by employees of several other departments. Therefore the research propositions are examined by interviewing 3 project managers and the department heads of Sales, Engineering, Supply Chain, Production, Test & Commissioning and the Planning department. Afterwards the COO was interviewed on the findings of the previous interviews. A cross-case analysis is done to examine the most significant points of agreement and difference among the respondents.

Results
This study claims that more fit-for-purpose approaches are needed on the basis of the present research which shows that implementing PM in organizations like Huisman Equipment. The case study results offer good reasons to adapt the organization to PM but at the same time identifies a number of obstacles to the implementation of PM.
The conclusions in this study will focus on the first step for fit-for-purpose PM implementation by preparing the organization for PM changes and narrowing the gap between the prevailing work culture and the PM work culture that is needed. Finding PM tools that are fit-for-purpose to different types of projects in the company is the next step to be taken after the organization has been prepared for fit-for-purpose PM implementation. The conclusion for fit-for-purpose PM implementation is two-fold. First the awareness of why fit-for-purpose PM implementation is needed will be discussed. Followed by recommendations how fit-for-purpose PM implementations should deal with this awareness.

The observed benefits of PM tools seem to accord reasonably well with leading PM guides like PMBOK, Prince2 or CMMI. But although these benefits are acknowledged the case study also shows strong obstacles that prevent the implementation of PM tools. Although PM literature indicates that PM implementations often fail there is as yet little knowledge on the obstacles that hamper the implementation of PM tools. Some PM literature on PM maturity models claim successful PM depends on choosing the right PM tools suited to management goals and PM maturity of the company. But only little literature discusses the difficulties of needed work culture changes. Payne (Payne, 1993) and Polesie (Polesie, 2013) are among the few who hint that PM implementations might be obstructed more by work culture problems than problems with the system. This case study argues that the gap between current work culture and a needed PM work culture might be one of the most important obstacles that need attention in more successful fit-for-purpose PM implementation.

According with the PM literature from Meredith & Mantel (Meredith & Mantel, 2010), this case study shows that PM tools could potentially help project managers to coordinate projects. In this case study project managers need to actively gather information themselves in order to be able to coordinate projects. They believe that PM tools offer potential to be more responsive to information delivered to project managers from departments. The potential to improve coordination with PM tools is not only seen dependent on the PM tool design but also on collaborative effort of employees giving meaningful input to these PM tools. This collaborative effort to give input to the PM tools requires a PM work culture that is seen as just or even more important than the PM tools itself. The work culture that is perceived needed for PM seems to differ from the prevailing work culture. Some of the respondents referred to this as a gap between “what is” (ist) and “what is needed” (soll).

This case study emphasizes that acceptance of PM tools and the related PM work culture will not be easy since a PM work culture is characterized by aspects conflicting with the highly valued current work culture. Furthermore some of the literature suggests that the PM work culture characteristics mentioned in the case study might need a management style that conflicts with some of the current work culture characteristics (Martini, 2013) (Koppenjan et al., 2011). The present work culture has led to successes, is highly valued and seems well-suited for entrepreneurial companies with work culture values like flexibility to adapt to unforeseen circumstances, work freedom and informal communication. A PM work culture, on the other hand, requires values that go against the prevailing work culture as it demands more control, with insight in task responsibility and task authority and more formal communication with less work freedom. The desire for more formal communication is expressed with desires for conventionally recognized forms, structures and rules. A fit-for-purpose PM implementation should recognize the contradicting management needs and requires a clear explanation of the
need to find a new balance between current work culture strengths and needed PM work culture to convince employees of this.

This case study offers two main reasons why moving towards a PM work culture and implementing PM tools is perceived needed. The first reason is that the increased number of employees in the company has led to difficulties in the information exchange between departments. Payne also mentions the introduction of formal PM is seen as potential improvement for cross-functional coordination (Payne, 1993). The second reason is related to increased repetition in produced products, caused by using more components of previously produced products. For example repeating components of a previously produced crane for a new type of crane. Repetition is believed to create opportunities for more efficient production and management processes, reducing cost, improving quality, time and client satisfaction with more standardization of production and PM processes.

The discussion above leads to recommendations for a fit-for-purpose approach that should increase acceptance of PM tools and convince employees to move towards a PM work culture. Summarized in one sentence: fit-for-purpose PM implementation should consist of small coordinated PM steps leading towards collaborative goals, taking into account management characteristics that conflict with the present work culture.

Fit-for-purpose PM implementation should convince employees that collaborative effort is needed for PM tools to be successful. To convince employees of this effort, the goals for PM and how the selected PM tools contribute to these goals should be clarified. To convince employees to change the work culture towards the characteristics of PM work culture, the PM goals and arguments for selected PM tools need to be made understandable to get accepted by employees and should have full support of the entire management since an individual manager’s vision on PM could be seen as temporary by employees. In this case study it was found that disagreement exist between the majority of the respondents and the COO, on current CP design contributing to more insight in task progress, and this is an important reasons less support on CP among employees. In this case study it was found that disagreement exists between the majority of the respondents and the COO on the current CP design. This is an important reason for the lack of support for CP among the employees.

When the decision is made to improve or implement a new PM tool somebody has to be made responsible to coordinate change management for the PM implementation. The responsible persons should be granted enough time to facilitate and coordinate the changes in the company and ensure continuous improvement of the PM tools. This should prevent only to focus on ‘doing’, that Meredith & Mental describe often prevents PM implementation in organisations because it appears to be more effective to ‘stop all the talk’ and ‘get on with the work’ (Meredith & Mantel, 2010). The change management should consist of continuous cycles that start with setting goals for the PM tool. Followed by choosing or improving a PM tool based on arguments how this tool will contribute in achieving the PM goals. The PM goals and PM tools should have full support of the entire management since employees could see an individual manager’s vision on PM as temporary. As well small intermediate steps to achieve the PM goals will make it easier to get work culture changes accepted. The final step of the cycle should evaluate the PM tool its contribution to the PM goals and assess potential improvements to restart the cycle.
Finally, to implement fit-for-purpose PM, it seems needed to first prepare the organization that seems rather unknown with PM tools that are used uniformly company-wide and with a work culture that seems to differ from the work culture that is needed for PM. Further research could validate this needed preparation with similar case study examples or explore if companies with successful implemented PM tools followed similar preparation. Depending on the PM focus different projects will require different fit-for-purpose PM tools that should be determined in a next step. For the focus on CP and RL this case study indicates that a RL could be especially interesting for more innovative projects to have better risk communication between departments. For CP this case study shows projects with more repetition could benefit most by increasing efficiency on repeating product parts, whereas innovative projects are harder to plan because of more uncertainties and risks. But there can be several other PM foci. For example in this case study it is proposed to make some PM tools more uniform, since people now use individual chosen PM formats, while within a PM work culture PM tools with conventionally recognized form, structure and rules are wanted.
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1 Introduction

Project management improvements for organizational improvements are an on-going concern for many companies. Adapting organization structures to mature project management organizations (PMO’s) are deemed essential for industries to ensure project delivery on time, within budget and for staying competitive (The Economist, 2009). Many companies aim for more uniform management practices with standardized project management tools, to increase efficiency, cooperation or to improve how they measure quantitative and qualitative project outcomes (ibid.). However they often fail successfully implementing these changes within the organization (ibid.).

Companies often start with a simple organizational structure. A simple structure is a structure with relative autonomous individuals and limited influence from managers and analysts on their functioning, little formalized behaviour and with mainly directs supervision and stimulation of horizontal as well as vertical decentralization (Mintzberg, 2009). Bigger projects and growing numbers of employees make direct control more difficult. Adopting a matrix structure could theoretically create more vertical as well as horizontal centralization in an organization. More vertical centralization since official decision power moves from the work floor to the project managers thus resulting in less autonomously working force. More horizontal centralization, on the other hand, is where unofficial power moves from line managers to managers and analysts (Mintzberg, 2008). Often their information needs require information exchange with more formal procedures and standards (ibid.). This unofficial power shift to managers and analysts indicates the need for cross-functional coordination. Cross-functional coordination requires formal project management (Payne, 1993).

While there are many attempts to implement formal PM improvements they frequently fail (The Economist, 2009). Scientific knowledge falls short in explaining this failure. A recent evaluation of 61 management papers of four leading project management journals concludes that project research has a tendency to endorse the underlying assumptions of previous research and express the need for empirical examples. (Hällgren, 2012)

1.1 Huisman Equipment as case study

Huisman Equipment offers a great opportunity for empirical research on problems connected with PM implementation. The company has experienced rapid growth and at present engaged in search for organisational improvements. One of the decisions in this search was to move towards a matrix-structured organization about two years ago. This move can be explained by a need for more horizontal decentralization. This is often followed by an increased need for formal procedures and standards for managers and analysts (Mintzberg, 2008). Subsequently, there is a need for more cross-functional coordination. As Payne notes, to be able to have cross-functional coordination there is a need for formal PM (Payne, 1993).

This research will focus on Huisman Equipment’s headquarters in Schiedam where most of the project management is located. Huisman Equipment experienced rapid employee growth from 200 in the year 2000 to over 2000 employees at present. Huisman Equipment began as a company led mainly by engineers involved in innovative off-shore projects. Until recently the company did not undertake much organizational change.
**Problem**

Not adapting the organization could cause inefficiencies and misalignments commonly found in fast-growing companies (Huisman, 2012 p:10). Projects have grown more complex and capital-intensive were deficient control on projects execution could increase risks. This could lead to less successful projects, thus endangering the competitive position, the growth potential and ultimately even the continuity of the company.

Huisman Equipment has introduced the Improvement Program both to evaluate and improve its organization. One of the 6 sub-groups concerns Project Execution. The main goal of the Project Executions group reads “Increased quality and efficiency of project execution through uniformity and clarity” (Huisman, 2012). This goal reflects the Company’s search for organizational improvements in PM practices.

**Research dilemma**

Just like many other companies, improved PM practices is a felt need. Experiences from other companies demonstrate that implementing PM improvement often fails. Since there is a shortage of scientific knowledge on problems occurring during the implementation PM practices, Huisman Equipment offers an interesting case study.

The case is assumed suitable for researching problems surrounding PM implementation and for examining more fit-for-purpose approaches for formal PM implementation since the company expresses interest in PM implementation for its improvement program but at the same time experiences difficulties in achieving this. In the search for fit-for-purpose approaches it soon became apparent that Huisman Equipment characterized by very entrepreneurial projects in the offshore industry.Preserving the companies entrepreneurial strengths might be conflicting with requirements that could come with the introduction of project management. In our explorative research on fit-for-purpose approaches the entrepreneurial preserving strengths shall get special attention.

1.2 **Research objectives and goal**

The goal of this research is to improve knowledge on more fit-for-purpose approaches for implementing PM method by using Huisman Equipment as case study and compare observations with existing PM paradigms.

The objective of this research is twofold. For science, the objective is to improve knowledge on difficulties in implementing PM methods through empirical research. For Huisman Equipment there is the more practical objective of creating an overview of problems and establishing priorities in choosing the best approach for PM initiatives aligned with the company’s characteristics.

1.3 **Research approach**

This research is directed at exploring fit-for-purpose PM implementation approach without testing theories. This is because there is little research on fit-for-purpose PM implementation or the related problems. The following three steps represent the main research parts that were chosen for the research.

1. Analysis of perceived problems (structuring problems in project execution, setting limitations in scope, specifying research questions and formulating interview questions)
2. Exploratory interviews (in-depth interviews on sub-questions within scope limits)
3. Cross-case-analysis (comparing department statements and deducing cross-department alignment)

Huisman Equipment seemed to offer a suitable opportunity for in-depth research since the current search of the company for organizational changes plus the openness and cooperation by Huisman Equipment and its COO to do empirical research and conduct interviews freely among its personnel.

In order to focus the research, we started analysing the perceived problems. Most fortunately there happened to be an Improvement Program (IP) going that had just (January 2013) conducted a survey of the perceived problems by the problem execution (PE) group. The IP (Huisman, 2012) consists of four groups of which the PE group is most connected with ideas for PM improvements. Within the PE group there were four persons responsible for the subjects of cost control (Huisman, 2013a), risk management process (Huisman, 2013b), project management process (Huisman, 2013c) and PE planning (Huisman, 2013d). The problems documented for the four disciplines have been analysed and all four persons responsible have been interviewed on the perceived most urgent problems in project execution. The results of this pilot study have been analysed in Appendix I: Problem focus matrix analysis. This analysis and after consultation with the personnel of Huisman Equipment interested in the subject has resulted in the limitation/delineation of the research scope as discussed in 1.4 and the formulation of the research sub-questions in 1.5. The report structure and how the exploratory interviews and cross-case analysis fit into this report is discussed in paragraph 1.6

1.4 Scope of the research

As stated in the introduction, and visualized in Figure 2, the search for PM practices often seems to originate from a perceived need for more control & monitoring as a result of environmental changes, like the company’s growth. Projects can be managed in numerous ways with the help of numerous PM practices to find control and monitoring. This research elected to focus on risk and planning process with Central Planning (CP) and Risk Log (RL) offering tangible foci for in-debt exploratory interviews in line with the interests of Huisman Equipment.

CP and RL seemed promising foci within PM in the view of the fact that CP was recently introduced, 3 years ago, simultaneously with the introduction of the new COO. Furthermore respondents see CP as one of the first cross departmental processes in the company. A RL is an example of PM practices that is not yet introduced and that might offer prospects for the company manage risks that are described by numerous leading PM guides like PMBOK, Prince2 or CMMI.
1.5 Research questions

The pilot study (see: Appendix I: Problem focus matrix analysis) on the problems encountered by the project execution group in the ongoing improvement program (Huisman, 2012) helped to determine the main research question and the sub-questions. The pilot study together with the research goal and the focus on central planning and risk log leads to the following main research question and sub-questions:

Main research question
What is a fit-for-purpose approach for implementing central planning and risk log PM practices, without losing entrepreneurial strengths within the company?

Sub-research questions:
- a. What benefits does PM potentially offer and what defines a PM work culture?
- b. What defines the company culture and how does this relate to a PM culture?
- c. What are the possible obstacles for the implementation of PM?

The following paragraph will describe how this report is structured to answer these questions.

1.6 Report structure

In the introduction chapter, the motive/reason for the research was introduced first. Subsequently it was explained why Huisman Equipment seems a good case example for this research. Next the three main research parts were presented and the first part of the problem analysis. The latter helped to determine the research scope and questions.

The next chapter reviews the literature about the need for fit-for-purpose PM research, the potentials of PM and the imperfections of PM. The third chapter describes the research methodology used and explains why in-depth interviews are especially suited for the present research. Chapter Four offers the results of the cross-case findings of the in-depth interviews. After which Chapter Five will analyse these outcomes and provides a reflection with relevant literature, summons important outcomes for Huisman Equipment and discusses the validity of the outcomes. Chapter Six concludes this research and offers suggestions for further research.
as well as managerial recommendations. The final chapter seven reflects on the entire research.
2 The need for fit-for-purpose PM research

This chapter will discuss theories to highlight the demand for more fit-for-purpose PM research. Although the remaining of the research focuses on central planning (CP) and risk logging (RL) the research starts with exploring overall PM in chapter. The literature topics follow out of the perceived problem analysis and therefore have a high overlap with the research questions.

First 2.1 will discuss some important potential benefits of PM since obviously PM practices are considered for their potential benefits. Although leading PM guides like PMBOK, Prince2 or CMMI mainly emphasize its benefits, PM practices must also have imperfections restraining its implementation. Therefore 2.2 will describe some potential PM drawbacks found in literature and furthermore some apparent obstacles for PM implementation are discussed in 2.3.

2.1 Potential benefits of project management

“Project management is the application of knowledge, skills, tools and techniques to project activities to meet the project requirements.” Quotation 1: (PMBOK-guide, 2000: p6)

Project management is one way of managing projects that PMBOK describes in quote 1 above. There are countless other ways of managing projects of which project management (PM) practices is only one. These PM practices have a few different well-known guides like PMBOK, Prince2 or CMMI, describing their entire arguments of how this should be done. CP and RL are tools that are usually dominantly present in most PM practices.

Reasons to pursue MP practices presumably grew out of perceived benefits for implementing PM practices. One of these potential benefits, according to Payne, lies in improved cross-functional coordination considering that traditional, functionally structured organizations do not easily permit cross-functional coordination and the introduction of formal PM is seen as potential improvement (Payne, 1993).

Potential benefits from PM practices are thought to result from improved coordination of tasks. Task coordination focuses the responsibility and authority to meet the project requirements, confirming the desires of an individual or small group within an organization (Meredith & Mantel, 2010). Managers are expected to coordinate the tasks. Where the organizational form and the project form should enable responsive coordination (Meredith & Mantel, 2010), in which PM practices could be seen to have the potential to improve this. Potential improvements might be seen in the needs to be responsive. Meredith & Mantel describe managers need to be able to be responsive to the client environment, to identify and correct problems at an early stage, to make timely decisions about trade-offs between conflicting project goals and to ensure that managers of the separate tasks do not optimize the performance of their individual tasks at the expense of the total project (Meredith & Mantel, 2010).
2.2 Project management drawbacks

“Managers expect they can plan all the variables in a complex project in advance, but they can’t. Nobody is that smart or has that clear a crystal ball.” Quotation 2: (Matta & Ashkenas, 2003 :p4)

The second citation from the work of Matta & Ashkenas hints to reporting risks that could occur in project management that will never be perfect. Matta & Ashkenas state planning methods are usually intended to reduce the execution risk of planned activities not being carried out properly. But by doing this often underestimate the 1) white space risk of some activities not being identified in advance by planning leaving gaps in project plan, and 2) the integration risk when all planned activities are finished but the result is not delivering the intended result (Matta & Ashkenas, 2003). Similar white space and integration risks might need to be considered with the implementation of all PM tools used for reporting information.

Besides not being perfect, PM practices and other company values might contradict with each other. For example control and flexibility impose contradictory requirements upon management of projects (Koppenjan, Veeneman, van der Voort, ten Heuvelhof, & Leijten, 2011). Another possible contradiction may be found in product characteristics, because of different management needs for exploitation versus exploration characteristics while both be needed. Exploration involves search, variation, risk-taking, experimentation, play, flexibility, discovery and innovation. Exploitation can be described by refinement, choice, production, efficiency, selection, implementation and execution (Martini, 2013a). These and other contradictory management needs might exist in a company. Simply looking at one aspect to improve PM practices might have adverse effects on other aspects of the company which makes it imperative to develop holistic fit-for-purpose PM approaches.

2.3 Project management obstacles

“ These problems are primarily problems of resistance to chance, and they are hence ‘people’ problems rather than problems with the system or practices themselves” Quotation 3: (Payne, 1993 :p1)

As stated above, PM involves the application of a combination of knowledge, skills, tools, techniques and organization structures. The present research is focusing on CP and RL and therefore it is interesting to examine whether these tools are felt to be designed sufficiently and whether other PM fragments are felt needed for an efficient functioning. Globerson for example states break down structures are essential for effective planning processes (Globerson, 1994)

Besides failures that are due to the system design there might be other obstacles such as those referred to in the third quotation. For instance, a change in work culture could be required and there are indications that this change is not easy to bring about. Payne concludes that the introduction of PM commonly causes problems. He suggests that the functioning is dependent on choosing the right organizational structure, where a project-biased matrix appears most effective. Payne adds that for the organization to become comfortable with the chanced organizational structure it may take many years and that the resistance to change is more caused by ‘people’ problems rather than by problems with the system (Payne, 1993). Payne suggests that there are two common problems caused either by mistrust and conflict between functional groups or by the selection and establishment of an appropriate team structure (Payne, 1993). Another reason for resistance to change could be when the change conflicts with the work motivation, especially the sense of work freedom (Polesie, 2013). Polesie writes about signs that show the importance of a sense of freedom for construction project managers when
implementing standardization processes. But, this sense of work freedom could just as well be important for other employees and for the PM implementation.

2.3.1 Conclusion
The previously discussed literature shows that there is a need for explorative research on fit-for-purpose PM. The present research aims to contribute to this need for empirical PM examples. In a PM literature evaluation Häggren concludes that the majority of current PM research has a tendency to re-emphasize its own underlying assumptions (Häggren, 2012). Shenhar recognizes the need for explorative research on fit-for-purpose approaches for PM in his book called Reinventing Project Management. In his book Shenhar states that new approaches are needed because traditional project management assumes that all projects follow a standard set of rules and processes while this is not enough for today’s dynamic projects (Shenhar, 2007).
3 Research methodology: exploratory case study

Since there is a lack of research on conflicts with PM implementation and a general lack of empirical research to test project management theory in general (Hällgren, 2012), this research will explore conflicts surrounding PM implementation with empirical research as visualized in Figure 3. The research will relate the case studies from Huisman Equipment to applicable theories to arrive at recommendations on how Huisman Equipment could increase its chance for the successful implementation of PM. At the same time to contribute to the improvement of management theory with empirically research on problems that obstruct formal PM implementation.

The first section will explain why case studies seem most suitable for this research. The next section will clarify how the case studies relate to finding an answer to the research questions.

3.1 Why case studies?

Case studies are chosen as method for empirical research. Quantitative research is not applicable since the reasons for conflicts are largely unknown, have to be explored first, and therefore it is not known which data are needed for a quantitative research. From among the qualitative research methods available the case study method seems the most suitable as it fits with characteristics specified by Verschuren & Dodewaard in their book on case studies (Verschuren & Doorewaard, 2010); namely a contemporary phenomenon within its real-life context, where the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used.

Case studies retain the holistic and meaningful characteristics of real-life events such as organisational and managerial processes (Yin, 2003). Furthermore a case study is especially useful when the boundaries between phenomenon and real-life context are not clearly evident (Yin, 2003).

This research only has a small number of case projects available since important project coordinators (project managers) were no longer working for the company and because the number of projects using CP is still limited. A RL is not yet used in any project in the company. Case studies offer the chance to perform a holistic intensive in-depth exploratory study of the observed problems. They allow unidentified issues to surface by using unstructured interviews with open-ended questions. Furthermore case studies offer the opportunity to include personal observations and statements from company documents. Procedures and criteria for a strategic case selection have been made and are presented in section 3.6.
Yin gave an overview (see Figure 4) of the reasons for the selection of the best applicable empirical research method. Based on this, the case study method was chosen since:

- The reasons for conflicts are unpredictable and need to be explored, and what needs to be tested is relatively unknown and can be seen as a ‘how’ or ‘why’ question
- Behaviour cannot directly, precisely and systematically be influenced since the behaviour and reasons are unknown
- The research focuses on contemporary events (projects) of active project managers.

Next to studying historical data, this adds two sources of evidence, namely direct observation of events being studied and interviews with involved people.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires Control of behavioral events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes/no</td>
</tr>
<tr>
<td>History</td>
<td>How, why?</td>
<td>No</td>
<td>no</td>
</tr>
<tr>
<td>Case study</td>
<td>How, why?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Figure 4: Relevant situations for different empirical research strategies (source: Yin, 2003, fig 1.1)

3.2 Case study topic outline

The three research questions specified in 1.5 are designed to explore the conflicts on PM implementation through interview questions. The scope of the research is limited to CP and RL. These two management processes will create more tangible phenomena for the interviewees. Interpretational possibilities of the cross-case analysis will also increase since this focus on specific PM tools will make it easier to compare the different outcomes with each other. These two uniform PM tools are especially interesting since one (risk log) is non-existing as a formal PM tool at present while the other (central planning) has only recently been implemented.

The research questions embody the elements that will be explored in the interviews. These elements can be visualised in Figure 5, where the research questions can be traced back with the letters a, b, c and number 1. These elements are: (a) the potential benefits of PM practices in comparison with (b) the current work culture of the company. Then the desired fit-for-purpose PM practices (1). Finally the exploration of the (c.) obstacles that are perceived to obstruct fit-for-purpose PM implementation. All resulting in what might create more project success.
After exploring the case study elements with semi-structured interviews, the arguments that are relevant for the different study elements are filtered-out, grouped and marked with a respondent code in Appendix II: Long list interview statements. A cross-case analysis (see Appendix III: Cross-case Matrix) will examine the resemblances of the project cases (respondents) in chapter 4. After this a reflection will be made with existing literature to draw lessons from the case findings in chapter 5. These findings aim to improve our knowledge on conflicts when implementing formal PM in organisations.

### 3.3 Multiple embedded research design for the case studies

This research will use a multiple embedded research design (Figure 6).
The projects of Huisman Equipment form the unit of analysis. Each interviewee is a unit embedded in this project context. Each project manager is responsible for some of these projects while the departments are often involved in all projects, as also shown in Figure 9. This research will analyse multiple cases to explore topics that need further empirical research and do not have a clear theory to test as yet. This because the research is not testing a clearly formulated theory but is exploring fit-for-purpose PM implementation. These multiple project cases create replication logic with the opportunity to test effects of the elements (Figure 5) on multiple project cases (Yin, 2003). The project managers will all have worked on different projects while the majority of the department managers and project controllers have often been involved in all projects. The multiple projects will have repetitive as well contrasting features. Repetitive since multiple interviewees will be involved in the same projects. Contrasting since some projects will have different characteristics to be researched. Especially interesting will be to explore the entrepreneurial characteristics of projects as independent variable of successful PM implementation (see Figure 5).

The case study will be embedded and not holistic (Yin, 2003) since the research not only explores the project managers as embedded units in the project context but also multiple other department heads. The first embedded unit of analysis within the project context will be the project managers of the individual projects cases. In consideration with those project managers the other embedded units of analysis, the departments to be interviewed will be chosen after the first interviews, see Figure 7. Other embedded units of analysis are important since uniform PM methods are used company wide and its successful implementation will likely depend on more than only the project managers. It is likely that at least some department managers (DM) and project controllers (PC) will be interesting to interview on the project cases.
3.4 Case study protocol

The case study protocol in Figure 7 shows the successive steps taken for the interviews. The step of analysing interview results will be described in more detail in section 3.7 and is visualized in Figure 11

![Figure 7: Case study process](image)

3.5 Case-study interview questions

The core of the evidence consists of the answers collected with ten, cross department, semi-structured interviews. The interview questions are put in the interview protocol (Appendix IV: Interview protocol (in Dutch)). The interview protocol has been designed in line with previously described visual model (Figure 5). This visual model is presented differently below in Figure 8, to show the logic and the numbers that correspond to the categories used in the interviews and are documented in the Appendix IV: Interview protocol (in Dutch). The independent variables are assumed to be controllable by the company whereas the extraneous variables are seemingly non-controllable, since they are rooted in the characteristics company.
3.6 Case & interviewee selection

The case (projects) and interviewee selection is closely related. Project managers usually manage one project at a time while department managers, project controllers and the COO are involved with all or multiple projects simultaneously, as shown in Figure 9. CP as well as RL are influenced by several departments. Therefore we asked the project managers which departments influence these PM methods the most. Interviewing multiple departments and project managers on the same project accords with the recommendation by Verschuren & Doorewaard that for exploratory research with little knowledge it is better to find reasonable similar projects because observations could otherwise be influenced by differences in the cases (Verschuren & Doorewaard, 2010). However, for the effects of the extraneous variable “entrepreneurial culture & product characteristics” (see (4) in Figure 8), we also wanted to explore the different project types in Huisman Equipment. The criteria for selection of the project managers and departments are discussed in the next two sub paragraphs 3.6.1 & 3.6.2.
3.6.1 Selection criteria

The research benefits from focussing on ongoing projects of active project managers over past projects, adds two new sources of evidence, namely direct observation of events and interviews with the people involved (Yin, 2003). These two sources of evidence could be very valuable, even the more so because of the importance of the company culture and its work culture for this research which is better observable among active employees. Selection criteria 1 of the following considered selection criteria, is therefore seen as the most important one:

1. Likelyhood to interview responsible project manager
2. Difference in product type
3. Experience in Huisman Equipment & overall work experience
4. Affecting CP practises

Selection criteria 2 is taken into consideration because of the fact that for the entrepreneurial culture & product characteristics, see Figure 8 we wanted to explore the different project types in Huisman Equipement. Selection criteria 3 is chosen because of the possible awareness by the interviewee of company culture (variable 5 see Figure 8). Criteria 4 is chosen to select the department heads to be interviewed; the department heads to be interviewed are selected together with the project managers to be interviewed.

3.6.2 Selection procedure

The full list of chosen interviewees is shown in the beginning of the next chapter 4. First the project managers were chosen. To select the project managers a long list of all active and finished projects was made with the names of all responsible project managers (annex: Project long list of active PM’s 03/13).
There are 8 project managers in Huisman Equipment. Two are experienced project managers but not from Huisman Equipment itself since they are hired in for a specific project and therefore have no experience with other Huisman Equipment projects. The other 6 managers are presented in the Annex: Project long list of active project managers. Robert Jansen is member of my graduation committee and therefore is excluded as candidate for the preliminary interviews as he could have biased views. Another one is not a full-time project manager and is excluded because of his limited availability. Leaving four project managers out of which 3 are chosen because they scored the best on the difference in product type, experience in Huisman Equipment and overall work experience.

Product types in Huisman Equipment primarily consist of drilling, pipe lay and crane projects that are evenly distributed among the three chosen project managers whereas the department heads are involved in all the projects. Differences in product type is therefore a selection criteria (variable 4 see Figure 8).

The project managers were asked in the interviews which departments were most influencing the successful functioning of CP practices. This revealed that almost all were affecting CP and therefore six department heads and the COO are chosen to be interviewed. The full list is presented in Figure 10.

![Figure 10 Department, code & corresponding interviewee](image)

3.7 Collecting the evidence

The chain of evidence in Figure 11 presents an overview of which inputs are used, the results of the inputs, and how the analyses generate conclusions.

The evidence to explore the elements is mainly collected by method of semi-structured interviews and supported with company documents, and the results of direct observations during my stay at the project management department throughout the period of my internship.
This chapter described why explorative semi-structured interviews have been chosen as research methodology and how the research is designed to arrive at valuable conclusions. The next chapter describes the ten interviews.
4 Case study interviews

The previous chapter discussed the question of why exploratory case studies were chosen, how they were developed and on what criteria the respondents for the interviews have been chosen. This chapter describes how the exploratory interviews were executed, analysed and presents some of the conclusions derived from them.

The 10 interview results have been recorded in audio and summarized (in Dutch) in telegram style in the same style as the interview protocol format in 10 Annexes (Interview summary date & (respondent code)). The respondents’ codes originate from the selection procedure in 3.6. The outcomes of interviews have been send to the respondents for review. The interview output from all 10 interviews has been put in a long list to sort the apparent most interesting statements. The statements that seem most interesting have been put in matrix in the Appendix III: Cross-case Matrix to get more insight in how statements align and differ between respondents.

Based on the cross-case matrix the most important conclusions are presented in section 4.2 for Central Planning (CP) and in section 4.3 for Risk Log (RL). The reflection of the COO on all interviews is found in section 4.4. But first we will give a brief introduction of the respondents in 4.1.

4.1 Introducing the respondents (confidential)

4.2 Cross-case conclusions CP (confidential)

4.3 Cross-case conclusions RL (confidential)

4.4 Reflection of COO on the department interviews (confidential)

4.4.1 Concluding remarks

By means of this cross-case analysis an overview is given of the most noteworthy differences and similarities between the respondents with respect to a particular subjects. While the chosen categories were helpful in structuring the statements it also happened that it was not always clear in which category statements fitted best. This chapter tried to retain the statements in their original formulation as much as possible in order not to lose too much of their authenticity. However it is important to realize that some statements could easily fit different categories simultaneously. For example, a felt need can easily be reformulated and turned into a shortcoming, or even obstacle or barrier. The next chapter will therefore interpret the more general outcomes of the cross-case results and relate them to the research questions.
5 Fit-for-purpose PM discussion & reflection on theory

In the previous chapter 4 the cross-case conclusions were presented in 6 categories. This chapter examines the general opinion, derived from the cross-case conclusions in chapter 4, and relate this to the research questions. As well attention is paid to the opinion of an individual respondent in case it differs on important issues from the general opinion of most respondent.

When reading about this general opinion please keep in mind that project managers, department heads and project controllers were the respondents. Afterwards the COO has been interviewed to solicit his response on the results of the other interviews.

An overview of the general opinion on PM is needed for two reasons. The first reason is to give a more comprehensive overview of the outcomes of the interviews since the previous chapter 4 only showed the 6 selected categories that helped to structure the large amount of interview data. Yet the 6 categories selected also overlap and relate to each other, and some of the remarks could fit into other categories if reformulated or viewed from a different perspective.

The other reason for this overview on the general opinion is to deal with, what de Haan & Heer call, built-in habit of solution-thinking of people (ibid.). This solution-thinking often leads to a situation that problems are not solved when many people are involved, all having different solutions in mind (ibid.). Often these solutions are proposed without stating objectives while these objectives are needed to understand the arguments either in favour or against certain solutions (ibid.). These arguments should be made explicit and easily accessible in order to enhance the decision-making processes that should as much as possible be based on facts (ibid.). The findings of the interviews with 10 persons of similar professional backgrounds already show that they all have different solutions in mind. The respondents also indicate that objectives for PM initiatives are not clearly presented in the company. This overview of the general opinion on PM could serve as a starting point for further discussions and better decision-making within the company on PM objectives and PM solutions.

Paragraph 5.1 – 5.3 will each discuss conclusions derived from chapter 4 on one of the research questions. These paragraphs are supported with the following appendixes that illustrate the general opinion from the respondents on the research questions:

- 5.1 with Appendix: V: Scheme for research question 1
- 5.2 with Appendix: VI: Scheme for research question 2
- 5.3 with Appendix VII: Scheme for research question 3

5.4 will discuss the validity of the research outcomes.

5.1 Which benefits does PM potentially offer and what defines a PM work culture?

The general opinion by the case respondents on the research question is illustrated in Appendix: VI: Scheme for research question 1 This goal instrument chart is made to create more overview on the perceived benefits and how goals and instruments relate to each other. This
goal instrument chart was made with the help of problem structuring techniques from de Haan & Heer\(^2\) (de Haan & de Heer, 2012)

The department heads interviewed give numerous reasons for why the current CP design is not fulfilling all planning potentials. This is exhibited in felt needs for planning improvements. Increased project coordination could be seen as one of the main goals to overcome the currently experienced unfulfilled needs. In PM literature like Meredith & Mantel project coordination is considered an important aim of PM: *improved coordination of tasks needed to focus responsibility and authority to meet the project requirements confirming the desires of an individual or small group within an organization* (Meredith & Mantel, 2010) All respondent seems to agree that presently there are problems in communicating important information between departments, which are probably connected with the growing size of the company. The needed changes that are most frequently mentioned and felt to be necessary for increased project coordination are:

- More cross-departmental communication
- More uniform procedures
- Better structured work culture
- Better company overview

All interviewed project managers emphasize that the coordination of projects is thought to require an active monitoring of tasks. And confirmed by most of the department heads, expressing this is, under the present culture, most likely to be successful. Most respondents and especially the project managers and the Planning department suggest that active monitoring would be less needed if there were more inputs from departments on CP. This seems to suggest that a more responsive coordination is called for. This accords with Meredith & Mantel stating that the organisational form and the project form should enable responsive coordination in order to focus responsibility and authority and confirm the desires of an individual or small group within the organization (Meredith & Mantel, 2010).

The need to focus responsibility and authority in an organisational form that allows responsive coordination seems to be reflected in the, most frequently mentioned, needed changes in work culture; mentioned by respondents who are enthusiastic about the added value of PM practises to project execution. The most explicitly mentioned needed changes that seem to accord with a more responsive work culture are:

- more input from the departments on PM methods
- more responsibility and transparency
- and less work freedom

Some even say that this needed change in work culture is the most important and, at the same time, most difficult aspect of PM implementations.

The conditions for information inputs that respondents felt to be needed for (responsive) coordination by project managers, with the help of PM tools, especially CP and RL, are:

1. more comparable project information,
2. more insight in task responsibilities and authorities,
3. and more insight in task progress,

\(^2\) More information on problem structuring of Haan & Heer in Appendix I: Problem focus matrix analysis
4. and more insight in risks on tasks

All respondents agree that the current CP design has yielded more company overview. This company overview created a more uniform planning for all projects as a result of which information on different projects can be compared and combined. Previously, different planning formats made it difficult to compare and combine schedules thus causing more difficulties and less overview on dependencies between projects and between international company divisions. Although all respondents obtain a better company overview by CP, this increased company overview is primarily seen as serving the COO’s interest as KPI control tool. The COO himself seemed to be the most satisfied respondent with current CP design. Other respondents say that company overview is also important to encourage company culture to become more deadline-driven. However the department respondents are much less enthusiastic about current CP design in serving their interests in project coordination and for their own functioning.

In line with the needed insight in task progress, the respondents felt the need to gain more insight in task responsibilities. Some respondents claimed that insight in task responsibility and authority might be more important than any other PM method and that practices like authorization matrixes could facilitate this.

CP design is highly encouraged by most department respondents but they would like to see a different planning system than the present CP. With another CP design they think that there is much more potential for project coordination with more insight in tasks progress. The insight in task progress with CP is acknowledged to be the most disputed aspect of CP. This point seems to be an important source of dissatisfaction with current CP design among most of the interviewed departments heads. The COO is one of the few who are convinced that the presently used CP design gives enough insight in task progress.

The most important perceived shortcoming with task progress insight relates to how progress is shown in the CP system, which is most easily explained with the aid of Figure 12. At present the end dates of tasks are fixed and never altered, only showing how far a planned task is lagging behind. The COO is satisfied with this situation. Most departments, however, would prefer to use new finish-time estimates for tasks that are behind schedule. Because this is now lacking they say that much time is needed to gather enough information for proper coordination. Besides the need for more insight in the up-to-date finish-time estimates, more correct task sequences in CP and more input on progress in from departments are the most frequently mentioned needs for planning. At present most respondent state that CP is not providing enough information for project coordination. The lack of coordination benefits with the present CP seems to accord with the opinion of Matta & Ashkenas who state that the rea-
son why managers use plans, timelines and budgets is to reduce execution risk, that is to say the risk of planned activities not being carried out properly (Matta & Ashkenas, 2003).

RL is as yet non-existing in the company. All project managers agree that some form of RL could improve project execution. Benefits that all seem to be connected with more insight in risks on tasks are the following:
- better introduction of projects to new colleagues
- better evaluation of projects,
- better alignment of different project phases
- better insight into task priorities and improved float estimates in planning.

Engineering adds that the usefulness of RL is to be found in the function as a tool for project management and in better price versus risk considerations. All other departments except for Sales exhibited positive feelings towards a RL. Sales does not see added value in a formal risk procedure or any other formal PM methods and is in favour of informal work procedures, which he believes function better with skilled employees. Sales also adds that documenting and exchanging risk information between departments would create a situation where people don’t think of the risks anymore themselves.

The success of using PM tools, especially CP and RL, in attaining the goals for improved information as stated above, seems to dependent on the design of these PM systems and a supportive PM work culture. Respondents say of these systems that they should
- be used cross-departmental
- be easy accessible
- provide up-to-date information
- provide accurate information
- have formal characteristics

Cross-departmental processes in general seem rare in this company and some respondents even state they were non-existent before introduction of CP. The CP as it functions now was introduced around 3 years ago. A uniform risk tool like RL is currently non-existent in the company. Most seem to believe such cross-departmental processes are very important to be initiated and they believe that PM methods like CP and RL are good examples of desired cross-departmental processes.

All respondents agreed on the need for better cross-departmental communication. Most respondents believe PM methods could help achieving this, especially by means of a well-designed planning method like CP, and most also believe in a RL as a valuable tool to exchange information on risks between departments. Payne mentions formal PM methods are usually desired to improve cross-functional communication (Payne, 1993). A RL and CP seem well suited under formal PM methods when subsuming it in the definition of “formal” as something that has a conventionally recognized form, structure, or set of rules. This definition seems to correspond with the often mentioned needs for:
- creating more structure
- developing more uniform procedures
- improving cross-departmental processes
- reducing work freedom

For the perceived needed work culture, project managers are accorded an important role by most of the department respondents. This role entails aligning the project team with the help
of PM practices, like CP or RL. Meredith & Mantel underscores the importance by stating that project managers are expected to coordinate tasks with PM to align a project team (Meredith & Mantel, 2010). The respondents have indicated that this role of the project manager is not sufficient in itself. The acceptance and success of the project manager is thought to be dependent on:
- a wide variety of individual qualities in helping to align a project team,
- the project manager’s experience within the company and
- the organization knowing of what to expect from the project manager

Some departments say that more uniform project management procedures could help promote acceptance of project managers and their task. By using a conventionally recognized form that assists other employees in knowing what to expect from project managers, alike PM methods as CP and RL could provide.

5.2 What defines the company culture and how does this relate to a PM culture?

The general opinion among the case respondents with respect to this research question is illustrated in Appendix: VI: Scheme for research question 2. This illustration presents an overview of the two main perceived circumstances for the organizational change, which because of the present work culture lead to the needed PM work culture. This matter will also be discussed in the paragraph below.

Most of the respondents are enthusiastic about the potential benefits of more PM and CP and RL. But not all respondents are equally positive. One respondent is noticeably less enthusiastic about CP and RL. This respondent explicitly highlights the strength of the informal character of the company and although he believes cross-departmental communication is at times insufficient he believes that informal communication should be somehow restored to its previous standards. This seems to offer a first hint of the highly valued informal communication prevailing in the company’s work culture. A company work culture that most employees consider an important, even the most important, obstacle to successful PM implementation. This prevailing culture and the difficulties surrounding CP will be described in answering the next sub-question.

The current success of the company seems to be reflected in the employee growth over the past few years. This fast growth was realized by selling highly innovative equipment for the offshore industry. The company is traditionally very good in developing innovative offshore equipment. The prevailing company’s work culture is excellent in supporting this and respondents say that this work culture has not changed much.

The Improvement Program folder states that the professional organization has not kept up with developments that came with the growth of the company, leading to the inefficiencies and organizational misalignments commonly found in fast-growing companies (Huisman, 2012). From the interviews it appears that the organizational change & PM change is perceived as needed because of two major reasons, namely the increased company size and occurrence of more repetition in products.

1. The increased amount of employees creates difficulties with cross-departmental information exchange needed for projects dependent on several departments working on a product.
2. The increased repetition in products, caused by using more components of previously produced products requires more efficiency in the management of the production process. PM and a project management work culture are seen as a solution for this.

As mentioned before all respondents experience problems with the quality of the information exchange between departments which are believed to originate from the increased size of the company. Regarding the needed PM work culture the respondents mention various aspects relating to the need for more control in project coordination. The following information needs might best to facilitate improved control by project managers:
- More insight in task responsibilities & authority
- More insight in task progress

The need for more control in growing companies is confirmed by Mintzberg, who states that bigger projects and growing numbers of employees make direct control more difficult and that analysts and project controllers require more information from functional departments in the company (Mintzberg, 2009).

Huisman Equipment is widely known for constructing offshore-equipment that is seen as highly innovative within their field of industry. Several innovative products within the offshore industry originated from Huisman Equipment and are still being invented here today. At the same time as the company grew in size, some products types brought a larger amount of repetitions in products, caused by using more components of previously produced products. The respondents unanimously agreed that the complexity of products largely depends on the amount of repetition from previously delivered products. The different main product groups have different amounts of repetition. All respondents are in favour of more standardization, especially for those products requiring a lot of repetition. Most departments believe that PM methods, like CP and RL, are easier for products with a lot of repetition. But at the same time respondents saw as well prospects for CP and RL for products that require less repetition, since these products are more complex and therefore need more coordination. Especially the possible added value of a RL is as well seen for more innovative products.

Although respondents recently experienced some improvements in project execution and initiatives for organizational change, most respondents state that the organization has not yet changed very much. The, by the respondents most frequently mentioned, characteristics of the prevailing work culture are
- informal communication
- much work freedom
- flexible work culture with impactful project decisions being made easily and throughout the company
- unstructured work culture
- *ad hoc* decision making (day-to-day management)
- strong island culture of departments
- inactive changes in work culture (little PM change initiatives)
- mono-disciplinary organization (mainly engineering driven)

The characteristics of the present work culture seem to differ a lot from the characteristics that are mentioned by respondents as needed for a PM work culture, as well as needed in support of PM tools, like CP and RL. The characteristics needed for a PM culture have already been discussed in 5.2. The next paragraph will discuss what is thought to hamper this change.
5.3 What are the possible obstacles for the implementation of PM?

The general opinion of the case respondents on this research question is illustrated in Appendix VII: Scheme for research question 3. This illustration gives an overview of the obstacles in PM implementation which can be distinguished in strategic and operational obstacles. Strategic obstacles relate to managerial options that prevent PM from reaching its objectives/goals. The operational obstacles are the obstacles that prevent PM from succeeding in its functioning.

‘Island culture’ is the often-heard explanation for some of the organisational problems in Huisman Equipment and was also often mentioned in the interviews. But the expression ‘island culture’ itself does not clarify much as it does not explain the effects it has, which can be different for each individual. The ‘Island culture’ might cause similar obstacles as seen for PM implementation in this paragraph. In this perspective, island culture might relate to the felt need for improved coordination between departments in on projects dependent on several departments. Coordination seems to have become more difficult with the growth of the company and caused problems with the information exchange between departments. PM methods like CPM are seen as offering a potential solution both for the problematic information exchange between departments and defective coordination. PM implementation is however perceived as hindered by various obstacles, which will be discussed below.

5.3.1 Strategic management obstacles

One of the obstructions for PM implementation might be that the different product characteristics may need different management styles. One of the reasons why respondents in the case study express the need for PM, is that innovative products have obtained more repetition characteristics, creating the need for more efficiency.

The literature and this case study show that different products might require different management styles. Looking at the needed PM culture and the perceived PM work culture this seems to accord better with the characteristics that Martini describes as needed for exploitative products, which involves refinement, choice, production, efficiency, selection, implementation and execution (Martini, 2013b). This while innovative products and current divined company work culture seems to accord better with the characteristics that Martini describes for explorative products, which involve search, variation, risk-taking, experimentation, play, flexibility, discovery and innovation (ibid.).

Koppenjan, et al. describe control and flexibility impose contradictory requirements upon management of projects (Koppenjan et al., 2011). Looking at the case study on the one hand we see a current work culture in which flexibility is highly valued with impactful decisions being made fast and ad hoc. Communication is informal & people having much work freedom. On the other hand respondents express a needed PM culture with more insight in task responsibility, task authority and progress in order to coordinate tasks, which hint to contradictory control values.

The current work culture seems to have more characteristics of what Martini describes as needed for explorative products and flexibility characteristics described by Koppenjan. The circumstance of products having more repetition might ask for a management style that aligns
more with what Martini describes as exploitative products and with Koppenjan’s control characteristics, that seem needed for a PM work culture.

Most of the respondents seem to encourage PM initiatives in general but at the same time they express dissatisfaction with the design of the current CP and express that convincing employees is not easy. Respondents express that a clear presentation of the goals and a full management support are needed for better acceptance of introduced PM tools. This report presents the general opinion of respondents on which goals need to be achieved in order to benefit from PM. This might be a good starting point to discuss those goals and the PM tools that contribute to these goals. The respondents also expressed that to realise PM benefits, the required PM work culture might be just as important as the design of the PM tools.

Furthermore some respondents mention the importance that the full management is expressing to be convinced of the needed changes. Since change initiatives now, are often initiated by a single manager and perceived to be temporally, making people less committed to the changes. Noteworthy is as well that some respondents, being in the company for a long period, feel that other and better planning methods were used under different managers in the past. These planning methods were perceived to provide a better insight in task progress than current planning. This demonstrates the influence, of changing responsible managers, in the choice of CP design.

The importance of expressing these goals for PM might be demonstrated in the current CP design. Most respondents agree on the value of current CP design, increasing company overview with more comparable uniform planning. But there seems disagreement between the COO and the respondents on current CP design, fulfilling the goal of giving more insight in task progress. Respondents express that the previous planning methods were better in providing this information; with the present CP it takes the projects managers much effort to obtain needed progress information from departments, necessary for the successful coordination of tasks. If insight in task progress is a serious goal within the organization people could discuss arguments why CP does or does not contribute to this goal.

Lack of change management and PM initiatives

Not initiating PM methods and a lack of change management is perceived as one of the most important obstacles hampering PM. Many believe, especially project managers, that uniform work procedures are not used because nobody initiates them, although they believe they are much desired. There seems to be a lack of cultural change that is reflected in the statements;

1. Nobody is responsible for implementation
2. Coordination for evaluation & improvement cycles is needed

Changes do not take place because nobody is responsible for initiating such changes and everybody indicates being far too busy and therefore not having time to do so. Furthermore some people state introducing changes requires change management skills that are as yet not present in the company. This while the COO believes somebody from within the organization should initiate and take initiative for new PM methods. The COO expresses to welcome good-presented initiatives. But expresses that people at the moment are too busy with other tasks to make them responsible for changes. Nobody having time to initiate PM changes being too busy with other work, aligns with what Meredith & Mantel express: organizations often do not spend sufficient time and effort on planning and controlling projects because it is far easi-
er to focus on ‘doing’, especially because it appears to be more effective to ‘stop all the talk’ and ‘get on with the work’ (Meredith & Mantel, 2010).

Multiple respondents state that PM changes initiated should be followed-up by continuously improvement. Persons with change management skills should coordinate these continuous evaluation and improvement cycles. The need for better coordination of PM changes might also be reflected by respondent’s feedback that CP would have functioned better when the desired information from other departments would be formalized by using templates.

The definition of PM makes clear PM is dependent on the application of knowledge, skills, tools and techniques in project activities to meet the project requirements. A PM tool therefore often is dependent of other PM practices. This was also expressed by the respondents stating other systems were needed for successful functioning of CP as a PM tool. Among the tools that were desired for better functioning of CP, ERP was often mentioned as desired. ERP often seems to be perceived as most perfect planning method, because of desired insight in task progress. However some also express an instrument like ERP requires a PM competence that is not yet present in the company. Another needed PM tool that was mentioned by the respondent from the planning department, and also may relate to a perceived lack of accuracy in CP, is the need for break down structures. The importance of these break down structures is confirmed by Globerson, which states break down structures are essential for effective planning processes (Globerson, 1994).

Looking at WBS and ERP both are non-existent in Huisman Equipment. ERP is, a complex PM method, that is often much desired but at the same time this is a tool that only seems realistic in a distant future. Break down structures like WBS seem more realistic in the short term. Both WBS and ERP reemphasise the need to create goals for PM and discuss arguments on what is needed and achievable in defining priorities to improve PM.

5.3.2 Operational obstacles

Respondents also give their opinions on operational obstacles that prevent successful PM implementation.

Respondents indicated that at present there are few uniform work procedures or cross-departmental processes. Organisational changes towards PM with methods like CP and RL might alter this situation.

Payne suggests that for an organization to become comfortable with PM adjusted organizational structures may take many years and that resistance to chance in this direction is caused more by ‘people’ problems rather than by problems with the system (Payne, 1993). Some findings in this case study seem to confirm this.

To begin with most respondents are agreed that changing work culture in accordance with a PM work culture is important, if not the most important condition for successful PM implementation. Respondents realize that changing this work culture to a PM work culture is difficult. For one thing because this might curtail work freedom that is highly valued in the prevailing work culture. Furthermore, for PM methods to be accepted by employees in the company the design choices, goals and benefits need to be explained to the people who have to use these PM methods. Convincing people of the importance of uniform cross-departmental methods in general is considered essential as precisely this uniformity is held to be conflicting with the present highly valued free work culture. Another instance of ‘people’ problems obstructing PM is the suggestion by some respondents that a blaming culture might prevent
people from giving input to other departments. This finds support in the statement by one department head that if input given to other departments is not taken seriously or ignored, employees might feel restrained in offering further inputs.

Payne also suggests that mistrust and conflict between functional groups are the most common problems with the introduction of formal PM, and that formal PM is needed to improve for cross-functional communication (Payne, 1993). Mistrust and conflict between functional departments are sensitive issues to be raised by respondents although there are signs of strains between functional groups. For instance, the often mentioned ‘island culture’ that is felt to be hampering cross-departmental communication and cooperation. Another sign of mistrust, as expressed by the respondents, is that the acceptance of people depends on the length of time they are working in the company, and that new functions like project managers and planners seem to be less easily accepted in the company.

Some respondents observed that fear for bureaucratization is often used as an excuse by employees to oppose certain change initiatives within the organization. PM methods are often associated with paper work and to conflict with the highly valued informal communication culture now prevailing.

Most of the respondents seem enthusiastic about the prospect of more information being documented and exchanged between departments by means of PM methods like CP and RL. One department head perceived disadvantages, particularly in documenting knowledge. This respondent believes documenting information is not needed for experienced employees and only creates the risk that people won’t think for themselves anymore. Even if exchanging information by means of PM methods is desirable one needs to be aware of imperfections. Imperfections that Matta & Ashkenas mention for planning methods that have the advantage of reducing the execution risk however will never be perfect since there will always remain a white space risk of some activities not being identified in advance by planning, thus leaving gaps in the project plan. And the integration risk when all planned activities have been executed but the outcome is not delivering the intended result (Matta & Ashkenas, 2003).

The company flourished with a free work culture in which highly innovative offshore-equipment was produced. Till now the company is characterized by a free work culture, with informal communication and fast decisions being made throughout the company. Several respondents consider this free work culture to be an important strength of the company that should be preserved. However, this free work culture is also seen as an important barrier for the implementation of PM practices and required PM work culture. As already observed above, the needed PM work culture requires less work freedom and specifies ‘formal’ characteristics that seem incompatible with the prevailing work freedom, being highly valued. Polesie suggests, that especially the sense of work freedom might cause resistance for change since this change might conflict with work motivation of employees (Polesie, 2013)

5.4 PM implementation suggestions

This paragraph offers some suggestions for better PM implementation within Huisman Equipment based on the outcomes of the interviews and reflection on PM literature. These suggestions are divided into two parts. The first part presents suggestions relating to the presentation of the overall need for PM implementation and change in work culture. The se-
cond part (5.4.2.) presents conditions for change management that is perceived needed to support the implementation of PM tools.

5.4.1 Presenting the need for PM implementation and a related PM work culture

Respondents believe that a change in work culture is as important as the introduction of the PM tools itself. This sub-paragraph presents the most important arguments that could help to convince people and overcome obstacles to move towards a PM work culture.

The PM work culture that is perceived as needed by the respondents requires a management style and work culture that is in some essential respects conflicting with present-day practices. This is reflected in the distinction used by some of the respondents, namely in “what is” (ist) and “what is needed” (soll) for a PM work culture; these mutually conflicting characteristics are illustrated in Appendix: VI: Scheme for research question 2. Since the current work culture is highly valued by Huisman Equipment employees, the respondents stress that convincing people of the importance of changing this work culture is as important as convincing them of the benefits of specific PM tools. To convince employees of the need of change in the presently existing and highly valued work culture, respondents emphasize that the goals of a PM work culture and the benefits of PM tools as described in 5.4.2 need strong advocacy, along with the explicit and full backing of the entire management staff for these goals.

In connection with this PM work culture project managers are understood to have an important role in improving coordination between departments with the help of PM tools. PM tools like CP and RL are examples of tools that are instrumental in this coordination.

The acceptance of project managers by other employees is part of the needed change in work culture. Explicit acceptance of the role of project managers is important and could be increased with more uniform work procedures used within the project management department and with an explanation of the importance by project managers to achieve the goals of a needed PM work culture. The application of uniform work procedures by the project management department is deemed to be important for employees because they will then know what to expect from project managers when they use the same documents, templates, excel sheets and work methods.

PM tools and uniform work procedures seem to fit the definition of “formal” as something that has a conventionally recognized form, structure, or follows a set of rules, which seems to accord with Payne’s statement that formal PM methods are usually desired to improve cross-functional communication (Payne, 1993). Improvement of cross-functional communication seems required in view of the difficulties experienced by respondents in communicating information between different departments. In the opinion of the respondents, communication between departments is often obstructed by a strong island mentality within departments and a highly valued culture of informal communication.

Most respondents emphasize that project managers have actively monitor tasks to get the needed information from departments for project coordination. They suggest that implementing PM tools could reduce this effort to get the information and help coordination to become more responsive to the information communicated by the different departments to the project managers. This seems to suggest that a more responsive coordination is called for. This ac-
Two factors that call for PM

Efforts for PM tools should be supported by goals

To convince the organization of the need to change towards a PM work culture, the respondents singled out two factors, namely:

- The increased number of employees in the company has led to difficulties in the information exchange between departments
- The increased repetition in produced products, caused by using more components of previously produced products. For example, repeating components of a previously produced crane for a new type of crane. Repetition is believed to create opportunities for more efficient production- and management processes, reducing cost, improving quality, time and client satisfaction with more standardization of production- and PM processes.

These two factors should be highlighted to convince the organization to move towards a PM culture. Although these factors offer good reasons to move towards a PM work culture, the current work culture also has strengths that need to be preserved to safeguard the entrepreneurial character of the company that is embedded in the current highly valued work culture. Therefore, PM implementation should be aimed at simple steps requiring little efforts as possible with a good change management as described in 5.4.2. In this way people can focus their time and activities on their own work as much as possible, while documenting enough information for people who are dependent on this information in other departments. Convincing people of PM efforts should be supported by setting goals for PM tools. Formulating these goals and discussing these goals is part of the needed change management, described in the paragraph below. Change management requires effort and commitment within the organization, while organizations often find it far easier to focus on ‘doing’ things, especially because it appears to be more effective to ‘stop all the talk’ and ‘get on with the work’ (Meredith & Mantel, 2010). The most needed change management aspects are described in the sub-paragraph 5.4.2 below.

5.4.2 PM change management

Respondents say that both the implementation of PM tools and the use of other uniform documents like templates, excel sheets or work method, need a change management that consists of the aspects summed in Figure 13. This depicts the continuous cycle of improvements that are thought to be needed to support the implementation of a PM tool.
First, the decision has to be made to improve a certain PM process or tool. For example it could be decided to improve some of the current planning processes in the existing CP system. Or, it could be decided to improve the current risk management for example with a RL. Presently risks are considered individually and often they are not documented and information is not shared by the departments.

Respondents state that the main reason why PM tools are not implemented is because they were not initiated properly. For PM tools to be initiated properly someone needs to be made responsible. This responsible person should be assigned enough time to monitor and coordinate the changes in the company and ensure the continuous improvement of PM tools.

On the one hand, it seems logical to appoint persons from outside the company, who are skilled in change management, to coordinate PM implementation. On the other hand, some respondents believe this should be supervised by people from within the company because of their experience in the company. But all agree that people within the organization lack the time to do this. Appointing new people who operate with feedback from experienced employees therefore seems to offer the best chance for successful PM implementation.

Implementation can only be successful if proper goals are set for the PM tools to be implemented. The difficulty of formulating goals correctly and to get them accepted and understood by employees is often underestimated. This difficulty is reflected in the different goals that different respondents perceived to be important for CP. Organizing workshops, facilitated by people experienced in formulating goals and targets, could help in discussing and formulating these goals. Goal instrument charts, together with other problem structuring techniques,
such as those discussed by de Haan & Heer\(^3\), could facilitate understanding and acceptance of the goals and instruments (de Haan & de Heer, 2012). All to create consensus on what needs to be taken into account for the implementation of a PM tool.

For example, the importance of the following goals, as mentioned by respondents for CP, could be discussed, as well as how the current CP design contributes to these goals:

- More comparable project information
- More insight into task responsibilities and authorities
- More insight into task progress
- More insight into risks on tasks

A RL is as yet not used in the company. Most respondents are in favor of implementing a RL especially for the more innovative projects. Nevertheless these respondents admit that other employees will be less enthusiastic about a RL or any PM tools since they are believed to have more confidence in informal communication. The most important goal expressed for RL is increased insight into risks of tasks. Most benefits of a RL are expected from an improved communication between departments on risks of project tasks, by documenting risks in a RL, since risks considerations are as yet not documented and shared between departments.

Similar goal setting and continuous improvement cycles should take place for all PM implementations, like for uniform documents, templates, excel sheets and work methods. Most respondents express a general need for such uniform PM procedures and similar change management.

When goals are set, a PM tool has to be chosen and implemented that will contribute to achieving these goals. PM implementation needs active coordination to convince and check people on needed changes in behavior. For CP this could be an improved planning tool that contributes to the achievement of the said goals.

When choosing to focus on risk management tools like RL, most respondents stress the importance of keeping these tools simple, since advanced risk management systems would be too complex and will not be used anyway because they take too much time. Implementing a RL should therefore be easy presentable and require as little time from employees as possible. Therefore a RL seems to have best chance to succeed when somebody assigned from outside the company develops it and works closely together with the existing project team, validates the input in the RL with the help of experienced employees and improves it along the way with feedback from employees.

An example of a simple risk communication between departments could be a Risk Register (see Figure 14) in combination with a Risk Assessment Matrix (RAM) (see Figure 15). This could improve alignment between employees in different departments on which risks are to be taken into account and how they could be dealt with on occurrence. The RAM provides a low effort overview of the probability and the impact of risk events; that is to say of risks that originate from the Risk Register. The Risk Register can include various risks like economic, technological, and organizational risks and should be motivated by the factors likelihood, impact, immediacy, consequences, treatment and monitor (Verbraeck, 2009a and 2009b To improve the risk alignment between departments it could even be considered to include the responsible department in the risk matrix.

\(^3\) More information on problem structuring of Haan & Heer in Appendix I: Problem focus matrix analysis
Active coordination is needed to evaluate the PM tool in achieving the set goals and to determine possible improvements. Feedback from important employees that use the tools should be used to further improve the PM tools. Respondents also stress the importance of feedback given by the employees to be taken seriously, in order to get their commitment to the use of the tools.

After evaluating and identifying possible improvements, the cycle in Figure 13 is likely to be repeated a few times.

5.5 Validity

The validity of a research is the extent to which an observation or measurement is well-founded and corresponds accurately to the real world. The validity of a survey tool is considered to be the degree to which the tool measures what it claims to measure. The reliability of a research is about the quality of the data collected, which should as far as possible not be influenced or biased by the personality and subjective beliefs and convictions of the researcher and the way he conducted the interviews. This implies that replication of the research by another researcher and/or interviewer should in principle yield the same results. This paragraph will explain the efforts that have been made in this study to ensure validity and reliability of the research.
5.5.1 Validity of the research and the interviews

Because this explorative case study was set-up to search for as yet unknown explanations without specific hypotheses that should be tested it was very important to ensure validity and also to show what was done to reduce ‘subjective judgement’.

The objective of this study was to improve the existing knowledge on problems in implementing PM methods. The research chose to focus on CP and RL to present more tangible subjects for respondents in the interviews and to be able to compare the more focused evidence from the interviews by means of cross-case analysis. The evidence from the case studies on CP and RL is related back to general PM conclusions. This procedure is valid since both CP and RL represent good examples of PM tools and because the respondents think that much of the evidence relates to PM tools.

In order to explore the most important topics in the interviews several research propositions were formulated. These are based on the questions derived from a pilot study on the problems encountered by the project execution group in the ongoing improvement program (Huisman, 2012). This point has been discussed in Appendix I: Problem focus matrix analysis. The project execution group comprised four different groups, each covering a different improvement area, which fortunately reported on the perceived problems at the start of this case study (January 2013).

1. Cost control (Huisman, 2013a)
2. Risk management process (Huisman, 2013b)
3. Project management process (Huisman, 2013c)
4. PE Planning (Huisman, 2013d)

These reports, in conjunction with interviews of the four group managers responsible, provided the point of departure to formulate the propositions and research questions for the in-depth case studies and the selection of the most noteworthy respondents for this research.

Because the research questions form the basis of this empirical case study much time and effort has been put into formulating the best topics to explore in this case study and discussing them with the members of my graduation committee serving as expert panel in academic PM research and practical experience in Huisman Equipment.

5.5.2 Validity of the research outcomes

The 10 respondents provide enough sources of evidence to represent valid outcomes for this case study. The 10 respondents were selected on the basis of the criteria presented in 3.6. Since the pilot study concluded that the implementation of PM tools are dependent on several departments the choice was made to select department heads from 6 departments, 3 project managers and the COO to represent a good mixture of the departments that are regarded as most influential in the matter of the implementation of PM tools.

Hypotheses derived from this case study could be used to see if the outcomes of this case study are useful for other case studies, and if the hypotheses are also true for similar entrepreneurial characterized companies. Hypotheses that seem most interesting to validate for other case studies are:

- Successful PM implementations is dependent on the collaborative effort of employees
- Successful PM implementations is dependent on the collaborative agreement on goals and arguments for PM tools among employees
• Success of PM implementation is dependent on the gap between current work culture and a PM work culture perceived needed

5.5.3 Reliability of the results

The research methodology, presented in chapter 4, should provide all the information needed for the replication of the research steps which follow the case study methods of Yin (Yin, 2003). Where possible coding has been used to retrace the origin of used statements.

Assessment of the findings of this case study also depends on the quality of the interviews. In order to get the correct information, the respondents were assured of anonymity and the interviews were taken with as much openness as possible in this way trying to prevent people from saying things in favor of a particular theoretical paradigm to please the interviewer or their superiors, and to leave room for alternative explanations.

All interviews were held in Dutch, audio recorded, and stored for retrieval and possible verification. Subsequently the interviews have been transcribed and the written text was sent to the respondents to allow for corrections and additions.

Huisman Equipement offered the opportunity to conduct interviews freely among its personnel without any restrictions; the most experienced department heads could be interviewed as well. All ten respondents were enthusiastic, open hearted and outspoken during their interviews, even about sensitive topics. All information that is perceived as important has been used but some statements on sensitive issues were slightly tempered to protect the identity and integrity of the respondents.
6 Conclusions & recommendations

With the findings from the cross-case analysis, it is now possible to draw some conclusions on PM implementation from this empirical study.

Each of the first three paragraphs will offer a conclusion pertaining to a separate sub-question. The first paragraph concerns the potential benefits of PM and the PM culture that is thought to be needed for success. The second paragraph shall describe the current company’s work culture compared to an ideal PM work culture. The third paragraph shall discuss the main obstacles for PM implementation and an optimal PM culture. Paragraph Error! Reference source not found.  will present a short conclusion pertaining to the main question based on the previous paragraphs. Subsequently, paragraph 6.5 will discuss the potential for future research, whereas paragraph 6.6 will summon the managerial recommendations for Huisman Equipment.

6.1 Which benefits does PM potentially offer and what defines a PM work culture?

PM literature state that PM and project managers are needed to improve responsive coordination of tasks by focusing on responsibility and authority to meet the project requirements (Meredith & Mantel, 2010). The empirical study found similar coordination needs, such as more insight in task responsibilities, authority and progress, for coordination between the functional departments and the project managers, where PM practices, particularity CP, are seen as beneficial in achieving this.

The responsive character of the coordination of tasks that Meredith & Mantel require seems to be reflected in the benefits respondents see for coordination with more PM. Presently coordination requires active monitoring of tasks and respondents express the opinion that PM could lessen the need for active monitoring of tasks and bring about a more responsive coordination of tasks. PM, particularity CP and RL, is taught to help responsive coordination by project managers. More information input on tasks from the functional department serves the following goals:

- More comparable project information
- More insight in task responsibilities and authorities
- More insight into task progress
- More insight in risks on tasks

These goals relate to information that needs to be transferred from functional departments to project managers. To be able to reach these goals appropriate and well-designed information systems are needed. However, as the functioning of these systems will always be dependent on the way they are used by staff and personnel, a right PM work culture is essential.

For both the information system and the PM work culture a more formal organization is desired, wherein formal is defined as exhibiting a transparent form, structure or set of rules. PM practices such as CP and RL are assumed to meet these formal requirements.

The required PM work culture needs familiarity with improved information exchange between departments. Within a PM work culture, the project manager is accorded an important
role in improving the alignments between functional departments. For the project manager to be able to fulfill this role his function needs to be accepted in the company culture. Success is also dependent on individual qualities of project managers. The acceptance of project managers is facilitated with more uniform project procedures, PM methods and RL and CP.

6.2 What defines the company culture and how does this relate to a PM culture?
PM needs to be supported with a PM work culture that is perceived as different from the work culture now prevailing. Changes of the present company work culture towards a PM work culture are perceived needed because of two main reasons:

1. Grown company size
The growth of the company has led to difficulties in the information exchange between departments. A PM work culture with adequate information exchange is seen as a potential solution for this.

2. Increased repetition in products
The increased repetition in produced products, caused by using more components of previously produced products. For example repeating components of a previously produced crane for a new type of crane. Repetition is believed to create opportunities for more efficient production- and management processes, reducing cost, improving quality, time and client satisfaction with more standardization of production- and PM processes.

The following list provides an overview of the characteristics of the present work culture that are thought to be in contradiction with a PM work culture:

- Presently there seems to be much work freedom, which is in contradiction with the need for less work freedom and more insight in task responsibility and task authority.
- Presently there seems to be a culture of ad hoc decision-making that is in contradiction with the need for making decisions based on a clear insight in task progress.
- The present culture is characterized by a strong island mentality within departments and informal communication between departments. However, in projects that are dependent on multiple departments there is a need for more information input from different departments on progress, more cross-departmental processes and improved information exchange between departments.
- The company is familiar with flexible, fast and impactful decisions that are made throughout the company. This seems incompatible with the needed work culture that demands more control in structured decision-making.
- The present company is characterized as a mono-disciplinary (mainly engineering driven) organization, while other expertise and acceptance of other types of professionals is wanted. The acceptance of project managers and planners in the organization is aimed at the improvement of the coordination of PM change initiatives.
- The present company culture seems to lack initiatives for PM changes. This should be changed in a culture that is open for the introduction of new ideas and practices. Somebody should be assigned the responsibility and time for taking change initiatives, coordinating the change and continuously improving the PM.
6.3 What are the possible obstacles for the implementation of PM?

The obstacles that seem to prevent PM implementation and from realizing its benefits can be divided into strategic and operational obstacles. Strategic obstacles relate to managerial options that prevent PM from reaching its objectives/goals. The operational obstacles are the obstacles that prevent PM from succeeding in its operational functioning.

6.3.1 Strategic obstacles

The literature offers a description of various management characteristics, some of which are difficult to combine or seen as incompatible and conflicting. Some of the latter characteristics seem to be present in the prevailing work culture and in the PM work culture needed.

- Explorative product characteristics might require contradicting management styles unlike exploitative product characteristics (Martini, 2013b).

One of the reasons why respondents in the case study feel the need for PM is because the products have obtained more repetition characteristics. The literature and this case study show that different products might require different management styles. The current company culture seems to accord better with the characteristics that Martini describes for explorative products, which involve search, variation, risk-taking, experimentation, play, flexibility, discovery and innovation (ibid.). However, the PM work culture that is needed for PM seems to accord better with the management style that Martini describes as needed for exploitative products, which involves refinement, choice, production, efficiency, selection, implementation and execution (ibid.).

- Flexibility and control require different management styles (Koppenjan et al. 2011)

Contradicting management needs, as the literature and the case study seem to confirm, are flexibility and control. On the one hand the current company work culture and one of its perceived strengths is flexibility. This flexibility is expressed in the case study with impactful decisions being made fast and ad hoc, communication is informal & people having much work freedom. On the other hand the organizations point to the need for more control on employees behavior in a PM work culture, with more insight in task responsibility, task authority and progress and the need for alignment between departments by using PM methods and project managers.

The organization is aware that PM methods need better presentation of goals and the full management support. The contradicting management styles (as explained previously) might be one of the reasons why this is lacking, since PM goals might be in conflict with other goals and management desires might therefore be conflicting too. Nevertheless consensus and commitment of the full management on the goals for PM has been expressed to be important but lacking, and is obstructing acceptance of PM in the company.

One of the things that causes most disagreement between the majority of the respondents and the COO is the lack of insight in task progress with CP. Whereas the COO believes that the present CP gives enough insight in task progress, most of the respondents say that the present CP design is insufficient for this.

The case study shows that PM implementation is hampered by the fact that the present culture is not enough change-oriented. Most of the respondents are in favor of PM and other uniform
work processes, but feel they are granted insufficient time to initiate PM proposals themselves. Respondents stress the need to make somebody responsible for PM changes and to call upon other experts for PM change coordination and for continuous improvement cycles.

As the definition of PM makes clear, PM is dependent on the application of knowledge, skills, tools and techniques in project activities to meet the project requirements. The effectiveness of PM is dependent on various PM practices. The present case study shows that respondent believe another CP design in conjunction with other PM systems, like WBS or ERP, are needed. It is unclear to them if and when these systems will be introduced.

6.3.2 Operational obstacles

Most of the respondents state that PM acceptance among employees is difficult. Some of the reasons relate to disagreements with functional goals in the design of PM systems, but respondents stress that a PM work culture is just or even more important for successful PM implementation. Obstructions for a PM culture seem to accord with Payne’s statement that resistance to change is often more people related than related to problems with the system itself (Payne, 1993). The most frequently mentioned operational obstructions within the current work culture are presented below.

The respondents state that the current work culture offers a lot of work freedom that is highly valued but at the same time might hamper PM implementation. This work freedom appears to be incompatible with the description of the PM work culture needed. The needed PM work culture requires less work freedom and specifies ‘formal’ characteristics that seem incompatible with work freedom, such as a conventionally recognized form, structure and rules. Polesie confirms that losing sense of work freedom possibly represents an important obstruction to change because it could lower work motivation (Polesie, 2013).

Respondents state that the current implementation of PM practices is hampered by felt bureaucratization among the company’s employees. In the current work culture informal communication is highly valued and taken for granted. Respondents indicate that the employees fear the reporting requirements of PM. Many employees prefer informal communication over documented information and they feel that bureaucratization has gone too far already.

The respondents think that project coordination might improve in case PM is providing needed information from employees within departments to the project managers. At the same time the respondents experience resistance from employees within departments because the employees believe that the documented information needed for PM could contain imperfect information and therefore prefer informal communication. Even if exchanging information with PM methods is desired it is seems good also to be aware of imperfections. Matta & Ashkenas mention planning methods have advantages to reduce the execution risk of planned activities not being carried out properly, however will never be perfect. There will always remain two risks, 1) the white space risk of some activities not being identified in advance by planning, leaving gaps in the project plan and 2) the integration risk when all planned activities are finished but the result is not delivering the intended result (Matta & Ashkenas, 2003).
6.4 A brief conclusion on fit-for-purpose project management

On the basis of this case study, it is suggested that a fit-for-purpose approach is needed for PM implementation. The case study offers good reasons to adapt the organization to more PM but at the same time reveals clear obstacles for its implementation. Hopefully, this report will generate interest for a fit-for-purpose approach for PM implementation. The following conclusions might be useful for overcoming some of the obstacles in PM implementation.

The previous paragraphs answered the sub-questions that lead to answering the main research question which reads: What is a fit-for-purpose approach for implementing central planning and risk log PM practices, without losing entrepreneurial strengths within the company? The answer to this question is two-fold: awareness of why fit-for-purpose PM implementation is needed, and recommendations how fit-for-purpose PM implementations should deal with this awareness.

This conclusion will focus on the first step for fit-for-purpose PM implementation by preparing the organization for PM changes and narrowing the gap between the prevailing work culture and the PM work culture that is needed. Finding PM tools that are fit-for-purpose to different types of projects in the company is the next step to be taken after the organization has been prepared for fit-for-purpose PM implementation.

The functioning of PM tools is dependent on the collaborative effort of numerous employees across departments who are expected to supply information for these PM tools. Improved coordination by project managers is seen as main objective for implementing PM tools. The quality of the information provided by employees determines how useful the tools are for the coordination of projects. Acceptance and effort spend on PM tools is hampered when people are not convinced about the chosen PM tool or when the ultimate goals remain unclear. Furthermore employees state that PM tools work less effective if they are only used for updating the manager who introduced the tool in line with his personal views about what is best. Managers who introduce PM tools are as temporary as their particular ideas on the best PM tool.

The most important obstructions in implementing PM tools detected by this case study concerns the gap between the work culture that is needed for PM and the prevailing work culture that is highly valued among employees. The dependence on the collaborative efforts of employees highlights the weakness of this work culture gap for PM. Since the current work culture is highly valued the employees have to be convinced of the need for PM and a PM work culture. The two most important reasons are:

3. Increasing company size
The growth of the company has led to difficulties in the exchange of information between departments. A PM work culture with adequate information exchange offers a potential solution for this.

4. Increased repetition in components of products
The increased repetition in produced products, caused by using more components of previously produced products. For example repeating components of a previously produced crane for a new type of crane. Repetition is believed to create opportunities for more efficient production- and management processes, reducing cost, improving quality, time and client satisfaction with more standardization of production- and PM processes.
In order to narrow the work culture gap, a PM work culture with a management style is needed that contradicts with the current management style. The present work culture has led to successes, is highly valued and seems well-suited for entrepreneurial companies with work culture values like flexibility to adapt to unforeseen circumstances, work freedom and information communication. A PM work culture, on the other hand, requires values that go against the prevailing work culture as it demands more control, with insight in task responsibility and task authority and more formal communication with less work freedom. The desire for more formal communication is expressed with desires for conventionally recognized forms, structures and rules. A fit-for-purpose PM implementation should recognize the contradicting management needs and requires a clear explanation of the need to find a new balance between current work culture strengths and needed PM work culture to convince employees of this.

The following will give recommendations of how fit-for-purpose PM implementation could deal with this awareness.

Fit-for-purpose PM implementation should convince employees that collaborative effort is needed for PM tools to be successful. To convince employees of this effort, the goals for PM and the arguments why selected PM tools contribute to these goals should be clarified in workshops.

To convince employees to change the work culture towards characteristics of PM work culture, the PM goals and arguments for selected PM tools need to be made understandable to them and should have full support of the entire management since an individual manager’s vision on PM could be seen as temporary by employees.

The PM goals should consist of a number of intermediate steps and related arguments of why these steps contribute to the PM goals. To get PM tools accepted, in a work culture that seems in contradiction with a required PM work culture, the steps taken need to be small. Organizations should not get lost in expected benefits of advanced PM tools. These advanced PM tools could be seen as long-term options but small PM steps are an organisational challenge that is big enough. PM steps also need to stay small and simple because in a work culture that seems at distance from a PM work culture, needed documentation for more formalized communication could be seen as unwanted bureaucratization and not in line with prevailing work motivations.

Even if people are enthusiastic about the benefits of PM, implementation could be hampered in case initiatives for PM changes are lacking within the organization. Fit-for-purpose PM implementation should create an active change culture to ensure proper coordination of PM implementation and to check the collaborative use of PM tools by employees. An active change culture should consists of the aspects summed in Figure 13. After the decision is made to improve a certain PM process or tool. For example it could be decided to improve planning processes like a CP system. Or, it could be decided to improve the current risk management for example with a RL. The active change in culture should consist of a continuous improvement cycle and somebody who is made responsible for this PM initiative, who sets and discusses the goals, selects the PM steps that contribute to these goals and evaluates the PM tools and any needed improvements.
When we summarize all this in one sentence, fit-for-purpose PM implementation should consist of **small coordinated PM steps leading towards collaborative goals, taking into account management characteristics that conflict with the present work culture.** This is the recommended way to prepare the organization to implement fit-for-purpose PM. Depending on the PM focus different projects will require different fit-for-purpose PM tools that can follow should be determined in the next step.

For the focus on CP and RL, this case study indicates a RL could be especially interesting for more innovative projects to have better risk communication between departments. For CP, this case study shows projects with more repetition could benefit most by increasing efficiency on repeating project parts whereas innovative projects are harder to plan because of more uncertainties and risks.

But there can be several other PM foci. For example, in this case study it is suggested to make some PM tools more uniform, since people now use individual chosen PM formats, while within a PM work culture, PM tools with conventionally recognized form, structure, and rules are desired.

### 6.5 Suggestions for further research

This case study meets a demand for empirical examples in project management. In journals there is a tendency to endorse underlying assumptions of previous research (Hällgren, 2012). This case study gives empirical insight into perceived benefits of PM, the obstructions for implementing PM and based on these obstructions give recommendations how to prepare this organization for PM implementation. These insights might give direction to future research on more fit-for-purpose approaches for PM implementation. The need for more fit-for-purpose
approaches is emphasized by the, in this case study presented, obstructions with PM implementation. For further research the following suggestions are made:

- More often linking case study results to the existing literature.

- Paragraph 5.4 describes some hypotheses that could be validated by more case studies examples.

- The effectiveness of the change management recommendations made in this study could be tested with a field experiment on implementing a PM tool.

- Based on the results of this case study, future research on fit-for-purpose PM approaches could address the questions of how to find the right balance between a PM work culture and the prevailing work culture and how to deal with possible conflicting managements needs that could obstruct PM implementation.

6.6 Managerial recommendations

First of all the management needs to decide whether they want more PM or not. The current company work culture displays characteristics that seem to be conflicting with a needed PM work culture. Yet the current work culture has led to a very successful company and therefore also has valuable characteristics that need to be preserved. The two most important reasons why more PM would be needed revealed by this case study are:

- The increased number of employees in the company has led to difficulties in the information exchange between departments

- The second reason is related to increased repetition in produced products, caused by using more components of previously produced products. For example repeating components of a previously produced crane for a new type of crane. Repetition is believed to create opportunities for more efficient production- and management processes, reducing cost, improving quality, time and client satisfaction with more standardization of production- and PM processes.

Should the management decide that more PM is needed this report might help with the first step by preparing the organization for fit-for-purpose PM changes and narrowing the gap between the prevailing work culture and the PM work culture that is needed. Finding PM tools that are fit-for-purpose to different types of projects in the company is the next step to be taken after the organization has been prepared for fit-for-purpose PM implementation.

Although benefits for PM are widely acknowledged the case study shows numerous obstacles that prevent the implementation of PM tools. One of the most important obstacles is that the needed PM work culture does not accord with the work culture that presently exists and is highly valued in the company. A change of work culture towards a PM work culture required since successful PM implementation is not only dependent on choosing the best PM tool design but also on collaborative efforts of employees giving meaningful input to these PM tools. To convince employees of these efforts, the goals for PM and how the selected PM tools contribute to these goals should be clarified. Although the current CP seems to offer a promising start for more PM, it also uncovered clear differences among employees and the COO with respect to how the current CP design contributes to the PM goals. This case study predicts that acceptance of PM tools and the related PM work culture will not be easy. As discussed further in 5.4.1, to successfully implement PM the organization needs to be made aware of
why PM is needed and why the introduction is difficult in the organization. Change management is needed to guide the introduction of PM and overcome the obstacles in the implementation.
7 Reflection

7.1 On the academic side
- Explorative interviews research as yet unknown propositions; researching such propositions requires assumptions and the bundling of large amounts of statements that are considered important. The reliability of these assumptions and bundling of statements depends on the truthfulness of the respondents and the qualities of the researcher. I personally believe the output from respondents can be qualified as very trustful. I also believe that the researcher treated this output with much integrity but this remains a subjective interpretation. Both the trustfulness of the respondents and of the researcher remains hard to verify.
- I found looking for appropriate literature to structure explorative research rather difficult. The book of Yin on case study research (Yin, 2003) offered some help to structure the research, but examples on how to arrive at the best research questions I personally found to be limited and disappointing. Fortunately my graduation committee offered assistance and the feedback needed for the reflection on my ideas.
- One of the challenges in this research was how to best represent statements on perceived problems and how to best interpret the statements of the respondents. This is especially difficult because respondents often use different definitions and have different views on possible solutions. Interpretation and the bundling of statements were needed to create overview. The book on problem structuring of complex problems from Haan & Heer offered a lot of help in obtaining a comprehensive overview of the problems based on the statements from the respondents (de Haan & de Heer, 2012)

7.2 On the practical side
- I believe my internship at Huisman Equipment offered me much added value to the research. This is because,
  - of characteristics of Huisman Equipment,
  - of the support of my 1st and 2nd committee members within the company
  - and because of up-to-date information within the improvements program
- The characteristics of Huisman Equipment offered a favorable research environment with little formal hierarchy where I was able to talk to anybody if needed.
- Two members of my research and thesis committee, who are employees of Huisman Equipment, offered support in finding the right people for my research. It was easy to get in contact with the best people for this research. Furthermore they offered me all freedom to conduct research within Huisman Equipment.
- The availability of up-to-date information from the improvements program created a good condition to do a pilot study on perceived problems in project execution to focus my research.

7.3 On the results
- I believe that my full-time presence in Huisman Equipment during my internship was beneficial for the quality of the findings laid down in this report.
- My presence at Huisman Equipment offered the opportunity to get to know most of the respondents better personally before I interviewed them, which I believe, resulted in more open and reliable interviews.
Furthermore my full-time presence in Huisman Equipment allowed me to introduce nuances in the research design because of the exposure to the daily working conditions and the professional activities of employees at Huisman Equipment.

I believe the results of this study offer an empirical contribution to the existing body of PM literature in which is found a large amount of repetition of its own theoretical assumptions.

This empirical study offers a case example that highlights the problems in implementing PM and might offer useful starting points for the on-going development of better approaches for PM implementation.

7.4 **Personal challenges**

At the beginning of this research I did not expect the research would become this socially sociologically oriented. This was very challenging because I do not believe this kind of research suits my personal core competence nor do I believe this was the original intention of my study at the Faculty of Technology, Policy and Management and my Master in Construction Management and Engineering.

Finding the right research approach was difficult but with the help of and reflection with my graduation committee I believe that in the end this problem was satisfactorily solved.

By far the biggest challenge is my dyslexia. From the start of the research I became aware of the importance of proper formulation in written language. Without my dyslexia I believe it would have been much easier to present and discuss my findings with my graduation committee. Fortunately I found a good friend of my family, a senior anthropologist with experience in social research, willing to carefully look into my thesis and assist me in expressing my views in this unfamiliar field of study more clearly and accurately.

The open and honest interviews at Huisman Equipment were a great personal experience in learning more about widely different perspectives on changes in organisations. Furthermore, the interviews made me aware of a few controversial and sensitive issues in the company, which I had to learn dealing with accordingly in order to maintain the delicate balance between interesting results and respect for confidentiality.
8 Bibliography


Appendix I: Problem focus matrix analysis *(confidential)*
Appendix II: Long list interview statements *(confidential)*
Appendix III: Cross-case Matrix (*confidential*)
Appendix IV: Interview protocol (in Dutch)

<table>
<thead>
<tr>
<th>Categorie (from logic model)</th>
<th>Subcategorie</th>
<th>Vraag #</th>
<th>Vraag</th>
<th>Antwoorden</th>
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<tbody>
<tr>
<td>0. Introductie (2 min)</td>
<td>Thesis onderwerp</td>
<td>X</td>
<td>Dit interview is een verkenning naar succesvolle en bruikbare PM methode voor de projecten van Huisman</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>0.1</td>
<td>Centrale planning en gebruik van risk log zijn twee veel gebruikte voorbeelden van PM methode die ik als kapstok wil gebruiken binnen het interview</td>
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<tr>
<td></td>
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<td></td>
<td>Deze focus en de interviewvragen volgen uit een analyse van ervaren problemen binnen de Problem Execution groep van het Improvement Program en overleg met mijn afstudeer commissie vanuit de TU Delft en Huisman met Dirk en Robert</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2</td>
<td>Zijn deze twee methode bij u bekend? Centrale planning zoals bij Huisman. Risk log als in een methode waar actief risico’s worden geïnventariseerd en gemonitord tijdens project uitvoering.</td>
<td></td>
</tr>
<tr>
<td>Interview opbouw</td>
<td></td>
<td>0.3</td>
<td>Is het goed als ik het gesprek met de telefoon opneem?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Het interview zal ongeveer 1 uur duren</td>
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<td></td>
<td></td>
<td>0.4</td>
<td>Wat is het meest recente afgeronde project waar u bij betrokken was? Ik richt het interview graag op dit project, soms zal ik in de vragen ook naar uw ervaringen met andere projecten vragen, maar dit maak ik dan expliciet.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>0.5</td>
<td>Wanneer is dit project begonnen en afgerond?</td>
<td></td>
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<td></td>
<td></td>
<td>0.6</td>
<td>Leeftijd / functie / jaren PM / jaren PM in Huisman / aantal projecten / studie achtergrond</td>
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<tr>
<td></td>
<td></td>
<td>0.7</td>
<td>Heeft u nog vragen voor ik met het interview begin?</td>
<td></td>
</tr>
<tr>
<td>1. PM characteristics (8 min.)</td>
<td>Centrale planning</td>
<td>1A</td>
<td>Gebruikt u centrale planning bij u recent afgeronde project? Wat is de status van invoering? Hoe beïnvloed de start van het project en de project uitvoering?(^1) Level1, Level2 en Level3(^1) Hoe zou u willen dat het zou functioneren? Hoe kan het helpen u werk beter uit te voeren? Wat zou u weerhouden van het gebruik ervan? Is er naar jou weten ooit een initiatief geweest voor CP?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Risk log</td>
<td>1B</td>
<td>Gebruikt u een risk log bij u recent afgeronde project? Wat is de status van invoering? Hoe zou het de project start en project uitvoering kunnen beïnvloeden?(^1) Hoe zou u willen dat het zou functioneren? Hoe kan het helpen u werk beter uit te voeren? Wat zou u weerhouden van het gebruik ervan? Is er naar jou weten ooit een initiatief geweest voor CP?</td>
<td></td>
</tr>
<tr>
<td>2. PM Culture</td>
<td>Werkwijze</td>
<td>2.1</td>
<td>Hoe karakteriseert u de werkwijze van projectuitvoering tijdens dit project, voor u en u collega’s? (b Zou u dat “vrij” noemen, of “gestuctu-</td>
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<td>Categorie (from logic model)</td>
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<td>(2min.)</td>
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<tr>
<td>7. Succesvol project (2min.)</td>
<td>Project succes</td>
<td>7.</td>
<td>Was uw project succesvol? In welk opzicht? Hoe had centrale planning en risk log hier verder in kunnen bijdragen?</td>
<td></td>
</tr>
<tr>
<td>4. Entrepreneurial aspects (2min)</td>
<td>Innovatie van producten</td>
<td>4.1</td>
<td>Hoe innovatief was het project? Beïnvloedt dit de mogelijkheden van centrale planning en risk log?</td>
<td></td>
</tr>
<tr>
<td>3. Implementation barriers (2min)</td>
<td>PM invoer belemmeringen</td>
<td>3.1</td>
<td>Wat zijn redenen dat centrale planning en een risk log niet (ten volle) zijn gebruikt in het project?</td>
<td></td>
</tr>
<tr>
<td>5. Company culture (2min)</td>
<td>Bedrijfscultuur</td>
<td>5.1</td>
<td>Hoe heeft bedrijfscultuur van Huisman het project beïnvloed? Hoe beïnvloedt de mind-set t.o.v. project management binnen verschillende afdelingen de projectuitvoer?</td>
<td></td>
</tr>
<tr>
<td>1. PM characteristics (5min.)</td>
<td>Algemene behoefte PM</td>
<td>1.1</td>
<td>Bent u van mening dat Huisman meer volgens uniforme PM methode zou moeten werken?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2</td>
<td>Hoe onderscheid de projectuitvoer van uw project zich met andere uitgevoerde projecten binnen Huisman?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1.3</td>
<td>Hoe zou invoeren van meer uniforme PM methode uitvoering van projecten beïnvloeden?</td>
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<tr>
<td>2. PM Culture (2min.)</td>
<td>PM werkwijze</td>
<td>2.2</td>
<td>Karakteriseert Huisman zich in het door vrije of gestructureerde PM werkwijze? Wat merkt u hiervan?</td>
<td></td>
</tr>
<tr>
<td>6. Successful PM practices (2min.)</td>
<td>Succes PM methode</td>
<td>6.1</td>
<td>Wat bepaalt voor u of de invoer van centrale planning succesvol is? En wat bepaalt voor u of de invoer van risk log succesvol is?</td>
<td></td>
</tr>
<tr>
<td>4. Entrepreneurial aspects (2min)</td>
<td>Innovatie van producten</td>
<td>4.2</td>
<td>In hoeverre verschillen de producten van huisman qua innovativiteit?</td>
<td></td>
</tr>
<tr>
<td>3. Implementation barriers (2min)</td>
<td>PM invoer belemmeringen</td>
<td>3.2</td>
<td>Wat denk u dat de invoer van PM methoden in Huisman met name belemmert?</td>
<td></td>
</tr>
<tr>
<td>5. Company culture</td>
<td>Bedrijfscultuur</td>
<td>5.2</td>
<td>Wat karakteriseert de bedrijfscultuur binnen Huisman en hoe heeft dit invloed op de uitvoering van projecten?</td>
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<tr>
<td>Categorie (from logic model)</td>
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<td>Vraag #</td>
<td>Vraag</td>
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<tr>
<td>8. Fit for purpose PM (20 Min)</td>
<td>Fit-for-purpose PM</td>
<td>3.3</td>
<td>Als u rekening houdt met de karakteristieken van Huisman, hoe zou u dan, als u het voor het zeggen had, een PM methode (zoals bv. centrale planning of risk log) invoeren binnen Huisman?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5.3</td>
<td>Hoe zou de mind set binnen de verschillende afdelingen de invoer van PM methode kunnen beïnvloeden?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2.3</td>
<td>Hoe beïnvloed de samenwerking &amp; communicatie van benodigde informatie tussen de afdelingen de PM methode? Verantwoordelijkheid en transparantie. Is deze communicatie er nu voldoende?</td>
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<td></td>
<td></td>
<td>3.4</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>2.4</td>
<td>Hoe zou het invoeren van meer uniforme PM methode (als centrale planning &amp; risk log) het uitvoeren van projecten beïnvloeden, voor u en uw collega’s?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4.3</td>
<td>Hoe kunnen PM methodes worden aangepast op het innovatieve karakter van huisman projecten? (hoe voor centrale planning &amp; risk log)</td>
<td></td>
</tr>
<tr>
<td>9. Afsluiting (10min)</td>
<td>Afsluiting</td>
<td>9.1</td>
<td>Wat vond u de meest interessante vraag in het interview?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>9.2</td>
<td>Wat ben ik vergeten te vragen?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.4</td>
<td>Wie zijn volgens u de meest interessante mensen voor vervolg interviews? (LM, PC andere PM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>Dank voor het interview. Ik stuur u een kort verslag van het interview op zodat u het kan controleren voor ik het in mijn analyse en eindrapport verwerk.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix V: Scheme for research question 1 *(confidential)*

Appendix VI: Scheme for research question 2 *(confidential)*

Appendix VII: Scheme for research question 3 *(confidential)*