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**Faculty of Science and Technology**

# **MASTER´S THESIS**

***Title:***

***Risk Management in a Complex Frame  
Agreement – A Case Study from a  
Contractors perspective***

Written by:

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Master of Science in Industrial Economics (30 credit points)



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## Abstract

Risk management in organisations has, over the years, gained increasing recognition as an important part of project management. Achieving effective and efficient project management is vital for the modern project organisation, in order to optimise the chance for project success. Not only is it preferable to optimise the chance for a successful project, but also the successfulness of the project. In this context, the risk management plays an important role. The risk management aims to maximise the likelihood and impact of opportunities, and to minimise the likelihood and impact of threats for the project objectives.

The objective for this thesis will be to evaluate the implementation of risk management in a Frame Agreement for one of the largest oil service companies on the Norwegian Continental Shelf. The Company is committed to be in compliance with the ISO31000:2009 standard for risk management.

The evaluation is based on the following hypothesis: "Risk management is well implemented throughout the Project Organisation in the Frame Agreement".

The writer aims to test the hypothesis through multiple methods, comprising of a survey in case study research.

After having examined all areas, it was found that the company had considerable need for improvement in most areas. It was also found that the Company was not being in compliance with the ISO31000:2009.

The Company does not have a risk management policy in place. The Management System does not provide sufficient information on risk management processes, and the Management System is not used consistently by the project managers. The risk database should be improved upon. Project Managers risk competence is varying, caused by lack of training. These findings lead to poor communication quality.

All study findings clearly points to the conclusion that the hypothesis is rejected, and that the Company does not have a well-implemented risk management.

## Abbreviations and acronyms

Abbreviations and acronyms used in the report are listed below in alphabetical order.

E&P	Exploration and Production
ERM	Enterprise Risk Management
FA	Frame Agreement
HSE	Health, Safety and Environment
ISO	the International Organization for Standardization
M_o_R®	Management of Risk
MS	(Company's) Management System
NCS	Norwegian Continental Shelf
PESTEL	Political, Economic, Sociological, Technological, Legal and Environmental
PM	Project Manager
PMBOK®	Project Management Body of Knowledge
QRM	Quality and Risk Manager
RM	Risk management
SWOT	Strengths, Weaknesses, Opportunities and Threats

## Terminology

The main terms used in this report are defined below, where they are used with initial capital letters in the text. The main terms used in this report are defined below, where they are used with initial capital letters in the text. For example, a project manager could refer to any project manager, while a Project Manager is in this report defined as a project manager within the Frame Agreement. The following definitions are used in this document:

Operator	One of the largest E&P operators on the Norwegian continental shelf.
Client	See "Operator"
Company	A leading service company in the oil and gas sector.
Critical Item	If the project team is not able to solve/mitigate, or if the risk has consequences beyond the project, then the Project Manager must be set as responsible for the risk and mark the risk as a Critical Item.
Frame Agreement	The specific frame agreement between the Company and the Operator.
Project Manager	A project manager in the Frame Agreement.
Project Organisation	The project organisation in the Frame Agreement
QuestBack	The conducted survey. QuestBack is a company providing survey software.
Risk	<i>"uncertainty that, if it occurs, will affect achievement of objectives" (Hillson, D. 2009)</i>
Risk Appetite	The degree of risk the organisation is willing to accept to achieve objectives.
Risk Attitude	<i>"A chosen response to uncertainty that matters, influenced by perception" (Hillson, D. 2009)</i>
Risk Exposure	The combined effect of risks for a set of objectives.
Risk Management	<i>"Systematic application of principles, a proactive approach and a process for identifying and assessing risks, followed by planning and implementation of risk responses." (OGC, 2010)</i>
Risk Threshold	The level of risk or impact the organisation is willing to accept. Risks above this level cannot be accepted without referring them to a higher management level.
Risk Tolerance	How much risk an organisation or individual is able to withstand.

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## Preface

This report is my master's thesis in the study of Industrial Economics at the University of Stavanger (UiS), where I have specialised in topics such as project- and risk management. The thesis has been both challenging and instructive, and has given me a profound understanding in the framework of risk management at the organisational level.

The thesis is an evaluation of the risk management in a large frame agreement for one of the biggest oil service companies on the Norwegian Continental Shelf (NCS). The purpose is to find out how well risk management is implemented in the frame agreement, and possibly find areas for improvement.

For strategical reasons for the company, the thesis has been written anonymously. This makes it difficult to thank all those in the company that have supported me during the work of the thesis, but you all know whom you are. I would especially thank my supervisor for the opportunity to write this thesis and for his time and guidance. Furthermore, I would like to thank Professor in Petroleum Economy at the University of Stavanger, Petter Osmundsen, for his support and guidance.

Sign:

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Knut Rørvik

Stavanger, 24<sup>th</sup> of June 2013



# 1 INTRODUCTION

*This chapter will first present the background and problem formulation of the thesis, before the hypothesis, research questions, goals, and the choice of methods is provided, followed by the investigators prejudice and experience. At the end of the structure of the report is presented.*

## 1.1 BACKGROUND AND PROBLEM FORMULATION

Well 40 years ago the field of risk and safety in higher education did not exist (Aven 2013), but has now become a recognised field of study. Risk management in organisations has received an increasing recognition as an important part of project management. For the modern project organisation, it is vital to achieve an effective and efficient project management in order to optimise the chance for success. Not only is it preferable to optimise the chance for a successful project, but also the successfulness of the project. In this context, the risk management plays a vital role. The objective of project risk management is to increase the likelihood and impact of opportunities, and to decrease the likelihood and impact of threats for the project objectives.

This thesis will evaluate the implementation of risk management in a Frame Agreement for one of the largest oil service companies on the Norwegian Continental Shelf (NCS). The Frame Agreement is a form of collaborating agreement that involves the establishment of a common protocol and a set of standards terms. It forms the basis for subsequent work for a given period of time. The Frame Agreement is signed with a large oil exploration and production (E&P) company on the NCS, and may be valid for over ten years.

Due to the anonymity of this report, the oil service company and the E&P company will hereinafter be referred to as “Company” and “Operator”, respectively. The Operator may also be referred to as “Client”. The Company and Operator could also individually be referred to as “Party” and collectively as “Parties”.

In the coming years the Company will experience further growth and rise in activity level, as well as stronger competition from all over the world. In order to strengthen its position in the market, the organisation will evaluate the strategies and structure of the organisation. The outcome of this thesis can be used in this work and may give an indication of the maturity of risk management in the rest of the organisation.

The questions addressed in this thesis are relevant in today’s competitive world, not to mention the increasing expectations for delivering good results. It is essential for the company to deliver successful projects.

## 1.2 STATEMENT OF HYPOTESIS

The evaluation of the risk management in the Frame Agreement is based on the following hypothesis:

***“Risk management is well implemented throughout the Project Organisation in the Frame Agreement”***

## 1.3 RESEARCH QUESTIONS

In order to test the hypothesis in section 1.2, the following two research questions are raised:

- 1. What is meant by “Risk management”?**
- 2. What is meant by “well implemented”?**

In order to assess whether or not the risk management in the project organisation is well implemented, a benchmark is needed. The benchmark will need to be based on standard *ISO31000:2009 Risk Management – Principles and guidelines*, made by the International Organization for Standardization (ISO) that provides principles and generic guidelines on risk management. It is understood by both Parties that the Company will be in accordance to the ISO31000:2009 standard.

The UK Office of Government Commerce (OGC) has created the useful guide “Management of Risk: Guidance for Practitioners (M\_o\_R®)” for risk management, which is in compliance with the ISO31000:2009 standard. The benchmark will build on this guide, which will be presented in chapter 2.2.

The second research question addresses the project organisation in the Frame Agreement, which can be further divided into five sub-criteria:

- a) Corporate documents
  - b) Application of corporate documents
  - c) Software and tools
  - d) Competence and training
  - e) Overall implementation
- a) At first the Company need to provide supportive documentation that explains how and why the organisation will implement risk management. Documents such as a risk management policy, Process guide and strategies should be provided. They describe the activities to be undertaken, the sequence, roles and responsibilities necessary for their delivery.

b) There is no point in having supporting documents if the Project Organisation does not implement them. Management should demand the use of the risk management documentation, and see to that the guidelines are clear and unambiguous.

c) The Project Organisation must have the proper software and tools to aid an effective risk management. Central in the organisation of identified risks, is the Risk Register. This database should be intuitive and easy to use, and at any given time, be able to provide an overview of the risk register.

d) Ultimately, it is people in the organisation who apply risk management. They are the ones who identify risks, evaluate with regard to likelihood and consequence, register the risk in the risk register and decide responses. For this reason it is important that they receive sufficient training in risk management, so that the competence and focus is high in the Project Organisation, providing a shared understanding of risk.

e) To achieve an overall implementation of risk management the Project Organisation must have a clear and effective communication. The implementation of risk management is dependent on participation, which again is dependent on communication. Management should ensure that the communication works up-, down- and side-ways in the organisation.

## **1.4 OBJECTIVES**

This thesis aims to achieve the following objective:

- Evaluate Company's implementation of risk management in the Frame Agreement against current standards.

## **1.5 SELECTION OF METHODS**

This thesis aims to test the hypothesis through multiple methods, comprising of a survey within a single case study research. The first research question regarding risk management is a theoretical question and the data collection source will therefore be recognised literature and standards. The second research question is directly aimed at the Company's risk management, and can be divided into two parts:

- 1) Organisational "theory", through documentation;
- 2) Organisational "practice", by implementation.

Part 1 will use the management documentation as the main data collection source, supplemented by direct observations, while part 2 will use survey, interview and observation. The survey will gather information about project managers knowledge, experience and attitude towards risk management in the

project organisation. Interviews and observation of the Portfolio Management will give valuable and clarifying information about the risk management.

## 1.6 SCOPE OF THE STUDY

The thesis is limited to the study of risk management in the Project Organisation defined by the Frame Agreement. What makes this agreement particularly interesting is that organisation recently entered into a new frame agreement, which took over for an outgoing frame agreement. It has new terms, such as a totally different payment structure, which challenges the organisation to adapt accordingly.

It is assumed that the mother organisation has implemented the Enterprise Risk Management (ERM). See COSO (2004) for more information.

## 1.7 ABOUT THE INVESTIGATOR

In the following are some statements about the investigator that the reader should be aware of when reading this report.

### 1.7.1 STATEMENT OF INFLUENCE

The supervisor for this thesis is the Company's Risk Manager. His influence and point of view, along with the investigators findings in the study, may influence the assessment of the current risk management. It has from the beginning of the thesis been indications on weaknesses in the risk management, and it is therefore important to recognise this influence, as it may lead to a more subjective analysis.

### 1.7.2 INVESTIGATORS EXPERIENCE

The investigator has no previous experience with case studies or surveys of such a magnitude. This will be a disadvantage for the quality of the data collection.

## 1.8 STRUCTURE OF THE REPORT

The chapter structure for this thesis is as follows:

- |           |  |
|-----------|--|
| Chapter 1 | <b>INTRODUCTION</b> , gives the background and problem formulation of the thesis, choice of method and scope of study.           |
| Chapter 2 | <b>THEORETICAL BACKGROUND</b> defines the most central topics for the study, such as the definition of risk and risk management. |
| Chapter 3 | <b>METHOD</b> describes the methodology used to collect the data used in the thesis.   |

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Chapter 4    **THE COMPANY** gives a brief presentation of the Company's and risk management.

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Chapter 5    **RESULTS AND ANALYSIS**, present the results of the QuestBack® survey for the Project Managers.

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Chapter 6    **DISCUSSION** examines the findings of the case study

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Chapter 7    **SUMMARY AND CONCLUSION** presents the key findings and conclusion in the thesis, followed by recommended areas of improvement and suggested further work.



## 2 THEORETICAL BACKGROUND

*This chapter contains the theoretical background of the thesis. Theories about risk, risk management, risk perspective, risk culture and risk communication are presented, followed by a detailed presentation of the benchmark for effective risk management. The purpose is to lay the foundation for the analysis of the collected data.*

The Company is committed by both the Frame Agreement and internal documents to comply with the International Standard for Risk Management: the *ISO31000:2009 Risk Management – Principles and guidelines*. This standard is made by the International Organization for Standardization (ISO) and provides principles and generic guidelines on risk management. It is implied that the ISO31000:2009 standard serves as a minimum requirement for the risk management system of the Company.

### 2.1 RISK AND UNCERTAINTY

Everybody has to deal with uncertainty on a regular basis, whether they want to or not. While individuals may try to implement a number of strategies to cope with these uncertainties, organisations use the discipline of risk management.

For risk management to help tackle the challenges raised by uncertainty, it must be properly focused and effectively implemented throughout the organisation. In order to implement effective risk management, we need a clear, unambiguous and widely accepted definition of the work risk.

David Hillson (2009) attempt to clarify the relationship between risk and uncertainty through a pragmatic approach, where he divides uncertainty into two groups: those that matter for the organisation, and those who do not. Uncertainties that do not matter can be ignored, which leaves those that matters left for the organisation to focus on. This lead to his proto-definition:

*“Risk’ is ‘uncertainty that matters” (Hillson, D. 2009)*

This means that not every uncertainty is a risk, but a risk is always uncertain. So risk management should focus on identifying and dealing with uncertainties that matters. In order to have a practical framework for risk management, we need to be able to decide if an uncertainty matters or not. The key here lies with objectives, which defines what matters to any individual, group or organisation. Objectives describe the desired goals and endpoints that represent success. So if risks are effectively managed, the chances of achieving the objectives will be optimised. Conversely, poor risk management will reduce the chances of success. Since uncertainty only actually matters in practice if it occurs, the proto-definition can be expended to:

*“Risk’ is ‘uncertainty that, if it occurs, will affect achievement of objectives”  
(Hillson, D. 2009)*

This form of definition is found in most of the current risk management standards and guidelines, as illustrated in Table 2-1. These definitions picks up an important point about uncertainty, namely that it includes both negative and positive risks, i.e. threats and opportunities. Both types affect the achievement of objectives.

SOURCE OF DEFINITON	‘UNCERTAINTY...’	‘... THAT MATTERS’
A Guide to the Project Management Body of Knowledge [PMBOK® Guide] (Project Management Institute, 2008)	‘An uncertain event or condition ...’	‘...that if it occurs has a positive or negative effect on a project’s objectives.’
ISO 31000:2009 (2009)	‘Effect of uncertainty ...’	‘...on objectives.’
Management of Risk [M_o_R®]: Guidance for Practitioners (Office of Government Commerce (OGC), 2010)	‘An uncertain event or set of events...’  ‘A risk is measured by a combination of the probability of a perceived threat or opportunity occurring...’	‘...that should it occur will have an effect on the achievement of objectives.’  ‘... and the magnitude of its impact on objectives.’

**Table 2-1: Definitions of "Risk". Based on Hillson, D. (2009)**

There are a variety of benefits for why an organisation should use a definition of risk that includes threats and opportunities. The organisation may increase possibility of success, identification of more opportunities, and increased efficiency.

## 2.2 RISK MANAGEMENT

Risk management is *“simply structured common sense”* (Hillson, D. 2009) and comprises of a series of steps in order to identify, assess and control risks in a structured manner. The M\_o\_R® guide defines risk management as:

*“Systematic application of principles, approach and processes to the tasks of identifying and assessing risks, and then planning and implementing risk responses.” (OGC, 2010)*

The aim for risk management is to maximise opportunities, minimise threats and optimise achievements of project objectives. It also seeks to support decision-making through providing an overview over individual risk and the overall risk exposure for the organisation. Risk management will limit the consequences of threats that occur, as well as proactively capture more opportunities. In this sense, it is unlikely that a project will be successful without effective risk management, making it a critical success factor for the organisation. In order to achieve effective risk management, the organisation needs a solid foundation that ensures risks to be properly identified, assessed and controlled.

The M\_o\_R® guide is made to help organisation to put in place an effective framework for risk management. It is in accordance with the ISO31000:2009 standard, and will central in the theoretical review of a sound risk management. The organisation should develop, implement and continuously improve such a framework for risk management to ensure that risk is managed effectively, efficiently and coherently across the organisation. This will help decision makers to take informed decisions about risks that affect their objectives, either on a strategic, project or operational level.

Effective risk management is likely to improve performance towards objectives by contributing to (OGC, 2010):

- Reduced negative surprises
- Efficient use of resources
- Reduce waste
- Reduce fraud
- Improve service delivery
- Reduced reactive “fire-fighting” of unidentified risks that has occurred
- Better management of maintenance activities
- Lower cost of capital
- Improved innovation
- Increased likelihood of change initiatives being achieved
- Increased focus on doing the right thing properly

The architecture of an effective risk management is built up by principles, framework and process. The relationships between these are shown in Figure 2-1.

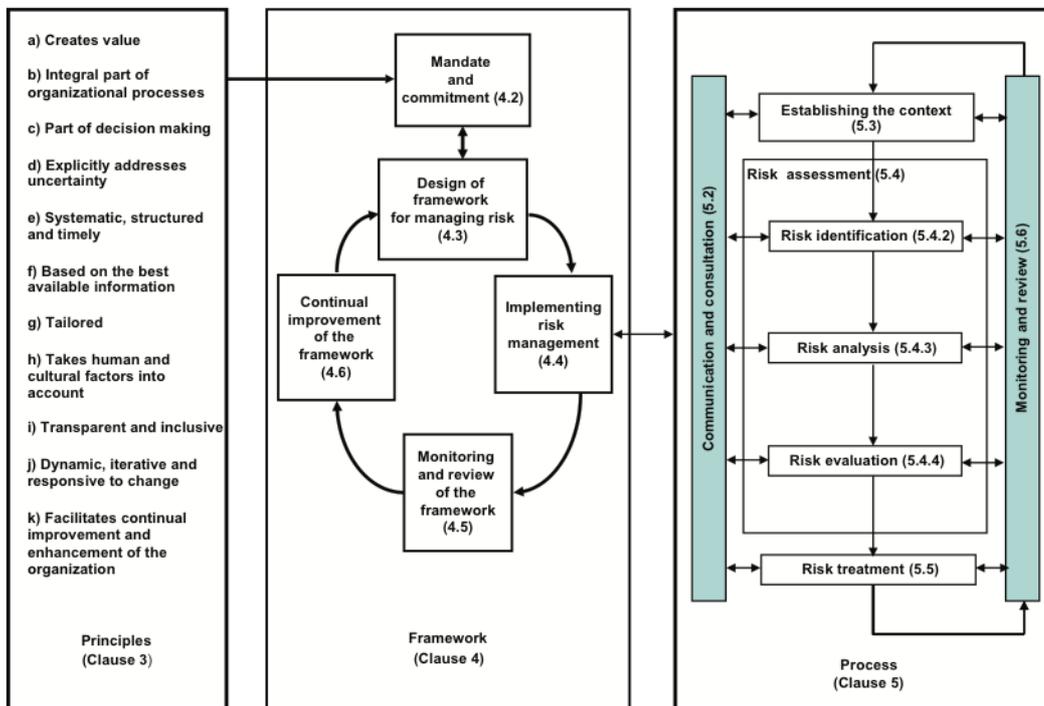


Figure 2-1: The relationship between the risk management principles, framework and process. Source: ISO31000:2009

### 2.2.1 RISK MANAGEMENT PRINCIPLES

The ISO standard provides a framework that is based on a number of principles that, if satisfied, will help to ensure effective risk management. The Management of Risk (M\_o\_R®): Guidance for Practitioners is based on a set of similar principles as seen in Table 2-2.

The ISO31000:2009 principles	The M_o_R® principles
A) Risk management creates and protects value.	1) Risk management aligns continually with organisational objectives.
B) Risk management is an integral part of all organisational processes.	2) Risk management is designed to fit the current context.
C) Risk management is part of decision making.	3) Risk management engages stakeholders and deals with differing perceptions of risk.
D) Risk management explicitly addresses uncertainty.	4) Risk management provides clear and coherent guidance to stakeholders.
E) Risk management is systematic, structured and timely.	5) Risk management is linked to and informs decision-making across the organisation.
F) Risk management is based on the best available information.	6) Risk management uses historical data and facilitates learning and continual improvement.
G) Risk management is tailored.	7) Risk management creates a culture that recognises uncertainty and supports considered risk-taking.
H) Risk management takes human and cultural factors into account.	8) Risk management enables achievement of measurable organisational value.
I) Risk management is transparent and inclusive.	
J) Risk management is dynamic, iterative and responsive to change.	
K) Risk management facilitates continual improvement to the organisation.	

Table 2-2: Risk Management principles from ISO31000:2009 and M\_o\_R®

A risk management framework based on the ISO standard should be based on the following eleven ISO principles (ISO, 2009):

**A) Risk management creates and protects value.**

Risk management contributes the project in achieving objectives and improved performance.

**B) Risk management is an integral part of all organisational processes.**

Risk management is included in all organisational processes, and is part of the responsibilities of management.

**C) Risk management is part of decision making.**

Risk management helps decision makers to make informed choices, prioritise actions and distinguish different alternative courses of action.

**D) Risk management explicitly addresses uncertainty.**

Risk management explicitly takes account of uncertainty, the nature of it and how it can be managed.

**E) Risk management is systematic, structured and timely.**

A systematic, structured and timely approach to risk management contributes to efficiency and will make consistent, comparable and reliable results.

**F) Risk management is based on the best available information**

Risk management uses the best available information such as historical data, experience, stakeholder feedback, expert judgement, observation and forecast.

**G) Risk management is tailored**

Risk management is adapted to the organisation's internal and external context and risk profile.

**H) Risk management takes human and cultural factors into account**

Risk management is aware of the perception, capabilities and intentions of internal and external people that can affect the achievement of the organisation's objectives.

**I) Risk management is transparent and inclusive**

Risk management involve stakeholders and decision makers at all level of the organisation to ensure relevant and up-to-date risk management. The involvement enables stakeholders to influence the establishment of risk criteria.

**J) Risk management is dynamic, iterative and responsive to change**

Risk management is continually looking for changes to respond to. Changes from internal and external event, risk characteristics, risks picture, and context require responses.

**K) Risk management facilitates continual improvement of the organisation**

The organisation should implement a risk management improvement plan in the strategies to continually improve the risk management maturity.

Effective risk management is dependent on the effectiveness of the framework providing the foundations and implementation throughout all levels of the organisation. The Risk Management Framework assists the management of risk

through the use of the Risk Management Process. The framework ensures that the results of the risk management process is properly reported and used as a basis for decision making.

The components of the Risk Management Framework and how they iteratively interrelate is shown in Figure 2-2. The intention of the ISO standard is not to prescribe a management system, but to assist the organisation in implementing an effective risk management into the overall management. The organisation should therefore adapt and adopt the framework components to their management systems.

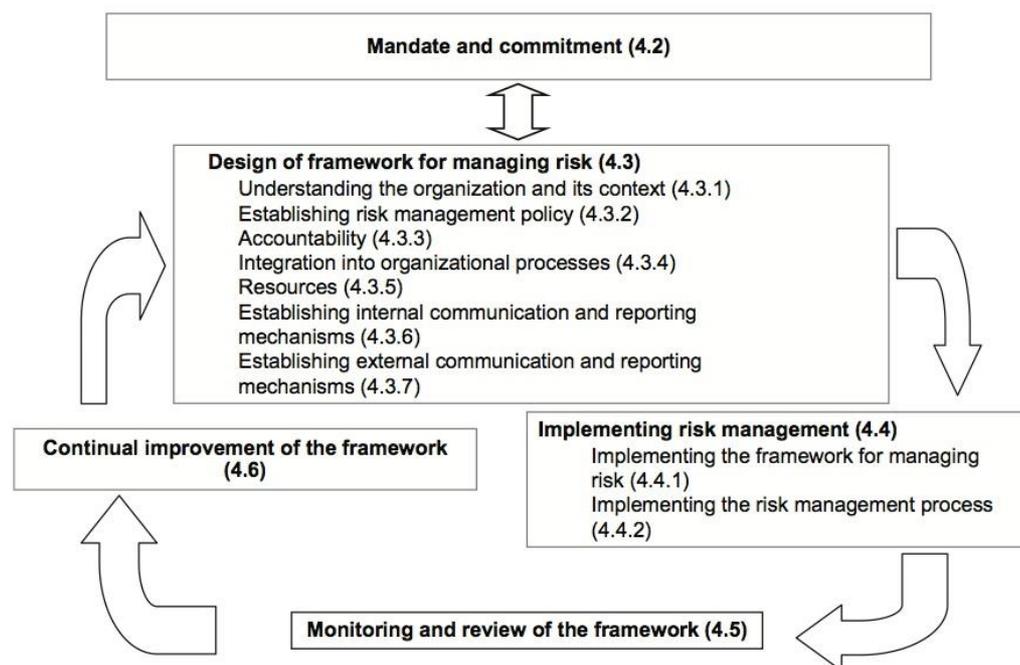


Figure 2-2: Relationship between the components of the framework for managing risk. Source: ISO31000:2009

**In order to be effective, the risk management is entirely dependent on strong involvement and commitment by the senior management team.**

An important part of the Risk Management Framework is the Risk Management Policy, which the senior management team should define and establish. The Risk Management Policy describes why risk management is important to the organisation, and clearly states the objectives for risk management.

### 2.2.2 RISK MANAGEMENT FRAMEWORK – A M\_o\_R® APPROACH

Central to the M\_o\_R® approach is a set of documentation comprising of:

- Risk management policy.
- Risk management process guide.
- Risk management strategies for each organisational activity.

These documents explain how the organisation will implement the risk management. They also describe the activities that will be undertaken, the sequence in how they will be carried out, and the roles and responsibilities necessary for their completion (OGC, 2010).

To M\_o\_R® approach recommends some supporting documentation to the risk management policy, process guide and strategies. The supporting documents can be divided into three categories – records, plans and reports – as listed below:

- Records
  - Risk register
  - Issue register
- Plans
  - Risk improvement plan
  - Risk communications plan
  - Risk response plan
- Reports
  - Risk progress report.

All of the documents that constitute the M\_o\_R® approach are clearly connected as shown in Figure 2-3 below.

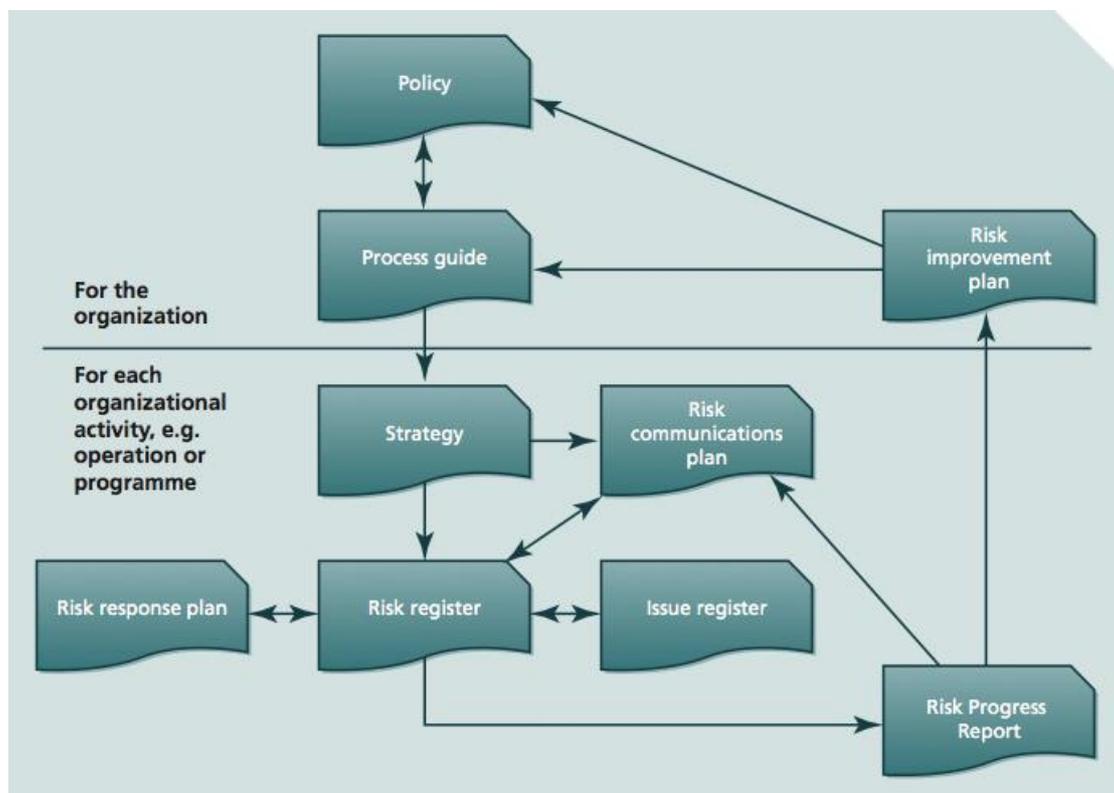


Figure 2-3: Relationship between documents. Source: OGC, 2010.

### 2.2.2.1 Risk Management Policy

The purpose of the risk management policy is to communicate how and why risk management is implemented throughout the organisation in order to support the realisation of its objectives. The policy should be clear about the organisations overall risk- capacity, appetite and tolerance levels. The policy should also describe the format, timing and content of reports.

In order to keep an effective risk management, the risk management policy should be reviewed and updated at least annually and always after release of new guiding documents, such as new legislations, government guidance and internal control.

The policy normally includes the following sections (OGC, 2010):

- *Introduction*  
The introduction describes the purpose of the policy, and how it relates to the other policies in the organisation. It will name the owner of the policy, the principles, objectives and benefits of risk management, and compliance requirements. The policy should be clear and unambiguous, and advise that it should be read in conjunction with the Risk Management Process Guide and Risk Management Strategy.
- *Risk appetite and capacity*  
The policy will describe the organisations Risk Appetite and Capacity.
- *Risk tolerance thresholds*  
Describe the Risk Tolerance Threshold that represents the level of exposure that will trigger aggregation of risk when exceeded.
- *Procedure for escalation and delegation*  
This section describes the procedure for escalation and delegation of risks. A single risk or a group of risks are normally escalated to senior management when they exceed the predefined threshold. Similarly, it should be clear when a risk can be delegated to a lower level for action.
- *Roles and responsibilities*  
This section will describe accountabilities and responsibilities for managing risks, and the duties for specific roles in Risk Management.
- *Glossary of terms*  
The policy should provide a common risk management vocabulary to ensure unambiguous communication between all participants.
- *Risk Management process*  
The policy will cross-refer to the Risk Management Process Guide.
- *When risk management should be implemented*

The risk management policy should reflect on how and when risk management should be implemented.

- *Reporting*

This section will describe the purpose, structure, content and frequency of reports.

- *Budget*

This part will describe how the risk management will be supported across the organisation.

- *Annual review*

The organisation should at least annually review the risk management performance, and improve and update the Risk Management Policy and Framework, or when changes in circumstances require it.

### **2.2.2.2 Risk Management Process Guide**

The purpose of the Risk Management Process Guide is to describe the steps on how Risk Management shall be carried out in the organisation, the roles and responsibilities of the people involved, and the supporting tools and techniques for the Risk Management. The guide should be designed so that it is applicable for any activity in the organisation. (OGC, 2010).

As with the risk management policy, the process guide should be reviewed and updated annually and always after release of new guiding documents.

### **2.2.2.3 Risk Management Strategy**

The purpose of the risk management strategy is to describe the specific risk management activities that will be undertaken for a particular organisational activity. It would be typical to produce multiple strategies, one for each distinct organisational activity. The key guidance for strategies is that they should be specific for the activity, but also reflect the organisations risk management policy and process guide. (OGC, 2010).

The risk management strategy should outline the Risk Appetite for an activity, i.e. how much risk the organisation is willing to accept to achieve an objective. It should be established and implemented before any work starts for any activity.

### **2.2.2.4 Risk Register**

The purpose of the risk register is to collect and maintain information about all the identified threats and opportunities for a specific organisational activity. The register should, at any point in time, be able to provide a snapshot of:

- All the identified risks for the activity
- The priority of these risks
- Risk owners
- Risk owners response strategies
- When and why a risk is closed

#### **2.2.2.5 Issue Register**

The purpose of the issue register is to capture and maintain information regarding identified issues that require action. Issues can be identified risks that has occurred, but not yet managed. Raised issues could also be a source for new risks that needs to be identified and handled. Issues can be problems, benefits or situations such as queries and change requests that have happened, which should be managed to limit the effect of a problem, maximise benefit or to answer requests. (OGC, 2010).

#### **2.2.2.6 Risk Improvement Plan**

The purpose of the risk improvement plan is to assist the implementation of risk management into the organisational culture and to document planned improvements. This provides a record of the maturity level of the risk management organisation, and what, when and how the organisation will implement improvements. (OGC, 2010).

#### **2.2.2.7 Risk Communication Plan**

The purpose of the risk communication plan is to describe how information will be shared between all relevant stakeholders for any particular organisational activity, in order to achieve an effective two-way communication. Effective communication between the stakeholders is a critical success factor for risk management. It ensures that context is understood, risks are identified and assessed, and responses planned and owned. (OGC, 2010).

#### **2.2.2.8 Risk Response Plan**

The risk response plan, when used, is linked to the risk response field of the risk register. The purpose of the plan is to detail specific plans for responding to significant and resource-intensive responses. (OGC, 2010).

#### **2.2.2.9 Risk Progress Report**

The purpose of the risk progress report is to provide regular progress reports to management on risk management. The report will evaluate the progress of planned responses and effect of these. Performance on measurable activities should be reported to demonstrate Risk Management value to the organisation. (OGC, 2010).

### 2.2.3 THE RISK MANAGEMENT PROCESS

Risk Management is basically structured common sense. In its simplest form, it can be expressed through an example: When someone is undertaking something important or risky, a couple of questions are likely to show up (Hillson, D. 2009):

- *What are we trying to achieve?*
- *What could affect achieving this?*
- *Which of those things are most important?*
- *What shall we do about them?*
- *Who needs to know about them?*
- *Having taken action, what has changed?*
- *What did we learn?*

These questions capture the most basic steps in the Risk Management process. A more formal presentation is shown in Table 2-3.

INFORMAL PROCESS STEP	FORMAL PROCESS STEP	PURPOSE
Getting started [What are we trying to achieve?]	Risk Process Initiation	To define the scope, objectives and practical parameters of the project risk management process.
Finding risks [What could affect us achieving this?]	Risk Identification	To identify all currently knowable risks, including both individual risks and sources of overall project risk.
Setting priorities [Which of those things are most important?]	Qualitative Risk Assessment	To evaluate key characteristics of individual risks enabling them to be prioritised for further action, and recognising patterns of risk exposure.
	Quantitative Risk Analysis	To evaluate the combined effect of risks on the project outcome and assess overall project risk exposure.
Deciding what to do [What shall we do about them]	Risk Response Planning	To determine appropriate response strategies and actions for each individual risk and for overall project risk.
Taking action [Do it!]	Risk Response Implementation	To implement agreed actions, determine whether they are working, and identify and resultant secondary risks.
Telling others [Who needs to know about them?]	Risk Communication	To inform project stakeholders about the current level of risk exposure and its implications for project success, including both individual risks and overall project risks, as appropriate.
Keeping up to date [Having taken action, what has changed?]	Risk Review	To review changes in identified risks and overall project risk exposure, identify additional actions as required, and assess the effectiveness of the project risk management process.
Capturing lessons [What did we learn?]	Post-Project Review	To identify risk-related lessons to be learned for future projects.

**Table 2-3: Informal and formal risk process steps. Source: Hillson, D. (2009)**

The steps in Table 2-3 are covered by various processes steps in the different risk standards as seen in Table 2-4. David Hillson (2009) presents the Risk Management Process in a way that covers each of the current standards, and will be presented on a high-level the following.

Informal process step	Formal process step	PMI PMBOK® Project Management Body Of Knowledge 5 <sup>th</sup> edition	ISO31000:2009 Risk management – Principles and Guidelines	OGC Management of Risk (M_o_R®)	
Getting started	Risk Process Initiation	Plan Risk Management	Establish the Context	Identify Context	
Finding risks	Risk Identification	Identify Risks	Risk Identification	Identify Risks	
Setting priorities	Qualitative Risk Assessment Quantitative Risk Analysis	Perform Qualitative Risk Analysis Perform Qualitative Risk Analysis	Risk Analysis Risk Evaluation	Assess	
Deciding what to do	Risk Response Planning	Plan Risk Responses	Risk Treatment	Plan	
Take action	Risk Response Implementation	Control Risks		Communication and Consultation	Implement
Telling others	Risk Communication		Monitoring and Review	Communicate	
Keeping up to date	Risk Review				Embed and Review
Capturing lessons	Post-Project Review				-

**Table 2-4: Mapping generic risk process to risk standards. Sources: Hillson, D. (2009), PMBOK (2013).**

### 2.2.3.1 Risk Process Initiation

Before the work of identifying risks, it is advised to establish the context. As risk is defined in terms of objectives, these objectives must be identified.

Recommended techniques to identify the context are (OGC; 2010):

- Stakeholder analysis
- PESTLE analysis (Political, Economic, Sociological, Technological, Legal and Environmental)
- SWOT analysis (Strengths, Weaknesses, Opportunities and Threats)
- Horizon scanning

The Stakeholder analysis will identify the Risk Tolerances of the key Stakeholders and this should be used to set the Risk Threshold. Examples of risk thresholds might include the following (Hillson, D. 2009):

- Schedule. Is there any flexibility in the final delivery date?
- Budget. How much over- and under-spending is allowed before higher level management must be notified?
- Performance. Is performance variation permitted? How much variation is acceptable?

When the Risk Threshold is identified, it can be used to define the scales in the qualitative risk assessment step of probability and impact on project objectives.

A last component of the Risk Process Initiation step is to define the potential sources of risk. These sources can be presented in a Risk Breakdown Structure (RBS), as seen in Table 2-5, and can serve as a checklist in the Risk Identification step.

RBS Level 0	RBS Level 1	RBS Level 2
0. ALL RISKS	1. TECHNICAL RISK	1.1 Scope definition
		1.2 Requirements definition
		1.3 Estimates, assumptions & constraints
		1.4 Technical processes
		1.5 Technology
		1.6 Technical interfaces
		1.7 Design
		1.8 Performance
		1.9 Reliability & maintainability
		1.10 Safety
		1.11 Security
		1.12 Test & acceptance
	2. MANAGEMENT RISK	2.1 Project management
		2.2 Programme/portfolio management
		2.3 Operations management
		2.4 Organisation
		2.5 Resourcing
		2.6 Communication
		2.7 Information
		2.8 Health, Safety & Environmental (HSE)
		2.9 Quality
		2.10 Reputation
3. COMMERCIAL RISK	3.1 Contractual terms & conditions	
	3.2 Internal procurement	
	3.3 Suppliers & vendors	
	3.4 Subcontracts	
	3.5 Client/customer stability	
	3.6 Partnerships & joint ventures	
4. EXTERNAL RISK	4.1 Legislation	
	4.2 Exchange rates	
	4.3 Site/facilities	
	4.4 Environmental/weather	
	4.5 Competition	
	4.6 Regulatory	
	4.7 Political	
	4.8 Country	
	4.9 Social/demographic	
	4.10 Pressure groups	
	4.11 Force majeure	

Table 2-5: Example Risk Breakdown Structure (RBS). Source Hillson, D. (2009)

The key output of the initial step is a clear definition of the scope of risk process, and is documented in the Risk Management Plan.

### 2.2.3.2 Risk identification

A risk must first be identified in order to manage it. The goal is to identify all the threats and opportunities for project objectives, in order to manage risks in the best possible way. There are many available techniques for risk identification, and some common techniques are:

- Brainstorming
- Checklists or prompt lists,
- Detailed analysis of project assumptions and constraints
- Interviews with key stakeholders
- Review of completed similar projects

The quality of the risk identification step is highly dependent on the involvement of the right people with the necessary perspective and experience. To further increase the quality of the risk identification, more than one technique should be used. The project manager should select appropriate techniques based on the undertaken project.

It is a common mistake in the risk identification step to identify causes or consequences of a risk, as the risk. This can obscure the genuine risk, which may not get the appropriate attention it deserves. One way to clearly separate risks from its causes and consequences is to use a three-part structured “risk statement”, as follows: *“As a result of <define cause>, <uncertain event> may occur, which would lead to <effect on objective(s)>”* (Hillson, D. 2009)

When a risk has been identified, it should be allocated to a risk owner who is responsible for managing the risk. All identified risks shall have a risk owner and be registered in the risk register. The typical data held in the Risk Register is listed in Table 2-6.

PROJECT DATA	Project Reference Number, Project title Project Manager Client
RISK DATA	Unique risk identifier Risk type (threat or opportunity) RBS reference (source of risk) WBS reference (are affected by risk) Risk title Risk description (cause-risk-effect) Risk status Risk owner Data risk raised
ASSESSMENT DATA	Probability of occurrence – rating Impacts against objectives – rating & description Related risks
RESPONSE DATA	Preferred response strategy Actions to implement strategy Action owners Action planned start and completion dated Action status Secondary risks Trigger conditions Review date Data risk closed/deleted/expired/occurred

Table 2-6: Typical Risk Register Data. Source: Hillson, D. (2009)

### 2.2.3.3 Qualitative risk assessment

The purpose of the Qualitative Risk Assessment is to prioritise the identified risks in order to find the worst threats and best opportunities. This way the organisation can allocate, the often limited, time and resources in the best possible way. The assessment uses the two-dimensional Probability-Impact Matrix (the Risk Matrix), defined by the Risk Management Plan, to score risks. The first dimension expresses the probability or likelihood of a given event to occur, whilst the second dimension expresses the impact, or effect, on objectives. It is normal to use “traffic light” labelling in the matrix, with “low (green)”, “medium (yellow)” and “high (red)” priority zones. As this is a rather coarse classification, a more detailed prioritization can be achieved by using higher resolution (for example scoring from 1 to 9).

There are other valuable characteristics by a risk that can be identified and used in the prioritization. Characteristics such as (Hillson, D. 2009):

- Manageability: To what degree the risk can be managed.
- Propinquity: The potential to affect the wider organization.
- Proximity: How soon the risk might occur.
- Urgency: The time window for when actions are possible.

The outputs of the Qualitative Risk Assessment for each risk are documented in the Risk Register.

### 2.2.3.4 Quantitative Risk Analysis

While the Qualitative Risk Assessment is a good tool to analyse individual risks, the Quantitative Risk Analysis analyse the combined effect of the risks in the project. This is often the only accurate assessment of the overall risk exposure in the project, and should be performed where necessary. (Hillson, D. 2009):

Two popular techniques for Quantitative Risk Analysis are the Monte Carlo Simulation and the use of decision trees.

### 2.2.3.5 Risk Response Planning

After a risk has been identified and analysed, it is time to find a suitable response in order to manage it. It is normally the responsibility of the Risk Owner to choose one of the seven risk response strategies available (Hillson, D. 2009):

- *Avoid/Exploit.* The aim for a threat is to eliminate the risk, by either making it impossible to occur or make it irrelevant. For an opportunity, the aim is to make it occur and ensuring that the project taking full advantage.
- *Transfer/Share.* These strategies involve another party to manage the risk. Threats can be transferred along with the responsibility of managing the potential downside. Opportunities can be shared, if the other party takes responsibility for managing it.

- *Reduce/Enhance.* Likelihood and/or impact of a threat can be reduced, while the likelihood and/or impact of opportunities are enhanced.
- *Accept.* The risk (threat or opportunity) can be accepted where a proactive action is not possible or not cost-effective. There will be taken no actions unless the risk occurs.

The choice of response strategy should match the importance of the risk. Resources are normally limited and the most aggressive responses (such as the avoid/exploit strategies) should be prioritised to the risks with the highest priority if possible. The findings in the Qualitative Risk Assessment should affect the choice of response in addition to available resources, cost-effectiveness, risk-effectiveness and possible introduction of secondary risks. Risk-effectiveness expresses to what degree the possibility and/or impact can be modified, while cost-effectiveness expresses the likely cost of addressing the risk compared its possible impact. (Hillson, D. 2009):

When a risk response strategy has been chosen and registered in the Risk Register, it must be realised through actions in order to affect the Risk Exposure.

#### **2.2.3.6 Risk Response Implementation**

Risk Responses should be treated as any other project task and be realised through defined actions, which should be assigned to an action owner with the necessary means to carry out the actions. The responses should be evaluated against desired effect and any secondary risks, arising from the response, should be identified and controlled. (Hillson, D. 2009):

#### **2.2.3.7 Risk Communication**

The Risk Communication step involves producing customised reports to stakeholders. The aim is to communicate the relevant results from the risk process to the appropriate stakeholder. Some stakeholders require a high-level summary of the overall risk exposure, while others might require in-depth detailed information about individual risks. (Hillson, D. 2009):

The Risk Communication step should be a planned process, so that each stakeholder receives specific and accurate risk information in a timely manner.

#### **2.2.3.8 Risk Review**

Risk management is a cyclic iterative process which should be reviewed on a regular basis throughout the project lifespan. The purposes of the Risk Review step are to ensure that the planned responses and actions are achieving the desired results, develop new responses where necessary, identify possible new risks, and to assess the overall risk management process. (Hillson, D. 2009):

### 2.2.3.9 Post-project Review

The project organisation should take the time to capture lessons learned after the completion of a project, so that this can aid future similar projects. The Post-project Review should answer questions such as (Hillson, D. 2009):

- *What were the main risks identified on this project (both threats and opportunities)? Do any of these represent generic risks that might affect similar projects in the future?*
- *Which foreseeable threats actually occurred, and why? Which identified opportunities that could have been captured were missed, and why?*
- *Which issues or problems occurred that should have been foreseen as threats? Which unplanned benefits arose that should have been identified as opportunities?*
- *What preventative actions could have been taken to minimise or avoid threats? What proactive actions could have been taken to maximise or exploit opportunities?*
- *Which responses were effective in managing risks, and which were ineffective?*
- *How much effort was spent on the risk process, both to execute the process, and to implement responses?*
- *Can any specific benefits be attributed to the risk process, for example, reduced project duration or cost, increased business benefits or client satisfaction and so on?*

Addressing these questions and include this information in future projects, will help increase the organisations learning and knowledge.

## 2.3 FRAME AGREEMENT AND CONTRACT TYPES

### 2.3.1 FRAME AGREEMENT

A frame agreement is a:

*“General term for agreements with providers that set out terms and conditions under which specific purchases (call-offs) can be made throughout the term of the agreement.” (OGC, 2008)*

The Frame Agreement is a form of collaborating agreement that involves the establishment of a common protocol and a set of standards terms. It forms the basis for subsequent work for a given period of time.

### 2.3.2 CONTRACT TYPES

The Frame Agreement uses the following contract types:

- Target Cost
- Reimbursable
- Lump Sum

The old frame agreement was mainly based on reimbursable contracts, while the new Frame Agreement is mainly based on target cost contracts.

### 3 METHOD

*This chapter explains the method used in this thesis, which is a Survey within a case study.*

#### 3.1 RESEARCH METHOD

This thesis used multiple methods, with a survey within a single case study to test the stated hypothesis.

Figure 3-1 shows that case studies are suitable to use when “how” or “why” questions are raised, and surveys are suitable for “who”, “what”, “where”, “how many” or “how much” questions. The combination of these two methods will cover the areas of interest in this report.

METHOD	(1) Form of Research Question	(2) Requires Control of Behavioral Events?	(3) Focuses on Contemporary Events?
Experiment	how, why?	yes	yes
Survey	who, what, where, how many, how much?	no	yes
Archival Analysis	who, what, where, how many, how much?	no	yes/no
History	how, why?	no	no
Case Study	how, why?	no	yes

Figure 3-1: Relevant Situations for Different Research Methods. Source: Yin, R. (2009)

The case study is preferred in examining contemporary events and when relevant behaviours cannot be manipulated, such as Company’s risk management in the Frame Agreement. It is possible to do direct observation of the events being studied, and interviews of the persons involved with the events. The unique strength of the case study is its ability to deal with a full variety of evidence, such as documents, interviews, and observations. (Yin, K. 2009)

Robert K. Yin (2009) presents a twofold definition of case study;

1. A case study is an empirical inquiry that
  - Investigates a contemporary phenomenon in depth and within its real-life context, especially when

- The boundaries between phenomenon and context are not clearly evident.
2. The case study inquiry
    - Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
    - Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result

In other words, a case study is a rich in-depth investigation, using multiple sources of evidence of a single entity.

## **3.2 RESEARCH DESIGN**

“The research design is the logic that links the data to be collected to the initial question of study.” (Yin, K. 2009)

The objective with this study is to determine whether the risk management system for the Frame Agreement is well implemented or not. In order to check this, a survey among project managers in the Frame Agreement was performed.

The survey among project managers, along with open interviews with central persons in the management team, is the primary data to answer. Secondary data mainly consist of corporate documentation.

## **3.3 THE CASE**

The case in this study is the Company’s risk management in one of the Frame Agreements. This single case study is a representative or typical case, where the “case” being the organisation surrounding the Frame Agreement. It is a so-called embedded case study design, where it will have several units of analysis. Main source of data will be from project management. Data gathered from Portfolio staff will be part of the analysis, as well as Company’s management documents.

The survey will go out to all the project managers in the Frame Agreement, and given response from everyone, it is possible to interpret a result for the Frame Agreement. The results in the case study will not provide the basis for conclude anything for the whole Company, but can give an indication on further work.

In this survey, the questions are risk based and is aimed for the project managers in the Frame Agreement, and is therefore considered as highly relevant for testing the hypothesis.

## **3.4 THE QuestBack SURVEY**

QuestBack is a company that offers a software application that helps you design and carry out your own surveys online. The program is very flexible and easy to use.

The questions for the QuestBack Survey were based on the Table 3-1. The content of the table is drawn up by the investigator and the Company Risk Manager, with the purpose of identifying the different areas of risk management. The survey questions were designed with the aim of covering the five sub-criteria, defined in chapter 1.3:

- Corporate documents
- Application of corporate documents
- Software and tools
- Competence and training
- Overall implementation

The final survey questions can be found in Appendix 1.

Organisation:	Framework:	Approach:	Staff:
<ul style="list-style-type: none"> <li>- Structure</li> <li>- Roles</li> <li>- Mandates</li> <li>- Meeting-points</li> <li>- Expectations</li> <li>- Accountability</li> <li>- Authority</li> <li>- Communication</li> <li>- Risk Culture</li> <li>- Support</li> <li>- Risk follow-up / Risk Review</li> <li>- Resources (People, Time, Money)</li> <li>- Management involvement</li> </ul>	<ul style="list-style-type: none"> <li>- Clear and unambiguous RM structure</li> <li>- Policy</li> <li>- Goals</li> <li>- Procedures</li> <li>- Strategies</li> <li>- Acceptance Criteria</li> <li>- Risk Appetite</li> <li>- Risk Capacity</li> <li>- Work process</li> <li>- Learning (Post-project review)</li> </ul>	<ul style="list-style-type: none"> <li>- Tools</li> <li>- Methods</li> </ul>	<ul style="list-style-type: none"> <li>- Educational Background</li> <li>- Competence</li> <li>- Experience</li> <li>- Understanding</li> <li>- Utility Value</li> <li>- Training</li> <li>- Risk Attitude<sup>1</sup></li> <li>- Risk Perspective</li> <li>- Time (to practice RM)</li> <li>- Ability to practice RM</li> </ul>

Table 3-1: Success criteria for risk management

### 3.5 VALIDITY

The survey questions are risk based and is aimed for the project managers in the Frame Agreement, and is therefore considered as highly relevant for testing the hypothesis.

### 3.6 RELIABILITY

When it comes to consider how reliable the method for gathering the data is, there are many elements that can affect the objectivity of the results. Element

<sup>1</sup> Defined as «A chosen response to uncertainty that matters, influenced by perception» (Hillson, D. 2009)

such as misunderstanding the questions, misinterpretation of the answer and re-writing answers can lead to reduced reliability.

Since the method used is qualitative, the investigator must make an interpretation of the collected data, which may therefore be subject for subjective influence. The writer's first impression is that the Company may be in lack of a common risk perspective.

### **3.6.1 Review of choice of method**

Some questions in the survey are quite subjective, making them open for a wide interpretation.

When it comes to collecting data, there are several factors that can bias the results.

- The writer was not under contract/employment for the Company while the thesis was undertaken.
- The writer had not met any of the project managers prior to the survey.
- The person of interest can be affected by the fact that she/he is interviewed. (Forskningseffekten s.207 i (Dalland, O. 2012))

## **4 THE COMPANY**

*This chapter gives a review of the Company, Frame Agreement and the Management System.*

### **4.1 REVIEW OF THE COMPANY**

The Company is a leading service company that works within the oil, gas and renewable energy sectors, and provide engineering, construction, upgrading and maintenance solutions.

### **4.2 THE FRAME AGREEMENT**

#### **4.2.1 THE ORGANISATION**

The organisation of the Framework Agreement consists of a project director at the top, with four business units, each with its product group. One business unit consists of study managers that prepare upcoming projects. The other units consist of project managers. The business units are supported by several resource units, such as engineering, procurement and project control.

#### **4.2.2 THE ESTABLISHMENT OF THE FRAME AGREEMENT**

Before the Frame Agreement (FA) was entered into, it had passed the Company's tender process. One of the tender process steps is the review and approval from the Risk Review Committee (RRC). The RRC considers all risks for the FA, and the outcome of this internal approval process is a set of terms that the FA needs to satisfy in order to be approved. Once the tender process is completed, the Project Team will receive access to the register with identified risks from the tender process.

The new Frame Agreement has a different payment structure than the old one. In the old framework agreement were primarily all projects reimbursable. Now projects are mainly given as target cost contracts.

#### **4.2.3 CHALLENGES OF THE FRAME AGREEMENT**

The new Frame Agreement involves a number of challenges, such as changing the culture to ensure that the new terms are implemented. It is the same people that were in the old contract (including the debtor) who work under the new. There is a challenge to avoid old processes being used which are not in line with the new terms.

One of the new terms in the Frame Agreement is that the Company is now responsible for the quality.

There is little economic exposure in the Frame Agreement. The financial exposure in the Framework Agreement is not particularly high. The majority of the projects are target cost contracts, where deviations from the budget is shared with the customer. This means that there will not be large surpluses, or losses. The risk lies in earnings, where the company is now responsible for the quality. Target cost contracts have very low margins, which cost rates that would have to be used, was cut after tough negotiations. When these rates were initially based on the full cost, it becomes difficult to achieve profit.

The guarantee liability is forwarded to the subcontractor. The Client has specified a number of pre-approved manufacturers, which shall be used in the Frame Agreement. This transfers some of the responsibility for the subcontractor to the Client.

### **4.3 COMPANY'S MANAGEMENT SYSTEM**

The Company has established a Management System (MS) that provides common work methods and standardised deliverables regardless of country, location or project. In addition, the MS describes the Company's values, its HSE responsibilities, ethics and compliance, quality in execution and management philosophy, outlining the expectations set for the Company as a whole, as well as those set for its employees and leaders in the organisation.

All governing document are available through MS and the work processes are described through the use of flow diagrams. The flow diagrams provide a good overview of the processes, and it is easy to see which activities are to be performed and the roles responsible for each activity. In addition, there are links to the necessary supplementary information such as work instructions and guidelines.

#### **4.3.1 COMPANY RISK MANAGEMENT POLICY:**

The Company does not have a dedicated risk management policy, but there is a QHSE (Quality, Health, Safety and Environment) policy statement. In it, they strive for exemplary performance in areas of quality, health, safety and environment, and addresses risk management through three sentences:

- Risks shall be managed on a corporate-wide basis;
- Risks comes in many forms, which all have a potential to have an impact on Company objectives, and;
- Risks are to be identified and controlled in a structured way.

#### **4.3.2 COMPANY BUSINESS RISK ANALYSIS MATRIX**

The risk analysis shall be based on the Company Business Risk Analysis Matrix shown in Figure 4-1. The matrix has predefined severity descriptions for HSE, performance impact, reputation and cost. The matrix is based on the ALARP-principle (As Low As Reasonable Practicable).

COMPANY BUSINESS RISK ANALYSIS MATRIX										
Description					Probability					
	Description	HSE	Performance Impact	Reputation	Cost	9-10 Very High	7-8 High	5-6 Medium	3-4 Low	1-2 Very Low
Severity	9-10 Very High	Incident leading to fatalities, major health risk or massive environmental impact	Unable to achieve Project performance specifications. New approach required to design construct/ operate.	Disastrous Extensive negative media coverage. Loss of reputation as a social responsible company. Loss of respect for employer and pride within the organisation.	60% of Maximum Contract exposure					
	7-8 High	Incident leading to serious personal injury with potential disablement. Very serious health risk or major environmental impact	Fail to meet work package performance specifications. Alternate approach required to design construct/ operate.	Significant Negative media coverage and attention from target groups. Company perceived as untrustworthy. Uncertainty and conflicts within the organisation.	30-60% of Maximum Contract exposure		1			
	5-6 Medium	Incident leading to serious personal injury, serious health risk or moderate environmental impact	Fail to meet system performance requirements. Churn rise to degraded performance for platform/ system operation.	Medium. Negative coverage in local media. Public noise and negative attention from important target groups.	10 - 30% of Maximum Contract exposure			2		
	3-4 Low	Incident leading to less serious personal injury with medical treatment, low health risk or minor environmental impact	Fail to meet maintainable item performance specification. Within acceptable performance margin for platform/ system operation.	Small. Could harm the company's reputation with customer, the industry and other target groups.	1-10% of Maximum Contract exposure				3	
	1-2 Very Low	Incident leading to personal injury with first aid treatment, low health risk or slight environmental impact	Fail to meet component performance specifications. No impact on platform/ system operations.	Insignificant. Very little impact on the company reputation.	< 1% of Maximum Contract exposure					
<b>Risk Ranking Code (RRC) and defined acceptance criteria</b>										
RRC 1	Risks related to personal injury <b>shall not</b> proceed									
RRC 2	Risks related to personal injury <b>should not</b> proceed unless no alternative risk reducing measures are available/ practicable to further reduce the risk. Require senior management authorisation to proceed.									
RRC 3	Acceptable risk level, but a review should be performed to see if risk could be reduced further									

Probability	Description	Probability values
Very High	Occurrence is almost inevitable during the project/ year	> 60%
High	Occurrence is probable during the project/ year	30-60%
Medium	Occurrence is possible during the project/ year	10-30%
Low	Occurrence is low but credible during the project/ year	1-10%
Very Low	Occurrence is not credible during the project/ year	< 1%

Maximum Contract Exposure is defined as 10% of the contract call-off value

\*The matrix is based on the ALARP-principle (As Low As Reasonably Practicable) - meaning that any risk identified in the yellow area is not acceptable unless there is a gross disparity between cost and expected benefit of the alternative risk reducing measures.\*

Figure 4-1: The Company Business Risk Analysis Matrix

### 4.3.3 RISK MANAGEMENT PROCESSES

The processes for risk management in the MS are presented as shown in Figure 4-2. The initial process is the establishment of the risk context followed by the identification of risk. After the process of identifying risks, follows the process of analyse, evaluate and treat the identified risks. The risk management process shall be continuous and traceable through all phases of a project. Each process is presented in detail in the following.

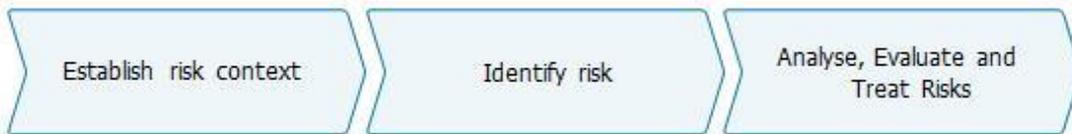


Figure 4-2: Company's Risk Management Processes

The first process “Establish risk context” comprises of the activities shown in Figure 4-3. The Project Manager is responsible for obtaining a Risk Database for the project, and schedule for brainstorming and regular risk meetings. The Project Management Team is responsible for defining the project’s level of criticality, regarding potential cost- and time effect. This includes establishing scores for probability and consequence in the Company Business Risk Analysis Matrix. When the Risk Database is in place and the Risk Criteria is identified, it is the responsibility of the Project Quality and Risk Manager (QRM) to add members and risk criteria in the Risk Database.

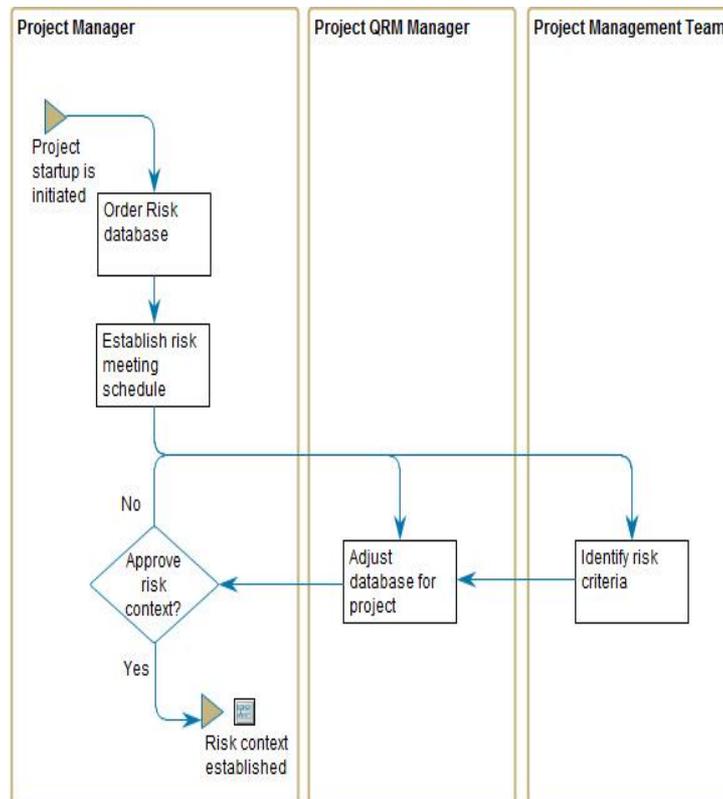


Figure 4-3: Workflow diagram for establishing risk context. Source: Company's Management System

After the risk context has been identified and approved, it is time for the next process, which is the “Identify Risk” process. This process is divided into four main activities as shown in Figure 4-4.

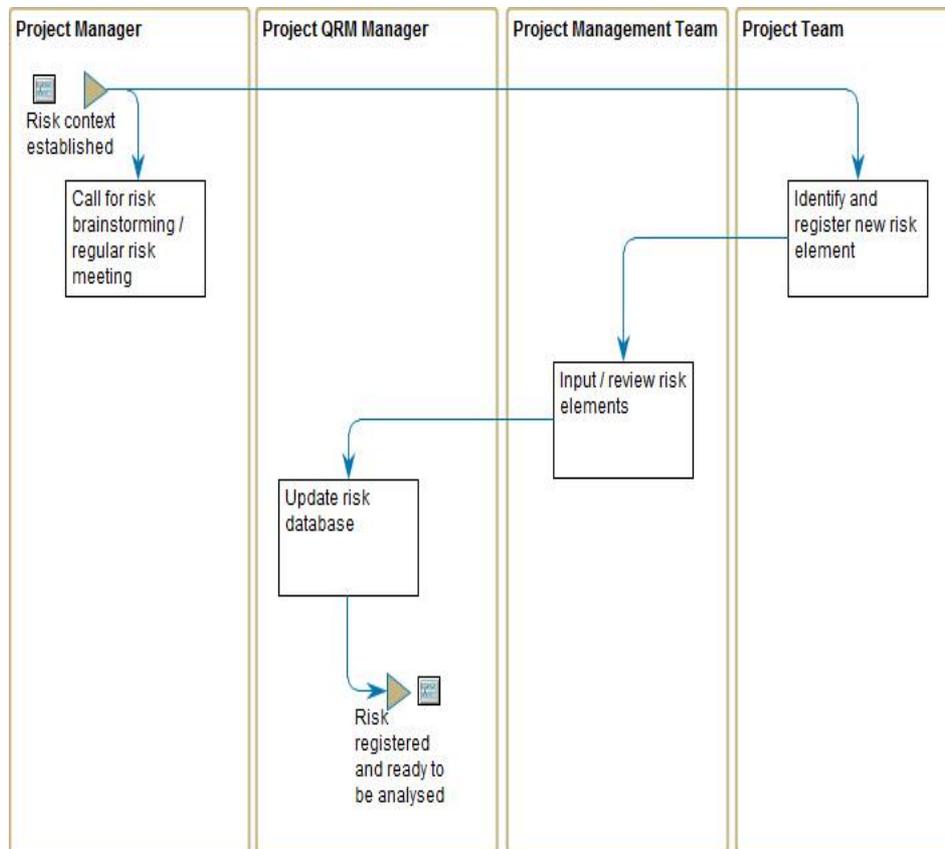


Figure 4-4: Workflow diagram for identifying risks. Source: Company’s Management System

The Risk Identification Process is initiated when the Project Manager calls for a risk brainstorming or a regular risk meeting. The attendees in a risk brainstorming should at least include: the QRM, Project Manager, Team Lead Engineer, and representatives from Plan, Cost and Procurement. It is recommended that a list of categories is used to trigger the identification of new risks. The goals of the brainstorming meeting are to identify risks, allocate responsibility for each risk, and to analyse the risks through the use of the Company Business Risk Analysis Matrix.

The Company has made a template for the risk identification that will ease the risk assessment. The template makes the participants explicitly describe the cause, event and effect of the identified risk, and which areas the risk will affect, such as cost, schedule, HSE, reputation, or quality. Probability of occurrence and consequence is stated, followed by a suggested mitigation/response. The last activity of the Risk Identification process is to update and register all identified risks in the Risk Register.

Once the risks have been registered in the Risk Register, the process of analysing, evaluating and treatment of risks can carried out, as shown in Figure 4-5. The likelihood and consequences of each risk must be evaluated and updated in the Risk Register. The Risk Owner is responsible for identifying mitigating actions and an Action Responsible for their risks, and to establish a plan for action execution and follow-up. The Action Responsible shall ensure that the recorded actions are executed and reported according to the plan. The status of the risk mitigation shall be up to date in the Risk Register, and the risk can be closed when there is no possibility of occurrence.

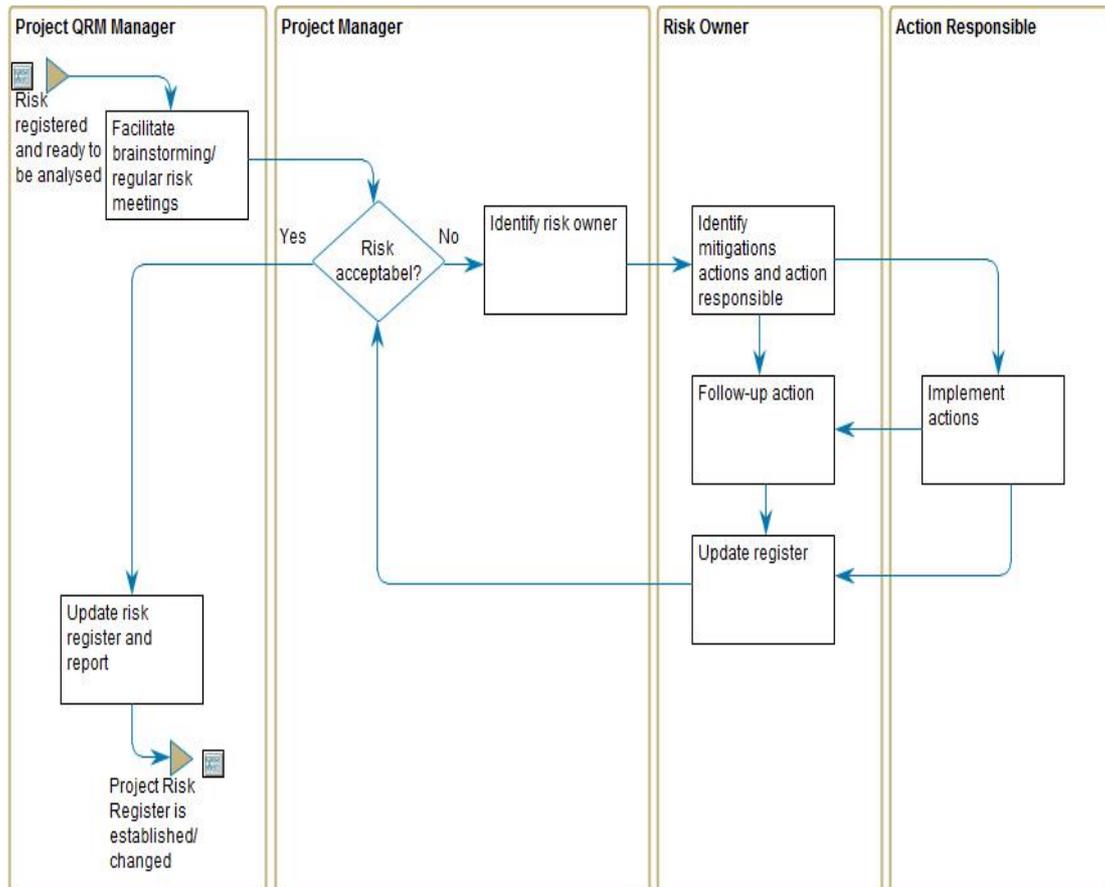


Figure 4-5: Workflow diagram for analysis, evaluation and treatment of risk. Source: Company's Management System

#### 4.3.4 RESPONSIBILITY AND AUTHORITY

The Project Organisation structure for the Frame Agreement (FA) is shown in Figure 4-2. Project Director at Level 3 is responsible for the management of the Frame Agreement. This includes the responsibility for arranging monthly internal and external risk meetings, and to evaluate if identified risks might affect the contract or the Business Unit (BU) at Level 2.



**Figure 4-6: Organisational structure for the Frame Agreement (FA).**

The Product Group Managers at Level 4 in the FA is responsible for managing the programs. They shall ensure the content and the continuous use of Risk Registers, encourage input from the project teams and arrange bi-weekly meetings with their Level 5 Project Managers.

The Level 5 Project Manager (PM) is responsible for managing the individual projects in the FA, and in the light of risk management they are responsible for arranging weekly risk meetings in all their projects. The PM shall ensure that risks are unambiguous and that the best qualified person is set as Risk Owner.

A study manager has the overall responsibility for the coordination and management of resources in the study phase of project implementation.

Any risk which the Project Team either cannot solve/mitigate by them self, or has a consequence beyond the project, should be lifted up to the next level in the organisation and marked as a Critical Item. The Critical Items are included in the bi-weekly and monthly meetings.

It is the responsibility of the Quality and Risk Manager (QRM) to establish and maintain the Risk Management System in the FA, as well as to produce and distribute custom weekly/monthly risk reports to the client and the different Company management levels. The QRM shall assist the risk meetings for Level 4 management, in addition to plan and implement risk training.

#### **4.3.5 COMPANY RISK DATABASE**

The company has its own risk database to be used in all projects. Each project gets its own database, which is within specified limits customized to the project.

An identified risk is assigned a unique number, and the ability to add risk and action responsible, project number and title, risk title, consequences, positive / negative, risk score, affected area, actions for each risk with status monitoring and reminder function.



## 5 RESULTS AND ANALYSIS

*The findings from the survey will be presented and analysed in this chapter.*

### 5.1 THE QuestBack SURVEY

The survey consists of a total of 52 questions and sub-questions, ranging from specific questions about their background to the opportunity to comment on given answers.

The survey received 16 responses out of the 20 invitations sent out. This gives a response rate of 80%, where five of the respondents used the given opportunity to answer anonymous.

Out of the 20 invitations, 15 were sent to Project Managers and five invitations were sent to study managers in the Frame Agreement. The study managers were included after request from the project director, and fall under the term Project Manager in this survey.

All survey questions, with response alternatives, can be found in Appendix 1 followed by the complete depersonalized response list with each respondent's answers.

Some of the responses are in Norwegian. The writer has translated these, where the original text follows in cursive parenthesis. The original response is included for mainly two reasons; to keep the original content and show that some of the respondents answered in Norwegian, even though the whole survey was in English. Two immediate reasons for answering in Norwegian can be that the respondent is not comfortable with the English language, and/or the respondent found it easier to formulate his or her answer in Norwegian.

When interpreting question responses containing scoring result from 1-6, for example score 1 (Disagree completely), and score of 6 (Completely agree), the following interpretation will be used:

Score 1 and 2 = the respondent disagrees with the statement.

Score 3 and 4 = the respondent partially agrees about the statement.

Score 5 and 6 = the respondent agrees with the statement.

Any Project Manager with 5 year experience or more is considered a senior Project Manager.

## 5.2 THE QuestBack RESULTS

The first five questions in the survey focused on the background of the Project Managers.

### Question 1: What is your educational background?

The first question was about their educational background. All respondents had technical background, but three chose not to answer this question. Nine of the Project Managers seems to have a Bachelor degree or similar, and four had a Master of Science.

### Question 2: How many years have you been a project manager?

Question 2 was about how long they had been project manager. The majority had at least 5 year experience, in which five Project Managers had over 10 year experience. Three Project Managers had between two and five years of experience, while four with less than two years of experience.

### Question 3: How many years have you been working in the Company?

Question 3 gave an overview of Project Managers seniority in the Company. Over 50% of the respondents had at least 5 years seniority in the Company, where four Project Managers had more than 10 years. Two Project Managers had between two and five years of seniority, two with between one and two years, while three Project Managers had less than one year of seniority in the Company.

The cross tabulation of Question 2 and Question 3 in Table 5-1 shows that the Company had, within the two last years, employed three project managers with at least five years of experience, and promoted three employees with more than 5 years of seniority in the Company to become Project Managers.

		3. How many years have you been working in the Company?					
			<1 year	1-2 years	2-5 years	5-10 years	10+ years
2. How many years have you been a Project Manager?		Total Number	Count	Count	Count	Count	Count
	<1 year	2	0	0	0	1	1
	1-2 years	2	1	0	0	1	0
	2-5 years	3	0	1	1	1	0
	5-10 years	4	1	0	1	1	1
	10+ years	5	1	1	0	1	2
<b># of Respondents</b>		16	3	2	2	5	4

Table 5-1: Cross tabulation of Project Manager's experience and seniority in the company

**Question 4: How many years have you been working within the Frame Agreement?**

The fourth question was about how long the various Project Managers had worked in the Frame Agreement (FA). Seven of the respondents have at least 5 years of seniority in the FA, while seven had 2 years or less.

**Question 5: What kind of projects do you undertake within the Frame Agreement?**

This question looks at the types of projects the Project Managers undertake, mainly in terms of value. This was a multiple selection question since Project Managers normally runs several projects in parallel. A review of each respondent in Appendix 1 shows that four of the respondents selected 3 kinds of projects, six selected 2 kinds of projects, and six selected one kind of projects. Table 5-2 shows the cross tabulation of experience of the Project Manager and the types of undertaken projects.

		2. How many years have you been a Project Manager?					
			<1 year	1-2 years	2-5 years	5-10 years	10+ years
5. What kind of projects do you undertake within the Frame Agreement?	Total number		Count	Count	Count	Count	Count
	Small (0-5M NOK)	2	0	0	2	0	0
	Medium (5-20M NOK)	10	2	1	3	2	2
	Large (20-100M+ NOK)	12	1	1	1	4	5
	FastTrack	6	0	0	2	1	3
	Other	0	0	0	0	0	0
# of Respondents	16	2	2	3	4	5	

Table 5-2: Cross tabulation of experience as Project Manager and undertaken projects (economical size)

### Question 6: How confident are you on Risk Management?

In order to investigate the individual Project Manager’s confidence on risk management principles and practice, they were asked to state their confidence on risk management. To this question, 1 is equivalent to “not confident at all” and 6 is equivalent to “very confident”. The scores are shown in Figure 5-1.



Figure 5-1: Project Managers confidence in risk management

One respondent implied not to be confident in risk management. Nine respondents implied that they were not that confident in risk management, whereas five gave a score of 3 and four gave a score of 4. Six answered they were confident in risk management. The cross tabulation of the experience of Project Managers and confidence in risk management are shown in Table 5-3, and can indicate a trend that the confidence increases with experience. The six respondents stating they were confident in risk management (score 5 and 6), were all senior Project Managers with at least 5 years of experience.

		2. How many years have you been a Project Manager?					
		Total count	<1 year	1-2 years	2-5 years	5-10 years	10+ years
6. How confident are you on Risk Management?	1 - Not confident at all	0	0	0	0	0	0
	2	1	0	1	0	0	0
	3	5	1	1	1	1	1
	4	4	1	0	2	1	0
	5	5	0	0	0	2	3
	6 - Very confident	1	0	0	0	0	1
# of Respondents		16	2	2	3	4	5

Table 5-3: Cross tabulation of the experience of Project Managers and confidence in Risk Management

One of the most experienced Project Managers gave a confidence score of 3. Closer examination shows that he or she had less than one year of seniority in the Company. The Project Manager further states in Question 29.3 that he or she had not received sufficient training in risk management. A closer examination of the respondent giving a confidence score of 2 shows that the Project Manager also had a seniority of less than one year, as well as receiving insufficient training.

### Question 7: With your own words, how would you define risk?

The Project Managers were asked in Question 7 to define the term "risk". Each respondent definition is listed in Table 5-4 below.

Question 7: With your own words, how would you define risk?	
1	Uncertainty that may affect plan, cost, SOW, quality, resources etc. ( <i>Usikkerhet som kan påvirke plan, kost, SOW, kvalitet, ressurser osv.</i> )
2	Technical, operational, economical, etc. areas of concern in a project that need management's attention. A "positive" risk is often called an opportunity. Risks are quantified based on probability x consequence.
3	It's when you have a risk for a failure in the project, like not meeting the time schedule, budget, quality or environmental demands. Or Health risk and injury.
4	A possibility to make wrong, regards safety, system design, design, installation with respect for safety, time-planning and costs.
5	A project risk means both threats to the project objectives and opportunities regarding those objectives.
6	The notion implies that a choice having an influence on the outcome sometimes exists (or existed). Potential losses themselves may also be called "risks". Any human endeavour carries some risk, but some are much more risky than others. I'll emphasise that registration of RISKS shall NOT cover for poor or bad planning
7	I define RISK as everything that can happen in a project, which can get consequences for cost and project execution. In addition all internal RISK that affects the business unit.
8	Defining uncertainties, potential problems. Describing actions, take measures in advance to avoid the problem.
9	Any possible challenges related to change i.e. Scope, Cost, Schedule or HMS issues.
10	A risk is a possible negative outcome of an unsolved problem/challenge. Risk can also have positive influence in a project.
11	Risk has the potential that a chosen action or activity will lead to a loss. An action results in a reaction.
12	Possible deviation from project HSE, plans and cost goals.
13	I define risk as uncertain elements that can affect projects in accordance to safety, economy and plan. ( <i>Risk definerer jeg som usikre elementer som kan påvirke prosjektene i ifh til sikkerhet, økonomi og plan.</i> )
14	Definition of risk is the 'effect of uncertainty on objectives'.
15	Something unwanted - incident or consequence - that has an unacceptable level of likeliness to occur.
16	A risk is an unclear factor that need attention and monitoring in the project, could be positive or negative (this is the short version).

Table 5-4: Respondents definition of "Risk"

All of the definitions are different, with varying content. Table 5-5 shows an overview of the different definitions of risk.

	Respondent number from Table 5-4	Total
Used “uncertainty”	1, 8, 13, 14	4
Explicitly or implicitly indicates opportunity	1, 2, 5, 7, 8, 10, 13, 14, 16	9
Only negative risks	3, 4, 11, 15,	4
Unclear definition	6, 9, 12,	3

**Table 5-5: Overview of respondents’ definition of Risk**

Four of the respondents state that a risk is only negative, whilst nine explicitly or implicitly indicates that a risk can also have positive impacts on project objectives. Three of the responses were unclear. Four respondents used the word “uncertainty” in their definition.

**Question 8: With your own words, describe the purpose of risk management.**

Question 8 wanted the Project Managers to state the purpose of risk management. The respondents were all able to express a fair understanding of the purpose of risk management, but they were all different, both in formulation and content. This was rather expected since the management documents do not present a definition of risk management.

**Question 9: Risk management and expectations**

Question 9 consists of three sub-questions on communicating expectations for risk management. Figure 5-2 shows the responses about the statements; from 9.1: Management to the Project Manager, 9.2: Project Manager to the Project Team, and 9.3: customer expectations.



Figure 5-2: Responses on statements regarding risk management and expectations

Eleven of the respondents agreed that management clearly communicate their expectation to the Project Manager, while four respondents indicate that they did not entirely agree with the statement. One of the respondents slightly disagreed with the statement. The overall impression of communicated expectations is good, but can be improved upon.

Eight Project Managers indicate that they are not communicating their expectations to the project team as clear as they could.

The internal communication of expectations is fairly good, indicating that members of the Frame Agreement, at all levels, are aware of the Company's expectations to risk management. With regards to expectations imposed by the Client, ten respondents indicated that customers' expectation were not clear and unambiguous, while six thought they were. This could indicate that Client representatives have different understanding and commitment to risk management, as requirements to reporting and successful implementation of risk management are clearly defined in the Frame Agreement.

**Question 10: Is the Management System clear and unambiguous about your role in risk management?**

13 respondents agreed that the Management System was clear and unambiguous, while 3 thought it was not. As the majority of the respondents agree with the statement, one could argue that the respondents disagreeing, either in not having received sufficient training, or they have higher expectations to the MS than the other Project Managers.

### Question 11: You are welcome to comment on your answers

Question 11 gave the respondents the opportunity to comment on any of the questions from 1 to 10. One of the respondents used the opportunity to state the following:

*"No common Risk system is implemented in the Company. We are using both the Clients Risk System for one Frame Agreement and the Company's Risk Database for this Frame Agreement. This meaning we don't have a common way to focus on Risk Management." [Depersonalized comment]*

This comment states that the Company has no common risk system, in which framework agreements apply various risk systems. This statement may not be correct, as the Company do have a common risk system that shall be used in all projects. Some customers require the use of their own risk system, but this shall be in addition to Company's Risk Database. It is unfortunate for the Company if a project only uses the costumer's risk database, as content and experience data in the database will be lost when the contract is terminated.

### Question 12: [Additional information]

Question 12 was not a question, but additional information for the respondent. It stated that "Risk Communication is about how risks and mitigations are shared within the project/contact."

### Question 13: Risk management and communication

The respondents were in question 13 asked to score eleven different statements regarding risk management and communication. The average scores of these statements are presented in Figure 5-3.

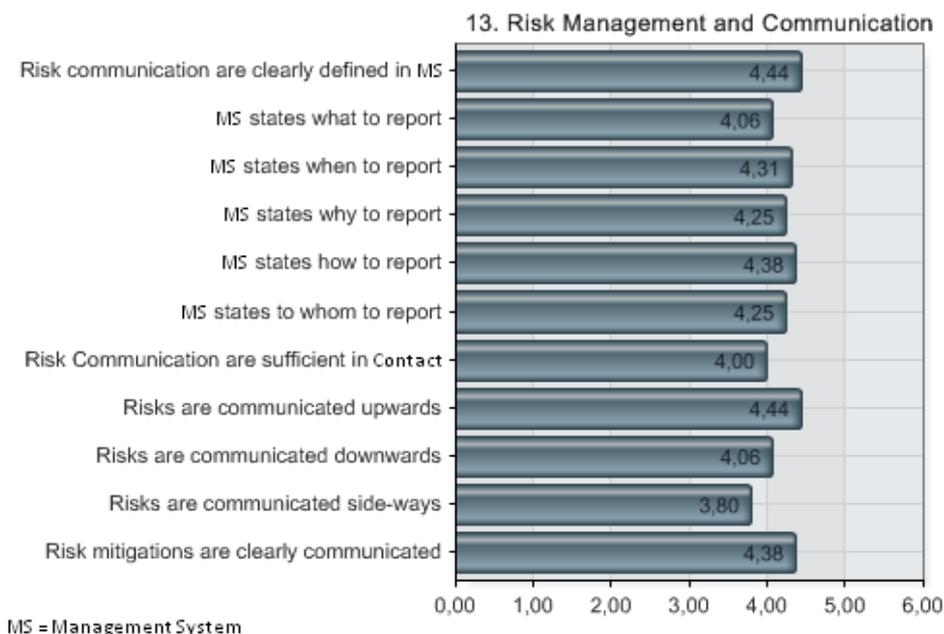


Figure 5-3: Average scores of responses regarding risk management and communication

The overall scores implies that the communication works, but should be improved upon. Sideways communication got the lowest average score, where only three respondents agreed that risks are communicated sideways.

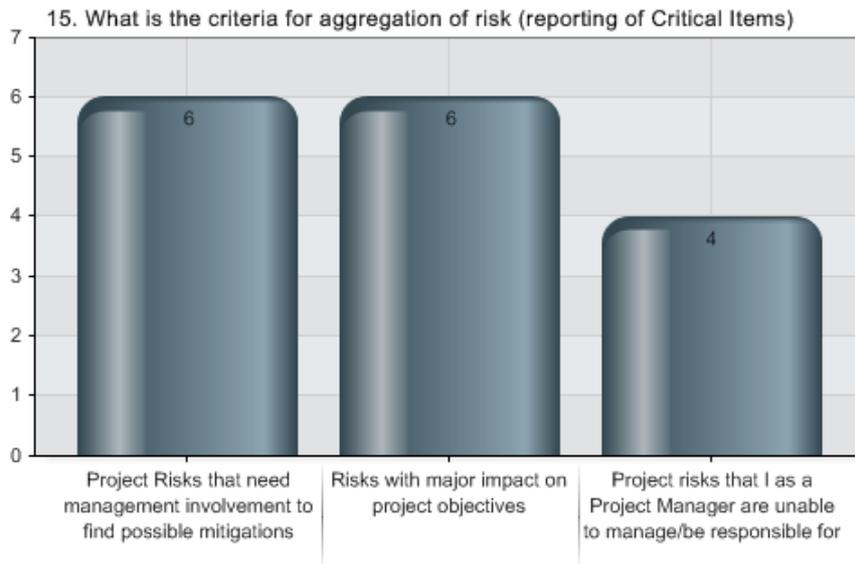
Three Project Managers gave a lower score than 3 on any of the sub-statements, where they all disagree that the risk communication in the FA is sufficient.

**Question 14: Are you familiar with the defined criteria for aggregation of risk (reporting Critical Items)?**

This question asked the respondent if they were familiar with the criteria for aggregation of risks, where twelve said “yes” and four said “no”.

**Question 15: What are the criteria for aggregation of risk (reporting Critical Items)?**

Question 15 asked them to select what they thought were the criteria for aggregation of risk. The results are shown in Figure 5-4.



**Figure 5-4: Respondents criteria for aggregation of risk**

The result reflects the observed established practice, where all “important” risks are marked as Critical Items in the Risk Register. The Quality and Risk Manager (QRM) in the Frame Agreement said that this use of Critical Items forced them to limit the use to only Level 4 managers. A review of Critical Items in the work instruction should be performed.

**Question 16: Who can be a project risk owner?**

This question asked the Project Managers who could be a project risk owner. Figure 5-5 shows that the majority stated that anyone within the Frame Agreement can be responsible for a risk, while three answered “any manager in the Company”. The work instruction is not clear enough on who shall be the risk owner, it only states that the best qualified person should be responsible for follow-up and mitigation of identified risks, leaving it open for interpretation.

The Company's Risk Manager states that the correct answer should be that only members of the project management team can be responsible for a risk in the project, which three of the respondents stated.



Figure 5-5: Respondents answers on who can be a Project Risk Owner.

**Question 18: Risk management and utility value (nytteverdi)**

Question 18 looks at Project Managers utility value of risk management. Figure 5-6 shows that most Project Managers clearly recognizes the value and importance of risk management in their projects.

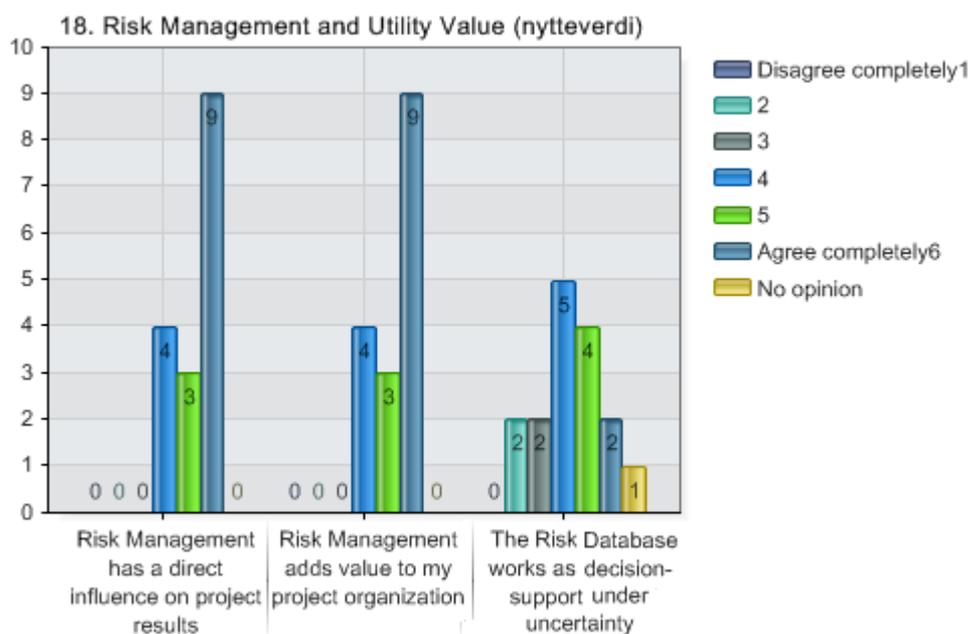


Figure 5-6: Respondents utility value of risk management

Not all the Project Managers use the Risk Database consistently as decision-support under uncertainty. One of the reasons for that may be due to the poor quality of the content of the Risk Database. The QRM said that the project team used the Risk Register as a reminder for actions, resulting in an unnecessary large number of registered risks that contribute to lowering the credibility of the Risk Database.

One on the respondents answered “no opinion” on the question regarding the Risk Database. What this

**Question 19: Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated?**

In Figure 5-7 is the results on what the Project Managers consider to be the biggest challenges in keeping the Risk Register updated. The Project Managers stated that time, and the competence and availability of the people using it, was most scarce in keeping the Risk Register updated. The quality of the Risk Register and the number of registered risk was also highlighted.

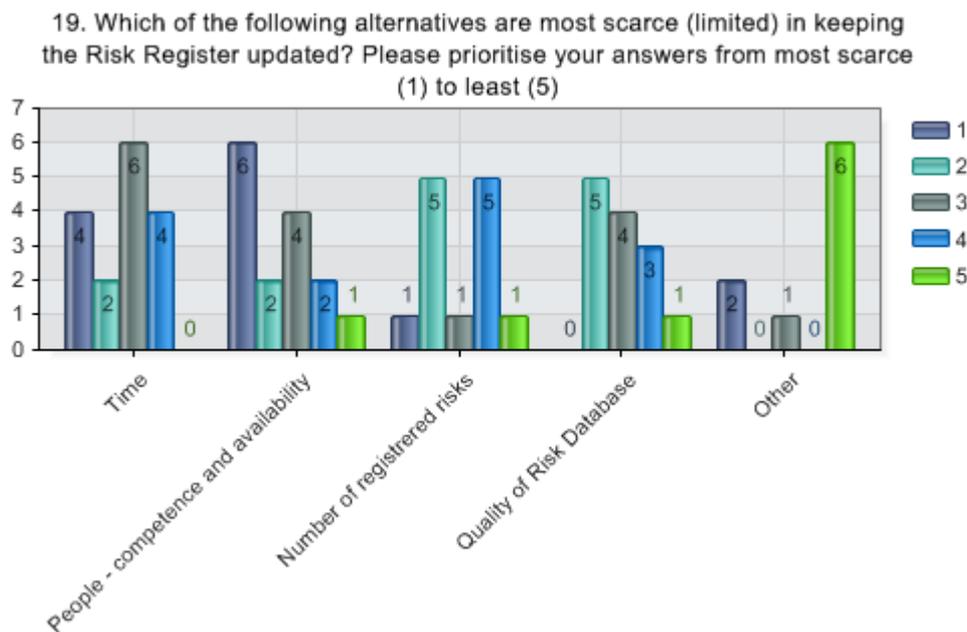


Figure 5-7: Respondents implied scarcity of resources to keep the Risk Register updated.

Three respondents gave “other” a prioritisation of 3 or higher, where two gave the highest prioritisation. It is unknown what this could be, as they did not comment on it in Question 20.

**Question 20: You are welcome to comment on your answers.**

Question 20 gave the respondents the opportunity to comment on questions 18 and 19, where two respondents question the use of the current Risk database and state the following:

*"After very good experience with using the Risk System PIMS, it is like going back more than 10 year when I have to start using the Company's Risk Database again." [Depersonalized]*

*"I do not know if there are any statistics on this issue. I believe that the inputs here depend a lot on individual experience. A quality assessment of Company's Risk Database should be performed."*

**Question 21: What are your main sources of risk management practice?**

The respondents were asked in Question 21 to state their main sources of risk management practice, and the responses are listed in Table 5-6.

Name	Count
The Management System	7
Company Risk Manager	4
Project Quality and Risk Manager (QRM)	6
PMBOK (Project Management Body Of Knowledge)	1
Other	6
Number of respondents that answered this question	16

**Table 5-6: Respondents main sources of risk management practice**

Considering the fact that it is the Management System (MS) containing the Company's processes, surprisingly few specified the use of it. Only seven of the respondents stated they use the MS as one of the main sources of risk management practice. Four said that they only relied on their own experience. Table 5-7 show the stated source(s) for each respondent, where each respondent has a unique number (from 1 to 16).

<b>Management system</b>	<b>1, 6, 8, 9, 10, 11, 15</b>
<b>Company Risk Manager</b>	<b>6, 9, 11, 14</b>
<b>Project Quality and Risk Manager (QRM)</b>	<b>1, 3, 7, 9, 11, 16</b>
<b>PMBOK®</b>	<b>12</b>
<b>Other</b>	<b>2, 4, 5, 7, 10, 13</b>

**Table 5-7: Main sources of risk management practice. Each respondent has a unique number, from 1 to 16.**

10 responses stated only one main source for use in risk management, 4 stated two sources, while 2 respondents stated three sources. The organisation should work towards getting the Project Managers to use at least two sources, whereas the MS should be one of them.

**Question 22: You checked off "other" in previous question. Please specify these sources.**

For those who selected "other" source(s) were asked to specify these. All stated either experience or own knowledge as a main source for risk management practice.

### Question 23: Guidelines in the Management System

Question 23 asked the Project Managers about the guidelines in the Management System (MS). Although the risk management work instruction do not specifically say anything about why risk management should be applied to the project, it is quite clear on role, responsibility and accountability. The results in Figure 5-8 then suggest that some of the Project Managers are not familiar with the content of the work instruction.

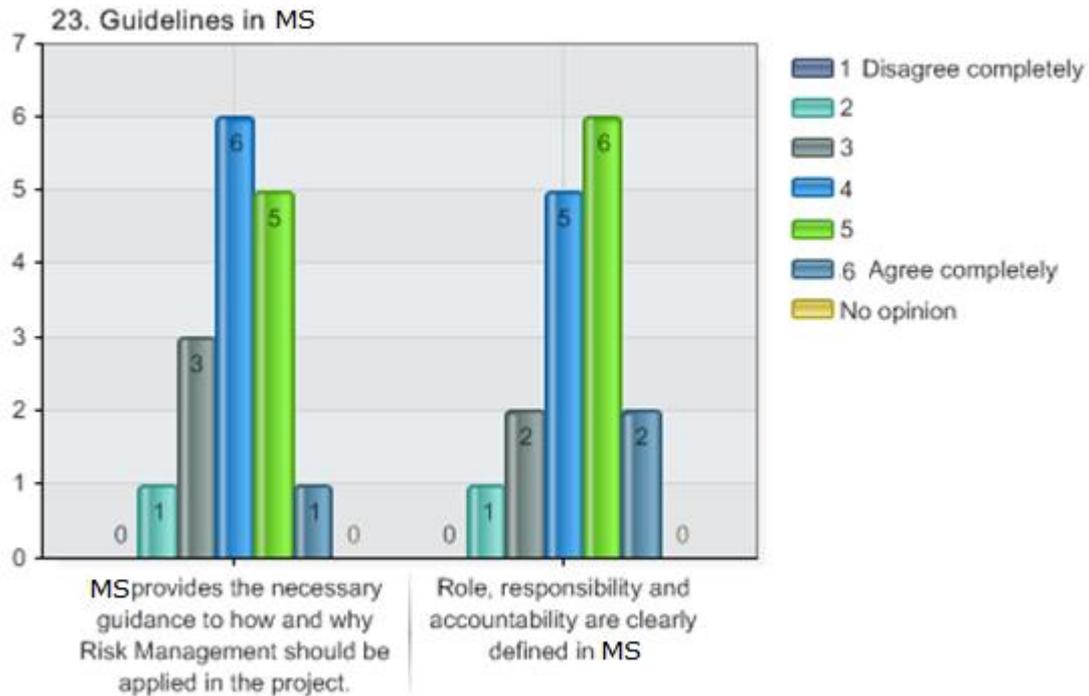


Figure 5-8: Respondents review of the Management System (MS)

### Question 24: Does the Company have a risk management policy?

This question asked the respondents if the Company had a risk management policy. Twelve project managers were convinced it existed, one said no, while three stated that they did not know. It is unclear why so many people have the perception that the policy exists. One explanation may be that they take it for granted that such a policy is in place, but the findings of the following question suggest otherwise.

### Question 25: Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?

This question asked what should be used in the evaluation of the probability and consequences in the Risk Register, and as many as six believed that the Company's risk management policy should be used.

The results from Question 25 are shown in Figure 5-9, where only four managed to identify the Company Business Risk Analysis Matrix (Risk Matrix). The work

instruction for risk management clearly state that the Risk Matrix shall be used to analyse identified risk.

Although the “Project defined Risk Acceptance Criteria (RAC)” and the “Risk Acceptance Criteria defined in contract” are both incorrect, they can still be interpreted more correctly than the use of the risk management policy. The RAC is used in the adaption of the Risk Matrix to the specific project.

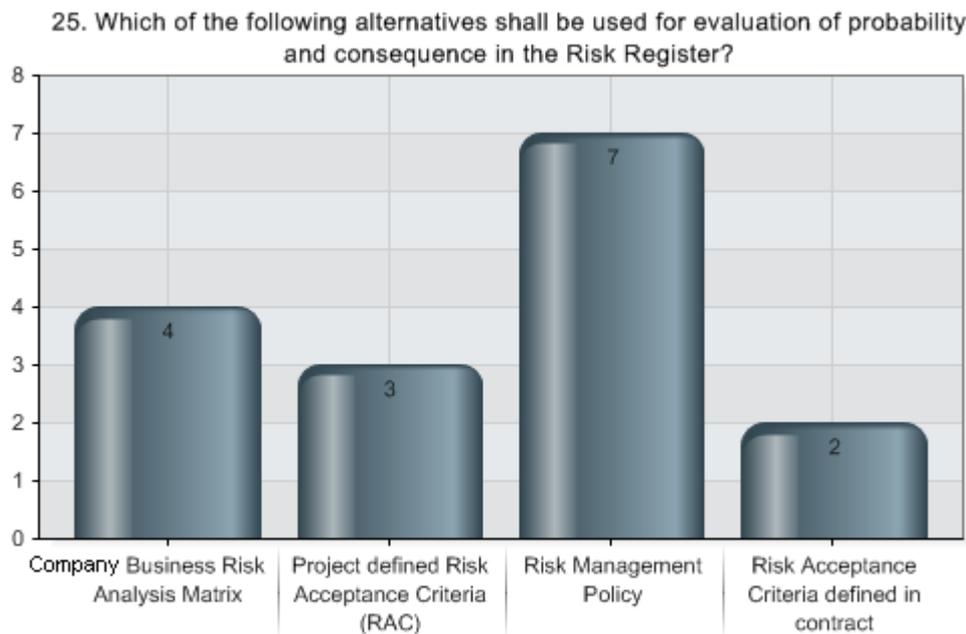


Figure 5-9: Respondents answers on what should be used for evaluation of probability and consequence in the Risk Register

### Question 26: You are welcome to comment on your answers

Question 26 gave the respondents the opportunity to comment on any of the questions from 21 to 25, where one respondent stated the following:

*"The main objectives are to identify the project risk elements and decide how to handle the risk. Which criteria and scale (1-5 or 1-10) used to evaluate the probability and consequences will depend on the "picture" you see it from and should not be the main focus in the risk process."*

The comment emphasises that the main focus should be on identifying and managing risks.

### Question 27: The Risk Database

The respondents rated five statements about Company's Risk Database in Question 27, which can be seen in Figure 5-10.

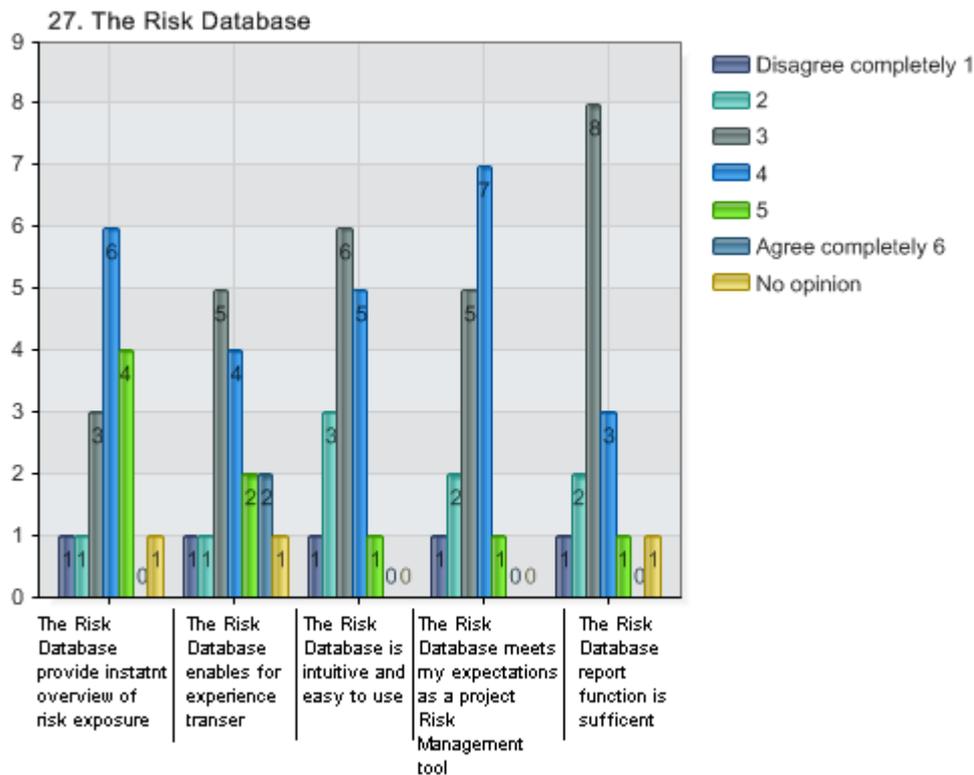


Figure 5-10: Respondents answers regarding the Risk Database

The results indicate that quality of the Risk Database is not satisfactory, in which they point out that it does not fully meet their expectations as a risk management tool and that it is cumbersome to use. The Risk Database does not have a function that provides an instant overview of the risk exposure. The database only enables the user to export all risks in a list, in which the user then must use it to make an overview of the risk exposure. The QRM emphasises that there is no function for experience transfer.

### Question 28: You are welcome to comment on your answers

The respondents could in Question 28 give comments on the use of the Risk Database, whereas three stated the following:

*"I have used Statoil PIMS earlier and see that as a better and more user friendly tool (more intuitive)"*

*"If the company means risk management is a focus area, we have to invest in and implement a proper risk management system, e.g. Statoil PIMS Risk Register."*

*"An evaluation of the company Risk Database quality should be done by comparing it with other databases. It could be more "user friendly"."*

The comments emphasises that the risk database is not user friendly, and implies that the Company should get a new and improved database.

**Question 29: Expectations and attitudes towards the current risk management in the Frame Agreement**

Question 29 asked the Project Managers to consider four statements about the current risk management in the Frame Agreement, with the results shown in Figure 5-11.

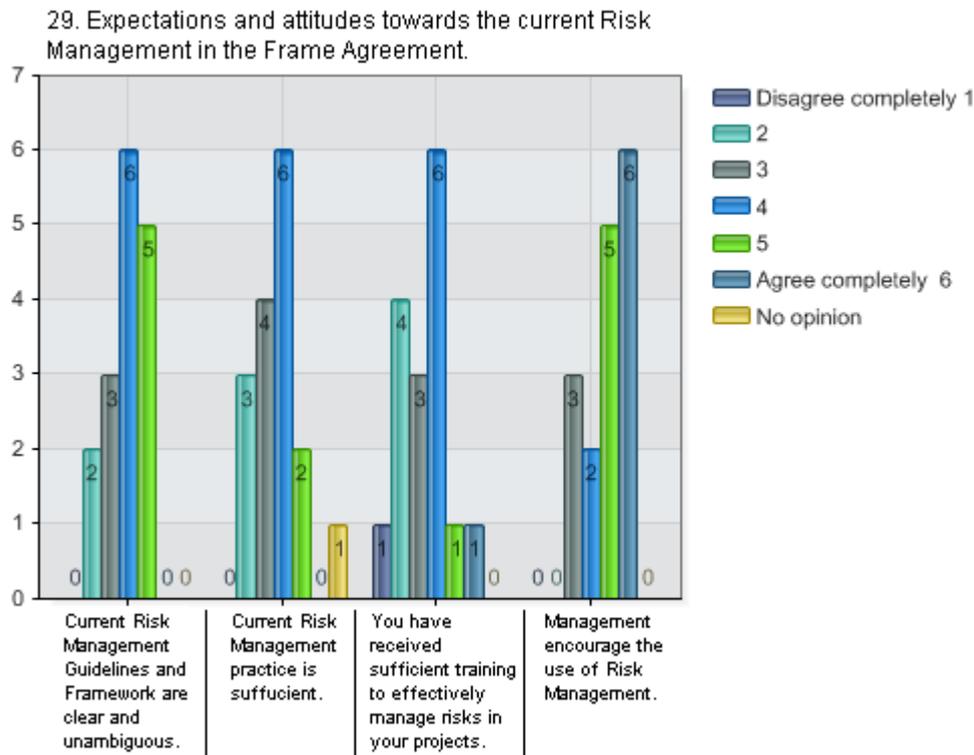


Figure 5-11: Responses about the current risk M\management

The Project Managers gave the current guidelines, framework and practice an overall medium score, indicating that risk management is present, but not sufficient. Management clearly encourage the use of risk management, but have failed in providing the Project Managers with sufficient training in the field of risk management.

**Question 30: You are welcome to comment on your answers**

Question 30 gave the respondents the opportunity to comment on the previous question, but was not used.

**Question 31: With regard to risk management in the Frame Agreement, are there any areas that should be improved?**

The Project Managers was, with regard to risk management, asked in Question 31 if there were any areas that should be improved. One respondent answered “no” and 15 answered “yes”.

### Question 32: Which area(s) should be improved?

Those answering “yes” in Question 31 were asked to specify what should be improved. 14 responded to this question, and the responses are listed in Table 5-8. One of the Project Managers did not specify which areas he or she thought should be improved.

Question 32: Which Area(s) should be improved?	
1	Make checklist for risk brainstorming, gather information on what goes wrong in projects to use as an input to risk for new projects, course in risk understanding related to this industry
2	More training; e.g. guidelines for quantifying and selection of risks to be implemented in the risk database, so that projects do it in a uniform way.
3	Management are the only one trained to use of the Risk System. Training should also be given to lower level employees as well.  <i>(Det er kun management som er trent til å bruke risk systemet, En må også få i gang trening nedover systemet.)</i>
4	For me: training
5	Invest in a new Risk system.
6	1) Risk definition 2) All risks shall be mitigated before entering execution phase meaning only unforeseen events can show up in the execution phase
7	Communication towards all employees on the need for and importance of Risk management. In my experience many employees sees RISK as a hassle - so a change of attitude towards it should be dealt with in some way. An example would be to make an electronic training course.
8	It is cumbersome to use the current Risk Database. Previously, we gathered the same risks in an action log in Excel. This was much easier to use in the Project Meetings.  <i>(Tungvint å bruke Risk Databasen. Tidligere hadde vi de samme riskene i en aksjonlogg i excel. Dette var mye enklere å bruke i prosjektmøtene.)</i>
9	More training should be performed
10	Guideline for evaluation of risk severity and value
11	Ref. my earlier comment on the current Risk Database. Risk related issues could be more in focus in the projects / studies etc.

12	Training
13	Training and better routines/focus in the Projects. ( <i>Opplæring, gjerne bedre rutiner/fokus i prosjekt.</i> )
14	Training More focus in the projects and management Better tools (reports etc.) Measurements towards cost impacts in projects upside/downside

**Table 5-8: Respondents suggested areas of improvement in the risk management**

The responses are summarised in Table 5-9. Nine answered that the training in risk management should be improved, while four had this as the sole area. Five stated that the risk database/system/tools should be improved, three wanted a better risk database, and two wanted improved tools. Four Project Managers responded that there should be more focus on risk management in the projects. Four stated that management guidelines should be improved upon, where one of them emphasised the need for a common risk definition.

Suggested Areas of improvements in risk management	Respondent number from Table 5-8	Total
Training:	1, 2, 3, 4, 7, 9, 12, 13, 14	9
Risk database/system/tools:	1, 5, 8, 11, 14	5
Risk communication, focus and attitude:	7, 11, 13, 14	4
Better guidelines:	2, 6, 10, 13	4
Risk review (learning):	1	1

**Table 5-9: Overview of respondent's suggested areas for improvement in the current risk management**

## 6 DISCUSSION

### 6.1 THE QUALITY OF COLLECTED DATA

The investigator had little experience in designing questions for the survey, resulting in some questions being open for interpretation.

The study managers were included in the QuestBack survey at the request of the Project Director. As some of the respondents chose to answer anonymous, it is not possible to distinguish the study manager's responses in the survey. This makes it difficult to draw any real conclusions about the Project Managers.

### 6.2 1 – CORPORATE DOCUMENTS

The Company does not provide common definitions of central terms in risk management, such as the definition of risk. This could result in confusion and poor communication. The QuestBack revealed that each respondent had its own definition, whereas several Project Managers defined risk as purely negative. This means that opportunities remain unidentified until they occur, and thus becomes unable to utilise them in the best possible way, which lowering the probability of project success.

#### 6.2.1 THE RISK MANAGEMENT POLICY

Risk management is only mentioned in one of the Company's many policies; the QHSE (Quality, Health, Safety and Environmental) policy statement, stating "risk shall be managed on a corporate-wide basis, in a structured way". This does not replace a risk management policy, indicating that the Company does not have a risk management policy.

It is a major deviation from the ISO31000:2009 standard that the Company does not have a risk management policy. This means that the company is not in accordance to the ISO standard, and thereby fail to meet requirements in the Framework Contract.

Possible consequences for not having a risk management policy can be:

- Lack of commitment from management; risks do not receive desired focus
- Lack of common definition of risk management, resulting in several different risk cultures and reduced communication.

Results from the QuestBack shows that 12 out of 16 respondents think that the Company has a risk management policy, and seven would use the policy to evaluate identified risks. A closer review of the latter respondents revealed a strange finding; it turned out that one of the respondents that would use the risk management policy to evaluate risks was the only one recognising that the Company did not have a risk management policy. It seems that many of the project managers do not know what a risk management policy is or what a policy in general is used for.

## 6.2.2 THE MANAGEMENT SYSTEM

How many actually use the Management System (MS)? The results from the QuestBack showed that only 7 of the 16 respondents stated they used the MS as one of the main sources for risk management practice. The QuestBack also indicated that the majority of the Project Managers are not sufficiently familiar with the content in the MS. There is no point in having guiding documents if they are not used. If management want to have control over the processes, they need to ensure that the guidelines are being used and adhered to.

The fact that only 4 out of the 16 respondents recognized the Risk Matrix, questions the focus and implementation of the MS. Management should emphasise the importance of using the MS and clearly communicate their expectations with regards to strict adherence to the defined processes and connected documents. They should also ensure that management processes are clear and unambiguous.

The results from the QuestBack showed a clear trend of insufficient knowledge of the content in the MS, as only seven of the Project Managers stated that MS was a main source for risk management practice. The fact that several of the questions showed discrepancies on their understanding of important elements, such as risk management policy and Company's defined acceptance criteria, supports this observation.

Ensuring that work is performed in a consistent and effective manner is among the main objectives with any management systems. If implemented successfully, personnel will through the MS have access to principles and methods, which have been continuously kept updated. This ensures best practice, forming a solid basis for how any work under the management system shall be performed.

If the management system is not sufficiently implemented, the following consequences could be expected:

- Training and education of employees will be challenging and time consuming as standardised programs will not meet the individual needs.
- Best practice is not implemented
- Risk reports will be based on different sets of acceptance criteria, leading to difficulties in obtaining an objective risk exposure.

As only four Project Managers managed to identify the Company Business Risk Analysis Matrix, all of the 3 above listed points seems to be verified. This matrix should, if the requirements in the MS were adhered to, be reviewed at least once a month as part of maintaining the Risk Register.

Evaluations and observations from the investigator confirms that different practices are established, leading to uncertainty in the risk management process of the Frame Agreement. This implies that the Project Managers are not sufficiently familiar with the risk management content in the Management System of the Company.

The Management System (MS) does not clearly state who can be responsible for a risk, only that a dedicated risk owner should be defined by the Project Manager. In order to ensure accountability for the defined risks, the MS should clearly state what competence and authority is required in order to be an owner of a project risk.

Due to the maturity of the Company's risk management system, especially relevant for the database, the risk owner should be in the Project Management team in order to keep a close control of the risk exposure. This will ensure that the content of the Risk Register is of sufficient quality, enabling for active risk management towards "*uncertainty that matters*".

The criteria for aggregation of risk are not sufficiently communicated, which has resulted in inconsistent use of the Critical Items function in the database. The purpose of the Critical Items is to ensure that risk is managed at the appropriate level. Risks that the project management team are unable to solve, or has consequences beyond the project, should be lifted to be managed by a higher level of management.

A consequence of this for the FA organisation was that the function got limited to the use for level 4 managers, thus increasing the likelihood of not managing risks at the appropriate level.

The MS should clearly communicate the difference between a Critical Item and Top 10 risk. It was observed through the QuestBack and interviews, that Project Managers aggregated all risks with large impact, even if they did not need any help to handle the risk. The method as described in the management system should be clear on the distinct difference between aggregation and communication. An inconsistent understanding of the function for aggregation of risk was observed during interview, QuestBack and review of reports.

Potential consequences connected to improper use and understanding of Critical Items could be that:

- Project specific risks are managed at the incorrect management level.
- Level 3 and 4 managers become uncertain on own responsibility and accountability for the risk in question.
- Focus and attention are brought towards risks or issues which are not really important to the project.

The Management System (MS) provide workflow diagrams that clearly show which risk management activities should be performed, and who is responsible for each process step. A description of how each process step should be carried out is seen as very poor by the investigator. Details for how to perform a defined activity are rarely provided, leading to a chance of projects implementing work processes developed for and by themselves. This is seen as necessary based on

current status on management documents and the FA in question ended up by developing their own work instruction. This is the practice that is described in chapter 4.

Potential consequences connected to insufficient degree of details in the Company management system, could be:

- Lack of experience transfer both during and after the project execution phase.
- Projects are reinventing the wheel whenever a new contract is started.
- Inefficient and inconsistent method for performing risk management.

As previously discussed, the investigator finds the above listed items being verified during the investigation.

### **6.2.3 INTERFACE BETWEEN DISCIPLINES AND PROJECT PHASES**

With regard to risk management in the Company, risk registers are required to be established and maintained both for tender and project execution. The Risk Review Committee (RRC) is a decision gate between the two phases. During the review, risks are mitigated, but as strategic decisions are made during this evaluation, new risk could be imposed to future projects. During the evaluation of the MS, it became evident that interfaces between tender risk register and project risk register were insufficiently described. It appears to the investigator that no function or position is responsible for the overall risk management process of the Company.

A result is that the MS does not define the requirements to communicate risks identified during tender phase, including new risks imposed by RRC, to the project team. The risk management process relevant for project execution does not put forward any requirements to evaluate the risk register from the tender phase.

The investigator believes that this should be a part of the input for the initial brainstorming session, to ensure a sound basis for developing the risk register.

The management documents do not provide a definition of risk, but the work instruction and the risk register involve opportunities as well as threats. The QuestBack revealed that some Project Managers did not recognize opportunities as part of risk management.

### **6.2.4 THE RISK MATRIX**

The descriptions in the Company Business Risk Analysis Matrix only focus on negative impacts of risk, and do not imply opportunities.

## 6.2.5 THE ISO 31000:2009 PRINCIPLES

The Company's current risk management touches all of the ISO principles in which the framework should be based on, but fail to fully satisfy them.

The process workflow diagrams and connected documents available through the management system do not ensure that risk management is based on the best available information. It is intended that the management system should cover this, but there are no statements in the risk management documentation that emphasizes the importance of using the best available information. This could lead to inadequate identification and mitigation of risks. The Company should ensure that all relevant information is used as input during risk identification activities. Appropriate identification tools and methods should be used.

Current risk management is not consistently used as decision-support by the organisation, where it now relies on the perception to the individual Project Manager. The QuestBack revealed that the risk register is not consistently used as decision-support. This could lead to unfortunate decisions, which could have been avoided by clear guidelines and high quality risk register.

## 6.3 3 – SOFTWARE AND TOOLS

### 6.3.1 THE RISK DATABASE

The risk database is not set up to facilitate transfer of experiences. It is a database which includes information of all identified risks with their connected mitigation measures, but there is no search function enabling for efficient experience transfer. The result of this is that it becomes a challenging process to find previous experience from similar projects.

The risk management process does not define any requirements for experience transfer after project execution. A lesson learned database for the project debrief reports does exist, but as there are no requirements for documenting experiences related to risk, the chance for learning from previous experience is poor. Examples of risks that should be part of the post-project review report would be those that occurred, meaning that the planned mitigation measures were insufficient and those that were never identified until they occurred.

The Risk database is central for the risk management in the Frame Agreement. It should be intuitive and easy to use, and be able to give instant overview of risk exposure in the project. The database should be able to produce reports and enable for experience transfer. For the structure of the database, it would be desirable if there were a hierarchical structure that differentiated different levels of risk. For example, the project director could easily get an overview of all strategic risks.

The Company risk database satisfies all the five points listed in the theory section. The weakness lies in reporting capabilities and the ability to instantly

display current exposure for the contract or for the project in question. As long as the Company have an objective of establishing the risk database as a tool for decision making, such instant overviews are seen as key.

Further, the risk registers should be built in accordance with a risk breakdown structure, as this would ease the process of identification and categorising risk. It will also ease the follow-up of each risk. Some of the respondents of the QuestBack found the content of the risk register to be inconsistent, risks are poorly described and too many risks are seen as generic. The quality and credibility of the database becomes poor when the content is not consistent, where, for example, consequences and actions are registered as risks in the risk register.

The risk database is not considered user-friendly. It is easy and intuitive to register risks, but challenging to monitor and maintain. There is no hierarchical level of risks in the database, so all the risks are listed making it hard to get an overview.

The Company should implement the use of Risk Breakdown Structures (RBS) in the risk management process. This would ensure a structured process for identifying possible risks.

Whenever the respondents to the QuestBack were given a chance to give their comment, the need for new software or improvements/evaluation of the existing software was often mentioned. This, in combination with the comments from the Company Risk Manager and the contract QRM, supports the investigators impression of the software not meeting the expectations to the management tool.

### **6.3.2 RISK TOOLS AND METHODS**

The risk management work instruction only suggests the use of brainstorming as method for identifying risks, with recommended use of a list of categories to trig the identification of new risks. An example of such list is presented with ten categories.

The work instruction does not mention any input documentation, making the brainstorming entirely dependent on participant's ability to identify risks. This could result in unidentified risks. It was observed through interview that experience showed that poor structure and method of initiating brainstorming led to poorly defined risks, being difficult to interpret when they were to be evaluated afterwards.

The Company should provide other methods to be used where appropriate to identify risks. Such methods could be:

- Interviews with key stakeholders
- Historical review
- Surveys
- Review of similar projects

## 6.4 4 – COMPETENCE AND TRAINING

It was observed by the investigator that there was not established sufficient training for basic understanding of risk. If the project managers do not have the same basic understanding of risk, these possible consequences might occur:

- Different understanding of risk
- Inability to identify opportunities
- Impaired attitude of risk management
- Varying quality of identified risks
- Reduced communication

The QuestBack identified various perspectives of risk, and that there is an insufficient focus on risk management in the project teams. There is an urgent need to put in place basic risk management training to ensure common understanding and use.

The Product Group Managers in one of the interviews said that many of the Project Managers failed to recognise risk management as a tool. This attitude is detrimental to the effectiveness of risk management, as they are not motivated.

The project managers have technical background. This may result in reduced identification of commercial risks, which someone with another background might be able to identify.

The responses in the QuestBack showed that the Project Managers recognised the influence and value from risk management, but findings shows that they do not fully exploit the potential. It also showed that seven project managers would use a risk management policy to score risks, which questions their competence in Risk Management and definition of a policy.

The competence on risk management is poor and this affects the quality of the registered risks in the risk database.

## 6.5 5 – OVERALL IMPLEMENTATION

The new Frame Agreement has a different payment structure than the old one. In the old framework agreement were primarily all projects reimbursable. Now projects are mainly given as target cost contracts, where the Company has a clearer responsibility for the quality of delivered products. A large number of the project personnel being part of this new Frame Agreement (FA) were also members of the previous FA. They are working very closely with the Client and the importance of formalism between the two parties is increasingly important. With regard to the new FA, will Project Managers with longer seniority in the old FA be more prone to apply old terms in the new contract. This is a challenge that can result in huge losses for the Company, which means that the organisation must have a continuous focus on implementing the changes in the FA.

Due to the new FA regime, it is important that risks for a successful execution are communicated throughout the organisation. Results from QuestBack indicated that sideways communication is not embedded in the Management System, which was confirmed through interviews and observation.

There are a lot of decent answers in the QuestBack indicating that most elements of risk management are present. But they are based on an unfinished foundation, leading to the quality and content not measuring up. Without having a risk management policy that clearly defines the framework for how the processes and strategies for risk management should be, it is not surprising to find that there is no uniform practice.

Turning an organization is like turning a super tanker; it takes time. But the changes in the Company happen too slowly when there is no one in the organization taking on the responsibility of being the standard-bearer for change. There is no clear plan for changing the culture, but pilot projects are executed to serve as examples of how a project should be implemented.

It was difficult to get a clear answer from the management when they were asked about what was the biggest risk in the Frame Agreement. This implies that an overview of the risk exposure for the organisation is insufficient.

The Project Managers gave the current guidelines, framework and practice an overall medium score, indicating that risk management is described and available, but not to a sufficient level.

## 7 SUMMARY AND CONCLUSION

### 7.1 KEY FINDINGS

This chapter will summarise the key findings in the research.

#### 7.1.1 CORPORATE DOCUMENTS

The most important finding in the research is that the Company does not have a risk management policy. This should have been present and served as Company's foundation for risk management.

This study has revealed a number of deficiencies in the Management System (MS) of the company, where the main identified deficiencies are:

- Lacking detailed information on risk management process steps
- MS does not ensure the involvement of the tender risk database
- MS does not ensure the use of best available information.
- MS does not ensure that the risk management is part of decision-making
- MS does not provide a clear definition of risk
- MS is not clear and unambiguous on risk ownership
- MS does not require documentation of experiences and lessons learned

The findings show that the company is not fully compliant with the ISO31000:2009 standard. The main violations are:

- There is no risk management policy
- The Company does not satisfy all the ISO principles
  - o Risk management is not consistently used as decision-support
  - o MS does not ensure the use of best available information.

The Company has not managed to provide sufficient documentation for risk management in the Frame Agreement.

#### 7.1.2 APPLICATION OF CORPORATE DOCUMENTS

There is no consistent use of the management documents, and management has not sufficiently ensured the use of the Management System.

Project managers have inadequate knowledge of the content in the Management System

### 7.1.3 SOFTWARE AND TOOLS

The users of the database do not have a common understanding of how it should be used. The Critical Item function for aggregation of risks is abused.

The Company only use brainstorming as method for risk identification. The risk management work instruction does not specify any inputs for the brainstorming, except those from participants.

### 7.1.4 COMPETENCE AND TRAINING

The overall competence on risk management in the Frame Agreement is

There is a lack of basic risk management training.

It is not a common understanding of the definition of risk

The quality of the content and the credibility of the current risk database are poor.

### 7.1.5 OVERALL IMPLEMENTATION

The overall impression of the results from the QuestBack survey is that the main processes are present, but quality should be improved.

Except for the risk management policy are all elements of risk management described in the Company, but the quality is poor.

Projects must develop their own risk management work instruction.

Sideways communication is insufficient.

## 7.2 RECOMMENDED AREAS OF IMPROVEMENT

The following improvements must be implemented to be in compliance with the ISO31000:2009 standard:

- Establish a risk management policy
- Ensure the use of best available information
- Ensure that the risk management is part of decision-making

Other suggested improvements are:

- Improve the Management System
- Establish mandatory training in basic risk management
- Improve or upgrade the risk database

### 7.3 CONCLUSION

The hypothesis in this study was that the frame agreement had a well implemented risk management. To investigate whether the risk management were well implemented, the following five areas examined:

- 1: Corporate documents
- 2: Application of corporate documents
- 3: Software and Tools
- 4: Competence and training
- 5: Overall implementation

After having examined all five areas, it was found that the company had significant deficiencies in each area. It was also revealed deficiencies that make the Company not being in compliance with the ISO31000:2009.

The corporate documents are insufficient, where there Company does not have a risk management policy in place. The Management System does not provide sufficient information on risk management processes. The MS is not used consistently by the project managers. The database is not good enough. Project Managers competence is varying and there is lack of training. All the points in front results in that the communication quality is poor.

All findings of the study points clear at the conclusion that the hypothesis is rejected, which means that the company does not have a well-implemented risk management.

### 7.4 FURTHER WORK

The findings in this paper suggest that the Company should undertake an assessment of risk management in the rest of the organization.

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# Appendix 1 – The QuestBack® Survey (Raw depersonalized data).

This appendix contains all the questions and answers QuestBack® survey that was conducted amongst the Project Managers in the Frame Agreement. First, all the questions with the following response options are presented, followed by the answers from each respondent.

16 out of 20 invited responded to the survey request.

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<b>Survey questions with alternatives:</b> .....	<b>2</b>
<b>Respondent Nr. 1</b> .....	<b>7</b>
<b>Respondent Nr. 2</b> .....	<b>11</b>
<b>Respondent Nr. 3</b> .....	<b>15</b>
<b>Respondent Nr. 4</b> .....	<b>19</b>
<b>Respondent Nr. 5</b> .....	<b>23</b>
<b>Respondent Nr. 6</b> .....	<b>27</b>
<b>Respondent Nr. 7</b> .....	<b>31</b>
<b>Respondent Nr. 8</b> .....	<b>35</b>
<b>Respondent Nr. 9</b> .....	<b>39</b>
<b>Respondent Nr. 10</b> .....	<b>43</b>
<b>Respondent Nr. 11</b> .....	<b>47</b>
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<b>Respondent Nr. 13</b> .....	<b>55</b>
<b>Respondent Nr. 14</b> .....	<b>59</b>
<b>Respondent Nr. 15</b> .....	<b>63</b>
<b>Respondent Nr. 16</b> .....	<b>67</b>

## Survey questions with alternatives:

**Question 1: What is your educational background?**

Alternatives: [Free text]

**Question 2: How many years have you been a Project Manager?**

Alternatives: <1 year  
1-2 years  
2-5 years  
5-10 years  
10+ years

**Question 3: How many years have you been working in the Company?**

Alternatives: <1 year  
1-2 years  
2-5 years  
5-10 years  
10+ years

**Question 4: How many years have you been working within the Frame Agreement?**

Alternatives: [Ranging from <1 year to 11 years]

**Question 5: What kind of projects do you undertake within the Frame Agreement?**

Alternatives: Small (0-5M NOK)  
Medium (5-20M NOK)  
Large (20-100M+ NOK)  
FastTrack

**Question 6: How confident are you on Risk Management?**

Alternatives: 1-6 (Not confident at all – Very confident)

**Question 7: With your own words, how would you define risk?**

Alternatives: [Free text]

**Question 8: With your own words, describe the purpose of Risk Management?**

Alternatives: [Free text]

**Statement 9.1: Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 9.2: Risk Management and expectations. You clearly communicate your expectations to your project team**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 9.3: Risk Management and expectations. Customer expectations are clear and unambiguous**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Question 10: Is the Management System clear and unambiguous about your role in Risk Management?**

Alternatives: Yes/No

**Question 11: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Statement 13.1: Risk Management and Communication. Risk communication are clearly defined in the Management System**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.2: Risk Management and Communication. The Management System states *what* to report**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.3: Risk Management and Communication. The Management System states *when* to report**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.4: Risk Management and Communication. The Management System states *why* to report**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.5: Risk Management and Communication. The Management System states *how* to report**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**13.6 Risk Management and Communication. The Management System states *to whom* to report**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.7: Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.8: Risk Management and Communication. Risks are communicated upwards**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.9: Risk Management and Communication. Risks are communicated downwards**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.10: Risk Management and Communication. Risks are communicated side-ways**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 13.11: Risk Management and Communication. Risk mitigations are clearly communicated**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Question 14: Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)**

Alternatives: Yes/No

**Question 15: What are the criteria for aggregation of risk (reporting of Critical Items)**

Alternatives:

- Project Risks that need management involvement to find possible mitigations
- Risks with major impact on project objectives
- Project risks that I as a Project Manager are unable to manage/be responsible for

**Question 16: Who can be a project risk owner?**

Alternatives:

- Only members of the Project Management Team
- Anyone within the contract
- Any manager in the company

**Question 17: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Statement 18.1: Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 18.2: Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 18.3: Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Questions 19.1-5: Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5).**

- Time
- People - competence and availability
- Number of registered risks
- Quality of the Risk Database
- Other

Alternatives: 1-5 (Most scarce – Least Scarce)

**Question 20: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Question 21: What are your main sources of Risk Management practice?**

Alternatives: [Multiple answers]

- The Management System [depersonalized answer]
- Project Quality and Risk Manager (QRM)
- Company Risk Manager
- PMBOK (Project Management Body of Knowledge)
- Other

**Statement 23.1: Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 23.2: Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Question 24: Does the company have a Risk Management Policy?**

Alternatives: Yes/No/Don't know

**Question 25: Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**

Alternatives:

- Company Business Risk Analysis Matrix
- Project defined Risk Acceptance Criteria (RAC)
- Risk Management Policy
- Risk Acceptance Criteria defined in contract

**Question 26: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Statement 27.1: The Risk Database. The Risk Database provide instant overview of risk exposure**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 27.2: The Risk Database. The Risk Database enables for experience transfer**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 27.3 The Risk Database. The Risk Database is intuitive and easy to use**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 27.4: The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 27.5: The Risk Database. The Risk Database report function is sufficient**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Question 28: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Statement 29.1: Expectations and attitudes towards the current Risk Management in Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 29.2: Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 29.3: Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

Alternatives: 1-6 (Disagree completely - Agree completely)  
-1 No opinion

**Statement 29.4: Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

Alternatives: 1-6 (Disagree completely - Agree completely)

-1 No opinion

**Question 30: You are welcome to comment on your answers (OPTIONAL)**

Alternatives: [Free text]

**Question 31: With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Alternatives: Yes/No

**Question 32: Which Area(s) should be improved?**

Alternatives: [Free text]

## Respondent Nr. 1

**1. What is your educational background?**

Master of Science/ Siv. Ing

**2. How many years have you been a Project Manager?**

5-10 years

**3. How many years have you been working in the company?**

5-10 years

**4. How many years have you been working within the Frame Agreement?**

2 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

5

**7. With your own words, how would you define risk?**

Technical, operational, economical.. etc. areas of concern in a project that need management's attention. A "positive" risk is often called an opportunity. Risks are quantified based on probability x consequence.

**8. With your own words, describe the purpose of Risk Management?**

To manage risk (and thus also the project) as much as possible in the preferred direction.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely 6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

5

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

5

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

5

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

4

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

Agree completely<bra>6

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

Agree completely 6

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

Agree completely 6

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

5

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

**13.9 Risk Management and Communication. Risks are communicated downwards**

4

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
4
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
5
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)**  
Project Risks that need management involvement to find possible mitigations
- 16. Who can be a project risk owner?**  
Only members of the Project Management Team
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
4
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5).Time**  
3
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
The Management System [depersonalized answer]  
Project Quality and Risk Manager (QRM)
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
5
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
5
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Company Business Risk Analysis Matrix
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
4
- 27.2 The Risk Database. The Risk Database enables for experience transfer**  
4
- 27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
3
- 27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
3
- 27.5 The Risk Database. The Risk Database report function is sufficient**  
3
- 28. You are welcome to comment on your answers**  
I have used Statoil PIMS earlier and see that as a better and user-friendlier tool (more intuitive)
- 29.1 Expectations and attitudes towards the current Risk Management in Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

5

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

4

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

5

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

Agree completely 6

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

More training; e.g. guidelines for quantifying and selection of risks to be implemented in the risk database, so that projects do it in a uniform way.



## Respondent Nr. 2

1. **What is your educational background?**  
Master Mechanical & process Engineering
2. **How many years have you been a Project Manager?**  
5-10 years
3. **How many years have you been working in the company?**  
<1 year
4. **How many years have you been working within the Frame Agreement?**  
<1 year
5. **What kind of projects do you undertake within the Frame Agreement?**  
Medium (5-20M NOK)  
Large (20-100M+ NOK)
6. **How confident are you on Risk Management?**  
3
7. **With your own words, how would you define risk?**  
a possibility to make wrong, regards safety, system design, design, installation with respect for safety, time planning and costs.
8. **With your own words, describe the purpose of Risk Management?**  
Identify and then try to handle above possibilities, by taking matters
- 9.1 **Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**  
5
- 9.2 **Risk Management and expectations. You clearly communicate your expectations to your project team**  
5
- 9.3 **Risk Management and expectations. Customer expectations are clear and unambiguous**  
4
10. **Is the Management System clear and unambiguous about your role in Risk Management?**  
Yes
11. **You are welcome to comment on your answers**  
(OPTIONAL)
- 13.1 **Risk Management and Communication. Risk communication are clearly defined in the Management System**  
5
- 13.2 **Risk Management and Communication. The Management System states <B>what</B> to report**  
5
- 13.3 **Risk Management and Communication. The Management System states <B>when</B> to report**  
5
- 13.4 **Risk Management and Communication. The Management System states <B>why</B> to report**  
5
- 13.5 **Risk Management and Communication. The Management System states <B>how</B> to report**  
5
- 13.6 **Risk Management and Communication. The Management System states <B>to whom</B> to report**  
5
- 13.7 **Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**  
5
- 13.8 **Risk Management and Communication. Risks are communicated upwards**  
5
- 13.9 **Risk Management and Communication. Risks are communicated downwards**  
5

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
5
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
Agree completely 6
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)**  
No
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)**  
Risks with major impact on project objectives
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
No opinion
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). Time**  
4
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). People - competence and availability**  
5
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). Number of registered risks**  
1
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). Quality of the Risk Database**  
2
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). Other**  
3
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
Other
- 22. You checked off "other" on previous question. Please specify these sources**  
From previous work, have been in the company for 9 months
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
3
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
5
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Company Business Risk Analysis Matrix
- 26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
No opinion

**27.2 The Risk Database. The Risk Database enables for experience transfer**  
4

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
2

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
4

**27.5 The Risk Database. The Risk Database report function is sufficient**  
No opinion

**28. You are welcome to comment on your answers**  
(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
5

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
No opinion

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
2

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
Agree completely 6

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes

**32. Which Area(s) should be improved?**  
For me- training



## Respondent Nr. 3

**1. What is your educational background?**

Engineer

**2. How many years have you been a Project Manager?**

2-5 years

**3. How many years have you been working in the company?**

5-10 years

**4. How many years have you been working within the Frame Agreement?**

9 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Small (0-5M NOK)

Medium (5-20M NOK)

FastTrack

**6. How confident are you on Risk Management?**

4

**7. With your own words, how would you define risk?**

It's when you have a risk for a failure in the project, like not meeting the time schedule, buds jet, quality or environmental demands. Or Health risk and injury.

**8. With your own words, describe the purpose of Risk Management?**

To identify the risk, insert compensating measure.

Have a responsible to follow up the risk.

And also to inform the management of the risk in the project.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely 6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

5

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

5

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

4

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

4

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

5

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

5

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

5

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

4

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

5

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

- 13.9 Risk Management and Communication. Risks are communicated downwards**  
3
- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
4
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
4
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project risks that I as a Project Manager are unable to manage/be responsible for
- 16. Who can be a project risk owner?**  
Only members of the Project Management Team
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
4
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
4
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
4
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritize your answers from most scarce (1) to least (5). Time**  
1
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
3
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
2
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
4
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
Project Quality and Risk Manager (QRM)
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
4
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
4
- 24. Does the company have a Risk Management Policy?**  
Don't know
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Project defined Risk Acceptance Criteria (RAC)
- 26. You are welcome to comment on your answers**  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
4

**27.2 The Risk Database. The Risk Database enables for experience transfer**  
4

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
4

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
4

**27.5 The Risk Database. The Risk Database report function is sufficient**  
3

**28. You are welcome to comment on your answers**  
(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
4

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
4

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
4

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
4

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes

**32. Which Area(s) should be improved?**

Det er kun management som er trent til å bruke risk systemet, En må også få i gang trening nedover systemet.



## Respondent Nr. 4

**1. What is your educational background?**

Bachelor degree in mechanical engineering and Project Management

**2. How many years have you been a Project Manager?**

10+ years

**3. How many years have you been working in the company?**

10+ years

**4. How many years have you been working within the Frame Agreement?**

5 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)  
Large (20-100M+ NOK)  
FastTrack

**6. How confident are you on Risk Management?**

5

**7. With your own words, how would you define risk?**

A project risk means both threats to the project objectives and opportunities regarding those objectives.

**8. With your own words, describe the purpose of Risk Management?**

Risk Management of uncertainty shall be a continuous process throughout the project development process.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

5

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

4

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

3

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

No common Risk system is implemented in the company. We are using both the Client Risk System (PIMS) for the Statoil Contract and the company database for Frame Agreement. This meaning we don't have a common way to focus on Risk Management.

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

2

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

3

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

2

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

2

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

2

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

2

**13.8 Risk Management and Communication. Risks are communicated upwards**

4

**13.9 Risk Management and Communication. Risks are communicated downwards**

2

**13.10 Risk Management and Communication. Risks are communicated side-ways**

4

**13.11 Risk Management and Communication. Risk mitigations are clearly communicated**

4

**14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**

Yes

**15. What are the criteria for aggregation of risk (reporting of Critical Items)?**

Project risks that I as a Project Manager are unable to manage/be responsible for

**16. Who can be a project risk owner?**

Anyone within the contract

**17. You are welcome to comment on your answers**

The risk owner should be the person that has the best qualification to handle the element.  
And a project risk owner shall be part of the project team.

**18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**

Agree completely 6

**18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**

Agree completely 6

**18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**

2

**19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**

3

**19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**

4

**19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**

2

**19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**

5

**20. You are welcome to comment on your answers**

After very good experience with using the Statoil Risk System in PIMS, it is like going back more than 10 year when I have to start using the company's Risk Database again.

**21. What are your main sources of Risk Management practice?**

Other

**22. You checked off "other" on previous question. Please specify these sources**

Experience by working with Risk Management in different organisation.

**23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**

4

**23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**

4

**24. Does the company have a Risk Management Policy?**

Yes

**25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**

Risk Management Policy

**26. You are welcome to comment on your answers**

The main objectives are to identify the project risk elements and decide how to handle the risk. Which criteria and scale (1-5 or 1-10) used to evaluate the probability and consequences will depend on the "picture" you see it from and should not be the main focus in the risk process.

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

Disagree completely 1

**27.2 The Risk Database. The Risk Database enables for experience transfer**

Disagree completely 1

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

Disagree completely 1

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

Disagree completely 1

**27.5 The Risk Database. The Risk Database report function is sufficient**

Disagree completely 1

**28. You are welcome to comment on your answers**

If the company meaning risk management is a focus area, we have to invest in and implement a proper risk management system, e.g. Statoil PIMS Risk Register.

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

3

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

2

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

4

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

3

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

Invest in a new Risk system.



## Respondent Nr. 5

**1. What is your educational background?**

[Please enter academic degree and field of study]

**2. How many years have you been a Project Manager?**

10+ years

**3. How many years have you been working in the company?**

10+ years

**4. How many years have you been working within the Frame Agreement?**

7 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)

FastTrack

**6. How confident are you on Risk Management?**

6 - Very confident

**7. With your own words, how would you define risk?**

The notion implies that a choice having an influence on the outcome sometimes exists (or existed). Potential losses themselves may also be called "risks". Any human endeavour carries some risk, but some are much more risky than others.

I'll emphasize that registration of RISKS shall NOT cover for poor or bad planning

**8. With your own words, describe the purpose of Risk Management?**

The purpose of risk identifying and registration is to meet the risk by taking actions to the risk does not occur. This is typically done by planning the project activities to a level that only unforeseen event are left, for which you can mitigate to minimize the loss.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

5

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

3

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

3

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

No

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

3

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

3

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

3

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

3

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

3

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

3

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

2

**13.8 Risk Management and Communication. Risks are communicated upwards**

2

**13.9 Risk Management and Communication. Risks are communicated downwards**  
5

**13.10 Risk Management and Communication. Risks are communicated side-ways**  
2

**13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
5

**14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes

**15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Risks with major impact on project objectives

**16. Who can be a project risk owner?**  
Anyone within the contract

**17. You are welcome to comment on your answers**  
(OPTIONAL)

**18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
5

**18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
5

**18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
2

**19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
4

**19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
1

**19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
2

**19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
3

**19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
5

**20. You are welcome to comment on your answers**  
(OPTIONAL)

**21. What are your main sources of Risk Management practice?**  
Other

**22. You checked off "other" on previous question. Please specify these sources**  
My own knowledge

**23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
3

**23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
3

**24. Does the company have a Risk Management Policy?**  
No

**25. Which of the following alternatives shall be used for evaluation of probability and consequence in the**

**Risk Register?**

Risk Management Policy

**26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

3

**27.2 The Risk Database. The Risk Database enables for experience transfer**

3

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

3

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

3

**27.5 The Risk Database. The Risk Database report function is sufficient**

3

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

2

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

2

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

2

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

5

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

1) Risk definition

2) All risks shall be mitigated before entering execution phase meaning only unforeseen events can show up in the execution phase



## Respondent Nr. 6

**1. What is your educational background?**

[Please enter academic degree and field of study]

**2. How many years have you been a Project Manager?**

2-5 years

**3. How many years have you been working in the company?**

1-2 years

**4. How many years have you been working within the Frame Agreement?**

1 year

**5. What kind of projects do you undertake within the Frame Agreement?**

Small (0-5M NOK)  
Medium (5-20M NOK)  
FastTrack

**6. How confident are you on Risk Management?**

3

**7. With your own words, how would you define risk?**

I define RISK as everything that can happen in a project that can get consequences for cost and project execution. In addition all internal RISK that affects the business unit.

**8. With your own words, describe the purpose of Risk Management?**

Risk Management is to identify, communicate, manage and try to control the RISK's in a project.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

4

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

4

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

3

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

No

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

4

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

4

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

4

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

4

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

4

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

3

**13.8 Risk Management and Communication. Risks are communicated upwards**

3

**13.9 Risk Management and Communication. Risks are communicated downwards**

3

**13.10 Risk Management and Communication. Risks are communicated side-ways**

3

**13.11 Risk Management and Communication. Risk mitigations are clearly communicated**

3

**14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**

Yes

**15. What are the criteria for aggregation of risk (reporting of Critical Items)?**

Project Risks that need management involvement to find possible mitigations

**16. Who can be a project risk owner?**

Any manager in the company

**17. You are welcome to comment on your answers**

(OPTIONAL)

**18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**

5

**18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**

4

**18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**

4

**19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**

1

**19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**

3

**19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**

2

**19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**

4

**20. You are welcome to comment on your answers**

(OPTIONAL)

**21. What are your main sources of Risk Management practice?**

Company's Risk Manager

The Management System [depersonalized answer]

**23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**

4

**23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**

4

**24. Does the company have a Risk Management Policy?**

Don't know

**25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**

Company Business Risk Analysis Matrix

**26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

4

**27.2 The Risk Database. The Risk Database enables for experience transfer**  
3

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
3

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
4

**27.5 The Risk Database. The Risk Database report function is sufficient**  
4

**28. You are welcome to comment on your answers**  
(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
4

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
3

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
4

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
5

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes

**32. Which Area(s) should be improved?**

Communication towards all employees of the need for and importance of Risk management. In my experience many employees sees RISK as a hassle - so a change of attitude towards it should be delta with in some way. An example would be to make an electron-training course.



## Respondent Nr. 7

**1. What is your educational background?**

Mechanics Technologist

**2. How many years have you been a Project Manager?**

10+ years

**3. How many years have you been working in the company?**

<1 year

**4. How many years have you been working within the Frame Agreement?**

<1 year

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

3

**7. With your own words, how would you define risk?**

A risk is a possible negative outcome of an unsolved problem/challenge. Risk can also have positive influence in a project.

**8. With your own words, describe the purpose of Risk Management?**

Be aware and evaluate on a daily/weekly basis any changes and unforeseen activity in projects. Register and regularly evaluate actual risk changes.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely<bra>6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

5

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

Agree completely 6

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

5

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

5

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

5

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

5

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

5

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

5

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

Agree completely 6

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

- 13.9 Risk Management and Communication. Risks are communicated downwards**  
5
- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
3
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
4
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project Risks that need management involvement to find possible mitigations
- 16. Who can be a project risk owner?**  
Any manager in the company
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
5
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
1
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
2
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
4
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
3
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
5
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
Project Quality and Risk Manager (QRM)  
Other
- 22. You checked off "other" on previous question. Please specify these sources**  
Experience from other company as PM
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
5
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
5
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the**

**Risk Register?**

Risk Management Policy

**26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

4

**27.2 The Risk Database. The Risk Database enables for experience transfer**

Agree completely 6

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

4

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

4

**27.5 The Risk Database. The Risk Database report function is sufficient**

4

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

5

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

5

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

2

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

Agree completely 6

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

Guideline for evaluation of risk severity and value



## Respondent Nr. 8

**1. What is your educational background?**

Maritim Høgskole

**2. How many years have you been a Project Manager?**

<1 year

**3. How many years have you been working in the company?**

10+ years

**4. How many years have you been working within the Frame Agreement?**

6 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)

**6. How confident are you on Risk Management?**

4

**7. With your own words, how would you define risk?**

Any possible challenges related to change i.e. Scope, Cost, Schedule or HMS issues.

**8. With your own words, describe the purpose of Risk Management?**

The purpose of Risk Management is to foresee and handle any Scope, Cost, Schedule or HMS issues. Also to inform the contract Management of status on these issues.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely 6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

Agree completely 6

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

Agree completely 6

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

Agree completely 6

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

Agree completely 6

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

Agree completely 6

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

Agree completely 6

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

Agree completely 6

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

Agree completely 6

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

4

**13.8 Risk Management and Communication. Risks are communicated upwards**

Agree completely 6

**13.9 Risk Management and Communication. Risks are communicated downwards**

4

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
4
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
4
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project Risks that need management involvement to find possible mitigations
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
Agree completely 6
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
3
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
1
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
4
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
2
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
The Management System [depersonalized answer]
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
5
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
Agree completely 6
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Company Business Risk Analysis Matrix
- 26. You are welcome to comment on your answers**  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
4
- 27.2 The Risk Database. The Risk Database enables for experience transfer**

Agree completely 6

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

4

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

4

**27.5 The Risk Database. The Risk Database report function is sufficient**

4

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

5

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

5

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

4

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

Agree completely 6

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

More training should be performed



## Respondent Nr. 9

**1. What is your educational background?**

Instrument and automation engineer

**2. How many years have you been a Project Manager?**

2-5 years

**3. How many years have you been working in the company?**

2-5 years

**4. How many years have you been working within the Frame Agreement?**

3 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)  
Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

4

**7. With your own words, how would you define risk?**

Risk has the potential that a chosen action or activity will lead to a loss. An action results in a reaction.

**8. With your own words, describe the purpose of Risk Management?**

To identify, assess and prioritize risks, by performing flex. An ALARP assessment

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

4

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

4

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

4

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

4

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

4

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

4

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

4

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

4

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

5

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

**13.9 Risk Management and Communication. Risks are communicated downwards**

5

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
5
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
5
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Risks with major impact on project objectives
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
5
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
1
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
2
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
3
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
4
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
5
- 20. You are welcome to comment on your answers**  
I do not know if there are any statistics on this issue. I believe that the inputs here depend a lot on individual experience. A quality assessment of the Risk Database should be performed.
- 21. What are your main sources of Risk Management practice?**  
The Management System [depersonalized answer]  
Project Quality and Risk Manager (QRM)  
Company's Risk Manager
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
4
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
5
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Risk Management Policy
- 26. You are welcome to comment on your answers**

All options are important within the management policy

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
5

**27.2 The Risk Database. The Risk Database enables for experience transfer**  
3

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
3

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
3

**27.5 The Risk Database. The Risk Database report function is sufficient**  
3

**28. You are welcome to comment on your answers**

An evaluation of the Risk Database quality should be done by comparing it with other databases. It could be more " user friendly " .

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
4

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
4

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
4

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
Agree completely 6

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes

**32. Which Area(s) should be improved?**

Ref. my earlier comment on Lotus Risk Database. Risk related issues could be more in focus in the projects / studies etc.



## Respondent Nr. 10

**1. What is your educational background?**

Engineer Telematics

**2. How many years have you been a Project Manager?**

10+ years

**3. How many years have you been working in the company?**

1-2 years

**4. How many years have you been working within the Frame Agreement?**

1 year

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

5

**7. With your own words, how would you define risk?**

A risk is an unclear factor that needs attention and monitoring in the project, could be positive ore negative (this is the short version).

**8. With your own words, describe the purpose of Risk Management?**

Risk management is a system/way to handle the risks you see in the project.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

5

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

5

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

4

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

4

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

3

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

4

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

3

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

5

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

4

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

**13.9 Risk Management and Communication. Risks are communicated downwards**

5

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
No opinion
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
5
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project Risks that need management involvement to find possible mitigations
- 16. Who can be a project risk owner?**  
Only members of the Project Management Team
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
4
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
4
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
3
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
1
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
Other  
The Management System [depersonalized answer]
- 22. You checked off "other" on previous question. Please specify these sources**  
Just in general from other experience in projects and systems used earlier.
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
4
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
5
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Risk Acceptance Criteria defined in contract
- 26. You are welcome to comment on your answers**  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
4
- 27.2 The Risk Database. The Risk Database enables for experience transfer**  
2

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

4

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

4

**27.5 The Risk Database. The Risk Database report function is sufficient**

2

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

4

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

3

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

5

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

Training

More focus in the projects and management

Better tools (reports etc.)

Measurements towards cost impacts in projects upside/downside



## Respondent Nr. 11

**1. What is your educational background?**

Automation engineer

**2. How many years have you been a Project Manager?**

10+ years

**3. How many years have you been working in the company?**

5-10 years

**4. How many years have you been working within the Frame Agreement?**

11 years (from the beginning)

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)  
FastTrack

**6. How confident are you on Risk Management?**

5

**7. With your own words, how would you define risk?**

Definition of risk is the 'effect of uncertainty on objectives'.

**8. With your own words, describe the purpose of Risk Management?**

Risk management is the identification, assessment, and prioritization of risks.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

5

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

5

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

5

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

5

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

5

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

5

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

5

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

4

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

5

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

5

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

**13.9 Risk Management and Communication. Risks are communicated downwards**

5

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
4
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
5
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project Risks that need management involvement to find possible mitigations
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
4
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
5
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
5
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
4
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
3
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
5
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
2
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
1
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
The Management System [depersonalized answer]  
Project Quality and Risk Manager (QRM)  
Company's Risk Manager
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
4
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
4
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Risk Management Policy
- 26. You are welcome to comment on your answers**  
(OPTIONAL)

- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
5
- 27.2 The Risk Database. The Risk Database enables for experience transfer**  
4
- 27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
4
- 27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
4
- 27.5 The Risk Database. The Risk Database report function is sufficient**  
3
- 28. You are welcome to comment on your answers**  
(OPTIONAL)
- 29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
5
- 29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
4
- 29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
4
- 29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
5
- 30. You are welcome to comment on your answers**  
(OPTIONAL)
- 31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
No



## Respondent Nr. 12

**1. What is your educational background?**

Sivilingeniør

**2. How many years have you been a Project Manager?**

<1 year

**3. How many years have you been working in the company?**

5-10 years

**4. How many years have you been working within the Frame Agreement?**

7 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

3

**7. With your own words, how would you define risk?**

Usikkerhet som kan påvirke plan, kost, SOW, kvalitet, ressurser osv.

**8. With your own words, describe the purpose of Risk Management?**

Kontrollere risk, redusere/hindre omfanget av uønskede hendelser, fange opp muligheter

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

3

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

3

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

3

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

4

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

Disagree completely 1

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

Disagree completely 1

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

Disagree completely 1

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

4

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

Disagree completely 1

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

Disagree completely 1

**13.8 Risk Management and Communication. Risks are communicated upwards**

3

**13.9 Risk Management and Communication. Risks are communicated downwards**

3

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
3
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
3
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
No
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project risks that I as a Project Manager are unable to manage/be responsible for
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
5
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
2
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
1
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
4
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
3
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
5
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
PMBOK (Project Management Body Of Knowledge)
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
2
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
2
- 24. Does the company have a Risk Management Policy?**  
Don't know
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Risk Acceptance Criteria defined in contract
- 26. You are welcome to comment on your answers**  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
2

**27.2 The Risk Database. The Risk Database enables for experience transfer**  
5

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
2

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
2

**27.5 The Risk Database. The Risk Database report function is sufficient**  
2

**28. You are welcome to comment on your answers**  
(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
2

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
2

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
Disagree completely 1

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
4

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes

**32. Which Area(s) should be improved?**

Make checklist for risk brainstorming, gather information on what goes wrong in projects to use as an input to risk for new projects, course in risk understanding related to this industry



## Respondent Nr. 13

**1. What is your educational background?**

[Please enter academic degree and field of study]

**2. How many years have you been a Project Manager?**

5-10 years

**3. How many years have you been working in the company?**

10+ years

**4. How many years have you been working within the Frame Agreement?**

5 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Medium (5-20M NOK)  
Large (20-100M+ NOK)  
FastTrack

**6. How confident are you on Risk Management?**

5

**7. With your own words, how would you define risk?**

Defining uncertainties, potential problems.

Describe the action, take measures in advance to avoid the problem.

**8. With your own words, describe the purpose of Risk Management?**

The purpose of the risk register is to define potential problems in advance so that the project is in control of these if .

There is a list of risks, pr. Project. Risks can be flagged for management of status "critical" for the attention of them. Risk Database is alive and is regularly maintained by closing risks as actions taken. New risks are added if necessary.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely 6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

Agree completely 6

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

5

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

Agree completely 6

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

Agree completely 6

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

Agree completely 6

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

Agree completely 6

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

Agree completely 6

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

Agree completely 6

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

Agree completely 6

- 13.8 Risk Management and Communication. Risks are communicated upwards**  
Agree completely 6
- 13.9 Risk Management and Communication. Risks are communicated downwards**  
Agree completely 6
- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
Agree completely 6
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
Agree completely 6
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)?**  
Yes
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)?**  
Project risks that I as a Project Manager are unable to manage/be responsible for
- 16. Who can be a project risk owner?**  
Anyone within the contract
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
4
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
4
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
4
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time**  
2
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
1
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
4
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**  
3
- 19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**  
5
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
Other
- 22. You checked off "other" on previous question. Please specify these sources**  
Har brukt riskregister flere år i den gamle kontrakten før det nye styresystemet. Dette er ikke noe nytt, men har pågått i mange år. Var på kurs ang. dette allerede i 2006."Seminar usikkerhetsstyring"
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
Agree completely 6
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
Agree completely 6
- 24. Does the company have a Risk Management Policy?**  
Yes

**25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**

Project defined Risk Acceptance Criteria (RAC)

**26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

5

**27.2 The Risk Database. The Risk Database enables for experience transfer**

No opinion

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

3

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

3

**27.5 The Risk Database. The Risk Database report function is sufficient**

3

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

4

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

3

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

Agree completely 6

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

Agree completely 6

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

Tungvint å bruke riskdatabasen. Tidligere hadde vi de samme risk i en aksjonlogg i excel. Dette var mye enklere å bruke i prosjektmøtene.



## Respondent Nr. 14

1. **What is your educational background?**  
Mechanical Engineer
2. **How many years have you been a Project Manager?**  
1-2 years
3. **How many years have you been working in the company?**  
<1 year
4. **How many years have you been working within the Frame Agreement?**  
<1 year
5. **What kind of projects do you undertake within the Frame Agreement?**  
Medium (5-20M NOK)
6. **How confident are you on Risk Management?**  
2
7. **With your own words, how would you define risk?**  
Possible deviation from project HSE, plans and cost goals.
8. **With your own words, describe the purpose of Risk Management?**  
Following up and monitoring the risks in a project to minimize and avoid deviations.
- 9.1 **Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**  
4
- 9.2 **Risk Management and expectations. You clearly communicate your expectations to your project team**  
3
- 9.3 **Risk Management and expectations. Customer expectations are clear and unambiguous**  
3
10. **Is the Management System clear and unambiguous about your role in Risk Management?**  
No
11. **You are welcome to comment on your answers**  
(OPTIONAL)
- 13.1 **Risk Management and Communication. Risk communication are clearly defined in the Management System**  
3
- 13.2 **Risk Management and Communication. The Management System states <B>what</B> to report**  
3
- 13.3 **Risk Management and Communication. The Management System states <B>when</B> to report**  
4
- 13.4 **Risk Management and Communication. The Management System states <B>why</B> to report**  
3
- 13.5 **Risk Management and Communication. The Management System states <B>how</B> to report**  
4
- 13.6 **Risk Management and Communication. The Management System states <B>to whom</B> to report**  
3
- 13.7 **Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**  
4
- 13.8 **Risk Management and Communication. Risks are communicated upwards**  
4
- 13.9 **Risk Management and Communication. Risks are communicated downwards**  
3
- 13.10 **Risk Management and Communication. Risks are communicated side-ways**

3

**13.11 Risk Management and Communication. Risk mitigations are clearly communicated**

4

**14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)**

No

**15. What are the criteria for aggregation of risk (reporting of Critical Items)**

Risks with major impact on project objectives

**16. Who can be a project risk owner?**

Anyone within the contract

**17. You are welcome to comment on your answers**

(OPTIONAL)

**18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**

4

**18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**

4

**18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**

3

**19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5).Time**

3

**19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**

1

**19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**

4

**19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database**

2

**19.5 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Other**

5

**20. You are welcome to comment on your answers**

(OPTIONAL)

**21. What are your main sources of Risk Management practice?**

Company's Risk Manager

**23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**

3

**23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**

3

**24. Does the company have a Risk Management Policy?**

Yes

**25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**

Project defined Risk Acceptance Criteria (RAC)

**26. You are welcome to comment on your answers**

(OPTIONAL)

**27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**

3

**27.2 The Risk Database. The Risk Database enables for experience transfer**

3

**27.3 The Risk Database. The Risk Database is intuitive and easy to use**

2

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

2

**27.5 The Risk Database. The Risk Database report function is sufficient**

3

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

3

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

4

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

2

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

3

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

Training



## Respondent Nr. 15

**1. What is your educational background?**

Stavanger tekniske fagskole

**2. How many years have you been a Project Manager?**

1-2 years

**3. How many years have you been working in the company?**

5-10 years

**4. How many years have you been working within the Frame Agreement?**

4 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

3

**7. With your own words, how would you define risk?**

Risk definerer jeg som usikre elementer som kan påvirke prosjektene i ifh til sikkerhet , økonomi og plan.

**8. With your own words, describe the purpose of Risk Management?**

Hensikten med Risk Management definerer jeg som eit verktøy for å belys, redusere og finne løsninger på usikkerhet i prosjektene.

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

4

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

4

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

4

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

Jobber som studieleder , ikke prosjekt leder.

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

5

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

5

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

5

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

5

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

5

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

5

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

4

**13.8 Risk Management and Communication. Risks are communicated upwards**

5

**13.9 Risk Management and Communication. Risks are communicated downwards**

4

- 13.10 Risk Management and Communication. Risks are communicated side-ways**  
4
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated**  
4
- 14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)**  
No
- 15. What are the criteria for aggregation of risk (reporting of Critical Items)**  
Risks with major impact on project objectives
- 16. Who can be a project risk owner?**  
Any manager in the company
- 17. You are welcome to comment on your answers**  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results**  
Agree completely 6
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization**  
Agree completely 6
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty**  
Agree completely 6
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5).Time**  
3
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability**  
4
- 19.3 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Number of registered risks**  
2
- 20. You are welcome to comment on your answers**  
(OPTIONAL)
- 21. What are your main sources of Risk Management practice?**  
The Management System [depersonalized answer]
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.**  
5
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System**  
4
- 24. Does the company have a Risk Management Policy?**  
Yes
- 25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?**  
Risk Management Policy
- 26. You are welcome to comment on your answers**  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure**  
5
- 27.2 The Risk Database. The Risk Database enables for experience transfer**  
5
- 27.3 The Risk Database. The Risk Database is intuitive and easy to use**  
5
- 27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**

5

**27.5 The Risk Database. The Risk Database report function is sufficient**

5

**28. You are welcome to comment on your answers**

(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**

4

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**

3

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**

3

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**

5

**30. You are welcome to comment on your answers**

(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**

Yes

**32. Which Area(s) should be improved?**

opplæring, gjerne bedre rutiner/fokus i prosjekt.



## Respondent Nr. 16

**1. What is your educational background?**

Master of Science

**2. How many years have you been a Project Manager?**

5-10 years

**3. How many years have you been working in the company?**

2-5 years

**4. How many years have you been working within the Frame Agreement?**

2 years

**5. What kind of projects do you undertake within the Frame Agreement?**

Large (20-100M+ NOK)

**6. How confident are you on Risk Management?**

4

**7. With your own words, how would you define risk?**

Something unwanted - incident or consequence - that has an unacceptable level of likelihood to occur.

**8. With your own words, describe the purpose of Risk Management?**

Countermeasures taken to fully avoid or minimize the chance of the unwanted event to occur.

Example: Installing and using Seat belts in your car

**9.1 Risk Management and expectations. Expectations to you as Project Manager is clearly communicated from Management**

Agree completely 6

**9.2 Risk Management and expectations. You clearly communicate your expectations to your project team**

4

**9.3 Risk Management and expectations. Customer expectations are clear and unambiguous**

4

**10. Is the Management System clear and unambiguous about your role in Risk Management?**

Yes

**11. You are welcome to comment on your answers**

(OPTIONAL)

**13.1 Risk Management and Communication. Risk communication are clearly defined in the Management System**

Agree completely 6

**13.2 Risk Management and Communication. The Management System states <B>what</B> to report**

4

**13.3 Risk Management and Communication. The Management System states <B>when</B> to report**

4

**13.4 Risk Management and Communication. The Management System states <B>why</B> to report**

4

**13.5 Risk Management and Communication. The Management System states <B>how</B> to report**

4

**13.6 Risk Management and Communication. The Management System states <B>to whom</B> to report**

4

**13.7 Risk Management and Communication. Risk Communication is sufficient in Frame Agreement**

3

**13.8 Risk Management and Communication. Risks are communicated upwards**

3

**13.9 Risk Management and Communication. Risks are communicated downwards**

3

- 13.10 Risk Management and Communication. Risks are communicated side-ways  
3
- 13.11 Risk Management and Communication. Risk mitigations are clearly communicated  
3
14. Are you familiar with the defined criteria for aggregation of risk (reporting of Critical Items)  
Yes
15. What are the criteria for aggregation of risk (reporting of Critical Items)  
Risks with major impact on project objectives
16. Who can be a project risk owner?  
Anyone within the contract
17. You are welcome to comment on your answers  
(OPTIONAL)
- 18.1 Risk Management and Utility Value (nytteverdi). Risk Management has a direct influence on project results  
5
- 18.2 Risk Management and Utility Value (nytteverdi). Risk Management adds value to my project organization  
5
- 18.3 Risk Management and Utility Value (nytteverdi). The Risk Database works as decision-support under uncertainty  
3
- 19.1 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Time  
3
- 19.2 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). People - competence and availability  
1
- 19.4 Which of the following alternatives are most scarce (limited) in keeping the Risk Register updated? Please prioritise your answers from most scarce (1) to least (5). Quality of the Risk Database  
2
20. You are welcome to comment on your answers  
(OPTIONAL)
21. What are your main sources of Risk Management practice?  
Project Quality and Risk Manager (QRM)
- 23.1 Guidelines in the Management System. The Management System provides the necessary guidance to how and why Risk Management should be applied in the project.  
5
- 23.2 Guidelines in the Management System. Role, responsibility and accountability are clearly defined in the Management System  
5
24. Does the company have a Risk Management Policy?  
Yes
25. Which of the following alternatives shall be used for evaluation of probability and consequence in the Risk Register?  
Risk Management Policy
26. You are welcome to comment on your answers  
(OPTIONAL)
- 27.1 The Risk Database. The Risk Database provide instant overview of risk exposure  
3
- 27.2 The Risk Database. The Risk Database enables for experience transfer  
3
- 27.3 The Risk Database. The Risk Database is intuitive and easy to use  
3

**27.4 The Risk Database. The Risk Database meets my expectations as a Project Risk Management tool**  
3

**27.5 The Risk Database. The Risk Database report function is sufficient**  
3

**28. You are welcome to comment on your answers**  
(OPTIONAL)

**29.1 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management Guidelines and Framework are clear and unambiguous**  
3

**29.2 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Current Risk Management practice is sufficient**  
3

**29.3 Expectations and attitudes towards the current Risk Management in the Frame Agreement. You have received sufficient training to effectively manage risks in your projects**  
3

**29.4 Expectations and attitudes towards the current Risk Management in the Frame Agreement. Management encourage the use of Risk Management**  
3

**30. You are welcome to comment on your answers**  
(OPTIONAL)

**31. With regard to Risk Management in the Frame Agreement, are there any areas that should be improved?**  
Yes