Organisational Risk Culture:
Differences between Managerial Expectations and Employees' Perception

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ABSTRACT

Corporate real estate management has become the strategic management of the company's real estate portfolio that also includes risk management, to protect the business against developments, which could jeopardise the continuity of the organisation. However, risk management tools just represent the infrastructural and technical precondition, but it also requires an appropriate risk culture by all employees for an effective and comprehensive risk management system.

Due to diverse shortcomings identified during the literature review, the researcher intends to contribute to corporate real estate management and risk management likewise, by investigating risk culture, theoretically and practically, through an in-depth case study. The case study unit is a corporate real estate organisation of a diversified retail and wholesale company based in Germany.

From an academic viewpoint, the researcher has developed a general framework consisting of different key components associated with risk culture from the literature. This represents the conceptual basis for the case study that followed, to identify managerial expectations, i.e. the target risk culture, of the case study unit's executives, through qualitative interviews (n=11). Based on this, the researcher aims to find out any differences between these expectations and employee's perception, i.e. the existing risk culture, through a web-based survey of all their full-time employees (n=455). The described approach also represents a proven way as a theoretical concept to investigate risk culture in organisations.

In terms of practical contribution for the case study unit, the survey responses (n^r=199) confirms the biggest backlog demand in clarity and transparency of risk management processes, including employees' knowledge of the respective policy, and cross-departmental exchange. Management role model, sense of responsibility and entrepreneurial thinking is confirmed by the respondents which represents a fundamental basis towards their target risk culture. However, specific differences in risk culture exist by gender, age, location, job tenure and hierarchy level that is analysed and discussed, to develop more specific measures to overcome the identified deficits.

AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas. Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed  October 2013

ABBREVIATIONS

ARES	American Real Estate Society
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operations Officer
CRE	Corporate Real Estate
CREM	Corporate Real Estate Management
DAX	stock listed company (Deutscher Aktien Index)
DUS	Dusseldorf, Germany
e.g.	for example
EBS	European Business School
ERS	Emergency Reporting System
HR	Human Resources
i.e.	that is
IMF	The International Monetary Fund
IIF	The Institute of International Finance
IISD	The International Institute for Sustainable Development
IREM	The Institute of Real Estate Management
IRM	The Institute of Risk Management
ISO	The International Organization for Standardization
IT	Information Technology
KonTraG	Corporate Sector Supervision and Transparency Act (in Germany)
M	Median
MAG	METRO AG
MP	METRO PROPERTIES
n	Number of (interview or survey) participants
n^r	Number of (interview or survey) respondents
NOS	National Occupational Standards
RC	Risk Culture
RE	Real Estate
REIT	Real Estate Investment Trust
RIMS	The Risk and Insurance Management Society
RO	Risk Owner
RM	Risk Management
SAR	Saarbrucken, Germany
SD	Standard Deviation
UK	United Kingdom
US	United States

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KEY TERM SHEET

Corporate Real Estate (CRE): Properties that are owned or leased by a company for its own operational purposes, almost exclusively consisting of commercial and industrial property types i.e. offices, production sites, warehouses or retail shops/stores, depending on the company's core business. Residential properties are usually rare in a corporate real estate portfolio

Corporate Real Estate Management (CREM): The active, result-oriented, strategic and operative management of corporate real estate

Non-Property Companies: Companies whose core business is not in the real estate industry

(Organisational) Culture: Collective mindset and shared mental assumptions of people as part of an organisation that guide people's view and action by defining appropriate behaviour for various situations

Real Estate Risk: All risks that are related to real estate and its management

Risk: Potential effects of uncertainty on objectives

Risk Owner: The ultimate holder of objectives and related risks

Risk Management (RM): A combination of instrumental infrastructure (such as processes, methods and tools) and organisational structure (such as roles and responsibilities of all people involved) so as to identify, assess and control risks associated with the company's business

Risk Culture (RC): The values and standards of behaviour for individuals or groups within an organisation that determine the collective ability to identify, understand, openly discuss and act on the organisation's current and future risks

1 Introduction

1.1 Historical Perspective & Justification of Study

After the financial crash (the collapse of the residential property market since 2007 in the United States (US), and further debt crises within separate countries with global consequences), there has been an inevitable consequence for commercial properties. Decreasing market values and rents have been accompanied by continuous escalating vacancy rates (IMF, 2009; Mazria & Kershner, 2010). What may sound like a good opportunity for non-property companies (i.e. companies whose core business is not in the real estate (RE) industry) who lease their properties, turns into a risk when considering the high ownership rate of corporate real estate (CRE), which represents 10% of the total assets of non-property companies, and in some cases up to 30% (Stürmer, 2005).

The necessity for corporate real estate management (CREM) has long been identified but the requirements have changed over the years. Today, CREM is no longer just about bricks and mortar (Holland, 2009). By definition, it has become the active, result-oriented, strategic and operative management of CRE (Schulte & Schäfers, 1998). The focus is primarily not on return on RE investment, but on the use of the property for the company's core businesses (Edwards & Ellison, 2003; Appel-Meulenbroek, Havermans & van Kempen, 2009). However, value retention and appreciation of these properties remains a significant objective of CREM (Stürmer, 2005).

For non-property companies, CRE generally fulfils two functions which are both critical and supportive to the organisation. The first is simply the physical fundament of the business, to enable the company to undertake its activities, e.g. offices, production sites or shops. The second role is of a symbolic nature, supporting the representation of the organisation to others (O'Mara, 1999). CRE plays a significant role, especially in the retail business, as this is the place where companies establish and maintain direct contact with their customers (Edwards & Ellison, 2003). It is the place where they stock, present and sell their products or services; consequently it is the place where retail companies earn their money (Soethe & Rohmert, 2010).

To ensure that CRE does not fail to fulfil its function, management has to establish appropriate, proactive methods, tools and procedures. German corporations have been obliged by law (KonTraG; § 91 para. 2 German Company Law) to install an early warning system to protect the business against developments which could jeopardise the continuity of the company (Wieland & Fürst, 2002). Whereas other industries make already use of forward-looking methods and tools, it is still mainly experience and intuition that counts in CREM (Maier, 2004). A reason for that may be that the laws and provisions do not provide a formalised framework for the companies stating what an appropriate early warning system should look like, what it should contain and how it should be implemented. These mainly represent a trigger for the management as a violation of this organisational duty, which can result in considerable increased liability by the Management Board in the event of loss or damage. In that case, the Management Board would have to provide evidence that they attended to their duty to a sufficient extent (§ 93 para. 2 German Company Law). For non-property companies, this does not only include their core business but also their CRE activities, to manage RE risks accordingly.

As a consequence, the demand and requirements of companies with regards to the implementation and disclosure of risk management (RM) increases so that it also covers CRE (Pfnür, 2004; Rose, 2012). However, RM should not be seen merely as an end in itself, or just a method of fulfilling legislative requirements of regulatory authorities, banks or rating agencies. It should be the concern of all companies to identify, assess and control their risks, including those which are associated with CRE to ensure their sustained success on the market.

An effective RM represents the procedural and technical precondition, which includes the instrumental infrastructure (RM processes, methods and tools) and organisational structure (roles and responsibilities of people involved in RM) for a company to manage their risks (IRM, 2002; Schild, 2009). Literature confirms that there has been significant developmental progress of RM frameworks and standards over recent decades (Ward, 1997; IRM, 2002; Brocar, 2007; Urschel, 2010; Fricke, 2010; Cendrowski, 2010). However, the business press has reported a great many corporate scandals, failures and collapses, and not only in the financial industry, which indicates that RM tools and

processes alone are not adequate to make a concrete difference to a company's success or failure (IRM, 2012; Ashby, Palermo & Power, 2013).

There is one organisational construct demonstrating a lasting value and positive impact on RM resulting from the consistency of all employees showing the same behaviours towards risks, sharing the same understanding and a collective mindset, i.e. risk culture (RC) (Althonayan, Killackey & Keith, 2012). RC is the way all members of an organisation feel and behave about risks, including employees' attitudes toward risk as it relates to their daily operating activities and management's view of risk in relation to decision-making processes (Compliance and Ethics Institute, 2009). It represents the norms of behaviour for individuals and groups within an organisation that determine the collective ability to identify, understand, openly discuss, and act on the organisation's current and future risks (Levy, Twining & Lamarre, 2010). RC can also be regarded as a pattern of basic assumptions that a group learned as it identified, evaluated and managed its internal and external risks, which have worked well enough to be considered valid, and are therefore valid enough to be taught to new members as the correct way to perceive, think and feel in relation to those risks (Schein, 1985; Cooper, 2010). Consequently, RC represents the missing link between RM tools and procedures and the people involved (IRM, 2012; Borge, 2013).

Although the necessity of RM is widely accepted, companies often underestimate the influence of the cultural aspect in that context (Brüesch & Kager, 2010; PWC, 2009). To develop and maintain an appropriate RC is still one of the major challenges in RM (Meinert, 2011). A strong culture may lead to high employee motivation and loyalty, cooperation and exchange between all departments and a better alignment of the company towards achieving its goals (Gordon, 2012). It may promote consistency and encourage solidarity and attentiveness within the company that shapes employee's behaviour at work accordingly. Finally, a healthy culture can achieve higher efficiency and profitability (Gordon, 2012). This is also true for RC, as it may lead to people being attentive in their working environment with regard to potential risks. However, people have to learn and understand how to deal with risks at work (Blue, 2011). Usually, they learn from other individuals within the organisations, e.g. colleagues or supervisors, through group dynamics or by way of example. All too often, management simply

assumes that their employees know what behaviour towards potential risks is expected by them (PWC, 2009).

In many cases, executives have not realised that even the most sophisticated RM tools and technologies are merely expensive dashboards, without being accompanied by an appropriate RC (Blue, 2011). Companies spend a lot of money on their RM but this continues to fail, sometimes with fatal consequences (Hubbard, 2009; Stulz, 2009). Managers have begun to understand that these have often been a result not of the tools or procedures but of an inappropriate RC (Boards Insync, 2009; Hubbard, 2009; Blue, 2011). In organisations that have a poorly developed RC, employees will tend to do the wrong thing despite good policies or tools (Cooper, Speh & Downey, 2011). Some Risk Managers believe that the financial crisis was caused not by technical failure, but by a weak organisational culture (Rasmussen & Marks, 2010; Jahner & Krcmar, 2005). In addition to that, many companies believe that an inappropriate RC represents an essential risk itself for the organisation (Monjau, 2007; Bungartz, 2003). Consequently, there has been a certain pressure to show a positive RC due to the increased focus on RM by both shareholders and stakeholders (Rose, 2012).

Weak cultures are often less likely to demonstrate the ability to respond positively to criticism, whereas strong cultures are more likely to welcome opportunities to learn and change for the better (Cardinal, 2012). Employees, in a risk-oriented cultural environment, will do the right thing, even in face of unclear procedures (Cooper, 2010). It is assumed that a risk-oriented culture encourages self-policing, and that the level of monitoring and controls are increased far beyond what any RM tool or approach alone can accomplish (Marks, 2009; Rossiter, 2001). Although it is impossible for Risk Managers to be everywhere at once or to write guideline that covers each and every risk-fraught activity or situation, within a strong RC people know what to do and take this behaviour for granted (Hopkins, 2004; Seitter, 2006). A healthy common sense of all employees towards risks combined with a good cultural setting represents an essential qualification for a ‘human” early warning system (Romeike, 2008). Companies that are continuously in a crisis mode who react to risk-fraught events when they occur have not developed a strong RC that is characterised by a forward-looking approach of the entire organisation (Rochette, 2009). Finally, an appropriate RC

represents a prevention that is more efficient than ex-post acting risk controls (Wieland & Fürst, 2002).

In a strong RC, people make better risk decisions because of the capability and desire to do so, not simply because they are expected to follow rules or procedures (Borge, 2013). An appropriate RC is claimed to be the most effective tool to manage, although not necessarily to reduce risk (Behof, 2010). Nevertheless it does enable an effective and sustainable RM to play a significant role in the day-to-day decision making process, thus demand for enhancing a stronger RC has become necessary by management (Rautenstrauch & Hunziker, 2010). However, a healthy RC cannot just be introduced by management, as it is mainly a 'by-product" of management's behaviour demonstrating adherence to policies through their own behaviour (Cendrowski, 2010). It cannot be achieved simply by distributing guidelines or mandating that values have changed (IRM, 2012). It requires a significant shift in the mindset of all employees, making risks everyone's daily business (Houngbedji, 2011).

As Warren (2010) highlights there is a need for further research in CREM in developing strategies to prepare their organisation to mitigate the effects of RE risks, such as natural disasters and severe weather events, that may result in physical injury or even economic loss of the CRE. CREM organisations have long understood the concept of risks, i.e. to ensure that acquisition or construction projects are completed on time (operational risk) and within the budget (financial risk) at a single asset level. However, there has been little concentration on risks across the entire CREM organisation, such an inappropriate RC (Gibson & Louargand, 2002). The 'people" aspect is often left to the Human Resources (HR) departments to design and develop the human factor, but a more active input from the RM functions and the management is crucial in aligning the RC with the overall business strategy, and risk strategy in particular (Box, 2010). It is important to understand that a strong RC is not a guarantee for business success, but without it the chances for success are strongly limited (Rochette, 2009).

1.2 Research Objectives & Questions

This research generally aims to add to the knowledge of RM, especially in terms of the human factor, i.e. RC, through an empirical case study carried out on risk-cultural aspects at a CREM organisation of a non-property company, based in Germany. The

primary study target is to contribute to theory in general by developing an RC framework, to identify the target and existing RC of organisations, in order to understand potential differences between managerial expectations and employees' perception. The study secondarily aims to contribute to practice, in particular to investigate the target and the existing RC of a case study unit. The case study intends to proof practical applicability of the RC framework in general.

Consequently, the objective of this study is threefold:

- To develop an RC framework to advance theory about RC
- To identify the target RC of a case study unit to gain an understanding about how their ideal RC should look like in practice (managerial expectations)
- To determine any congruencies and differences between managerial expectations and employees' perception, that represents the existing RC within the case study unit.

The study intends to answer the following overall research questions (RQ):

What are differences, if any, between managerial expectations and employees' perception in organisational risk culture?

This overarching RQ leads to the following subordinate RQs:

RQ1 **What are the key components of organisational RC?**

RQ2 **What are managerial expectations in terms of the target RC within the case study unit?**

RQ3 **What are the congruencies and differences between managerial expectations and employees' perception within the case study unit?**

1.3 Research Scope & Structure

The research covers the development of an RC framework that is applied in a CREM organisation of a non-property company based in Germany, to identify the target RC and investigate its achievement, i.e. the existing RC.

Regarding RQ1, the RC framework is developed from literature and previous research, using existing models and frameworks as a starting point. During the literature review, shortcomings are identified and general propositions with regard to socio-demographic variables are developed that refer to RC throughout the organisation in principal. Relating to RQ2, the target RC is identified by conducting in-depth interviews with executives of the case study unit. The general propositions are further specified in consideration of the RC components and the results of the interviews. This is followed by a survey with all employees, to answer RQ3 in order to determine the existing RC within the case study unit. The study ends with a comparison of the target RC with the existing RC, to work out any congruencies and differences between managerial expectations and employees' perception.

This paper consists of five chapters that follow the introduction chapter, which reveal the conceptual themes of this study. The first chapter introduces the topic and presents the research objectives, questions, assumptions and limitations. Chapter two deals with the literature review, covering definitions, concepts, propositions and current state of research with regard to RM, RC and CREM. This is followed by chapter three, which introduces the genesis of the RC framework, applied in this study, to answer RQ1. Chapter four focuses on research methodology, including the development of the chosen research design, methods, sampling, data collection and analysis. Chapter five starts with an introduction of the case study unit, continued by findings resulted from the interviews (identification of the target RC; to answer RQ2) and employee survey (determination of the existing RC; to answer RQ3). It ends with an interpretation and critical discussion of the case study results, including a comparison of target and existing RC. Chapter six finalises this work with a summary, conclusions and recommendations by the researcher, together with suggestions for future research.

Table 1 Research Diagram for this Study

	Research Method	Research Purpose	Research Outcome	Connection to next / final stage
1)	Literature Review	To identify key components of organisational risk culture	"House of Risk Culture"	represents the conceptional framework to identify the target risk culture by interviews
2)	Management Interviews	To identify managerial expectations concerning risk culture of their organisation	"Target Risk Culture" as expected by management	represents the basis to determine the existing risk culture by employee survey
3)	Employee Survey	To determine congruencies and differences between managerial expectations and employees' perception in their organisation	"Existing Risk Culture" as perceived by employees	provides the results appropriate to answer the overall research question

1.4 Research Assumptions & Limitations

As this study explores a single case, it does not attempt to provide broad generalisation, but rather insight and in-depth understanding of an individual real-life phenomenon (Yin, 2009). Consequently, the research results are only valid for the case study unit, and in particular for those persons who participated in the study, i.e. interviewees and survey respondents. Interview partners were selected, using the judgement of the researcher, to consider the most appropriate samples which have the prospect of providing answers that would be more beneficial than other potential samples. However, the researcher also depended on the willingness of those people to participate in this study, whereas 2 (out of the 11 executives requested to be interviewed) refused to attend, due to lack of time. In summary, it cannot be excluded that the selected interviewees were actually the most appropriate, or if other persons would have produced different insights, or even conflicting answers. The same is applicable for the survey participants, as only those employees were considered who have access to a personal email address (to receive the invitation email and to the internet (to complete the web-based questionnaire).

Furthermore, it is unclear if and how the fact that the researcher is an employee of the case study unit impacts the research. What is seen as an advantage or beneficial effect by the researcher to have access to a study population that is usually not accessible for others, in particular when the study topic is sensitive, potential bias cannot be avoided, by both the researcher and the study participants. Notably, social desirability bias, i.e. the attempt to answer in a way as it may be expected by society, or the Management Board of the case study unit in particular, may have implications for this study, that can be reduced by the researcher by an appropriate researcher design, but can not be fully excluded (Bryman & Bell, 2007).

Studying cultures generally faces the problem with regard to the respective boundary of the culture of interest. It is difficult to understand the levels of aggregation under which potential subcultures can be consolidated, especially in large organisations (Führing, 2004). The researcher decided to regard the case study unit's (full-time) employees based in Germany as a separate, self-contained culture, in a sense that a collective mindset, values and beliefs are shared within this group of people. During the study, the researcher learned that, within this culture, two sub-cultures may exist, as the case study

unit was located in two different cities, that is to be considered in the further course of the research. However, it cannot be excluded that further sub-cultures exist, for example with regards to gender, age, supervisory responsibility or job tenure, and that could cause conflicting perceptions or assumptions.

In addition to that, country-specific cultural aspects are not analysed within this study. The case study unit employs not only German-born people that have grown up in Germany, but also other nationalities, and this may have an influencing effect with regards to culture. As 98% of the survey respondents completed the questionnaire in German, the researcher assumes that cultural differences between German and non-German participants do not have any high relevance for this study, and therefore can be ignored. However, country-specific cultural differences cannot be excluded and may produce potential bias that may also impact this study.

2 Literature Review

The literature review of this study was conducted in three main directions, where two are generally independent from each other, but all relevant to this thesis: Risk/Risk Management (RM), Risk Culture (RC) and Corporate Real Estate Management (CREM). During the literature search and subsequent analysis, the selected literature was initially separated into the three respective spheres in order to understand their individual definitions and concepts, and the current state of research on an independent level.

2.1 Risk & Risk Management

2.1.1 The Risk Definition

As a starting point of this study, it is necessary to understand what risk is. Slovic (1987) and Douglas and Wildavsky (1982) highlighted that risk has a different meaning to people depending on their social environment, as the perception of different risks is based on different cultural factors. Due to this, it is not surprising that there is also no uniform definition of risk in the literature. There are a lot of definitions available depending on the writers' understanding of risk. For Arlt et al. (2009) risk, in a narrower sense, means the hazard of a negative deviation from an expected outcome, which is the mathematical risk definition. Adair and Hutchison (2005) referred to a spectrum which ranges from certainty, characterised by full knowledge, to total

uncertainty with a lack of knowledge. They see risk within this range as a situation where alternative outcomes and their probabilities are known.

Hertz and Thomas (1983) defined risk as a state of uncertainty where some of the possibilities involve a loss, catastrophe, or other undesirable outcome, whereas Hubbard (2009) regarded risk as the probability and magnitude of a loss, disaster, or other undesirable event. It was noticed during the literature review that risk was often mentioned in the context of uncertainty, especially when risks are incapable of being measured. Likewise, measurable uncertainty was often put on a par with risk; so said Reymen, Dewulf and Blokpoel (2008), who defined uncertainty as an unpredictable and/or uncontrollable risk. Furthermore, the terms probability and possibility were used in the same context when trying to define the term risk, whereas there is a clear difference: possibility is a binary condition, either something is possible or it is not, while probability reflects the continuum or range between absolute certainty and impossibility (Jones, 2007). The diverse spectrum of definitions indicates the different perceptions, experiences and appetites of the authors for considering risk. Indeed, the definition of risk depends on the purpose and intention of the respective authors.

Critics such as Knight (1921) argued that the terms are loosely used and mixed up in everyday speech and economic discussions, because they have never been properly separated. In everyday language as well as in the literature, risks are generally associated with something negative. A different perception came from Pfnür (2002) who suggested that risks could also be regarded as neutral, as risks are intrinsically tied to chances. The effects of activities or decisions could be not only worse (risk), but also better (chance) than expected. That is why some authors speak about ‘upside risk” and ‘downside risk” as there is the potential for consequences that constitute opportunities for benefit (upside) or threats to success (downside) in all types of undertaking (IRM, 2002). So risks can even be associated with something positive. A desired risk could be a thrill by acting in a risky manner, e.g. bungee jumping or parachuting (Rohrmann, 2003). Hubbard (2009) criticised the widely inconsistent and ambiguous use of the word risk as one of several weak points in RM.

While there are several different risk definitions available in theory, there are three basic words that each definition should contain as claimed by Hillson (2010):

- uncertainty (it may or may not occur)
- effect or consequence
- measured against defined objectives

During this study, the researcher utilises risk as potential effects of uncertainty on objectives, in accordance with ISO 31000 (The International Organization for Standardization, also known as ISO, is an international standard-setting organisation, founded in February 1947, which promulgates worldwide proprietary, industrial, and commercial standards. ISO 31000 was published in November 2009, and provides a standard on the implementation of RM). This risk definition is appropriate for this study as it includes effects in both directions, i.e. negative (risks) and positive (chance) effects, as risks are intrinsically tied to chance.

Hillson (2010) criticised that risk is not the effect, but the uncertainty itself that results in an effect, so that risk is an uncertainty that, if it occurs, will have an effect on objectives. The difference here is that RM would focus on the uncertainty, instead of on the effect. From this researcher's point of view, RM cannot influence the probability whether or not a risk occurs (uncertainty), but it can propose or hold ready (preventive) measures, e.g. special clauses in contracts, alternatives or counteractive measures, to manage effects of potential risks proactively. RM does not only mean (as it is not always possible) to avoid or reduce risks, but also to take risks deliberately in order to realise the chances. The challenge is to be aware of or prepared for risks. However, risks are uncertain but the importance is to manage their potential consequences.

2.1.2 The Concept of Risk Management

The literature offers a lot of different approaches with regards to RM, for corporations to protect their business against undesirable developments caused by risk-fraught activities. A very basic model of RM discussed in the literature by Brown (1993) included only two phases, which are risk assessment and risk control. From his perspective, risk assessment means identification, whereas control means to decide how to deal with identified risks. Although it was not described, it can be assumed that control requires an assessment which exceeds the pure identification of risk. A more detailed RM model described by Maier (2004) consists of three steps, namely risk analysis, politics and control. Politics in this context means the decision regarding how

to handle risks, e.g. risk acceptance or risk transfer, whereas control is the monitoring of those activities with regards to efficiency and effectiveness.

Some other RM models go back a step further. Before risk identification, the first objective is to determine the company's overall risk preference and define a risk strategy (Huffman, 2002). Also Taylor (2003) explained that a company has to define its objectives first and then define the risks that could prevent it from achieving them. The process model by Artl et al. (2009) also starts with mapping out a strategy, followed by risk identification, analysis, assessment, control, check against the strategy, documentation and reporting.

Companies do not just have to be able to demonstrate that they are capable of identifying, assessing and managing risks, but also that they are capable of responding when those risks change (Taylor, 2003). This means, that it is key to consider the changing nature of risks by monitoring them continuously. Consequently, RM should not be a one-time process, but ongoing. This is why most of the literature illustrates RM as a cycle, which highlights that it should be a continuous process as presented by Figure 1. The three steps most often named in the literature are risk identification/analysis, followed by risk assessment/risk measures/controls, accompanied by a permanent documentation/reporting.

Figure 1 Basic Model of Risk Management Process

Source: Own illustration, in accordance with Romeike (2002)

Further examples of RM concepts were presented within the works of Klaproth (2004), Artl et al. (2009), Sandvoss (2004) and others. However, some other authors differ from that illustration by presenting the process in the shape of a triangle (e.g. Maier, 2004) or

a work flowchart (e.g. Rehner & Neumair, 2009). Whereas a triangle is often used in business and economics to show the stress ratio of competing items, such as the 'magic triangle" of time, cost and quality in project management, a work flowchart represents a process characterised by a start and an end. The necessity to understand RM as a continuous process is not clearly presented by these illustrations. However, all the considered authors proposed that RM should be performed at least on a regular basis, which indicates that a one-time execution is not sufficient and sustainable when companies intend to have permanent success.

2.1.3 Current State of Risk Management Research

The vast majority of the material selected for the literature analysis with regards to RM is of an academic nature, for the most part published in journals and books, as well as conference or lecture papers. The works found to have a practical reference mostly report superficially either a single case or a very specific subject related to RM. This could suggest that the area of risk is very sensitive. Companies are understandably reluctant to make their own risks or weaknesses, which might compromise their competitiveness, publicly known. In other words, companies are not willing to publish best practise solutions or experiences, in order to keep or obtain the edge over the competition. For all that, articles in trade journals often present some practical examples, which sometimes provide a rough understanding of best practise.

The study of risks has its roots in mathematical studies of probabilities. In the course of time, powerful mathematical and analytical tools for decision-making derived from probability theory, and a lot of research was conducted in that area (Bernstein, 1996). Within this increased interest in RM by different authors, also critical success factors for effective RM were put in the centre for consideration. Many researchers discovered a great influence of certain factors on implementation success, from different perspectives, i.e. different industries or types of organisation. Grabowski and Roberts (1999) studied critical success factors in the context of virtual organisations, and they have identified organisational structuring/design, communication, culture, and trust as the most important factors to mitigate risks. For Hasanali (2002) leadership, culture, structure (roles & responsibilities), information technology (IT)/infrastructure and measurement are key factors for knowledge management, which are also applicable to RM.

Ranong and Phuenngam (2009) focused on RM-related critical success factors in financial industries and they came to the conclusion that there are seven factors for an effective RM, namely commitment/support from the top management, communication, culture, organisation structure, trust, IT and training. For Müller (2005), an open communication and a prior definition of objectives are relevant for the success of projects, whereas a risk-aware culture represents the most critical aspect. Also Jahner & Krcmar (2005), who did research in the industry of IT, highlighted culture as the essential 'success factor' in RM. Other authors, such as Brühwiler and Kahla-Witzsch (2011), separate critical success factors into hard and soft elements, whereas methods and tools represent the hard facts as a precondition for success. The soft facts include the human factor, i.e. the awareness and perception of people, tone from the top and a learning culture, just to name a few.

Presenting these works as examples, it is noted that the cultural aspect plays a significant role for the success of RM. RM should not be regarded as a series of isolated controls but a pursuit of cooperative spirit; this also confirms the importance of the human aspect in RM (Schild, 2009). For Hillson and Murray-Webster (2004) cultural aspects introduce an additional layer of complexity to RM as they affect RM both explicitly and covertly. Due to this, an understanding of these cultural components was identified by previous research as the main requirement for successful RM (Glendon, 2012). This is confirmed by Hillson and Murray-Webster (2004) who pointed out that an appropriate RC is the most significant success factor, as it has a considerable influence on whether RM delivers what it promises, as both research and experience has indicated to them. However, in this context, they also mentioned that RC is also the factor most often lacking in companies, which also represents a good reason to focus on that within this study.

2.2 Organisational Risk Culture

2.2.1 The Risk Culture Definition

During the literature review, it was confirmed that there is no widely-accepted definition or set of characteristics of RC (IRM, 2012; Bennett, 2013; Ashby, Palermo & Power, 2012). Some even claim that RC definitions have been inadequately formulated and that key aspects are still undetermined (Althonayan, Killackey & Keith, 2012).

Although there is no universal consensus, there are a lot of different approaches and perspectives on what RC is, mainly focused on particular aspects of this topic, such as communication or leadership. In an attempt to approach RC, the researcher decided to reduce RC to culture first, to define it in its own meaning as a starting point.

In general, the term ‘culture” has different meanings. Culture generally refers to language, thoughts, arts, science, spirituality, social activity / socialisation and human interactions (Bennett, 2013). In accordance with Oxford English Dictionary, the definition of culture generally differentiates between the following:

- the arts and other manifestations of human intellectual achievement regarded collectively
- the characteristics, ideas, attitudes and social behaviour of a particular society
- the cultivation of bacteria, tissue cells, etc. in an artificial medium containing nutrients
- the cultivation of plants

Within the meaning of this study, culture refers to the second definition, i.e. a group of people that share a collective mindset, explicitly or tacitly, based on same assumptions, beliefs, norms and values, as well as awareness, attitudes and behaviour (Schild, 2009). In this study, the group of people is represented by individuals that are employed by an organisation. Consequently, this study generally refers to organisational culture (also known as corporate culture) (hereinafter organisational RC referred to as “RC”).

During the literature review it was noticed that many authors corresponded to other authors with regards to their understanding of culture as a basis, mainly to Schein (1985, 1992) and Hofstede (1990). For example, Thamsatitdej (2006), Führing (2004) and Ke and Wei (2005) referred to the work of Schein (1985, 1992) and his model of organisational culture that is based on three interdependent levels, i.e.

- artefacts
- values and beliefs
- underlying assumptions

The first of these levels, i.e. artefacts, is the most visible, with observable structures, processes, rituals and behaviours of an organisation. Values and beliefs correspond to the espoused justifications, rules, strategies, philosophies and maxims. Underlying assumptions represent the basic level, including perception, thoughts and feelings about people and the world, which are invisible and mostly unconscious (Schein, 1985; Schein, 1992; Bungartz, 2006; Verma, 2009).

Other authors, such as Gad (2012) and Linke (2011), referred to Hofstede's definition of culture, i.e. a collective programming of the mind which distinguishes the members of one group from another, derived from one's social environment. Hofstede identified the following five different cultural dimensions that he applied to analyse the correlation between national cultures and corporate cultures in a worldwide study within a large IT organisation (Hofstede, 1990):

- power distance
- collectivism/individualism
- femininity/masculinity
- uncertainty avoidance
- long term orientation

Hofstede and Schein approached culture in a different manner. For example, as Hofstede's programming sounds very technical, it may be assumed that culture can be changed from outside, like reprogramming or a reboot. In contrast to that, Schein emphasises that culture is the most difficult attribute to change in an organisation. Whereas Hofstede applied his model to compare different nationalities with each other, to show that organisational behaviour in companies is influenced by national cultural groupings, Schein focuses on a deeper understanding of the influencing factors of organisational culture. However, both Schein and Hofstede realised culture is a phenomenon that is learned as a result of group experience and social surroundings. Further differences and similarities were analysed by different researchers in their work in-depth. That is why this is omitted in this study. As Hofstede's model seems to be more appropriate to compare cultures with each other, and this researcher aims for a deeper understanding of RC in itself, Schein's approach, (i.e. artefacts, values and beliefs, and underlying assumptions to describe (organisational) culture) was selected to be further considered in this study.

Ravasi and Schultz (2006) pointed out that each company has their own unique culture. In larger organisations, there may be several co-existing, sometimes conflicting cultures, as a result of different characteristics of the members of the management team. According to Schein (1992), there are generally two drivers that shape organisational culture, i.e. external adaptation and internal integration. External adaptation refers to the company's evolutionary assimilation to the respective external environment or industry. Internal integration is related to the organisational structure and the internal environment. In summary, organisational cultures develop from different external and internal influences, such as economic situation, competition, technologies that the organisation uses, nature of manpower or the ownership structure.

To understand what RC means, culture and risk are put together, so that RC can be defined as the characteristics, attitudes and social behaviours shared by a particular group of people towards (positive and negative) effects of uncertainty on objectives. What appears to be missed out in some of these definitions is to highlight the willingness of people that facilitate to learn the assumptions and to adopt the norms of behaviour. This should not be seen as a matter of course assuming that group members will automatically do so. This may be true for groups or organisations that the individual has selected by choice, such as sports clubs or political parties. In the working environment this may not be necessarily true, as employees have not always got the choice to select their most favourite position or employer. Consequently, the willingness of people in the business area should not be underestimated or taken for granted when it comes to a common understanding or perception about risks (Musslewhite, 2005; Bungartz, 2006; Klügl, 2011).

As an assumption of this study, it is important to understand that RC is not static but a continuous process, or even several formal and informal processes, which repeats and renews itself (Ashby, Palermo & Power, 2012). This results from the previous research that risk perception is socially constructed, and consequently also organisational RC, including all dynamics and bias that are involved (Renn, 1998b; Botterill & Mazur, 2004). This represents a significant precondition for this researcher that RC can be influenced and guided, once identified and assessed, towards the target RC as intended by the management of an organisation.

2.2.2 Socio-demographic Variables of Risk Culture

The socially constructed nature of risk requires an understanding of risk perception when it comes to organisational RC (Botterill & Mazur, 2004). As many organisations suffer from an inconsistent RC as a result from non-conforming risk awareness and perception of their employees (Cheney, 2009; Tritschler, 2001, TowerWatson, 2010), literature indicates that there may be differences by groups with certain socio-demographic characteristics, such as educational level, age or gender (Starr, Langley & Taylor, 2000; Urban & Scasny, 2007; Chauvin, Hermand & Mullet (2007; Sjöberg, 2000; Bouyer et al., 2001). In addition to that, there are characteristics that come particularly along with the organisational or business context, such as job experience / tenure or hierarchy level / status / income that may also have an influencing factor in RC (Flynn, 1994; Palmer, 2003). In the following, relevant different socio-demographic variables are presented, including associated propositions.

Flynn, Slovic and Mertz (1994) suggest that factors such as power and status are strong determiners of employee's perception and acceptance of risks. In accordance to Jahner and Krcmar (2005), particularly management requires awareness and attention for RM, to establish a proper RC and the right tone from the top. Also Ke and Wei (2005) confirmed that leadership is crucial for a healthy RC. In their study, Hoitsch, Winter and Bächle (2005) found out that management seems to have very high risk awareness, consequently a more appropriate RC, in contrary to employees without any supervisory responsibility. In contrary to that, Finucane et al (2000) speculate that for people with higher status ‘the world seems safer and hazardous activities seem more beneficial’ so they may be rather willing to take risks. Either way, hierarchy level and status has an influence on risk perception and consequently on organisational RC.

Literature about risk perception and tolerance has also shown that age has a meaningful effect (Hermand, Mullet & Rompteaux, 1999; Bouyer et al., 2001). Some authors assume that people become less risk taking and more cautious as they get older, as there is a shift from asset accumulation to asset preservation with increasing age (Yao, Sharpe & Wang, 2011). Previous research implies risk tolerance generally decrease as people age, confirming that older adults show a stronger aversion to risks (Mather et al., 2012). In contrary to that, other authors assume that elderly people may take greater risks, due to their ‘what do I have to lose’ mentality (Dror, Katona & Mungur, 1998). Another

reason may be that older people have more (general and/or job-related) experience. In contrast, less experienced employees feel relatively more unsafe, so they may be less likely to take a risk, compared to their older colleagues (Bye & Lamvik, 2007). However, age (and years of experience that are associated) represents a differentiating factor when it comes to risk perception in organisational context (Bouyer et al., 2001, Bye & Lamvik, 2007).

Furthermore, previous research has shown gender differences particularly in risk perception, assessment and behaviour (e.g. Gustafson, 1998; Harris & Jenkins, 2006; Powell & Ansic, 1997; Byrnes, Miller & Schafer, 1999, Bouyer et al., 2001). For example, Gustafson (1998) found out that men and women may perceive different risks and the same risks differently, due to different living conditions, ideology, social roles, power relations (in business) and levels of trust and fear. Women often feel more concerned about risks in comparison with men. In particular, women are more sensitive to technological risks as they are less familiar with science so they distrust technology (Boholm, 1998; Bastide, Moatti, Pages & Fagnani, 1989). As a consequence, women are less risk seeking than men, assuming gender differences in motivation, as research of Powell and Ansic (1997) has shown. They found out that females have a lower risk preference and a greater desire for security, whereas males have a higher preference for risks due to their greater desire for return. In addition to that, female often perceive a higher probability of negative outcome and lesser expectations of the opportunities associates with risks than male (Harris & Jenkins, 2006).

There are also indications for a relation between organisational affiliation / job experience and attitude at work. The study of Kalejaiye and Adeyemi (2013) concludes that employees with low job tenure are more committed to the organisation, compared to their colleagues with longer company affiliation, as senior employees are often less worried of losing their job. In contrary to that, the work of Gyekye (2006) reveals a higher safety perception by long-tenured employees, due to their increased company commitment, compared to their colleagues with shorter affiliation. There are also differences in risk perception assumed between ‘experts’ with longer job experience and ‘lay persons’ with less expertise which refer particularly to risk appetite and judgement (Botterill & Mazur, 2004). Experts often feel better informed and apply more systematic methods in risk identification and assessment which also influences their perception on

risks (Kaplan & Garrick, 1981; Bye & Lamvik, 2007). Either way, organisational tenure and job experience may have an effect on organisational RC in oppositional directions.

One lesson learned from cross-national research is that risk perception and risk appetite may vary from location to location (Boholm, 1998). When the company is located at different places, i.e. diverse office locations, or even administrative, production or sales locations, in different cities, regions or countries, the researcher assumes that different sub-cultures may have been developed. This assumption is supported by Meek (2013) who found out considerable geographic differences, or even a conflict, in financial institutes between a sales-driven, front-office culture and a risk-focused culture. Regional characteristics and cultural specifics may have an impact on people's perception and judgement of risks, so the RC may differ at the diverse locations. In emerging and dynamic markets, people might be more courageous and willing to take risks, compares to regions with increased unemployment and decreasing purchasing power, where people may tend to be cautious.

In summary, intra-group differences are assumed as more substantial than cross-national differences (Rohrman, 1994). This is because risk perception is rather explained by socio-demographic characteristics, personality facettes and worldview than by national identity (Rohrman, 1994; Chauvin, Hermand & Mullet, 2007). To understand potential differences between managerial expectations and employees' perception, the researcher assumes a difference in RC throughout the organisation by the following socio-demographic variables that are supervisory responsibility (hierarchy level), age, gender, job tenure and location. These are subsequently considered in this study.

2.2.3 Current State of Risk Culture Research

With regards to RC literature, it was noticed that the vast majority are articles from journals and papers published by management consultants, such as Deloitte, McKinsey or PricewaterhouseCoopers. While the range of academic paper on culture is very large and has influenced some of the consulting work, RC has largely been ignored in science (Ashby, Palermo & Power, 2012). Whereas only a few articles are published in German, most of the papers provided by consultants are in English, indicating the international character of their clients and the topic. The majority of these papers were published post-2004, with hardly any published prior to 2000. Those which were published before

2000 do not deal with RC in particular, but with organisational culture (Hofstede, Neuijen, Ohayv & Sanders, 1990), cultural theory (Tansey & O'Riordan, 1999), risk research (Renn, 1998a) or risk perception (Slovic, Fischhoff & Lichtenstein, 1982; Slovic 1987). With regards to the consultant's documents, the majority available on the internet are dated as of 2009, which may be an indicator that this topic has gained in importance for their clients since then. A recent study of Deloitte (2013) about the importance of RC in daily business confirmed that 32% of 1,700 respondents assess the influence of RC as 'to a great extent'. This also supports the significance of this study, as RC seems to be a relevant subject in recent years.

Another type of document identified was conference papers. Except for a few German papers, most of them are available in English. From the locations mentioned in the documents where the conference took place (i.e. Washington, Dubai, Johannesburg, Estonia and London) it can be assumed that RC is a global topic. The fact that most of these conferences happened starting from 2009 supports the assumption above; that RC is a contemporary issue.

The smallest group of papers is represented by academic works, such as doctorial or diploma theses. Only a few papers could be found, where most of them are in English, just some in German (further languages were not searched for, as this researcher is limited to English and German). The oldest academic documents that were found were dated 2001, both dealing with risk society (Mythen, 2001; Panzer, 2001). They both mainly refer to several works of Beck (1992) and Adam, Beck & van Loon (2000), who concentrate on risk society rather than RC in a corporate context.

The authors cited most with several different works are Schein (e.g. 1985, 1992, 1993, and 2009), Douglas and Wildavsky (1983), Douglas (1992), Hofstede (e.g. 1984, 1990, 2001 and 2003), Slovic (1987) and Slovic, Fischhoff and Lichtenstein (1982). Whereas Schein (1992) focuses on organisational culture, Slovic (1987) and Slovic, Fischhoff & Lichtenstein (1982) concentrate on risk perception. Douglas & Wildavsky (1983) and Douglas (1992) combine risk and culture in their works, resulting in the conclusion that risk is a collective construct, which is associated with social organisations and their perception of risk. Also Hofstede (2001) was cited several times by different authors, even by Schein (2009). Hofstede (1984, 1990 and 2001) researched cultures, their

differences and consequences in organisations, and developed the cultural dimensions theory, which was frequently discussed and applied in further works (Appendix 2 shows an abstract of different authors referring to each other, resulting in an identification of key authors).

A cognitive approach to risks was introduced in the mid 1960's (Harwood, Ward & Chapman, 2009). These studies have their roots in seminal works, such as Slovic, Fischhoff and Lichtenstein (1982), who sought for an understanding about risk perception in society. This psychological approach focused on individuals was contrasted with Cultural Theory (of Risk), which was introduced by Douglas and Wildavsky (1983), asserting that social context forms the risk perception of individuals. In other words, the individual's way of living corresponds to a certain social setting that again corresponds to a particular view of risks. For them, risk is a collective construct, thus Cultural Theory (of Risk) combines risk perception with social context (Harwood, Ward & Chapman, 2009). There are several works that concentrate on Cultural Theory (of Risk), such as Sjöberg (1997) and Rippl (2002), with empirical tests on validity in this area. The literature is relatively silent on the strength of correlation between perception of risk and culture, so there is little clear explanation why individuals assess risks, their probability of occurrence and potential extent of loss differently. Complexity of the real world and further (external and internal) influences may represent the main reason. Due to this, Cultural Theory (of Risk) was not generally accepted by risk perception researchers, although it was confirmed also by their critics that certain interdependencies exist (Douglas, 1992).

Literature about risk perception mainly derives from three disciplines, i.e. medicine, psychology and the social science. Whereas psychologists have concentrated on individual psychological traits such as personality, social scientists focussed on the combination of a individual and situational factors (Harwood, Ward & Chapman, 2009). For example, Ward (1997) suggests that an individual's behaviour is influenced by both, the organisational context and personal characteristics. This underlines the idea that organisational culture may influence perception and behaviour. As a consequence, RC may have an influence on risk perception. Some other researchers add the situational component to that discussion. They believe that perception of and behaviour towards risks is connected to both the individual (personality, experience, education,

social affiliation) and the situation (environment) (Nicholson, 2001; Harwood, Ward & Chapman, 2009; Heshmat, 2010; Mishra & Lalumiere, 2011).

As criticism exists for most of the research conducted in the past, the main argument was that many of the studies were conducted in laboratory settings, which can be taken as a reason why many empirical works and case studies in the area of RC were carried out in the subsequent period (Harwood, Ward & Chapman, 2009). In addition to that, various negative risk events, organisational failures or catastrophic occurrences has drawn public interest so that also researchers gave attention to that topic, as concluded from the diverse literature and studies that refer to these (AON, 2010).

Most of the studies and academic papers are about risks or RM in general, but also contain RC, either in a few sentences with a definition or a separate chapter with different views or what a good, strong RC constitutes, e.g. open communication or tone from the top (Fricke, 2010; Cooper, 2010; Klügl 2011; Schmidt, 2004). Authors such as Gad (2012), Linke (2011), Verma (2009) and Thamsatitdej (2006) studied the impact and consequences of different cultures, i.e. people with different nationalities who work together in risk-fraught projects, i.e. construction projects, or people who work abroad, focused on the challenges and difficulties, and how to deal with it. This is predominantly cross-cultural management and not research of RC in the narrow sense, but may provide interesting insights when studying RC. Their works are mainly based on Hofstede (2003) and/or Schein (1985, 1992).

The work of Winter and Bächle (2004) deals explicitly with RC, as they conducted a survey on publicly listed companies (DAX 30) in Germany. However, only 9 (out of 51) questions refer to RC exclusively. This is the same with Führing (2004), who developed different types of RC but his work is limited to a simplified conceptual framework covering three dimensions, which are:

- expertise (intellectual abilities)
- motivation (willingness)
- organisation (admission)

However, it does not provide any further practical or empirical relevance.

In contrast to that, Harwood, Ward and Chapman (2009) studied organisational risk propensity through 33 ‘elite’ interviews, i.e. people who are characterised as influential, prominent and well-informed within an organisation. They developed a framework consisting of dimensional range from risk averse to risk seeking of diverse properties, such as risk ownership (forced versus voluntary), risk encouragement (cautious versus copious) or risk horizon (short term vs. long term). The outcome of their case study within a multinational healthcare organisation was that their case study company holds a risk-averse position, which is not astonishing due to the healthcare industry, i.e. high technology and a well-regulated environment. However, the researchers claim to conduct a larger piece of research to enhance the robustness of their framework as a recommendation for the future.

Jahner and Krcmar (2005) highlight a lack in RC for IT organisations, which they do not attribute to deficient technology, but to the awareness and attention of all employees, and of management in particular. Due to this, they developed a general model to assess RC based on three dimensions, namely:

- identify
- communicate
- act

Although they provide a clear example of an IT company on how to deal with data security, their work falls short of general practical application. As a result of their work, they raise the issue of assessing RC, as there are no approved key indicators.

Ke and Wei (2005) concentrate on top management in context with organisational RC, without any consideration of lower hierarchy levels, as leadership is crucial for them. This illuminates a significant part, but the holistic approach on all hierarchy levels is neglected. In addition to that, they did not test their model empirically by surveys, interviews or case studies, and consequently any practical relevance may be questionable.

RC has also been part of several empirical research efforts within general RM studies (Appendix 4). For example, Cheney (2009) studied 260 Chief Financial Officers and Chief Risk Officers from large organisations. His work confirmed that 85% claimed an insufficient enterprise-wide risk culture as a main problem within their company. This

was also confirmed by the research of Tritschler (2001) who found out deficits in 940 international companies with regards to cultural aspects in RM, as stated by their Controlling employees. Also Giebel (2006) acknowledges with his empirical study that there is an accumulated need for RC development, especially in small and medium sized industrial companies, as they have not defined any risk objectives or policies for appropriate behaviour, which shows a weakness in RM, and RC in particular. However, defining a risk strategy or policy represents a basic requirement, but it is of the same significance that this is formulated clearly and communicated consistently throughout the entire organisation. In general, this study appears to be too limited to understand RC holistically.

Hoitsch, Winter and Bächle (2005) surveyed RC in the area of stock-listed companies in Germany in 2003, where ten companies nominated an interview partner for their study (from RM, Internal Audit, Finance, Controlling or Accounting department). The study highlighted that most of the interviewees attested to their management a very high risk awareness and explicit contribution to develop a strong RC through training, workshops and mailings, whereas the risk awareness of other employees was regarded as less pronounced. However, deficiencies in the substance and structured development of RC were highlighted. Except for the 10 people nominated, no other members of the organisation were interviewed or considered in connection with this.

A similar result was provided by the study of Veysey (2010), conducted with 782 Risk Managers in private and public organisations from several European countries. There, 78% believed that RM is properly embedded within their company, as an indicator for a proper RC. However, this is an assessment made by Risk Managers only, who may have a biased view, which may produce a different opinion compared to the overall organisation on all hierarchy levels, or other individuals who are not involved in RM issues on a daily basis. This is supported by Bungartz (2006) who claimed that a consideration of all employees is essential when assessing corporate RC.

The study of Veysey (2010) is mostly confirmed by Roche (2012) who surveyed 250 organisations located in Australia. Only half of them stated to have an embedded RC, mainly due to lack of commitment from leadership (51%) and poor communication to staff (37%). However, he does not provide any indication as to whom was studied, e.g.

all employees or just a purposeful selection of people within each organisation. Furthermore, neither method nor questions were put to the survey participants.

Meek (2013) showed that 59% of 250 respondents across the financial sector felt a major challenge in finding the right balance of RC between risk-taking and risk-avers. Whereas 44% of respondents confimed their institution has already achieved a strong RC, 53% said that they are making progress in achieving a healthy RC. A reason for that may be that only 41% of respondents indicated RC as a top issue requiring management attention.

Richardson (2012) studied 30 UK insurance companies by online survey and interviews, with regards to the RC dimensions, i.e.

- leadership
- strategy
- training
- reward

In his study, he considered C-level employees of RM, audit and finance department (i.e. mainly Head of department) to understand the meaning and significance of RC in financial institutions. He found out that most respondents neither described their RM framework as mature nor embedded in the business. Furthermore, they did not see any alignment between their RM framework with their RC. It is astonishing that 64% believe that RC is properly addressed in their training programmes. However, Richardson (2012) challenges whether training would have the desired impact to develop and strengthen RC. This is also questioned by this researcher, notwithstanding it may represent an appropriate way to sensitise employees towards risks and expected behaviour. A call for action is addressed by Richardson (2012), in particular with regards to a greater presence from the Risk Manager to be more involved in risk-critical business activities, such as strategy formulation and business planning. Furthermore, a change in the organisation’s mindset to regard RM as a value-adding management process is required that also provides a good justification to increase further research in that topic.

In addition to empirical work, several case studies were conducted in the area of RC that also provides some example frameworks on how to identify and assess it. For example, Levy, Twining and Lamarre (2010) presented two case studies in their paper: one with a global investment bank and one with a global service firm. According to the assessment by management, both firms showed deficiencies in their RM processes, communication and leadership. Levy, Twining and Lamarre (2010) have applied their RC framework in both companies which consists of four groups, all related to risks, to be analysed i.e.

- transparency
- acknowledgement
- responsiveness
- respect

Based on the aforementioned, questions were developed and a series of interviews were conducted in both companies, without providing any concrete figures how many and who (which level or function) were considered in their study. The only note added was that managers across the business, so not just Risk Managers, were approached, as they particularly highlighted, for the first time. As their demographic analysis only included managing directors, directors, vice presidents and associates of the company, it can be assumed that this research was conducted on top level only, without any consideration of employees from lower hierarchy levels. Consequently, the same criticism applies that involvement of employees on all levels is key when assessing a company's RC (Bungartz, 2006).

Kulesa, Scanlon and Simpson (2011) also present a case study conducted with a medium-sized financial service company. To introduce a realistic view, not only people who are daily concerned with RM, such as Risk Manager, Compliance Officers and Internal Auditors, but also employees from other business areas took part in their study. However, in their paper, they also mentioned that the survey was launched to the identified group of employees indicating that this was not a complete inventory count of all people of the organisation. Further information on that is lacking. However, they assessed RC based on eight criteria that they associate with RC, which were:

- organisational culture
- leadership commitment

- risk appetite/strategy/policies
- reporting/management information
- roles/organisational structure
- technology/infrastructure
- tools/methodology
- process/controls

Concrete boundaries of these criteria are missing. As an example, the differences between technology/infrastructure, tools/methodology and process/controls are not shown clearly. As they work for a consulting firm, this may be the result of required confidentiality but it hinders the reader to clearly understand their approach and findings.

Within the research on RC, further models and frameworks have been developed. Cultural Theory (of Risk), as worked out by Douglas and Wildavsky (1983), is one of the most famous models of RC. It deals with an individual's perception (of risks) which derives from cultural affiliation. According to them, people tend to advocate behaviour that fits the belief or understanding of their group or association. In other words, behaviour that violates values and norms that are shared within a culture are associated with harms and danger. Consequently, different cultures may have different values and norms, which results in different risk perception of what is acceptable and what is not within a certain culture.

Douglas and Wildavsky (1983) have identified four different types of culture, i.e. hierarchical, individualistic, egalitarian and fatalistic, which refer to people and their sense of belonging to a culture. These four types are classified in a two-dimensional grid-group matrix. Whereas the grid dimension is focused on the extent of an individual's freedom to choose their social role, the group dimension refers to the commitment level of an individual to other group members. As a specific characteristic it was highlighted that in any organisation all types of culture may exist, but usually one type is in the majority and outweighs the others. As a recommendation from Cultural Theory (of Risk), management should recognise all cultural types and encourage them to get involved with the others, to benefit from all perspectives in RM. The Cultural

Theory (of Risk) concentrates on people as part of a group, i.e. on individual personalities that form the culture of an organisation. However, it does not assess the culture as a holistic unit (IRM, 2012). As a result of this, it is incapable of distinguishing whole social systems (Tansey & O'Riordan, 1999). Furthermore, only two dimensions, i.e. individual's freedom and commitment, are considered, which may be too limited when talking about culture, as other components such as trust or ethics, are not included. There have been a lot of theoretical discussions around Cultural Theory (of Risk) and Tansey and O'Riordan (1999) criticise that these will remain speculative unless grounded in a rich bed of detailed case studies. In summary, this theory represents a good starting point but it is not able to identify and assess the RC of an organisation in its entirety.

The same individualistic principle applies for a model that was introduced by Trickey (2010, 2012). The Risk Type Compass aims for placing people to one of the eight risk types, i.e. wary, prudent, deliberate, composed, adventurous, carefree, spontaneous and intense types. The main criteria here are the level of risk tolerance that involves individual's perception and the handling of risks. That enables the ability to classify employees into high risk takers (progressive mindset) and low risk takers (conservative mindset), that facilitates organisational management, e.g. to place them to a more appropriate job or position (Trickey, 2012). The danger here is that an unqualified assessment of people is conducted, i.e. not based on their job description but on management's vision. For example when management aims for progress and improvement and they replace conservative employees with high risk takers, resulting in an unbalanced, inappropriate RC, with only risk taking people, and nobody who countersteers (IRM, 2012). This model does also not focus on the entire organisation, but on certain people as individuals of it; consequently, it appears to be incapable of covering RC comprehensively.

A different approach (assessing RC as a holistic entity) was presented by Hindson (2010a), who proposes eight aspects that fall into four groups, i.e.

- tone of the top (risk leadership/responding to bad news)
- governance (risk governance/risk transparency)
- competency (risk resources/risk competence)
- decision-making (risk decisions/rewarding appropriate risk taking)

His concept is known as the Risk Aspects Model or Risk Culture Diagnostic. As a result, the researched organisation was clustered into one of the four cultures that Hindson (2010a) distinguishes between: engaged, chaotic, complier and sleep-walking culture, applying the two dimensions, i.e. governance spirit (the extent of guideline compliance) and pressure to conform (extent of the organisation's pressure to adopt a shared understanding). Whereas this framework covers major areas in great detail, e.g. leadership, communication and responsiveness to risks, some aspects fall short, e.g. perception, awareness, trust or sense of security that might also have an impact on attitude towards risks. Moreover, this model is mainly focused on adherence to rules and the pressure of people to adopt it. However, it may be capable to assessing the strength or loyalty of a culture with regards to guidelines and rules that may be able to describe a culture as a whole, when in focus. RC, however, is more than the compliance with rules, which represent one aspect, and should not be limited to it.

Another approach to assess RC was provided by Hillson (1997), which is the Risk Maturity Model. This model reflects the level of sophistication of an organisation when dealing with risks. Hillson (1997) identified four levels of cultural maturity, which are naive, novice, normalised and natural, starting from the lowest up to the highest degree of perfection. To each of these levels, different attributes are linked, generally clustered into four groups, i.e.

- culture
- process
- experience
- application

Taking the 'culture' group as an example, the naive organisation is characterised by no risk awareness and reluctance to change and the natural organisation appears to be proactive with a top-down commitment and leadership by example. The Risk Maturity Model allows organisations to benchmark themselves against these standardised four maturity levels. However, 'how' to do that, e.g. by questioning or observation either internally or externally assessed, is not described by the author (Hillson, 1997). In his final comments, Hillson (1997) recommends enhancing the diagnosis by developing a self-assessment questionnaire for organisation to identify their current level of maturity.

Minsky (2013) presents five levels of RC maturity, starting from 'bad' (people will not do the right things regardsless of policies and controls) to 'ultimate' RC (every person is a Risk Manager; people evaluate, control and optimise risks to build sustainable competitive advantages for the organisation). He refers to an online tool that uses a set of questions focussed on different areas, such as policies, processes, organisational design and management/control. Further guidance is missing.

This also applies for the Competing Values Model, as presented by Cardinal (2012). From this framework, four types of culture emerge, i.e.

- clans (friendly working environment; commitment and loyalty)
- hierarchies (formal and standardised processes)
- markets (difficult/dynamic area, focus on results)
- adhocracies (vibrant & flexible structures)

He highlights that an organisation ideally needs all four types, but usually emphasises one type over another. Expect for some audit steps, i.e. analyse values and beliefs of culture creators and carriers or analyse responses to critical incidents, he does not provide any instruction, how to do this from a practical perspective (Cardinal, 2012).

A comparison of the aforementioned RC models and frameworks that were developed over the past years is provided in Appendix 4.

IRM (2012) provides a framework that is based on the question 'which components may have an effect on RC?' i.e. organisational culture, behaviours, personal ethics and personal predisposition to risk. They recommend applying different concepts and models that are previously developed by other researchers, e.g. the Risk Type Compass approach when assessing personal predisposition to risk. This very comprehensive approach seeks to consider the most appropriate method to assess the respective area of interest, including all advantages and benefits that are associated. However, although they have identified and indicated weaknesses in the suggested frameworks and models, they did not provide any proposal for the overcoming or handling of these.

Although their extensive holistic approach gives suitable consideration to the RC topic, the complexity of this means that the practicality and convenience for large organisations is questionable. However, to compile appropriate components from

previous research was regarded as a suitable approach that is further considered in this study, when developing a RC framework

2.3 Corporate Real Estate Management

2.3.1 The Concept of Corporate Real Estate Management

By definition, CREM is the active, result-oriented, strategic and operative management of properties that are owned or leased by a non-property company for its own operational purposes, almost exclusively consisting of commercial and industrial property types, i.e. office, production sites, warehouses or retail shops/stores, depending on the company's core business. Residential properties are usually rare in a corporate real estate portfolio (Schulte & Schäfers, 1998). The focus is primarily not on return on RE investment, but on the use of the property for the company's core businesses, which is not in the RE industry (Edwards & Ellison, 2003).

CREM organisations in non-property companies are generally found in different types and characteristics. It can be a separate department, centrally organised in the holding company, often attributed as a direct reporting line to the Management Board. Other non-property companies establish decentralised property subsidiaries as their own profit centre for their CRE (Stürmer, 2005). In smaller companies the CRE function is occasionally assigned to one or a few persons who are staff members of other departments, such as Legal, Treasury or Accounting department, based on the main focus that the CRE manager has, e.g. legal perspective, administration or accounting view of properties. In companies with a bigger RE portfolio of owned and leased properties, there is usually a separate CRE segment or own property company as a subsidiary within the organisation that owns land and buildings, and that administrates and/or manages all RE related services and contracts. Here, it does not matter who is legally obliged by contract, either the business unit itself or the CREM organisation on behalf or in the interest of the business unit, but in any case CRE managers are service providers and consultants in all RE matters to the operational business units (Hwa, 2003).

In the context of this study, CREM means a separate organisation in a non-property company that deals with all RE-related matters in the interest of the operational business units, which gain their money from non-property businesses. This includes that the

CREM organisation offers space or services to third parties, in the event of excess properties or vacant areas, but their primary mission is to support the non-property company's core business. In this, it usually has its own organisational structure, starting with a Management Board at the top and several separate divisions or departments, such as Asset/Property Management, Expansion/Transaction, Construction/Engineering, Facility/Utility Management, Legal and Finance/Accounting/Controlling department. The respective design and quantity of the organisation depends on the direction or focus of the CREM organisation, as required or requested by the non-property company.

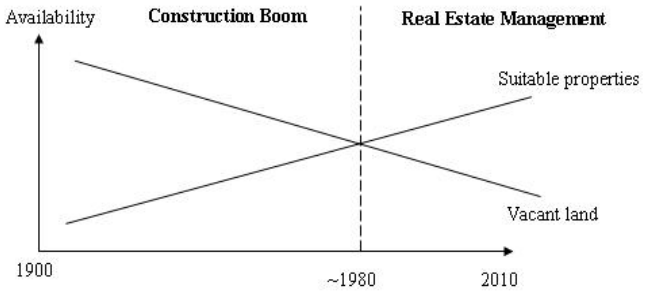
2.3.2 Current State of Corporate Real Estate Research

Zeckhauser and Silverman (1983) were one of the first who raised attention of CRE with their study. They looked into the role of CRE in American corporations in the early 1980s by surveying 1,377 non-property companies. A few years later, Veale (1989) referred to the study of Zeckhauser and Silverman (1983) and expanded the survey to 1,889 companies, in order to assess the status quo of CRE in non-property companies at that time. Ten years later, Bon (1998) presented the results of his study regarding CRE practices in North America and Europe. The time lapse of ten years suggests the advance in the US of the relevance of CRE compared to Europe. In Germany, the area of CRE was studied by Schäfers (1999) at the end of the 1990s. At the same time, researchers from other countries were also showing an interest in this discipline, e.g. Inskandar (1996) in Malaysia, Teoh (1993) in New Zealand, Liow (1999) in Singapore and Warren (1996) in Australia (Hwa, 2003). All of them referred to the earlier study by Zeckhauser and Silverman (1983), which appeared to have initiated the research in CREM.

Other important authors named in this context were Nourse, Joroff, Manning and Roulac. Joroff (1992) raised awareness by publishing a series of papers on management strategies in CRE for the future, which were developed by a group of leading corporate executives in the US. These strategies were generally confirmed by Manning and Roulac (2001) who identified lessons from the past and presented scenarios showing possible future directions for CRE. Furthermore, they concentrated on research into how to best structure and integrate the CRE function in the organisation of a non-property-company (Manning & Roulac, 1996; Manning, 1991). Nourse and Roulac (1993) also contributed to the CRE business by linking RE decisions with corporate strategy.

Krumm (2001), who studied the history of CREM, found that it has only been regarded as a separate discipline within non-property companies for around 100 years. At the beginning of the twentieth century, companies had no choice but to buy land and construct their own buildings, as there was no well-developed commercial RE market from which to acquire or lease properties (Brounen & Eichholtz, 2003). The availability of vacant land at affordable prices together with the absence of suitable properties, led to an increase in construction activities (Figure 2). A good example of this would be the many impressive company headquarters or large production sites built around that time. For that purpose, companies required specialist technical RE knowledge. As there was no shortage of vacant land, time and money, there was initially no particular need for the management of these resources. Therefore, in the early 1900s RE managers or corporate engineers were largely focused purely on engineering and architectural services. This boom in construction activities resulted in a rapid increase in the size and value of CRE portfolios (Krumm, 2001).

Figure 2 Availability of Vacant Land and Suitable Properties



Source: Own illustration, in accordance with Brounen & Eichholtz (2003)

Brounen and Eichholtz (2003) investigated that around the turn of the 21st century CRE epitomised one of the largest classes of asset in the world. In Europe, estimates of the value of CRE well exceeded the total institutional RE investment portfolio. According to Krumm (2001), around 1980 the growth of organisations and the increasing number and geographical spread of their properties triggered the need for management focused on CRE. On the other hand, this heightened attention by companies appeared to have triggered researchers to deal with CRE in more detail, given the amount of work published on the topic since 1980.

At the beginning of the 1990s, there was a significant decline of interest within the academic community to work on the CRE topic. Instead, consulting firms and associations serving CRE executives (e.g. IDRC or NACORE) increased their interests and activities in CREM. Manning and Roulac (1999) supposed that the decline in interest of the academic community resulted from the difficulty and higher costs of obtaining useful CRE data required for the research. In the past many CRE executives spent a lot of time on surveys and consequently they were no longer receptive to academic research, preferring to spend their time on providing data to professional associations (Manning & Roulac, 1999).

As shown in Figure 2, CREM as a specialisation within the RE industry has grown in importance and level of recognition since the 1980s (Johnson & Keasler, 1993). This was also the time when researchers began to show an interest in that area. In 1983, Zeckhauser and Silverman surveyed major companies in the US and found that corporate properties represented at that time at least 25% of a company's total assets. The study stimulated the interest of American non-property companies and they started to discover the relevance and value of their CRE. This was generally confirmed by a survey conducted by Veale (1989) as well as by Gale and Case (1989) who identified that companies did not follow consistent pattern in CREM at that time.

Ten years after that, Bon (1998) presented his work which covered the period from 1993 to 1997 and showed a downward trend in property ownership, compared to total assets, from 59% in 1993 to 43% in 1997 throughout North-America and Europe. Despite this fall, the figures were still higher than those found by Zeckhauser and Silverman a decade earlier. This increase resulted from the fact that RE ownership was still preferred by European companies, whereas American companies already considered leasing as a viable alternative. In the German speaking countries at least, this difference may be founded on the general perspective of viewing CRE as the family silver, consequently properties were kept rather than sold and leased back or acquired rather than leased (Beretitsch, 2005). The RE ownership rate of companies in the US was reduced to approximately 30%, with 70% being leased. At the same time, European companies owned roughly 65% of their properties, only 35% were leased. This suggests that American companies were several years ahead of their European counterparts in terms of active and strategic CREM, for example in activities such as sale-and-lease-

back (Stürmer, 2005). This was confirmed by Schäfers (1999) who discovered that CRE were seriously 'undermanaged' by the vast majority of German non-property companies, once they had been built or acquired.

In the past, CRE was often treated as an inevitable result of operations, entered on the company's balance sheet after construction or acquisition and afterwards largely ignored, as described by Wurtzebach and Miles (1991). This was confirmed by Krumm (2001), adding that decisions with regard to CRE were mostly taken on an ad hoc basis, case by case, without any strategic or sustainable consideration. Even more, O'Mara (1999) suggests that non-property companies are reluctant to make decisions about CRE due to the long-term character of these decisions. Once made, the property reminds everybody whether or not the company made a good decision, for a long time. CRE was not viewed seriously enough by non-property companies as most of their executives held that their company was not in the RE business (Brown, 1993; Schäfers & Gier, 2006).

However, about 30 years ago, cost reduction became the focal point of interest for companies and CRE began to be regarded as a critical strategic asset, as it was viewed as a fifth business resource alongside capital, people, technology and information. CRE has become a priority that has to be managed strategically to ensure that the financial and operating objectives of the company are met (Nourse & Roulac, 1993; Brounen & Eichholtz, 2003). In recent years, CRE departments have begun to broaden their focus from saving money to adding value to the corporations (Lindholm & Gibler, 2006). Since that time, they have experienced a significant change from simple technical property services to a forward-looking consulting and supervisory role with a more strategic focus. This is supported by Holland (2009) who suggests that CRE managers have to ensure that RE strategy is closely aligned with the overall corporate strategy.

Strategic CREM remains an emerging property discipline and therefore it is not surprising that this should also include increased attention to risk-fraught activities associated with CRE, as corporate risk analysis in general is one of the more recent developments in corporate strategic management (Heywood & Kenley, 2007; Huffman 2004). Nevertheless, although most CRE departments have seen changes from their traditional role to a more strategic relationship with business units, very few are

positioned to provide truly strategic value, as noted by Msezane and McBride (2002). Therefore, a more active role in the business issues of the company is necessary. Business continuity or sustainability management is an ongoing process which is closely connected with RM, with the purpose of ensuring that the business can continue if risks emerge.

With regard to CRE, this means ensuring that corporate properties can fulfil their function, which is primarily to enable the company in its business activities (Holland, 2009). Warren (2010) argued that the long-term survival of companies in a competitive business environment is put at risk if they are not prepared to manage critical disruption of operations. He claimed that the relevance of the loss of properties to the company is not widely addressed. Furthermore, he is critical of the fact that whilst there is a significant amount of literature, from a range of business and economic sources available, which seek to address the role of business continuity in crisis situations, the literature directly related to RE in these scenarios is limited. This is also confirmed by Reymen, Dewulf and Blokpoel (2008) who recommended further research to fill this gap in strategic CREM.

2.4 Corporate Real Estate Risks and Risk Culture

Concerning RM in CREM, it is regarded as necessary to understand generally which RE risk exists. As CREM is focused on properties, risks related to RE are of general relevance. However, there are several types of risks classified as RE risks in general. Many authors provided their own understanding of risks associated with RE as exemplified in Table 2.

Table 2 Overview of Different Real Estate Risks / Risk Classification

Huffman (2002)	Arlt (2009)	Gibson / Louargand (2002)	Hellerforth (2007)
financial risks	financial risk	financial risk	market risk
physical risks	operational risks	property market risk	capital structure risk
regulatory risks	strategical risks	business risk	polical risk
development risk	legal risk		technical risk
corporate risk			employee risk
business risk			liability risk

Urschel (2010)	Banck (2004)	Khumpaisal / Chen (2010)	Woodward (2004)
location risk	technical risk	social risk	strategic risk
market risk	economical risk	techical risk	commercial risk
company risk		environmental risk	economic risk
property usage risk		economic risk	legal / regulatory risk
development risk		political risk	organisational risk
			political risk
			environmental risk
			technical risk
			operational risk

The diverse spectrum indicates the different perceptions, experiences and appetite of the authors for considering RE risk. Indeed, the definition of RE risk depended on the purpose and intention of the respective authors. Notwithstanding, the wide range of RE risks triggers the need to identify which risks are associated with CRE. While there is no universal risk definition related to CRE, there is widespread acknowledgement of the need to identify a broader range of risks than would traditionally have been the case (CBRE, 2012). However, the general difference between RE risks and CRE risks is based on the fact that CREM is mainly concerned with technical and location specific risks, in contrary to vacancy risks or the risk to sell/lease to third parties that represent typical RE risks, resulting that CREM primarily offers space to their operational unit only (Plantz, 2012.) From a CREM's perspective, the literature generally summarises five main risk categories, which are explained hereinafter with some practical examples for further clarification:

1) Technical risks

These generally refer to quality, costs and time-related risks during the construction and holding period of a property (Wissler, 2006). This risk category is important as CREM is responsible to provide the core business with a property that supports or at least does not hinder the company to do their business. That means that all technical requirements (of the company, law or other authorities) are fulfilled and that the property is kept in a proper condition at any time, including health and safety issues, utilities services, required repair & maintenance, modernisation etc. Potential technical risks should be identified, assessed and monitored, e.g. by the Construction, Asset/Property Management or Facility Management department.

2) Financial risks

These generally refer to currency and interest-related risks, but also refer to unprofitable investments by companies due to wrong decisions. This also includes conservation of asset values, possible impairments and depreciations (Wittmann, 2000). When the business unit decides to close down their business in a corporate property owned by the CREM segment, the latter usually has to take the vacancy risk and potential loss of rents if there is no (appropriate) substitution available (Schwenzer, 2008). However, if a third party is willing to pay a higher rent or purchase the property above book value, this risk may turn into a chance. Financial risks also include currency and interest risks, e.g. when the CREM segment may have to acquire loan capital (external finance) for investment or when they conclude contracts in foreign currencies. This risk category should be identified, assessed and monitored by the finance/treasury department or controlling department as an example.

3) Legal and regulatory risks

These generally refer to risks related to permits, licenses, contracts, liability or compliance with (corporate and legal) rules and regulations (Wittmann, 2000). Contract or company law-related risks should be identified, assessed and monitored in the legal department, also risks that arise from laws and legal requirements. Construction law-related issues, such as building permits and other licenses, can be handled by the Construction department or Legal department. This is the same with zoning issues or third party rights and restrictions, where the Expansion or Transaction department should also be involved. Environmental risks may also be handled by the legal department, as they involve environmental laws and country-specific requirements. When it comes to technical measures for decontamination for example, the construction department should be involved in risk identification, assessment and monitoring.

4) Market and location-specific risks

These generally refer to economic trends and variations on the RE market, e.g. buyer's or seller's market, different interests of market players, RE, competitor or customer relevant developments on local, regional and country requests or demands and market or location specifics (Schlachta, 2011). CREM’s primary objective, i.e. to provide the core business with property conditions at least on market level, is generally depending on market situation. If they have not acquired or developed space in a forward-looking

way in order to benefit from deteriorating markets, there is a risk that the business unit has to pay higher property costs than during the days with lower market prices. A company may also benefit from increasing prices when they intend to sell a vacant property with a lower book value, so as to realise additional profit from the CRE sale. To deal with RE market trends and developments is a major issue in CREM, where market and location-specific risks should be identified, assessed and monitored by the Expansion/Transaction Management and/or the Asset/Property Management department.

5) Strategic and political risks

This generally refers to political changes or instabilities, or management decisions or strategic risks related to the business in general. It also includes issues related to corporate organisation and culture, corporate governance and shareholder value (Schlachta, 2011). Here, the Management Board, or any mandated department or function, should be responsible to identify, assess and monitor strategic and political risks. Often the HR department is involved for organisational issues, as well as the Legal department for political issues and/or the Controlling department for strategic tasks.

In general, risks in CRE have double consequences: on the property as a daily business for CREM and on the property to enable the company's core business. For example, poor construction quality, because construction sites are not properly supervised, may have a negative impact on sales. Consequently on the overall business, when a retail property has visible defects, CREM could be affected in a way that means they have to spend money on repair and maintenance, or they may not find any substitute user or buyer once the property is no longer needed by the company. It follows that CRE risks are usually characterised by long-term implications and consequently limited or expensive countermeasures.

In addition to the aforementioned risks, there is one risk category rarely mentioned in the context of CREM, but is in RE literature, which is cultural risk. RE companies who make business abroad are concerned with cultural circumstances that affect their return. In addition to political, currency or tax risks as an example when doing business in foreign countries, there is the cultural risk that refers to people in internal (e.g.

employees, stakeholders) and external (e.g. business partners, local government) relationships (Urschel, 2010). With regards to RE, the cultural risk influences significant decisions in RE investment, as the cultural environment affects architecture, building technique and construction materials, to name just a few (Maier, 2004). Furthermore, cultural differences play an important role in negotiations with foreign business partners or authorities. This also concerns CREM when providing space for the business activity of their operational unit in foreign countries, or even in different states or regions within the same country (Kühlmann & Haas, 2009). However, in contrary to external cultural risks, internal cultural risk is not widely addressed in CREM literature. Some refer to 'employee risk' (Hellerforth, 2007) or 'organisational risk' (Woodward, 2004) in this context, but RC is hardly covered in any CREM literature, as most of the works concentrate on financial, technical, legal or market risks (e.g. Brenner, 2008; Gondring, 2007; Urschel, 2010; Huffman, 2002; Gibson & Barkham, 2001).

As CREM activities and decisions generally follow the direction of the operational business, it can be assumed that they also follow the mindset from them, including risk awareness, appetite and perception (CBRE, 2012). However, while CREM has experienced a significant change from its supporting role to a forward-looking, more active consulting and supervisory position with strategic focus, CREM organisations may also have developed their own culture, including RC (Lindholm & Gibler, 2006; Holland, 2009; Heywood & Kenley, 2007; Huffman, 2004). Consequently, CREM organisations may have a different risk appetite than the operational divisions. As an example, operations may intend to expand to an emerging market, where owning CRE may represent a legal risk due to lack of clarity or certainty in ownership titles, or RE markets are expected to downgrade dramatically in the future. In that case, the CRE organisation may refuse to invest, but provide support for the operational unit to lease properties from their party landlords as an alternative, although this may be more expensive from an isolated operational perspective.

In summary, managing cultural risk when dealing with external business partners or governments is addressed far more in literature about CREM than dealing with the cultural risk inside the CREM organisation, i.e. an inappropriate RC. Consequently, this study intends to contribute to this area through a case study related to RC in a CREM organisation. By doing so, practical relevance is given, as well as contribution to theory,

by developing a RC framework to identify and assess the internal cultural risks applied in a CREM organisation.

2.5 Shortcomings Identified during Literature Review

In general, the literature review with regards to the current state of research, existing theories, concepts and frameworks for RC did not provide a satisfactory approach to answer the research questions properly, due to:

- different intention or objectives resulting in non-applicability for other purposes
- insufficient guidance for practical applicability
- unsuitable prioritisation of components (or neglect of relevant aspects)

Some concepts and theories were developed for the purpose of comparing different cultures, like Hofstede (2003), Gad (2012) or Linke (2011), in contrary to investigating a certain group or organisation with regards to their culture or RC in-depth. They rather focus on cross-cultural issues, aiming for an understanding of cultural barriers (Verma, 2009), or the affects within the international environment (Thamsatitdej, 2006). Other models answer the purpose to assess individuals within a certain culture (Trickey, 2010) or to understand the risk perception of individuals (Douglas & Wildavsky, 1983), rather than of the entire organisation. Due to their different primary purpose, these models or frameworks are not suitable to assess RC holistically, as intended by this researcher.

Furthermore, the review brought forward incomplete or intangible guidance for other researchers to apply the framework or concept accordingly. Some fall short of indicating how (i.e. method, e.g. survey or interviews), who (i.e. study participants, e.g. all employees or a representative sample) and/or what (questions, statements and scale) was researched to identify or assess the respective RC (Jahner & Krcmar, 2005; Hillson, 1997; Cardinal, 2012). Results and findings could not be reconstructed as key components of the research design were not provided to the reader. As confirmed by Sheedy & Wright (2013) there are only a few, if any comprehensive, validated measures of RC available yet. This study describes in detail how the research was conducted, including providing research data for others to follow and understand, in order to provide proper guidance for practical applicability in other organisations.

Other frameworks and concepts highlight different aspects or focus on certain facets of culture, such as leadership or communication, like Hindson (2010a), Levy, Twining and Lamarre (2010) or Winter & Bächle (2004). They did not envelop or equally prioritise other aspects that might be important or relevant in that context, such as trust, ethics, perception or commitment. In the opinion of this researcher, leadership or communication represents the outcome or visible consequence of these underlying aspects. That is why the researcher took leadership and communication (amongst others) as a starting point to understand these in more detail so as to develop basic components. The researcher does not prioritise one component over others. Neglected relevant aspects that were not included in the initial RC framework were added to the framework.

3 Risk Culture Framework

3.1 Methodology of Framework Development

The approach of Schein (1985, 1992) to analyse corporate culture based on three levels, i.e. artefacts, values and beliefs and underlying assumptions, represents the starting point to develop a conceptual framework for RC, as a basis for this study. The researcher follows the basic idea to start with observable artefacts, i.e. the visible processes, organisational structures, products, technologies, language, style, rituals and ceremonies, in summary all the phenomena that one can see, hear, and feel when encountering a new group with an unfamiliar culture (Schein, 2004). As this represents the observable layer of culture, the researcher regards these apparent aspects as a good approach to analyse what these observable artefacts are in the context of RM.

In addition to that, the researcher adds the second level, i.e. values and beliefs, into the approach. Within a corporate context, values and beliefs are often reflected in the company's strategy, objectives, philosophy and business principles (Schein, 2004). Although these aspects are less visible unless written down in the company's mission statement, policies or guidelines, the researcher agrees to consider these aspects to decipher the underlying assumptions of culture. This third layer, i.e. underlying assumptions, is usually not observable, thus cannot be comprehended unless approached from the overlying levels. Due to this the researcher decided to approach RC by focusing on the visible phenomena, i.e. artefacts and values and beliefs in RM. For this

purpose, the researcher screens the literature for recognisable or observable aspects related to RM to advance the underlying components relevant for RC.

To explore the observable artefacts in the context of RM, Führing (2004) already has discovered relevant aspects such as work organisation, leadership, knowledge management, organisational structure and human resource planning. The second level, i.e. values and beliefs, is represented by the risk appetite expressed in RM fundamentals and profile, the risk strategy and risk-related ethical standards (Führing, 2004). This leads the researcher to investigate which aspects or areas other authors see in the context of RM. Conen (2007), for example, describes the aspects of leadership, staffing, communication & reporting and policies & procedures, as cultural artefacts in RM. In contrary to that, Owen (2010) adds to leadership, job design & role definition and structure, systems and processes that mainly represent artefacts, a component that refers to values and beliefs, i.e. missions, vision & value.

Verma (2009) accentuates seven determinants (‘7S’) of culture in context with RM, i.e. shared values, systems, structure, skills, style, staff, strategy, whereas Reason (2006) divides culture into two aspects relevant to RM: something a company is (shared values, beliefs) and something a company has (structures, practices and systems). It that, strategy and philosophy is, what an organisation is, and leadership, human resources, communication and organisation and infrastructure is, what an organisation has. By considering all these, as a result of the literature review in that regard, the researcher subsumed all these artefacts, values and beliefs under five main areas that involve culture in RM as follows:

- leadership
- human resources
- communication
- organisation/infrastructure
- strategy/philosophy

Table 3 shows by means of some example authors, how their aspects that involve culture are classified into and subsumed under these five main areas of RM.

Table 3 Example Authors and their Understanding of Cultural Aspects in Risk Management

Example Authors									
Verma (2009)	**Rossiter (2001)**	**Conen (2007)**	**Barrett & Baret (2012)**	**Owen (2010)**	**Persad (2011)**	**Rotter (2003)**	**Kulesa, Scanlon & Simpson (2011)**	**Bungartz (2006)**	**Main Areas**
Strategy & Shares values	Strategy		Strategy, Objectives, Values & Ethics	Missions, Vision & Values	Appetite & Strategy	Value Structure, Corporate Philosophy	Appetite & Strategy	Value & Norms; Strategy & Philosophy	**Strategy / Philosophy**
Style	Leadership; Accountability	Leadership	Leadership & Management	Leadership	Commited Leadership	Management Style	Leadership & Commitment	Management Style; Management System	**Leadership**
Staff & Skills	People	Staffing	Knowledge, Skills, Learning, Induction & Recruitment	Job Design & Role Definition	Active Learning, Roles	Professional Expertise, Personnel Placement; Personnel Development	Roles; Organisational Culture	Professional Expertise & Abilities	**Human Resources**
	Communication	Communication & Reporting	Communication & Reporting		Information Sharing	Horizontal & Vertical Communication	Reporting & Management Information	Communication	**Communication**
Structure & Systems	RM Tool / Processes & Infrastructure	Policies & Procedure	Policies, Processes & Procedure	Structure, Systems & Processes	Organisational Structure, Policies & Controls		Organisational Structure; Process & Controls; Technology & Infrastructure	Organisation & Processes	**Organisation / Infrastructure**

In the following, the researcher decided to continue the approach by concentration on the five main areas referring to cultural artefacts, values and beliefs in more detail, to approach the underlying assumptions relevant for RC. For that, the researcher screened these main areas for relevant keywords that are mentioned by different authors in the context of culture and RM. Subsequently, the researcher analysed these keywords to develop the RC framework, consisting of different RC components that represent the conceptual basis for this study.

3.2 Risk Management Main Areas with Cultural Reference

In the following, the five main areas of RM, involving and constituting cultural aspects in the understanding of different authors, are presented in more detail, to uncover relevant components that might represent underlying assumptions and cultural preconditions, hereinafter presented as the keywords frequently found in the same context.

3.2.1 Leadership

In context with RC, many authors highlighted that a sustained commitment and signalling from management is critical to success (Harvey, 2012; Hindson, 2011; Althonayan, Killackey & Keith, 2012; Persad, 2011; Lehmann, 2010; Levy, Twining & Lamarre, 2010; Rasmussen & Marks, 2010). In their opinion, the process must begin at the head of the organisation by creating the right tone at the top throughout all hierarchy levels (Box, 2010; Brühwiler & Kahla-Witzsch, 2011; Hindson, 2010, Florig, 2013). This ‘tone at the top’ refers to the attitude and behaviour of management, acting as a

consistent and visible role model, also regarding ethics and values (Sloan, 2011; Mäe, 2011; Levy, 2010). This means that management must show that they take RM seriously, and not just in their own area of authority, demonstrating this by following their own rules and policies (Farrell & Hoon, 2009). They should take responsibility, rewarding employees who act in a risk-oriented way and penalising those who do not (Borghouts, 2009). They should send a clear message about the importance of RM, set explicit expectations, make transparent decisions, communicate openly and consistently, and encourage their employees to contribute within their area of responsibility (Anderson, 2011; Conen, 2007). Cooper (2010) even claims that leadership shapes organisational risk culture. This implies an understanding and awareness about the management's responsibility to the organisation, but also inspiring, supporting, practicing, and rewarding good RM (Borge, 2013).

In the context of leadership, the following keywords were frequently found in the literature:

Leadership			
identification	signalling	role model	tone from the top
commitment	competency	responsibility	authority
managerial trust	accountability	liability	consequence
mandate	values	ethics	awareness
understanding	perception	experience	abilities
visibility	encouragement	strategy	development
beliefs	moralty		

3.2.2 Human Resources

RC is closely associated with people, as it is the way all employees of an organisation feel and behave about risk, including their attitude towards it (Neff, 2009; Brühwiler & Kahla-Witzsch, 2011; Sloan, 2011). A strong RC requires awareness to identify risks and willingness to deal with it properly by all employees on all hierarchy levels (Althonayan, Killackey & Keith, 2012; Hoitsch, Winter & Bächle, 2005; Houngbedji, 2011; Reason, 2006). This also necessitates the ability to do so, which implies certain skills and expertise (Musslewhite, 2005; Bungartz, 2006; Klügl, 2011). This has to be developed and supported not only through education and training (also ethical training), but also through active learning from mistakes (Harvey, 2012; Hindson, 2011; Persad, 2011).

In a learning culture, the employees are encouraged to ask questions and contribute to constructive discussions proactively, assuming that employees feel either safe or courageous enough to do so (Cooper, 2010). In addition to that, their willingness to take part in this and cooperate with others is essential. This requires an employee's commitment and identification with the organisation, as well as a sense of responsibility for their certain area of work (Musslewhite, 2005; Borghouts, 2009). Ideally, each employee serves as a small Risk Manager in his/her area of accountability (Abed, 2010).

In the context of human resources, the following keywords were frequently found in the literature:

Human Resources			
identification	commitment	encouragement	responsibility
perception	confidence	awareness	understanding
ethics	values	cognition	consequence
limitations	abilities	accountability	skills
development	learning	training	beliefs
moralty	trust	experience	knowledge
education	practice	(risk) appetite	

3.2.3 Communication

Communication in the context of RC means a continuous organised flow of information about risks between all departments (horizontally) and hierarchy levels (vertically) of the organisation (Agens, 2011; Rotter, 2003). It should be characterised through transparency, completeness, timeliness and consistency (Althonayan, Killackey & Keith, 2012; Bächle, 2004, Hoitsch, Winter & Bächle, 2005; Maskin, 2009; Bennett, 2013, Florig, 2013, Deloitte, 2013). This can be supported through a common risk vocabulary (or terminology) that promotes shared understanding and awareness, so that people feel comfortable talking openly and honestly about risk (Barrett & Baret, 2012).

Communication should be two-way, which also includes feedback as a precondition for a learning culture (Cornish, 2002; Althonayan, Killackey & Keith, 2012). Management should send clear messages that are heard by the complete audience of all levels, by articulating clearly the risk strategy, appetite and limits as well as behavioural expectations, in a way that promotes and gains commitment and mindset (Farrell & Hoon, 2009; NOS, 2011; Lehmann, 2010). By way of example, this should encourage

employees to contact their supervisor or Risk Manager in case of any question or concern related to risks (IIF, 2009).

In the context of communication, the following keywords were frequently found in the literature:

Communication			
clarity	transparency	consistency	understanding
awareness	trust	ethics	confidence
skills	abilities	learning	training
knowledge	strategy	principles	boundaries

3.2.4 Strategy & Philosophy

Strategy and philosophy represent the intangible basis of managing an organisation and are often set out in writing in corporate principles, guidelines or policies. In the context of RM, every employee should know and understand the vision ('what we stand for') and mission ('what we want to achieve jointly') of the company with regards to how to deal with risks (Owen, 2010). Philosophy mainly involves what an organisation is or stands for or is based on, in contrary to what an organisation physically has, i.e. structure, practices, tools or systems, and includes shared values, beliefs and ethical standards (Reason, 2006; Rasmussen & Marks, 2010; Hindson, 2010; Bennett, 2013; Anderson, 2011). Here, aspects such as honesty, level of care, respect, veracity and solidarity come to the forefront (Hewitt, 2009). This also covers generally accepted do's and do not's within an organisation, even if not set out in writing, that should be closely linked with the company's objectives (Bungartz, 2010; Maskin, 2009).

Strategy is generally defined as an action plan which is designed to achieve the objectives. This is also true for RM, where a risk strategy is required to understand the company's risk appetite. The risk strategy should include the tolerance of a company towards risks, including boundaries and limitations (Althonayan, Killackey & Keith, 2012). This has to be understood by all employees on all levels that all aim for the same overall target when dealing with risks (Barrett & Baret, 2012; Florig, 2013; Neff, 2009). This implies a management that follows their own rules and philosophy in order to show that the organisation takes managing risks seriously and how to deal with it (Farrell & Hoon, 2009). Commitment and general consensus is key on both a

management and staff level (Conen, 2007; Harvey, 2012). This also means clarity and transparency in the decision-making process and requires a communication flow across the entire organisation, as a precondition for employees to play by the company's rules (Houngbedji, 2011, Kulesa & Wilkenfeld, 2008; Levy, Twining & Lamarre, 2010).

In the context of strategy and philosophy, the following keywords were frequently found in the literature:

Strategy & Philosophy			
identification	commitment	signalling	commitment
ethics	values	trust	consistency
clarity	transparency	development	(risk) appetite
strategy	limitations	boundaries	norms

3.2.5 Organisation & Infrastructure

Another area that is mentioned in the context of RM is the organisational and infrastructural part that involves structures, processes, systems and tools, policies and guidelines (Bennett, 2013; Ashby, Palermo & Power, 2012; Borge, 2013). Stable and effective systems and tools are required, which support assessing, managing and reporting risks, to reduce complexity and increase informational value (Musslewhite, 2005). This is required to fulfil a certain analytical standard as well as information sharing across the organisation (Levy, Twining & Lamarre, 2010). Process reliability, system security and technical controls are important issues in this context, but people also need to develop the skills to work with these tools accurately, through practice and (frequent) training (Neff, 2009). Reporting and communication tools, and also informal channels for information flow, are required to send a signal to employees, to encourage and support them in identifying risks, but also provide them with a possibility to communicate to the RM department or Management Board in all risk-related matters (IIF, 2009; Kulesa & Wilkenfeld, 2008; Cornish, 2002). Policies and guidelines should clearly articulate the expectations for managing risks as well as the company's core values and ethical standards (Cooper, 2010; Farrell & Hoon, 2009; Hindson, 2010). They should support and enhance the day-to-day business with regards to RM (Cooper, 2010; Harvey, 2012; Sloan, 2011).

A lesson learned during the crises in the past, is the need to develop elaborate organisational structures, including clear roles and responsibilities, authorities and

delegation, and attention to potential conflicting priorities or interests (Lehmann, 2010; Persad, 2011; Box 2010; Klügl, 2011). A learning organisation is characterised by continuous enhancement of structures and processes, in consequence of a changing environment, to keep pace with growing complexity (Brühwiler & Kahla-Witzsch, 2011; Bungartz, 2006; Houngbedji, 2011; Owen, 2010). Responsiveness is a key ability when managing risks (Rotter, 2003). This means that all organisational and infrastructural components of RM should be reviewed and adapted from time to time, to serve as a protective mechanism, today and in the future (Mäe, 2011).

In the context of organisation and infrastructure, the following keywords were frequently found in the literature:

Organisation & Infrastructure			
signalling	responsibility	consistency	stability
clarity	visibility	transparency	security
skills	ability	development	limitations
training	norms	knowledge	principles

Based on this preparatory work, the researcher further developed cluster from the different keywords of the aforementioned main areas, by categorising the key words properly. Table 4 provides the clustering of these keywords resulting in the RC components which will be used in the further course of this study.

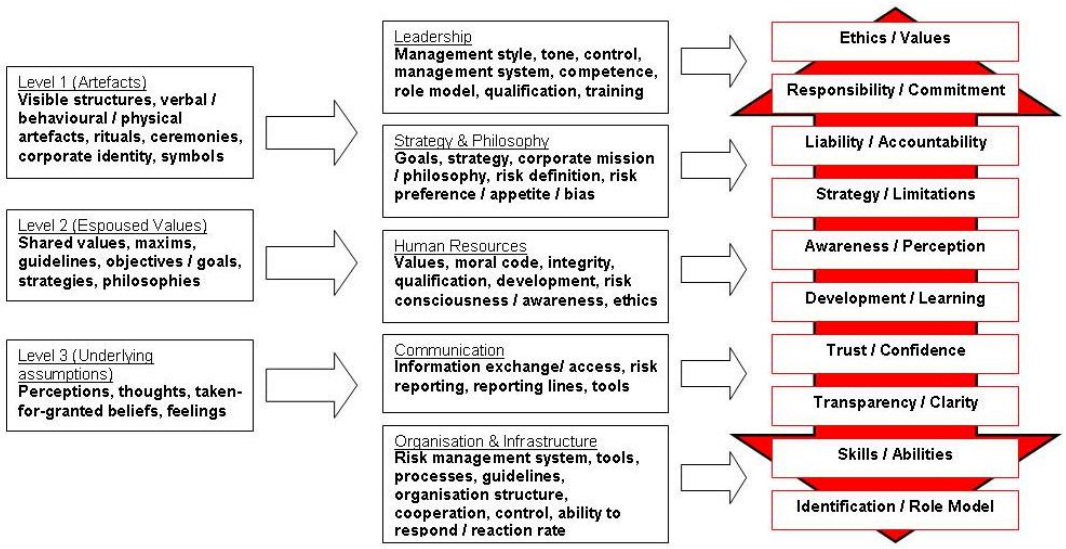
Table 4 Clustering of "Risk Culture" Key Words

Leadership	Human Resources	Communication	Strategy & Philosophy	Organisation & Infrastructure	Risk Culture Key Components
identification role model tone from the top signalling	identification		identification role model signalling	 signalling	⇨ Identification / Role model
commitment competency responsibility mandate authority	commitment responsibility		commitment	 responsibility	⇨ Responsibility / Commitment
liability accountability consequence	 accountability consequence				⇨ Liability / Accountability
ethics values beliefs moralty	ethics values beliefs 	ethics	ethics values norms moralty	 norms 	⇨ Ethics / Values
perception understanding awareness	perception understanding awareness cognition	understanding awareness			⇨ Awareness / Perception
managerial trust encouragement	trust confidence encouragement	trust confidence consistency	trust consistency	 consistency stability security	⇨ Trust / Confidence
visibility		clarity transparency	clarity transparency	clarity visibility transparency	⇨ Transparency / Clarity
abilities experience	skills abilities experience knowledge	skills abilities knowledge		skills ability knowledge	⇨ Skills / Abilities
development	development learning training practice education	 learning training	development	development training	⇨ Development / Learning
strategy	 limitations (risk) appetite	strategy boundaries principles	strategy limitations boundaries (risk) appetite	 limitations principles	⇨ Strategy / Limitation

3.3 Risk Culture Components

Based on the three levels of culture following Schein's (1985, 1992, 2004) approach, the researcher developed five main areas, these being strategy & philosophy, leadership, human resources, communication and organisation & infrastructure, as considered in previous works and papers. From these, ten RC components emerged, as a result of a clustering process of keywords mentioned by different authors. These components were further applied in this study as basic influencing and underlying factors for RC. Figure 3 shows the complete process, from organisational culture to RC components. In the following, these RC components are described and explained in more detail.

Figure 3 Development Process of Risk Culture Components



Source: Own illustration

3.3.1 Identification/Role Model

This RC component is mainly mentioned in the context of leadership and human resources, as this refers to the phenomenon that the role model provider demonstrates visible behaviour to others, i.e. the role model recipients, whereas this behaviour usually inspires and triggers the role model recipients to behave in the same way. Here, it is important to understand that this is a two-way process, as role model recipient select from a multitude of different choices available, and that identification and motivation plays a significant role for their decision. In other words, individuals usually accept those role models who motivate them to assume certain roles, or when individuals identify and sympathise with a certain behaviour or opinion (Jung, 1986).

As the role model phenomenon does not only influence vertically in the hierarchy, i.e. from management to staff, but also horizontally; older employees may represent a role model for younger colleagues, there might be a multiplier effect in either direction, negative or positive. In the context of RM, that means that supervisors provide a role model to their employees, when dealing with risks (Rasmussen & Marks, 2010). This role model function does not begin and end with the work in hand (Brüesch & Kager, 2010). Managers send a tone from the top, signalling their interest and the meaning of RM to the organisation, which is heard throughout all hierarchy levels (Cooper, 2010).

This means that management must follow their own policies so that employees understand that non-compliant behaviour will not be tolerated and that the organisation takes RM seriously (Farrell & Hoon, 2009). Further keywords that are associated with identification/role model: signalling, tone from the top.

3.3.2 Responsibility/Commitment

This RC component generally covers all main areas, i.e. strategy/philosophy, leadership, human resources, communication and organisation/infrastructure. Responsibility describes a sense of or attitude towards obligation or commitment to someone or something. In a business context, this generally refers to the duty to perform a certain task that is put to a person by contract or (written or verbal) mandate, and that the person is willing or committed to perform the task as requested, provided that he or she is capable of doing so. This also requires a two-way approach, i.e. to give responsibility by management and take responsibility by the assigned person (IISD, 2004; Brüesch & Kager, 2010).

The same applies for loyalty and commitment that is required by management from bottom to the top (Sheedy & Wright, 2013). However, it is no less relevant from the top down (Cardinal, 2012). In RM, responsibility and commitment is important, as each employee represents a Risk Manager when identifying and assessing risk-fraught activities in his/her working environment. People need to feel responsible for and committed to reporting risks to the management. Furthermore, sustained commitment, which is critical to success, drives continuous improvement that is required in a changing environment when dealing with risks (Harvey, 2012). As RM is the responsibility of management, this includes the communication of RM advantages and benefit in a way that promotes and gains commitment by all employees (NOS, 2011). Further keywords that are associated with responsibility/commitment: authority, competency, loyalty.

3.3.3 Liability/Accountability

This RC component is closely connected with responsibility and commitment, and mainly mentioned in the area of leadership and human resources. In general, accountability is the acknowledgment and assumption of responsibility for actions, encompassing the obligation to be liable for resulting consequences. In business, that

means that an employee may be responsible to fulfil a certain task, but his/her supervisor is accountable, so in case of failure the supervisor is liable for any consequence. According to that, accountability appears to be stronger in its effects than responsibility, as a person can feel (socially or morally) responsible for something, without being actually accountable (Mulgan, 2002). Due to this, accountability and liability is usually a management topic. When dealing with risks, the risk owner is usually accountable when a risk is not properly identified, reported or managed. The difficulty here is to identify the actual risk owner or person accountable, to hold somebody liable for it, due to risk aggregation, interdependencies, correlations or accumulations. Risk accountability should be captured within role descriptions and performance targets (Anderson, 2011). This requires that roles and accountabilities are clearly defined and communicated, and also training and education for those who are accountable for all consequences (Maskin, 2009). A further keyword that is associated with liability/accountability is consequences.

3.3.4 Trust/Confidence

Confidence is generally described as a state of being certain either that a chosen course of action or decision is best or most effective, build by knowledge or experience. This includes self-confidence, which constitutes confidence in oneself. Confidence also refers to the belief in the competency of other people, beyond self-control. Consequently, confidence is the certainty that an objective will be accomplished whereas trust implies that there is no certainty. Trust is the amount of faith; a feeling of confidence in a person who is worth believing in his/her actions. The uncertainty involves the risk of harm to the person who trusts, if the person who is trusted does not behave as expected (Tonkiss, 2007; Botterill & Mazur, 2004; Viklund, 2003). Management should earn the trust of their employees each and every day (Brüesch & Kager, 2010). Trust and confidence has a basic impact on all main areas, i.e. strategy/philosophy, leadership, human resources, communication and organisation/infrastructure.

RM usually requires trust and confidence to encourage people to identify and communicate ‘bad news’, i.e. risks in their business environment (Cooper, 2010). This is supported by stable and secure RM tools and systems as well as consistent internal and external risk communication (Musslewhite, 2005; Houngbedji, 2011). Furthermore,

a consistency between external and internal messages is important for the employees to build up trust and confidence (Maskin, 2009). However, overconfidence can also be dangerous, as it may preclude improvements and innovations, when people adopt an 'I have been doing it for years' attitude (Buckley, 2013). Further keywords that are associated with trust/confidence: stability, consistency, security and encouragement.

3.3.5 Transparency/Clarity

This RC component was mentioned in the context of all main areas, i.e. strategy/philosophy, leadership, human resources, communication and organisation/infrastructure. Transparency is about ensuring that inputs, processes and outcomes are visible to others, whereas clarity is about utilising information to reduce uncertainty and complexity (Prow, 2010). Both are relevant in RM as they may facilitate the decision-making process and improve effectiveness of RMS. While transparency is important in communication with each other, it does not mean that clarity comes along with it automatically. Transparency supports having all the information available, whereas clarity means using this information to enlighten or clarify a complex or non-transparent situation or circumstance (Prow, 2010). Consequently, both are required by management and staff when dealing with risks, as people need to understand clearly the company's approach to risk (risk appetite) (Farrell & Hoon, 2009; Florig, 2013). Risk transparency means to answer the question how to provide information useful for management decisions in time and move beyond compliance (Hindson, 2011). It means to reduce complexity without presenting a false picture of the risk situation (Brüesch & Kager, 2010). Further keywords that are associated with transparency/clarity: visibility, directness.

3.3.6 Skills/Abilities

This RC component is often associated with human resources, as people have certain skills and abilities that enable or qualify them to do certain tasks. In this, it applies to both management and staff. As this involves how to do certain things, skills and abilities are also mentioned in the context of organisation and infrastructure, for example when dealing with tools or systems. The difference is that skills can be learned without having prior knowledge, whereas ability is a strength that can be improved or developed but a certain talent or capability has to exist already within a person (Stevens & Campion, 1994). For RM, certain skills and abilities are required to identify, assess

and manage risks, for example cognitive abilities and communication skills. It can be assumed that well-trained employees can identify potential difficulties and problems before risks occur, and consequently these can be reduced, although not necessarily eliminated (Seitter, 2006; KPMG, 2013). Furthermore, there are collective abilities within an organisation, such as to discuss in an open and constructive manner without blaming each other, and come to an agreement how to deal with the company's current and future risks (Levy, Twining & Lamarre, 2010). This implies the willingness of people to acquire missing knowledge and to learn from the experience of others (Brüesch & Kager, 2010). Further keywords that are associated with skills/abilities: knowledge, experience, talent.

3.3.7 Development/Learning

This RC component is closely linked with skills and abilities and therefore often mentioned in the context of human resources and organisation/infrastructure. Learning involves acquiring or increasing knowledge and skills through study, experience or teaching. Instead, development is concerned with the growth of abilities, such as cognitive or problem-solving abilities, which often runs parallel to the biological development. Skills can also be developed in a way that turns them into habits, mainly through practice. With regards to leadership, the importance is to shape and cultivate the way managers approach their work and staff on a sustained basis, and this requires development not learning. However, learning aptitude or ability is a condition precedent so that people assimilate and apply their acquired skills and knowledge (Tannenbaum & Yukl, 1992; Killian, 2010).

Within RM, learning and development is required as people work in a changing environment and they need to keep up with these dynamics when identifying and assessing risks. That also means actively learning from mistakes without penalty (Persad, 2011). In a learning organisation, lessons learned are valued and errors are not regarded as defects of individuals, which is cultivated when communication and commitment on that is completely provided on all hierarchy levels (IIF, 2009; Deloitte, 2013). Further keywords that are associated with development/learning: training, education, practice, practical training.

3.3.8 Awareness/Perception

This RC component mainly covers leadership and human resources, as this topic is related to people, but it also touches the areas communication and organisation/infrastructure as consequence. Perception is the processing of sensory information, from physical stimulation of the senses that involve signals to the nervous system. Awareness can be defined as the ability to perceive or to be conscious of something, and is not necessarily accompanied by understanding. It is the state of being aware of something that involves both an internal state, such as instincts or feelings, and an external event through sensory perception. That means that perception can happen without subsequent awareness; when a stimulus is strong enough that a person perceives it, but is disregarded so that it does not influence the person's behaviour or thought process. In contrast, awareness without perception is not possible as realisation or consciousness always requires a perceived trigger. In the context of RM, perception is a basic requirement for risk identification, and it also requires awareness to communicate and assess these risks (Merikle, 1984; Hochberg, 1956; Slovic, 1987; Drestske, 2004; Sheedy & Wright, 2013). Further keywords that are associated with awareness/perception: understanding, attention, cognition.

3.3.9 Ethics/Values

This RC component is generally associated with strategy/philosophy, leadership and also human resources. Ethics, also known as moral philosophy or theory of reflection of morality, involves systematising, defending, and recommending of right and wrong behaviours (Fieser, 2009). As a basic concept, there are three ethical directions known: ethic of obedience (e.g. integrity; compliance to rules & regulations), ethic of care (e.g. empathy, respect, fairness) and ethic of reason (e.g. wisdom, prudence) (IRM, 2012; Bennett, 2013). They are standards by which mindset and behaviour is evaluated with regards to morality that discerns good from evil (Chippendale, 2001).

Consequently, ethics result into a set of rules that are adopted by a group of people that arrive at moral standards regulating what is right and wrong; so values are the beliefs and principles to identify what can be judged as good and evil. In other words, when someone acts in a way that is consistent with certain values and beliefs, this can be named as acting ethically or with integrity, as the honesty and truthfulness or accuracy of one's actions. Whereas values determine what is good and what is bad, ethics

determine doing what is good and what is bad (Jähne, 2001; Fieser, 2009). This plays a significant role in RM, as the person in charge of risk identification needs to distinguish between behaviour that is correct and not correct (not necessarily based on personal ethical standards but on the company's ethical code), so he/she needs to understand the organisation's rules, values and norms (Brüesch & Kager, 2010; Deloitte, 2013).

Furthermore, ethical values are generally important in personal interaction, e.g. respect, tolerance, veracity, not only concerned with RM but represent basic requirements when delivering 'bad news', i.e. identified risks, to others, to create a 'no blame' culture (Levy, Twining & Lamarre, 2010). Further keywords that are associated with ethics/values: integrity, beliefs, morality and norms.

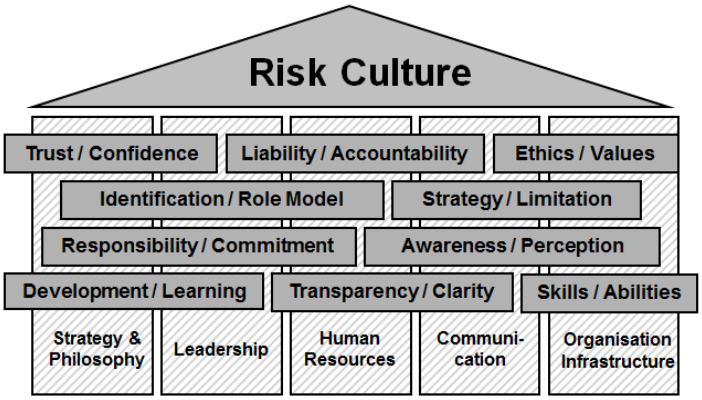
3.3.10 Strategy/Limitations

This RC component is mentioned in the main area of strategy/philosophy and also organisation/infrastructure, as the latter usually represents the respective transformation of strategy and limitations into organisational structures and processes. In a business context, strategy is a plan of action, consciously and purposefully developed by management, for achieving predefined corporate goals (Mintzberg, 1978). This involves behavioural patterns that are derived from the strategy, resulting in corporate governance and basic principles. These principles describe not only what decisions or actions are expected and favoured, but also boundaries and limitations set by the company to understand what is not allowed or which requirements have to be fulfilled in advance (Porter, 1996; Favaro, 2012). This is also relevant to RM, as employees have to understand the company's appetite for risk when identifying and assessing corporate risks. This requires the risk strategy to be clearly communicated by the management, including a definition of risk, for employees to understand what the company associates with risk. A risk strategy tells the employees how to deal with risks and what to report or not (Six & Kowalski, 2005; Brüesch & Kager, 2010). Further keywords that are associated with strategy / limitations: (risk) appetite, boundaries, principles.

3.4 The House of Risk Culture

Based on the ten RC components the researcher developed a concept for RC, i.e. the 'House of Risk Culture', as presented in Figure 4.

Figure 4 The House of Risk Culture



Source: Own illustration

The 'House of Risk Culture' is constructed based on five 'pillars', i.e. strategy and philosophy, leadership, human resources, communication, organisation and infrastructure, that are linked through ten 'bricks', i.e. trust/confidence, liability/accountability, ethics/values, identification/role model, strategy/limitation, responsibility/commitment, awareness/perception, development/learning, transparency/ clarity as well as skills / abilities. These 'bricks' do not represent separate, isolated elements but they are often preconditioned and consequences of each other. For example, skills/abilities are the result of development/learning and clarity/transparency may represent a requirement for trust and confidence.

The researcher decided to use the metaphor of a house to underline that RC is 'constructed' socially, from the members of an organisation (Renn, 1998b; Botterill & Mazur, 2004). RC is based on 'pillars' and 'bricks' that represent the 'constructional substance' which makes RC strong and resilient, to a certain extent (Schieder, 2006). Once developed and established, RC is a generally stable and solid construct that persists and overcomes certain external and internal influences as long it is kept in good 'structural shape and condition'. It provides 'shelter' and 'protection' of the organisation if their risks are properly identified, assessed and managed. RC cannot be changed easily and quickly, however, it can be 'remodelled' and 'reconstructed' although this requires certain time and effort (Schieder, 2006).

An overview of the key authors that were considered to identify the keywords within the aforementioned 'pillars' is provided in Appendix 12. Table 5 presents the key authors were used to derive the 'bricks' that finally construct the 'House of Risk Culture'.

Table 5 Key Authors that inform 'House of Risk Culture' components

Identification / Role model	**Responsibility / Commitment**	**Liability / Accountability**	**Trust / Confidence**	**Transparency / Clarity**
Brüesch & Kager, 2010	Brüesch & Kager, 2010	Anderson, 2011	Buckley, 2013	Farrell & Hoon, 2009
Cooper, 2010	Cardinal, 2012	Maskin, 2009	Cooper, 2010	Florig, 2013
Farrell & Hoon, 2009	Sheedy & Wright, 2013	Mulgan, 2002	Maskin, 2009	Hindson, 2011
Jung, 1986	Harvey, 2012		Musslewhite, 2005	Prow, 2010
Rasmussen & Marks, 2010			Tonkiss, 2007	

Skills / Abilities	**Development / Learning**	**Awareness / Perception**	**Ethics / Values**	**Strategy / Limitations**
Brüesch & Kager, 2010	Killian, 2010	Drestske, 2004	Bennett, 2013	Favaro, 2012
Levy, Twining & Lamarre, 2010	Persad, 2011	Hochberg, 1956	Brüesch & Kager, 2010	Mintzberg, 1978
Seitter, 2006	Tannenbaum & Yukl, 1992	Merikle, 1984	Chippendale, 2001	Porter, 1996
Stevens & Campion, 1994		Sheedy & Wright, 2013	Fieser, 2009	Six & Kowalski, 2005
		Slovic, 1987	Jähne, 2001	

4 Research Methodology

The following section reveals how the research was conducted based on the research philosophy. It explains the research methodology, including the design and methods that were applied to collect and analyse the data within the case study.

4.1 Research Philosophy & Paradigms

In general, research philosophy means the belief about the way in which data about a phenomenon under investigation should be gathered, analysed and interpreted (Easterby-Smith, Thorpe & Lowe, 2006). The nature of philosophical questioning in itself supports and encourages in-depth thinking and generates further questions on the topic (Crossan, 2003). Therefore, research philosophy can influence the way research is undertaken, starting with the research design through to the conclusions (Flowers, 2009). Due to this, an understanding of relevant philosophical theories is required to

support the researcher in identifying designs which will or will not work, and finally to decide on a methodology to be employed (Easterby-Smith, Thorpe & Lowe, 2006). Core assumptions in ontology (reality) and epistemology (knowledge) create the framework for philosophical approaches significant to a consistent choice of methodology, which is to follow.

In general, there are two polarised philosophical approaches: objectivism and subjectivism (Holden & Lynch, 2010). With regard to ontology, this means the belief that reality exists independently of those who live it (objectivism), or that reality exists only through experience of it by individuals (subjectivism) (Flowers, 2009). Whatever the philosophical persuasion is, these assumptions are consequential to each other, which means that the ontological view affects the epistemological perception, and consequently the choice of methodology (Holden & Lynch, 2010).

Some major research philosophies have been identified, which will be briefly described hereinafter, including their ontological and epistemological assumptions. First of all, there is positivism, which is generally described as the traditional scientific approach to research that has dominated earlier social sciences (Kvale, 2007). Positivists assume that phenomena can be studied as hard facts, relations between these facts can be established as scientific laws, and that social objects can be studied in the same way as natural objects (Smith, 1998). With regards to ontology, positivists believe that an objective, stable reality exists that is independent of human behaviour (Crossan, 2003). Regarding epistemology, knowledge is based on observations of this external reality. The idea of positivism is that research should be based on an objective approach, where the researcher must be independent of the subject being observed (Easterby-Smith, Thorpe & Lowe, 2006). Scientific statements are based on observable data, whereas the observation of data and its interpretation should be strictly separated. Research results are objective and quantifiable (Kvale, 2007). Consequently, the research employed by a positivist is characterised as being repeatable (Easterby-Smith, Thorpe & Lowe, 2006).

The opposite is represented by interpretivism, where the researcher is part of what is being observed. This is also, but not necessarily true for (social) constructivism. Due to this, proponents of both theories are well aware that the researcher cannot avoid affecting the phenomenon under investigation. The understanding of what people,

individually or collectively, think and feel as well as their verbal and non-verbal communication is considered as relevant (Easterby-Smith, Thorpe & Lowe, 2006). This paradigm assumes that there are multiple realities subjectively constructed, instead of a single objective reality (Sobh & Perry, 2006). Given the subjective nature of this persuasion, it is associated with the belief that reality is socially constructed and given meaning by people, hence knowledge is relative and reality is all imagination. Only the subjective interpretation of reality can lead to a complete understanding of it from a constructivists or interpretivists perspective (Holden & Lynch, 2010).

Between these extreme paradigms, critical realism offers a conscious compromise. Its ontological view includes the belief that an objective reality exists independently of human thought or behaviour, but considers knowledge as constructed by people. As knowledge is a result of social construction, it cannot be understood without considering the involved individuals (Farquhar, 2012). Consequently, this means that different researchers may have different viewpoints, so the results may vary (Easterby-Smith, Thorpe & Lowe, 2006). Due to varying viewpoints, realists try to construct or collect a group of different answers to a phenomenon, i.e. they do not believe in a pure A to B causality, but in a combined effect of place, time and people, which is not fixed but dependent on their environment. Due to this, realism research is basically characterised as being unrepeatable (Sobh & Perry, 2006). Critical realism prioritises ontology over epistemology, highlighting that the way reality is, should guide the way knowledge is obtained. These researchers reject the ‘one size fits all’ methodology and advocate the selection of a research method in accordance with the nature of the phenomenon. This is because of their ontological belief that there is only one reality, but knowledge based on multiple interpretations of it (Fleetwood, 2007).

Having briefly described these paradigms, not only chosen due to their prevalence in management research but because of their polarised viewpoints, it is worth analysing and understanding which research philosophy is significant to this researcher. It is argued that awareness about own values and considering these in research may help researchers to strengthen their study in terms of transparency to minimise bias and defend the choice of methodology (Flowers, 2009). From a philosophical perspective, the different paradigms provide a clear distinction between each other, but when applied

to research the differentiations become indistinct, in particular regarding the choice of a specific method or the research design (Easterby-Smith, Thorpe & Lowe, 2006).

For RC, the main phenomenon under investigation in this study, there is no widely-accepted definition available, which was confirmed by the previous literature review. In general, it refers to people's attitude and behaviour toward risks. At this, (potential) risks depend on people's perceptions, experiences and appetite for risk. It is the epistemological view of critical realists that there may be multiple definitions available, depending on the individual's understanding. This is also true for risk, the subject of interest within RC. The literature has confirmed that there is also a wide range of risk definitions available. These definitions range from an extremely negative association to a positive. Risk is a combination of a real world event and its subjective perception by people. Therefore, RC is the understanding and perception of risks, shared by a group of people that is socially constructed, whereas reality stays independent. With regards to this phenomenon, critical realism is regarded as appropriate by this researcher to form the basis of this research, as it supports the theory that there is one reality, but different interpretations (Farquhar, 2012).

Risk perception is socially constructed (Botterill & Mazur, 2004). Due to individual attitudes towards risks, its identification and assessment may differ from person to person or from group to group, especially when identifying whether or not a risk exists, or when estimating the extent of damage or the probability of occurrence. This does not exclude unexpected events but it does exclude those that are unforeseen. A good example would be 9/11 where nobody foresaw the attack on the Twin Towers using civil aircraft. Although Risk Managers almost certainly considered the possibility of the Towers collapsing when they were in the design phase, they dismissed the risk as unlikely, i.e. unexpected. It is only after the event that people know if their perception was right or wrong. This establishes that an objective reality exists, e.g. that hijacked civil aircraft could destroy the Towers. From that date on, similar attacks would be within the perception of Risk Managers based on experience. However, the former (what is the probability and the potential loss?) or the subsequent assessment (does the loss of the building have a major or minor impact on the portfolio?) is subject to individual experience and viewpoints. This fits the belief of critical realists that different views may exist and that context and environmental settings are crucial when studying a

real world phenomenon, such as RC, that is in fact 'unobservable' and intangible, compared to natural science (Perry, 1998; Easterby-Smith, Thorpe & Lowe, 2006).

Unlike natural science, RC as a phenomenon cannot be isolated and examined under controlled conditions, as there are many factors and drivers that may influence awareness and perception (Sayer, 2000). Critical realists reject cookbook prescriptions and they do not intend to produce cause-effect laws (however, they admit certain cause-effect linkages) that this researcher assumes is also not possible for a phenomenon, such as RC, as identified based on individuals' statements. From the researcher's point of view, RC cannot be counted or measured, but the meaning can be understood, consequently there is always an interpretation involved (Perry, 1998; Sayer, 2000; Farquhar, 2012).

This researcher believes in knowledge that is based on different viewpoints of people. Consequently, a phenomenon like RC cannot be understood independently of the respective humans involved (Farquhar, 2012). It is of significant relevance what these people have experienced and what they require with regards to target RC, to make it worth mentioning to the researcher. The answers are related to individual views and subjective perceptions. Subjectivity allows the study to benefit from experience and different perspectives when identifying the target RC. For non-positivists, subjectivity leads to the most interesting understanding of reality. Moreover, there is the chance to add new details or ideas, in particular aspects which have not been considered by literature to date. In addition, the study calls for a fuller understanding, which may require open and more detailed questions from or to the researcher. This is contrary to the 'one-way-mirror' research employed by a positivist, which tends to be rather inflexible and not very effective in understanding a phenomenon like RC in depth (Sobh & Perry, 2006).

With regards to the determination on the extent of target RC achievement, objectivity plays a more relevant role, compared to the target RC identification. Objectivity in scientific research implies that a phenomenon is investigated by a researcher, who acts as a non-interventionist, independent of the subject being observed (Easterby-Smith, Thorpe & Lowe, 2006). This usually means that the results can be tested and confirmed by other scientists, too (Bryman & Bell, 2007). In the understanding of this researcher,

this does not necessarily mean that the results of measurements are expressed on a numerical scale for everybody else to understand them in the same way. This objective approach is mainly supported by positivists (Easterby-Smith, Thorpe & Lowe, 2006). However, compared to positivism and also interpretivism, critical realism tolerates a wide range of research methods, whereas the particular choice should depend on the purpose of the study (Sayer, 2000). As different authors confirmed, critical realists accept both, qualitative and quantitative methodologies (Holden & Lynch, 2010; Sobh & Perry, 2006). This also convinced this researcher that critical realism presents an appropriate philosophical paradigm for this study.

Due to the intent to study a phenomenon in its natural setting, accompanied by a comprehensive understanding of the complexity, this researcher decided to conduct a case study (Farquhar, 2012). This will be described and discussed in further detail within the next chapter. As the literature has confirmed, critical realism forms an appropriate philosophical basis for case study research (Perry, 1998; Easton, 2010; Yin, 2009). One reason is that case studies usually deal with contemporary problems or topics, where accepted theory or principles are lacking. Consequently, inductive theory building is required, instead of deductive testing. The former is usually advocated by critical realists, whereas also a mixed approach of induction and deduction is acceptable (Perry, 1998). In addition to that, case study research involves the collection of unobservable data, such as experiences or perceptions of people. This is in contrast to the research efforts of positivists, but in line with critical realism (Easton, 2010; Perry, 1998).

In summary, this researcher follows the philosophical perception of critical realism with regards to this study. Due to the belief of positivists that research results are always objective, quantifiable and repeatable, this paradigm cannot be fully supported by the researcher as discussed before. However, this researcher believes that research can be based on elements of more than one philosophical paradigm if managed carefully. This is not an excuse for the inability to decide but the belief that a methodology should be chosen that is suitable for the problem under investigation, given the complexity of the real world. This is supported by a growing number of authors who argue that different philosophical elements and methods to some extent provide more perspectives on the phenomena being investigated (Easterby-Smith, Thorpe & Lowe, 2006). In the

following chapters, the researcher presents the case study approach and the research design by explaining the methodology and methods applied in more detail.

4.2 Case Study Research

A case study is generally described as an in-depth research approach to analyse an individual unit, i.e. a person, group or event, holistically within a real-life, authentic context (Flyvbjerg, 2011; Yin, 2009). Case study research deals with describing real world phenomena, instead of developing normative decision models (Perry, 1998). It is a valuable way of looking at the world around us (Rowley, 2002). The case study also provides the story behind the results and can be a good opportunity to bring attention to a particular difficulty or challenge (Neale, Thapa & Boyce, 2006). Rather than using huge samples to study a limited number of variables to develop or employ mathematical models or theories, a case study involves an in-depth examination and understanding of the phenomenon of interest. Comprehensive understanding results from a process that is known as 'thick description', which involves an intensive description of the phenomenon being studied, the research circumstances and also the relevant characteristics of the people involved (Becker et. al., 1994-2012). This is appropriate when there is a unique or interesting story to be told or a concrete problem to be solved, offering a more complete perspective of what happened and why and how to fix it (Neale, Thapa & Boyce, 2006).

Case study research is a choice of an individual case (or more cases) that is worthwhile and interesting to study rather than a methodological choice. A case study generally aims at theory building, rather than theory testing (Perry, 1998). Due to this, there is a tendency to qualitative methods or mixed-method approaches, as these produce comprehensive insights and rich knowledge (Bryman & Bell, 2007). Therefore, some researchers, and quantitative methodologists in particular, criticise subjectivity that follows from personal interpretation of data by case study researchers (Farquhar, 2012). In contrast to statistically-based studies which seek after quantifiable data, the purpose of case studies is to offer new insights and raise more questions for further research (Becker et. al., 1994-2012). As subjectivity is usually not avoidable and actually volitional, managing of subjectivity is required by the researcher, i.e. to present a rich and detailed description of the particular case so that others can recognise similarities and differences with their own matters (Hsieh, 2006).

In addition to that, there are concerns about reliability, validity and generalisability of the research results when conducting a case study. Reliability generally refers to the consistency of an approach. It is important to demonstrate an end-to-end chain of evidence, clear in structure, including research questions, context and purposes, methodology, data gathering, analysis and findings (Atkins & Sampson, 2002; Yin, 2009). Especially for critics, reliability also involves the question if case study research is prone to the bias of the researcher, i.e. results might be biased, e.g. due to the researcher's stake in the case (Neale, Thapa & Boyce, 2006). In particular, this could occur if a researcher intended to confirm his/her own hypothesis/propositions or disprove assumptions of other researchers (Saunders, Lewis & Thornhill, 2009). This bias towards verification generally applies to all methods, not just to case studies or other qualitative methods where subjectivity may be involved (Flyvbjerg, 2011). In this study, the researcher is indeed looking to analyse own propositions resulting from the interviews, when conducting the subsequent employee survey (this is explained in the next chapter). However, the direction of the outcome, i.e. positive or negative, is not relevant to this researcher; the main purpose of this study is to contribute to the conceptual and practical knowledge about RC.

In addition to reliability, replication and validity are often mentioned as challenges of case study research. True replication is one of the most argued criticisms of qualitative research as the researcher is the main instrument of data collection and analysis. He/she participates in the interviews and decides what to focus on, who to interview, which responses to consider and so on. Consequently, the result of qualitative research is likely to be affected by the researcher's personal characteristics, for example age, cultural background and experience. Another reason is that there are hardly any standard rules or procedures in qualitative research. Due to all this, it is difficult, maybe impossible, to fully replicate qualitative findings. However, case study researchers argue that replication and generalisability are not the primary purpose of their craft (Bryman & Bell, 2007). Others claim that conceptual validity instead represents a strength of case studies that implies that the assumptions applied are considered justifiable and reasonable, whereas validation means that the approach is acceptable for its intended application (Flyvbjerg, 2011). Case studies are usually appropriate so as to generate propositions that have to be tested for statistical generalisability in subsequent quantitative approaches (Perry, 1998).

Furthermore, validity refers to the extent to which a result is well-founded and corresponds accurately to the real world. Case study researchers, who have in-depth access to some individual cases, have difficulty convincing their audience that their results are based on the critical analysis of all data, which is available to them, and does not depend on a few well-chosen examples. However, it is wrong to think, that quantitative researchers have a 'golden key' to validity; consequently there is no reason for qualitative researchers to be overly defensive, but to provide criteria for including or excluding certain instances, to ensure that the raw data is still available to allow alternative interpretations of the same material (Silverman, 2000).

Due to this criticism, some authors suggest that qualitative research should rather be judged as credible and confirmable as opposed to valid and reliable (Becker et. al., 1994-2012). However, there are a lot of strengths that case studies provide. As already mentioned, they are particularly useful when researchers want to get a detailed view of a particular phenomenon. Instead of establishing clean and controlled environments as experimental studies do, case study researchers intend to investigate the phenomenon in natural settings (Hsieh, 2006). Furthermore, case studies provide a comparatively flexible approach of scientific research. The looser format allows researchers to start with broader questions and narrows their focus gradually, where required, rather than try to predict every possible outcome prior to the experiment (Becker et. al., 1994-2012; Hsieh, 2006). Due to natural settings and circumstances, unexpected changes in the course of the study and the desired flexibility, case studies can be lengthy. Thus, it may be challenging to hold the audience's interest if results are not provided in a digestible, concentrated manner, without losing any quality or richness of information (Neale, Thapa & Boyce, 2006).

For case study researchers, it is not essential to replicate the phenomenon in laboratory or experimental settings in order to better understand the phenomenon (Rowley, 2002). Whereas multiple cases may represent a powerful instrument to create theory when replication is evident, a single case study allows the researcher to investigate a complex phenomenon in greater detail. Yin (2009) argues that also single case studies may afford theories and had proven to be as empirically grounded as multiple case studies. Easton (2010) confirms that investigating one case in-depth can offer universal understanding

that a study of a million of cases cannot. For him, critical realism offers a philosophical justification for a single case study, not because it is proved to be the only 'right answer', but because the basic assumptions are accepted before.

The final decision on the number of cases is up to the researcher, and often a question of resources, same as the sample size in qualitative methods, as argued by Perry (1998) or Yin (2009). There is no exact number that could serve as a guideline in this regard (Perry, 1998). However, as Manning and Roulac (1999) highlights, many CREM executives have spent a lot of time on surveys and interviews in the past, due to the increased interest in the academic community; consequently they are possibly no longer receptive to scientific research. In contrast to that, in the last years CRE managers have begun to adjust their focus towards adding value to their organisation (Lindholm & Gibler, 2006; Holland 2009). That may serve as a catalyst to advance their interest to participate in case study research.

This researcher decided to focus on a single case. The reason for this is that this researcher has the opportunity and insight to study this case in great detail, as an employee of the organisation with good access to all relevant respondents. Gaining entry to an organisation, including agreement by both management and work council is regarded as difficult by Easterby-Smith, Thorpe and Lowe (2006). Full consent and support can be expected by the case study unit's management and work council. This can be defined as a revelatory case, when an investigator has the chance to research a phenomenon that is usually inaccessible to other researchers (Yin, 2009). This is confirmed by Weitz (2000) who explained that only a few private companies have agreed in the past to provide a comprehensive insight into their organisation, due to occupied capacity or the concern to disclose sensitive information that may represent a competitive disadvantage. As the importance of an appropriate, healthy RC was recognised by the case study unit and the offer by this researcher to study this phenomenon in-depth was highly appreciated by them, this represents a unique opportunity to contribute to both, science and the company.

4.2.1 Case Study Methodology

Research is generally defined as a scientific and systematic search for relevant information on a specific topic. In this regard, systematic means that the research is

structured that requires specific steps to be carried out in a specific order in accordance with a well-defined set of rules. Consequently, a research design is required as a conceptual structure of how the research will be conducted (Kothari, 2009). In the following, the research design for the selected case study that hopes to assist with answering the research questions fully is described the research questions properly. Within this case study, the researcher applied a mixed-methods approach that includes both qualitative and quantitative elements. Furthermore, the research design for this study represented a combination of description and exploration that consist of three stages, namely literature review, interview and survey phase, as presented in Table 1.

Table 1 Research Diagram for this Study

	Research Method	Research Purpose	Research Outcome	Connection to next / final stage
1)	Literature Review	To identify key components of organisational risk culture	"House of Risk Culture"	represents the conceptional framework to identify the target risk culture by interviews
2)	Management Interviews	To identify managerial expectations concerning risk culture of their organisation	"Target Risk Culture" as expected by management	represents the basis to determine the existing risk culture by employee survey
3)	Employee Survey	To determine congruencies and differences between managerial expectations and employees' perception in their organisation	"Existing Risk Culture" as perceived by employees	provides the results appropriate to answer the overall research question

The literature review resulted in the development of the 'House of Risk Culture' framework (as described in chapter 3) as a construct to identify the target RC and subsequently the existing RC within the case study. For case study researchers, there are usually several sources of evidence available, e.g. documentation/records, interviews, surveys or observations (Yin, 2009). All of them provide certain strengths and weaknesses but not all sources are equally relevant or appropriate. However, a researcher should select the source that is most appropriate to answer the respective research question. This researcher aimed for an understanding into what the target RC is, as intended by the management in the case study. The researcher decided to conduct one-to-one interviews, assuming this will lead to a comprehensive picture of the area of interest. The researcher also intended to investigate the relevance of different aspects that involve RC, as developed during the literature review. Additionally, potential further aspects were explored, as mentioned by the interviewees. The result of this step is a detailed description of the target RC, including an indication of what may be wrong today (and what is required to be changed) and reasons for the target RC (why it is important to change). The researcher applied an inductive approach, which works from specific observations and findings to theories (Skinner, 2010).

Subsequently, the researcher targeted at a more quantitative answer to what extent the target RC has already achieved within the case study unit. A survey, more precisely a web-based questionnaire with all relevant employees of the case study unit was conducted by the researcher. The questionnaire was developed from the answers as obtained during the previous step of this study. By doing so, the identified target RC could be tested to explore the extent of actual achievement. This represents a deductive approach, to test the prepositions that were developed before (Bryman & Bell, 2007).

4.2.2 Managerial Expectation of Target Risk Culture

Research Design & Methods

Regarding the identification of target RC, the researcher conducted face-to-face interviews with selected executive employees of the case study unit. In general, qualitative research deals with opinions, experiences and feelings of individuals who produce subjective data, which is collected through direct encounters with them, i.e. through one-on-one or group interviews or observation (Hancock, 2002). Qualitative research is aimed at a holistic perspective, mostly inductively (from specific observations to theories) and results are usually presented in a descriptive manner (Skinner, 2010). Given the subjective nature of this approach, qualitative research is usually preferred by anti-positivists, as it is associated with the belief that realities are subjectively constructed and given meaning by people, hence knowledge is relative. Only the subjective interpretation of reality can lead to a complete understanding of it from an anti-positivist's perspective (Holden & Lynch, 2010).

From an epistemological perspective, interviews are a powerful method for capturing people's opinion. They provide a greater flexibility than quantitative methods (Rubin & Babbie, 2009). Interviews provide the opportunity not to be limited to pre-defined questions, but to modify them as required during the talk and to obtain information beyond a predetermined set of questions. They also allow questions from the interviewee as well as further explanation by the interviewer if required. This is in line with the constructivist's understanding of the researcher's participating role and underpins the claims that qualitative research allows a deeper understanding of the area of interest (Silverman, 2000). Furthermore, interviews in person are preferred, because RC may be a sensitive topic to some people due to the generally negative association of

risks in business. Some may be very careful what they say and what reasons they give, as cultural issues might be sensitive, as people are concerned. Therefore, it might be helpful not to call it an interview officially, but a “discussion between experts” and a “possibility to address important issues,” which may make the interviewees feel more relaxed and less threatened (Bryman & Bell, 2007).

Furthermore, the respondent may be reluctant to answer questions with regards to RC and today’s weaknesses and target requirements unless there is a confidential atmosphere between the persons involved. Due to this, the researcher does neither expect a high rate of reliable answers nor sufficient details that allows a description of target RC, when just mailing open questions to the respondent. Instead of that, face-to-face interviews are preferable when the subject matter is confidential or sensitive, and when detailed answers are required (Easterby-Smith, Thorpe & Lowe, 2006). Furthermore, interviews have often been regarded as a powerful method for the preliminary/exploratory stage of a research project, so as to provide a good basis for developing a more structured approach that is necessary for subsequent surveys (Rowley, 2002). That is why interviews represented a useful start to investigate the target RC, followed by a survey to study the existing reality. However, the researcher is well aware that the interview results only presents a “snapshot” of current opinion, knowledge and experience of the executive managers that were interviewed. In empirical research this is called a cross-sectional design, where either the entire population or a representative subset thereof is selected, and that the information obtained represents what is going on, at a defined point in time, to investigate the connection and relationship between variables (Bryman & Bell, 2007). This is in contrast to longitudinal study, where individuals are contacted several times over a given period, e.g. to explore changes in viewpoints (Olsen & George, 2004).

Sampling & Data Collection

For identifying managerial expectations in terms of organisational RC of the case study unit, the researcher intended to collect qualitative data through direct encounters with individuals, by conducting semi-structured interviews.

The intensive and time consuming nature of data collection by qualitative interviews necessitates the use of small samples (Hancock, 2002). Notwithstanding, a qualitative study requires a certain number of interviewees who answer the questions adequately (Marshall, 1996). Qualitative sampling intends to consider those respondents who are

"richer" than the average, i.e. which provide an insight and deeper understanding of the phenomena of interest. Consequently, randomly selected respondents may not provide the researcher with the same quality of answers as a judgmentally selected individual could. Due to this, a "purposeful sample" appears to be appropriate, as the researcher actively selects, using their own judgement, the most appropriate samples with good prospects of answering the questions (Marshall, 1996).

In this case study, 9 (out of 21) executives from the case study unit were interviewed, purposefully selected, mainly due to the job relevance to RM, i.e. the divisions Finance/Risk Management, Technical Risk Management or Compliance. In addition to that, another 2 persons were interviewed, as RM executive experts from the case study unit's mother company, assuming a significant contribution from their expertise. Consequently, 11 executives were interviewed in total.

Each interview involved a series of open-ended questions, relevant to the area under investigation, i.e. RC. The open-ended nature of the questions also provided the opportunity for the interviewer using prompts or cues to encourage the person interviewed to consider the question further, in case the interviewee had difficulty answering a question, or provided only a short response (Hancock, 2002). This is of particular benefit, when the research topic is sensitive. Furthermore, interviews are regarded as an important source of case study evidence, as case studies usually deal with human affairs or behaviours (Yin, 2009).

This researcher conducted the interviews by using a pre-defined interview schedule, and standardised the questions as well as the order in which questions are put to the interviewees, so that the questions were always answered in the same sequence within the same context. This supported the intention of the researcher to minimise the impact of context effects, because the answers to a given question can be affected by preceding questions. However, being aware that contextual effects can never be avoided, it is desirable to hold them constant across all respondents. This does not necessarily exclude interposed questions by the researcher during the interview, when required or beneficial. Due to this, the researcher developed an interview schedule that contained the wording and sequence of questions. Interview schedules are considered as a way in

which the researcher can increase the reliability of research data (Lindlof & Taylor, 2010).

Reliability also involves the question what if the qualitative research is prone to the bias of the researcher, i.e. results might be biased, due to the researcher's stake in the study (Boyce & Neale, 2006). In particular, this could occur if a researcher intended to confirm his own hypothesis/propositions or disprove assumptions of other researchers, all the more if the researcher were participating, as preferred by proponents of constructivism (Saunders, Lewis & Thornhill, 2009). In this phase of the study, the researcher was not looking for confirmation or disproof, but to identify the target RC, intended by the management of the case study unit. This requires first hand perception from different managers to result in the most realistic picture possible; consequently the participation of the researcher is not a handicap, but an advantage to this particular stage of the study.

The researcher previously decided what areas to cover but was receptive to unexpected information from the interviewed person. This can be particularly significant if only a limited time is available for the interviews and the researcher wants to ensure that all key issues are covered (Hancock, 2002). The pre-defined interview schedule is designed so that the questions are divided up into four sections.

At first, some general questions were developed to obtain an understanding on the current knowledge, viewpoint and association of RC by the interviewee in general. Secondly, the interviewee was asked about his/her ideal scenario or setting of RC at the case study unit, to investigate key attributes and characteristics from the management's point of view. This also included questions about limitations and restrictions, individual responsibility, rights and duties, visible behaviour and attitude, as well as individual skills and abilities that are requested by management to contribute to the target RC within the case study unit. The third part of the interview dealt with the relevance of the components that are associated with RC as developed from the literature review. The researcher presented a set of unsorted cards with an RC component on each, for the interviewee to pick them and explain the reason for selection. The objective here was to understand which are the most or least relevant to the interviewees, including a reason for their selection and an opportunity to add further issues that describe or characterise

RC from their perspective. This also helped the researcher to tease out further details about accumulated need and the target with regards to RC at the case study unit, as the researcher assumed that the RC components inspired the interviewees and gave thought-provoking impulses. At the very end of the interview, the respondents were asked about their own opinion about the percentage of their target RC that has so far been achieved and where they see the biggest backlog or accumulated need of the case study unit, to complete the interview about target RC. The complete interview outline is presented in Appendix 5.

Prior to the actual interviews, the questions were tested in two pilot interviews with employees of MP that were not participants of the actual interviews. The focus here was not on the actual answers provided by the pilot test interviewees, but on comprehensibility and clarity of the questions. In a real world environment, the interviewer could test the reaction of interviewees to identify unclear questions or questions that make respondents feel uncomfortable (Bryman & Bell, 2007). Furthermore, this was a good way of pre-testing and improving the interview skills and the sense of confidence of the researcher, as it provides the researcher with some experience of using the schedule of questions and the technical equipment, i.e. the voice recorder, to be well prepared for the actual interviews (Easterby-Smith, Thorpe & Lowe, 2006). In addition, the instructions for the interviewees were tested as well as the overall interview situation, starting from the introduction to the termination of the interview (Bryman & Bell, 2007).

If agreed by the respondent, the interview was recorded, or alternatively written during the interview. As the latter requires a lot of time during the interview and represents a potential source of error, the researcher preferred recording which allows a subsequent 'verbatim' interview transcript. This detailed data enables the researcher to analyse it in different ways, also at a later date, to answer more detailed or other questions than originally conceived, or when realising that some phenomena previously considered unimportant is crucial to explain individual experiences or opinions. Furthermore, preserving the data conveniently allows other researchers to study and verify the data and its interpretations (Savenye & Robinson, 2003). Therefore, the researcher is responsible for providing data and interpretations that are rich enough to provide the

ability to other researchers to make judgements about the transferability of findings to different settings or contexts (Zhang & Wildemuth, 2008).

It is important to highlight that English was not the primary language of the interviewees. As all of the interviewees are German native speakers, and so is the researcher, the interviews are conducted in German language. Therefore, the transcripts are written in the language spoken during the interview (Bryman & Bell, 2007). How the subsequent analysis is executed, as well as how potential translation problem are solved, is described and explained in the analysis chapter.

Data Analysis

It has to be pointed out that the entire analysis was conducted in German language. All interviewees are German native speakers and the interviews were executed in German, consequently the transcripts are all in German language, too. The following approach provides some examples in English, although they just serve as a demonstration of the process, which was finally conducted in German language. In summary, interviews, transcripts and their analysis were completed in German and the relevant extracts from the transcripts used for analysis and interpretation have been translated into English. To overcome any possible discrepancies in the meaning of words, the researcher ordered not only two independent translations into English, but also a back-translation to German so as to compare these with the original excerpts and understand potential differences. In most of the cases translation consensus occurred, otherwise the more appropriate English translation was used for this study after discussion with an English native speaker. Performing the entire study consistently in one language (except for the study summary and writing of this thesis verified by back-translation), the researcher minimised the possibility of translation errors when analysing the data and interpretation the results (Bryman & Bell, 2007).

The analysis of interview data consisted of both qualitative and quantitative elements, with qualitative analysis dominating as the researcher addressed most questions in an open-ended form. Qualitative analysis requires a clear description of how data was analysed and transformed into meaningful conclusions (Easterby-Smith, Thorpe & Lowe, 2006). As previously described, qualitative data was obtained through interviews, using open-ended questions in Part 1, 2 and 4 of the interview. The questions in Part 3 referred to the pre-developed RC components for the interviewees to

select the three most relevant and the three least relevant for them when thinking of their target RC. Consequently, the data obtained from Part 1, 2 and 4 could be characterised as non-standardised, whereas data from Part 3 was more of standardised nature. The latter allowed a direct comparison, while data from Part 1, 2 and 4 required certain amount of preparation prior to the interview, as described in the following.

Due to the non-standardised nature of most of the data from the interviews, the researcher grouped the data appropriately, as a narrative, to support the subsequent interpretation, as suggested by Saunders, Lewis & Thornhill (2009). To be more precise, the analysis focused on the meaning of content, not on the language (as distinguished by Kvale, 2007), as the latter was not regarded as conducive to answering this research question. For this purpose, the researcher considered qualitative content analysis, or "coding" as described by Bryman & Bell (2007), as a valid approach, where data is broken down into components in order to organise them through a systematic classification and categorisation process and analyse them subsequently by applying a subjective interpretation (Bryman & Bell, 2007).

Coding can be regarded as the researchers' way of beginning to get at the meaning of data (Savenye & Robinson, 2003). Usually, qualitative research is not able to revert to an existing system for coding. Consequently, the researcher had to develop a methodology of identifying and labelling data in a way that allowed the data collected from the different interviews to be compared. This comparison focused on the identification of pattern, characterised by similarity, differences, frequency, sequence, correspondence and causation (Saldana, 2009). However, content analysis has to go beyond merely counting words or extracting text modules, but may include it. It should result in an understanding of reality, in a subjective manner, by uncovering patterns and themes relevant to the phenomenon under research (Zhang & Wildemuth, 2008). Qualitative content analysis is recommended to be performed on two levels so that it can be considered as holistic and valuable: A descriptive (what was actually said) and an interpretative (what could be meant by the spoken word) account of the data (Hancock, 2002). As an example to this, if the respondent said "unfortunately, specific training falls far short" (spoken words), this could mean "there is a basic or general training available. The employee is willing to broaden and deepen skills and knowledge, but has no possibility" (interpretative).

The transcripts were systematically searched for relevant text data, i.e. the codes, referring to pre-defined categories, such as a starting point. The screening was conducted based on two different purposes: to understand the study background in more detail and to identify the target RC, as intended by the case study unit's management. Therefore, the researcher had developed different categories that referred to the interviewee's background, their understanding of RC and their opinion about potential accumulated need. This allowed an indication about strengths and weaknesses of the case study unit with regards to RC, as a history to better understand their requirements referring to their target RC. The target RC, as the main purpose of this analysis, involved searching the transcripts for key attributes and main characteristics that the interviewees regarded as relevant or necessary when describing the intended RC from their perspective. The researcher identified all major requirements and expectations that the case study unit's management had towards their organisation, i.e. management and employees, when dealing with risks. In summary, the researcher screened the transcripts for text data (codes) that referred to the following categories in order to classify them respectively:

Status Quo / Background:

- interviewee's background with regards to RM
- interviewee's background with regards to RC
- meaning of RC in general
- meaning of RC within the case study unit
- case study unit's backlog demand with regards to RC

Target RC

- key attributes and main characteristics of target RC
- major expectations and requirements from management
- major expectations and requirements from employees

Referring to Easterby-Smith, Thorpe and Lowe (2006), content analysis is essentially qualitative but allows the involvement of quantitative elements into the process. The researcher involved quantitative aspects with regards to the case study unit's management's assessment of the current RC target achievement. The interviewees were

asked to provide an evaluation by what percentage the target RC is already achieved within the case study unit in their opinion. The researcher expected a quantifiable answer from each person interviewed that could therefore be directly comparable. However, the following question asked the interviewee for their reasoning regarding the percentage they had given. This addresses a WHY question referring to the previous judgement that requires a qualitative content analysis.

Furthermore, another more quantitative approach was required when analysing the respondents' selection of the three most and three least relevant key components associated with RC. At this, the researcher provided the pre-developed RC components for the interviewees to select. This could also be directly compared, by considering the respective reasons that were added to each decision by the person interviewed. The researcher also counted the frequency each component was selected to understand which ones were the most selected with regards to the three most and the three least relevant for the respondents. Consequently, the researcher aimed for an understanding whether or not there was a clear tendency towards certain RC components and why were these relevant or not relevant to the interviewees.

In order to understand the relevance of the pre-developed RC components, not only when these were directly addressed for selection, but also if/when they were used independently before presenting these to the interviewees. In any qualitative study, codes can also be used to count frequencies (Savenye & Robinson, 2003). Therefore, the researcher decided to apply a coding analysis to understand which codes and how often these occurred (frequency analysis). Each word of the ten RC components represented a code. First, the transcripts were screened for these codes. Secondly, the transcripts were screened for words, i.e. sub-codes that were closely related to the RC key components. That were either a verb or adjective that belongs to a key component, such as "clear" to clarity or "to learn" to learning, or any other words that was closely linked to it, such as "capability" to Skills/Abilities or "signalling" to Identification/Role Model.

A complete list of codes and sub-codes that were applied in this study are available in Appendix 6. In this connection, it is important to highlight that, in contrary to the codes, the sub-codes were not all defined before the start of the analysis, but also during the screening of the transcripts. Some sub-codes emerged or attracted attention after the

researcher found them in one of the transcripts that perfectly matched a certain code. This is a common approach in qualitative studies, as coding schemes are continually added to, collapsed and refined as the study progresses (Savenye & Robinson, 2003). Appendix 6 presents the final lists of codes and sub-codes ultimately applied to all transcripts. It only covers the relevant noun, but the screening was performed for all forms as aforementioned, i.e. noun, verb and adjective of each code and sub-code, e.g. development, to develop and developed.

The researcher scanned the recorded data, i.e. the transcripts, which enabled the researcher to manage the data by labelling, storing and retrieving it (Savenye & Robinson, 2003). However, coding is more than labelling and storing. It is to arrange data in a systematic order, resulting in categories, themes and finally in a hypothesis or propositions that could be tested during the analysis of data collected by the employee survey. To support and assist qualitative content analysis, the researcher used software, namely MAXQDA. Software can help to code and categorise a large amount of text, as transcribed from interviews or other documents (Yin, 2009). The researcher is fully aware that the software represents a supporting tool for qualitative analysis, for example counting the frequency of a certain code, but the definition of code and counting rules always depends on the researcher's decision (Easterby-Smith, Thorpe & Lowe, 2006). However, sometimes analysing qualitative data manually, e.g. by screening the transcripts by hand, may be easier or more appropriate. Consequently, the researcher had to decide when the use of software makes sense or bears a helping hand (Easterby-Smith, Thorpe & Lowe, 2006).

4.2.3 Employees' Perception of Existing Risk Culture

Research Design & Methods

Regarding the determination of existing RC, the researcher intended to apply a more quantitative approach. Quantitative research is generally described as the traditional, scientific approach to research which has dominated earlier social science, assuming that phenomena, both natural and social objects, can be studied as "hard facts" (Kvale, 2007). Based on an objective approach, quantitative research is usually preferred by positivists as it is associated with the belief that one stable reality exists, independent of human behaviour (Crossan, 2003). Quantitative research is aimed at reductionism, performed deductively (from theory to confirmation or rejection), and the results of

statistical analysis are usually presented in numbers (Skinner, 2010). The idea of positivism is that the research should be based on an objective approach, where the researcher, as a non-interventionist, must be independent of the subject being observed (Easterby-Smith, Thorpe & Lowe, 2006). Scientific statements are based on observable data, whereas the observation of data and its interpretation should be strictly separated. Research results are objective and quantifiable, therefore generally characterised as being repeatable (Kvale, 2007).

In general, there are different types of quantitative research designs. Descriptive design, with the intention of gaining more information about characteristics of a certain topic, is appropriate when only a little research has been conducted in that area. When factors or variables are already described, correlational design is applicable to evaluate relationships between them. Both of these are non-experimental approaches, as the researcher studies the phenomenon in its natural setting without any manipulation of the environment. Correlational studies represent the basis for quasi-experimental and experimental designs, which both study causality but are different with regards to randomisation. In experimental design, the researcher controls the research setting and intervenes when required. The choice of design is mainly dependent on the level of existing knowledge about the phenomena of interest and the study purpose (Bryman & Bell, 2007).

With regards to this study, both descriptive and correlational design were selected, as the intention of this researcher was firstly to describe the existing RC and determine the extent of target achievement of the case study unit and secondly to evaluate the relationship between the result and different variables, such gender, age or job tenure. Covering all this, descriptive correlational design means that data is analysed using descriptive statistics such as frequencies or percentages, including a comparison of two or more groups on the factor(s) of interest, i.e. gender, age or job tenure. As the factor(s) of interest were described by the prior descriptive level study and the relevant literature to this topic, a correlational investigation was also performed, to understand the relationship between variable, e.g. is there a (positive or negative) relation between job tenure and RC. Here, any cause-effect relationship was not intended by this researcher (Keele, 2010). Additionally, this phase also represented a cross-sectional study, as this survey was only conducted once, to understand the current RC situation, and only at a

defined point in time instead of investigating any potential changes over the course of time (Hopkins, 2000).

Regarding the research method, the researcher decided to conduct a web-based survey as this represents a powerful quantitative method for obtaining a large amount of data in a short time at a fairly low cost (Kelley, Clark, Brown & Sitzia, 2003). Since there is no interviewer present when the survey is completed by the respondents, interviewer effects are precluded. This means that the tendency of socially desired answers is reduced, which is particularly relevant for a sensitive topic, such as risks and RC, due to the general negative association in business (Bryman & Bell, 2007).

Sampling & Data Collection

With regards to the investigation of any potential difference between managerial expectations and employees' perception about organisational RC, quantitative data was collected through indirect encounters with individuals using a web-based survey. In general, quantitative studies require hundreds of respondents to provide acceptable confidence intervals or to ensure statistical significance, in order to generalise from a representative sample to the population. The collection of a large amount of data allows statistical analysis followed by valid interpretations (Hopkins, 2000). Therefore, the researcher studied the entire population (n=455), i.e. all full-time internal employees of the case study unit. This represents a census, i.e. the complete enumeration of all members of a respective organisation (Bryman & Bell, 2007)

With regards to statistical data, the researcher decided to analyse the study population based on the five socio-demographic variables as previously developed from the literature: gender, age, job tenure (at the case study unit), supervisory responsibility and location (as the employees of the case study unit are spatially separated into two main locations, whereas some of them have their workplace at different locations as explained in the case study chapter). The reason for selecting these criteria in particular was that the researcher expected cultural differences that also affect RC. For example, the criteria "job tenure" allowed expecting two oppositional results, such as:

- the longer an employee is employed at a company, the more he/she feels obliged and committed to it, consequently he/she may be more interested in the company's well-being

- the longer an employee is employed at a company, the more he/she feels certain about their job, or he/she is desensitised, callous or disappointed, consequently he or she may be less interested in the company's well-being

To allow a sufficient amount of people within each stage per criterion, the researcher applied only a limited number of stages. Whereas for "gender" and "supervisory responsibility" only a two-tiered differentiation was possible, i.e. male/female and yes/no, for "age" and "job tenure" the researcher considered only four stages to ensure an analysable quantity. With regards to "age" the researcher applied "30 years and below", "31-39 years", "40-49 years" and "50 years and above", whereas "job tenure" was differentiated into "up to 1 year", "1-3 years", "4-7 years" and "more than 8 years". These statistical questions were asked at the end of the survey, and are optional in accordance with ethical principles. Chapter 4.3 deals with ethical considerations in more detail.

Each person was requested to complete the questionnaire only once to avoid falsification of the results. However, as each employee of the case study unit had access to a personal computer and user account respectively, which has its own Internet protocol (IP) number, it is possible, when using a web-based questionnaire, to refuse the access to the questionnaire, once completed. Of course, the respondents could stop and re-start the survey at any time, as long as the answers were not finally submitted by them. This ensured that a double counting was avoided.

Although there are certain concerns about anonymity, data security, data confidentiality and computer literacy of the respondents that are associated with web-based surveys, the researcher made a purposeful decision to use this tool for data collection (Foster Thompson & Surface, 2007). First, the researcher selects a service provider for the online survey so that it can be seen as being as reliable as possible, i.e. a professional, experienced and well-known company. Secondly, the study participants, i.e. employees of the case study unit, are familiar with using computers in their daily work, consequently sufficient computer literacy can be assumed. Thirdly, as the respondents are not located at the same place, online surveys represent an opportunity to reach all of them at the same time (Bryman & Bell, 2007; Evans & Mathur, 2005). Although there may exist a certain remaining risk that some employees dislike participating in a web-

based surveys due to privacy concerns or other reasons, the advantages predominate, these being respondents can complete the survey in their own time and pace, unlike telephone or face-to-face questioning; more privacy as no researcher is present when the survey is completed and obtaining a high amount of data in a limited time at relatively low cost (Kelley, Clark, Brown & Sitzia, 2003; Bryman & Bell, 2007). To ensure that access difficulties or other technical problems are eliminated, the researcher conducted a pilot test with real employees as test persons prior to the actual survey.

During the survey, individuals who were invited to participate in the survey were asked to assess certain statements, by providing their level of agreement or disagreement for each of them. The statements were developed from the identified target RC, as intended by the case study unit's management. To allow a more sophisticated multi-dimensional analysis, the researcher developed a sufficient number of short statements to each attribute or characteristic that was mentioned in context with the target RC by the interviewees. Consequently, at least three or four statements referred to one attribute or characteristic of the target RC that enables a sufficient basis for analysis, and also fulfils the requirement not to overload the respondents with too many statements, as explained in the following, when presenting arrangements or measures to avoid typical sources of non-response or poor-quality results (Ewings, 2003). Therefore, the researcher limited the number of statements to a manageable amount, i.e. 25 to 30 in total. The statements used in the survey are presented in the case study chapter, as they were developed individually for the case study unit. The respective methodology for developing the statements and pre-defined answers, resulting in the survey, is explained and discussed in the following.

The benefit or advantage of short statements with a selection of pre-defined answers is the same as for closed questions: they are relatively quick and easy to comprehend and complete by the respondents (Easterby-Smith, Thorpe & Lowe, 2006). On the other hand, the data obtained is usually very superficial, but as identical statements were presented with a fixed choice of answers to the respondents, this fairly inflexible approach allows a significant comparison of responses across the participants in return, which was desired by this researcher (Bryman & Bell, 2007).

To increase the trustworthiness of the results, the researcher formulated some statements in a negative wording. For example, instead of "I am interested in …" the researcher used "I am not interested in…". By doing so, the respondents had to think about the statements in-depth before selecting agreement or disagreement. The tendency to select positive answers only, i.e. agreements, can be reduced by mixing positive and negative statements (Raab-Steiner & Benesch, 2012). Respondents often assume that positive feedback is expected from them (social desirability) (Bryman & Bell, 2007). This may result in agreement to all statements exclusively, although the respondent might have a different opinion. On the other hand, when there is a negative atmosphere at work, people may tend to answer all statements by using disagreement, solely to "penalise" the company with negative answers. However, as this cannot be completely avoided, using negative and positive wording may increase the chance that the respondent selects an answer in line with his/her opinion (Raab-Steiner & Benesch, 2012).

The researcher was well aware about the risk of using double negative within a statement. That is why only those statements were rephrased into the negative where it does make sense and is free of any potential misunderstanding. For example, the researcher did not provide statements, such as "I do not tend not to take risks lightly" as this might be too complex to be answered as intended by the respondents, and therefore represent a potential source of error (Bryman & Bell, 2007). To avoid misunderstandings, the researcher formulated the aforementioned statement into "I tend to take risks seriously", as an example (Raab-Steiner & Benesch, 2012).

Furthermore, it was considered important to have the majority of the statements as positive, as this survey also represents a tool to sensitise the employees towards RC. By answering the questions, the respondents became aware of this topic, especially when they have not been concerned with it before. They may assume a certain significance of this when management is interested in surveying the employees about RC, and some may read between the lines what may be expected from them. As Schonschek (2010) points out, surveys do not only show opinions, but also influence them in the future. This researcher as well as the management of the case study unit is well aware about this, consequently it was of great importance to obtain agreement for each question by both the Management Board and the case study unit's work council in advance.

The researcher decided not to apply a rotation. Statements were presented to the respondents in a fixed order, starting with general statements (e.g. “In general, I have a clear understanding of RM”) followed by more precise statements (e.g. “I am aware of the corporate RM policy”). Furthermore, the order of statements followed a certain storyline, i.e. the RM process, starting with statements referring to interest, awareness and risk identification, followed by statements about risk reporting and how to handle these, also in exchange with and support of other departments and colleagues. The researcher is aware about the opportunity to minimise potential question order effects by using a changing order of statements (Lindlof & Taylor, 2010). However, a constant sequence of statements reduces potential context effects (Bryman & Bell, 2007). Furthermore, some statements were based on the previous one, such as “I am aware of the corporate RM policy” prior to “The corporate RM policy is clear and comprehensible to me”. To ensure that the statements make sense, which increases respectability of the survey, those that were dependent on previous questions only appeared in case a certain answer was selected by the respondent. To be more precise, when disagreement was given to “I am aware of the corporate RM policy”, the statement “The corporate RM policy is clear and comprehensible to me” was skipped, as a person is not able to assess the clarity or comprehensibility of something that he/she is unaware of. In that event, the respondent was automatically guided to the next statement.

To specify the level of agreement or disagreement, a five-point rating scale was applied: I strongly disagree, I disagree, I neither agree nor disagree, I agree and I strongly agree. Usually, to avoid the complexity of long list rankings, it is advised that the maximum number of items is six (Easterby-Smith, Thorpe & Lowe, 2006). However, some researchers advocate seven, nine or even eleven levels, so that more variance can be provided with regards to the expressiveness on how strong or weak a respondent agrees or disagrees, but empirical studies confirmed that eleven point scale produces essentially the same data as five point scale in terms of mean (Dawes, 2002). Due to this, this researcher decided for a two level scale in both direction, i.e. “agree” and “strongly agree” as well as “disagree” and “strongly disagree” as a more detailed variance was not in the focus of this study.

The scale was not symmetric or balanced due to the equal amounts of positive and negative positions plus one middle answer, i.e. “neither agree nor disagree” that were provided to the respondents for selection. The researcher decided for an uneven number of responses so that the respondent was able to choose an answer in the middle of the scale. The respondents might select this position when he/she is not able to answer, is undecided or is unsure about his/her response. This might be the case when the respondent was asked about his/her knowledge about something, as not all statements referred to the respondent’s opinion. For example “I know whom to contact in case of…” should allow a “neither agree nor disagree” answer, when the respondent had to guess, but was not fully sure about it. Another case might be if the respondent was really undecided on his/her opinion, because he/she had never thought about this statement or issue before and was not able to form an ad-hoc opinion. Without a neutral answer, this respondent was forced to provide an answer in a certain direction, although there might be no actual tendency for him/her. This would adulterate the results, as it did not consider those people who are really in agreement or disagreement of a certain statement (Raab-Steiner & Benesch, 2012). In contrast, it could be assumed that persons who provided a clear agreement or disagreement were not forced to do so, consequently their answers can be regarded as true and meaningful.

Although there was always the possibility to take up a neutral position, the researcher expected at least a tendency of “agree” or disagree” emerging from the answers, when respondents were not able or willing to provide an extreme answer i.e. “strongly agree” or “strongly disagree” (Easterby-Smith, Thorpe & Lowe, 2006). The researcher is aware about the risk of central tendency bias (the avoidance of extreme responses), acquiescence bias (the “automatic” agreement with statements as presented) or social desirability bias (the attempt to portray themselves in a way as it may be socially desired or expected by the organisation) (Bryman & Bell, 2007). However, as surveys in organisations are often regarded as an opportunity for the employees to speak up and put forward their opinion, to be heard by management in a positive as well as in a negative way, this researcher did not assume much central tendency bias, unless this neutral position was actually required by the respondent for a certain reason.

The social desirability bias appeared to be more problematic to the researcher due to RC as a potential sensitive topic. The researcher ensured and announced anonymity and

confidentiality to the respondents in advance so that he/she did not feel directly and personally involved in the answers he/she was going to give, but with the opportunity to give their statements. In addition to that, the web-based survey guaranteed anonymity, due to the impossibility to identify the subjects who responded. Furthermore, since there was no interviewer present when the survey was completed by the respondents, interviewer effects were precluded. This means that the tendency of socially desired answers was reduced, which is particularly relevant for a sensitive topic (Bryman & Bell, 2007). Acquiescence bias could be reduced by using a mix of positive and negative statements, for the respondents to deliberately select each of them, without any automatism (Raab-Steiner & Benesch, 2012).

With regards to the response rate, which is a potential source of bias, literature confirmed that there is no standard for an acceptable percentage of completed surveys. However, it can be assumed that studies with a high non-response rate could be misleading, or are only representative of those who replied (Kelley, Clark, Brown & Sitzia, 2003). It is assumed that below 80% bias is likely to occur, and that a rate below 60% is barely acceptable in quantitative market research (Ewings, 2003). Others sources say that 65% to 70% is an achievable and therefore acceptable rate for self-completion questionnaires (Kelley, Clark, Brown & Sitzia, 2003; Hopkins, 2000; Bryman & Bell, 2007). For corporate surveys, Edwards, Thomas, Rosenfeld and Booth-Kewley (1997) consider that a response rate of at least 50% should be achieved, independent of the respective method of collecting data. Below that rate, the generalisability of the results appears to be limited, from their point of view. In contrast to that, Reilly and Wrensen (2007) exposed that academic practitioners have repeatedly reinforced that a response rate of 30% is the minimum acceptable rate to assure validity of survey. Rogelberg (2006) confirmed that there is no agreed minimum acceptable response rate.

Baruch and Holtom (2008), who analysed 1,607 surveys used in organisational research, found out that a response rate of 35.7% was reached when data was collected from organisations where responding was voluntary. A ‘minimum response rate of 30%’ as well as ‘average rates of 42%, 46% and 47%’ were confirmed by other different authors, as highlighted by Rogelberg (2006). This means that corporate reality seems to be different (lower) compared to response rates requested by academic

researchers, i.e. above 50%. To reflect corporate reality, the researcher strived for a response rate of at least 40% for this study.

Reilly and Wrensen (2007) point out that a response rate of 30% or 40% in an employee satisfaction survey is “a potential disaster” for HR professionals, as this is related to the willingness and interest of people to participate (Baruch & Holtom, 2008). Indeed, reasons for non-response in an organisational survey can be separated into two groups, i.e. active and passive. The passive non-respondent may have wanted to participate in the study, but due to different circumstances such as high work load or losing the questionnaire/access difficulties (technical problem), he/she did not, whereas the active non-respondent has made a conscious decision not to respond to (Rogelberg, 2006). However, the vast majority of the non-respondents can be classified as passive, as indicated by Rogelberg (2006).

The employees could participate in the study at any time that was convenient for them during a period of nine working days and the survey was estimated (after the pilot tests) to have a possible completion time of around ten minutes, the researcher tended to exclude lack of time due to high working volume as a reason for non-response for this study. Furthermore, there have been discussions among different authors regarding whether this source of non-response is passive or active in nature (Foster Thompson & Surface, 2007). Consequently, potential reasons for non-attendance in this survey are all regarded as active in nature by this researcher. In addition to lack of interest in the company or the topic itself, there are other reasons that can be classified as active non-response reasons, such as general job satisfaction, poor working atmosphere/climate, lack of organisational commitment, uncertainty about organisational use of data or individual’s general averseness to surveys (Rogelberg, 2006; Foster Thompson & Surface, 2007).

Reilly and Wrensen (2007) highlighted that there is a significant positive correlation between response rate and commitment to the organisation, as the latter is likely to increase the response rate when participants recognise responding is necessary or expected, and their responses have certain consequences or relevance for the company. Furthermore, they found out that the least satisfied people, or those with specific issues, tended to response first, as they intended to claim or attach blame. According to Foster

Thompson and Surface (2007), people who are satisfied with the way things are often feel no need to respond, as they do not want anything to be changed. This may lead to the conclusion that respondents are generally less satisfied with the situation at work than non-respondents. However, there might also be non-respondents who are dissatisfied but due to their belief that nothing will change, they do not respond as they regard this as a waste of their time (Foster Thompson & Surface, 2007).

However, all these reasons can be regarded as higher in significance and carry a higher weight for the individual than participating in the survey and finally contributing to the RM of the company, as mentioned as the survey reason in the announcement (Appendix 14) and invitation email (Appendix 15). In a positive way, the researcher characterises the employees who respond to the survey as:

- committed to the organisation (or at least having no objections against contributing to the company's RM)
- interested in the company or the topic (or at least not afraid to participate)
- not (fully) satisfied with the current situation (or willing to confirm a satisfying situation at work)
- believing in the relevance of their contribution (and that it might be changed for the better after the survey)

In accordance with Raab-Steiner and Benesch (2012), when using an uneven scale, respondents tend to avoid a middle answer when they are motivated and interested in the study, which increases the quality of the final results. To achieve the desired response rate and motivate the people accordingly, the researcher tries to avoid typical sources of non-response or poor-quality results (Ewings, 2003; Rogelberg, 2006; Reilly & Wrensen, 2007). The study population was represented by employees of the case study company, which is based in Germany; consequently most of the employees speak German. As there are also non-German speaking employees, the survey was available in both German and English language, to prevent any inability to participate due to language barriers.

Furthermore, mental and physical efforts can be minimised when expenditure of time and number of statements are limited, and the statements and pre-defined answers are kept simple, short and precise. In addition to that, the survey also showed a progress bar

for the respondents to see how much (in %) of the survey had been completed and what was pending. This was also supported when upfront instructions are provided in a clear but motivating manner by expressing the importance of individual's contribution. The latter is of particular importance to maximise the reward of responding, in addition to establishing trust and warranty of confidentiality and anonymity at the beginning of the survey. This can be increased by highlighting that the answers are analysed anonymously and kept in confidence, and that it is not possible to draw any conclusions about individuals. Moreover, expressing appreciation with a statement of thanks for participation at the end of the survey highlights the importance of respondent's valuable input. After analysing the survey, summarised research results are announced on the corporate Intranet as a reward for participation (Ewings, 2003; Rogelberg, 2006; Reilly & Wrensen, 2007). In that context, it has to be highlighted that the use of incentives was not found to be related to response rates in organisational studies (Baruch & Holtom, 2008).

Prior to the actual survey, the questionnaire was verified by a pilot test that was conducted by ten test persons, including people from the HR department and works council as well as 'typical' participants from different departments of different location, gender and age. These people were provided with access to the web-based tool for five working days in order to complete the questionnaire and provide their feedback with regards to comprehensibility and clarity of the survey. The objective of this pilot test was to ensure a fluent, faultless run of the web-based survey tool. The focus was not on the actual answers provided by the test subjects but on comprehensibility and clarity of the statements. In addition to that, the clarity and inviting character of the upfront instruction was verified, as well as the time estimation to complete the questionnaire (Bryman & Bell, 2007). It was confirmed that the survey was manageable in ten minutes on average, whereas most of the time was spent changing from a positive to a negative constructed statement or vice versa, assuming that the respondent had to think about the meaning and his/her opinion on the question in more detail. After the pilot test, some statements had to be modified to avoid any potential misunderstanding.

Data Analysis

The analysis of the survey is mainly quantitative in nature, as indicated by conducting statistical methods based on a positivist's perception to quantify, measure and express a

phenomenon numerically (Hyndman, 2008). By doing so, the level of subjective interpretation and result dependency on the researcher is reduced to a minimum (Easterby-Smith, Thorpe & Lowe, 2006). However, it is important to consider that not any technique is appropriate to analyse any variable and consequently the researcher decided to apply a technique that can answer the propositions properly (Bryman & Bell, 2007). For that purpose, the researcher used SPSS software for statistical analysis, including descriptive and bivariate statistics, which requires an understanding of the available data at first, before conducting any technique.

In general, there are different types of variable (socio-demographic characteristics) collected by the researcher. First, there is data that can be classified as nominal variables, as they cannot be rank ordered, such as location or language (German or English). There is neither a qualitative nor quantitative distinctive criterion to do so. Within this classification, there are dichotomous variables that contain two oppositional attributes, e.g. gender (male or female) or supervisory responsibility (yes or no). Although they are oppositional they cannot be ordered in a way that one is less or more of something than the other and consequently they can usually be treated as nominal variables. In addition to that, there are ordinal variables that can be ordered, whereas the distances between the predefined answers provided for selection do not necessarily need to be equal across the range, such as age (30 years and below/31-39 years/40-49 years/50 years and above) and job tenure (below 1 year/1-3 years/4-7 years/more than 8 years). The difference between the answers is not the same, however they can be ordered in a way that '30 years and below' is younger than '31-39 years' which is younger than '40-49 years' and so on.

Generally, Likert scales, where the respondent confirms his/her level of agreement to a certain statement by selecting between I strongly disagree, I disagree, I neither agree nor disagree, I agree and I strongly agree, are regarded as ordinal variables by many researchers. However, some suppose that Likert scales can be regarded as interval variables instead, assuming the distances between the scale categories are identical across the range of predefined answers (Bryman & Bell, 2007; Pallant, 2013). It has recently become common practice to assume that Likert-type categories constitute interval-level measurement, resulting in application of parametric statistics, provided that the scale item has at least 5 categories, which is true for the scale applied in this

study (Jamieson, 2004; Simon & Goes, 2013). Therefore, the researcher decided to numerically transfer the five-point rating scales into the following, assuming response data as interval-scaled:

1 = I strongly disagree

2 = I disagree

3 = I neither agree nor disagree

4 = I agree

5 = I strongly agree

A missing answer or a "not applicable" answer is not considered in the analysis of the respective question, but that does not necessarily mean to exclude the respondents from the analysis of the remaining answers. For example, if a respondent has answered all questions, except for the last one, his/her answers will be considered in the analysis from the first to the penultimate question. When a respondent refused to provide any statistical data, his/her answer was not considered when analysing the relation between a question and a certain statistical data category, such as age or gender. In that case, this item is considered as missing data and not included in the subsequent interpretation (Pallant, 2013).

As the web-based tool technically allows only one answer each to be selected by each respondent, there is no need for any data cleaning, i.e. the process of amending or removing data that is incorrect, incomplete, improperly formatted, or duplicated (Hyndman, 2008). An appropriate grouping of a sufficient number of values within each category was already done when preparing the statistical data for selection to facilitate comprehensibility of distribution, ensuring that categories neither overlap nor miss out any value (Bryman & Bell, 2007; Pallant, 2013).

In terms of reliability, the researcher intends to assess the internal consistency of the survey to understand whether the scale measures the same underlying characteristics. The Cronbach's alpha indicates the average correlation among all items of the scale. A value towards 1 refers to greater reliability (Pallant, 2013). Usually .8 represents an acceptable level of internal consistency, whereas many researchers also accept a lower figure, in particular for scales with fewer than ten items, which is true for this study (Bryman & Bell, 2007). Most Cronbach's alpha figures for this study vary from

approximately .5 to .8 as presented in Table 6, which confirms an acceptable internal consistency.

In case of a lower Cronbach's alpha, the mean inter-item correlation is regarded as more appropriate, where all values should be positive, indicating the items measure the same underlying attributes (Pallant, 2013). Appendix 17 confirms that not negative values exist. Literature indicates that inter-item correlation values may vary widely, due to different phenomena and nature of research, but seldom exceed .5 (McKennell, 1978). A high inter-item correlation above .8 is not desirable as this represents an indication of redundancy (Maindal, Sokolowski & Vedsted, 2012). The inter-item correlation values for this study range from .3 to .7 as shown in Appendix 17, whereas some values fall below. Some authors also accept a correlation within the range of .15 to .20 for broad characteristics or general constructs (Clark & Watson, 1995). However, there is no generally agreed or sacred level of acceptable or unacceptable values (Schmitt, 1996). Specific circumstances of each study should be taking into account before claiming any lack of reliability or internal consistency (Pedhazur & Schmelkin, 1991). In some cases, inter-item correlation values with (by conventional standards) low levels may still be quite useful (Schmitt, 1996). This may be true for "Critical Ability & Self-Confidence" and "Entrepreneurial Thinking" where the inter-item correlation is comparatively low which indicates a lower internal consistency of the related questions. However, due to the significance of these items for the case study unit, as confirmed by the executive interviews, the researcher decided to keep these questions. This is in line with the recommendation of Rattray and Jones (2007), as items should be retained if they are deemed to be important even if they do not fully meet the criteria.

Table 6 Cronbach's Alpha

Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
Management Role Model	,830	,829	4
Clarity & Transparency	,785	,804	4
Responsibility & Commitment	,516	,558	4
Awareness & Interest	,489	,506	4
Critical Ability & Self-Confidence	,228	,235	3
Cross-departmental Exchange	,557	,582	4
Entrepreneurial Thinking	,197	,223	3

For analysis, the researcher decided to run cross tabulation on the socio-demographic variables first. The researcher aimed to understand the study population in more detail, in particular with regard to age, gender, hierarchy level, location and job tenure. Contingency tables display the frequency distribution of these variables (Bryman &

Bell, 2006). As the web-based tool technically allows only one answer each to be selected by each respondent, there is no need for any data cleaning, i.e. the process of amending or removing data that is incorrect, incomplete, improperly formatted, or duplicated (Hyndman, 2008). An appropriate grouping of a sufficient number of values within each category was already done when preparing the socio-demographic variables for selection to facilitate comprehensibility of distribution, ensuring that categories do neither overlap nor miss out any value.

Secondly, with regard to the survey statements, the number of persons and the related percentage to each of the statement was analysed by the researcher, by running frequency tables. For analysis and interpretation, the researcher subsumed the statements under the respective propositions, the same way they were derived from, as they were previously separated and mixed within the survey outline. SPSS software was used to produce these frequency tables that contain both, total numbers and percentages (Bryman & Bell, 2006; Pallant, 2013).

Furthermore, the researcher intended to investigate potential differences of the propositions by socio-demographic variable, by testing hypotheses per proposition. To understand which statistical technique is appropriate, the researcher explored the collected data with regards to their distribution. From this data exploration, the appropriate statistical test is chosen, i.e. parametric tests for normally distributed data or non-parametric tests when the distribution is not normal. The researcher decided to conduct the test of normality in accordance with Kolmogorov-Smirnov (K–S test), to see if the data meets parametric assumptions. In that, a significance which exceeds .05 indicates that normality can be assumed, resulting in a symmetrical, bell-shaped curve that has the greatest frequency of scores in the middle and smaller frequencies towards the extremes. Testing RC as a whole, the researcher found out that the significance is .200, indicating a normal distribution. Consequently, the researcher applied parametric statistics, i.e. the t-test, in the subsequent analysis.

Table 7 Test of Normality for ‘Risk Culture’ Survey

Tests auf Normalverteilung

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistik	df	Signifikanz	Statistik	df	Signifikanz
RiskCulture1	,065	67	,200*	,990	67	,882

*. Dies ist eine untere Grenze der echten Signifikanz.

a. Signifikanzkorrektur nach Lilliefors

*. This is a lower bound of the true significance

a. Lillefors Significance Correction

To test the aforementioned hypotheses, the researcher intended to conduct an independent-samples t-test on the null hypothesis, to either reject it, i.e. to assume the hypotheses, or to confirm it, i.e. to disproof the hypotheses. A null hypothesis is the opposite of a hypothesis; consequently, the researcher rephrased the main hypothesis into the null hypothesis, as follows. The same systematic was applied for the sub-hypothesis accordingly.

Hypothesis:	There is a difference in RC throughout the organisation
Null hypothesis:	There is no difference in RC throughout the organisation

The t-test is used to determine whether or not two sets of data are significantly different from each other. In particular, the independent sample t-test gives information about two different (independent) groups of people with different socio-demographic characteristics, such as gender or supervisory responsibility, and when comparing their responses shows whether or not they answered in the same way (Pallant, 2013).

The independent sample t-test intends to show whether the variance of the scores for the two groups is the same in order to understand which of the t-test values is the correct one to be interpreted. The researcher referred to the significance column below the Levene's test. If this value is larger than .05, then the researcher took the first line in the table, i.e. equal variances assumed. If this value is equal or below .05, this means that the variances for the two groups are not the same. Consequently, the second line in the table is applicable, i.e. equal variances are not assumed.

To understand whether there is a statistically significant difference between the responses from employees of the two different groups, the researcher referred to the column labelled Sig. (2-tailed). If this value is equal to or less than .05, there is a significant difference in the mean score for each of the two groups. If this value is above .05, there is no significant difference between the two groups (Pallant, 2013).

In the case of several independent groups of employees, such as different ages (30 years and below/31-39 years/40 - 49 years/50 years and above) or job tenure (below 1 year/1-

3 years/4-7 years/more than 8 years), the t-test is not applicable. To understand if employees with different age or job tenure answered the same direction, the researcher conducted the analysis of variance (ANOVA). ANOVA provides a statistical test of whether or not the means of at least three independent groups are equal, and therefore generalises the t-test to more than two groups. The assumption for applying one-way ANOVA, i.e. the populations from which the samples were obtained must be normally distributed, was confirmed by the previous K–S test. The respective null hypotheses were rephrased from the hypotheses as explained before (Pallant, 2013).

After having confirmed that there is a difference in the responses of employees with different socio-demographic characteristics regarding age and job tenure, the researcher analysed where the difference is, by conducting a conservative post-hoc test, i.e. Tukey's range test. Post-hoc tests are designed to protect against Type 1 errors, i.e. rejecting the null hypothesis when it is actually true. One may assume a significant finding although it may have occurred by chance. To reduce this risk, the researcher decided on a post-hoc test (a posteriori) to explore the difference between each of the groups. Assuming equal variances, the Tukey's range test compares all possible pairs of means to determine which groups differ from each other. The critical value is the HSD (honestly significant difference), which is the point when a mean difference becomes honestly significantly different, and therefore it is less likely it has occurred by chance (Pallant, 2013).

By comparing the different means, the researcher finally understands what the difference is between the groups that represent the basis for the subsequent interpretation. However, the researcher is well aware of the risk having obtained a statistically significant result where the actual difference in the mean score of the groups is very small, so practical importance might be little, consequently interpretation of findings have to be conducted carefully and diligent by the researcher (Pallant, 2013). The researcher decided on significance level at .05 that would expect one in twenty (1:20) positive findings occurred by chance which represents a restriction in the interpretation of findings that is known to the researcher. SPSS flags (*) which mean differences are significant at the selected .05 level.

4.3 Research Ethics

The researcher followed the principles and procedures of research ethics that were approved by University of Gloucestershire University Research Degrees Committee in September 2008. In addition to that, the researcher who studies RC of a specific organisation had to follow their rules and requirements, i.e. the Management Board and the HR department as well as the work council. In general, the researcher felt responsible to ensure that the physical, social and psychological well-being of the study participants was not negatively affected by the research, within the bounds of possibility. The researcher was aware that the relationship between researcher and the persons researched should be characterised by mutual respect and trust during the entire study.

Prior to the interview, the participants were informed in a reasonable and meaningful way about the research nature and purpose, its objectives, intended method, planned duration and possible consequences to the interviewees. All participants were aware that they participate voluntarily, as they were briefed in advance about their right to refuse participation at any time, including withdrawal from the research project at any stage. At the beginning of each interview, the researcher explained that anonymity and confidentiality is ensured, in particular that no one – except for the researcher - is able to determine the participant's identity based on the answers provided within this study. Privacy and personal data was fully respected, as all questions referred exclusively to a business context and the interviewees made the decisions about the information he/she was willing to reveal. Direct citations that may be connected to a specific person were used only after prior agreement by the respective person.

The interviews were recorded by voice recorder, provided that the interviewee had previously accepted. Subsequently, the recorded verbal answers were transcripted *ad verbatim* in writing for the analysis and interpretation, except for the phrases where the interviewee pointed out during the interview that they were not to be used for the study. Furthermore, the researcher announced that the interviewees could receive their respective transcripts before it was analysed and used for this study. Those who requested it were provided with their transcript so they could give their consent for it being used further.

With regards to the employee survey, the relevant employees of the case study unit were informed about the intended research by an intranet announcement (Appendix 14) a week before the survey was conducted. The announcement contained the research purpose, justification and objective as well as method, timing and further information, such as voluntary participation, promise of confidentiality and anonymity, appreciation with a statement of thanks for contribution. The same information was provided in an email that each employee received including a link for them to access the web-based questionnaire.

Both the HR department and works council of the case study unit provided their prior consent for the survey to take place, to ensure that the employee's interests were properly considered and protected, where required. They also agreed to each statement and the statistical data that was obtained in the study. The researcher also signed a non-disclosure agreement that allowed the research to use anonymous data only, provided in Appendix 8. The case study unit's Management Board was informed about the overall results in a summarised way, as well as all employees by an intranet announcement (Appendix 18) once the results were discussed and released by the case study unit's Management Board.

The survey was voluntary and could be terminated at any time by closing the web browser window. In this event, the respondents' answers could not be considered. However, they could participate by restarting the survey, until they had submitted their answers. It was also possible to skip a statement in order to continue with the next one, as well as to go back to the previous statement. The survey, available in both German and English, took on average 10 minutes per respondent, which was also confirmed by the previous pilot tests. The answers were analysed anonymously and were kept in absolute confidence. In any case, it was not possible to draw any conclusions about individuals from the results of the surveys.

In addition to that, data security was ensured by the web-based survey service provider, i.e. 2ask. They undertook the technical and organisational measures for data protection, in accordance with the data privacy law, i.e. German Data Protection Act § 9. Data transfer was secured through a secured socket layer (SSL) encryption, and the data was continuously kept in a confidential manner.

5 Case Study Results

5.1 Introduction of Case Study

Selecting an appropriate unit of analysis, i.e. the case, is essential. For some authors, there are certain conditions that impact case selection, such as accessibility (which means any required data can be collected from the case) and resources disposability (that resources, e.g. people, are available and willing to support the study) (Rowley, 2002; Yin, 2009). Researching in the area of CREM means to have suitable access to a CRE organisation of a non-property company. As an employee of the case study company, the researcher meets both of the aforementioned conditions. As the actual unit of analysis is the CRE organisation, the researcher starts with a short introduction of the case study company, i.e. METRO AG, to give some background information before presenting the actual case study unit, i.e. METRO PROPERTIES.

The case study company, METRO AG (MAG) is a diversified retail and wholesale company, based in Dusseldorf (DUS), Germany, which operates four different sales divisions: cash & carry wholesale stores (focus is on professional customers; business-to-business strategy), hypermarkets (retail business focused on private customers; business-to-customer strategy), consumer electronics stores and department stores. MAG, which operates in 33 countries in Europe, Africa and Asia, is one of the most globalised retail and wholesale organisations and one of the largest retailers in the world, measured by revenues. The company employs almost 280,000 people (as of August 2012) who either work in the operative (sales) business or in one of the cross-divisional service companies that perform an array of services to the sales divisions, e.g. logistics, IT or advertising.

5.1.1 The Case Study Unit

METRO PROPERTIES (MP), as a 100% subsidiary of MAG, is the CRE service provider, based in DUS, Germany. MP manages the entire CRE portfolio of 2,200 leased and owned properties in 33 countries, with approximately 1,300 employees, whereof 455 are employed in Germany, based on a full-time internal employment contract with company email account. There are further employees located in Germany, with part-time or external contracts (temporary staff), who are not considered in this study. Moreover, there is technical staff that has neither access to the internet (to

participate in the survey) nor is contactable by email (as they do not have a company email account). These employees are not usually located at the offices as they take care for the different properties on site (throughout Germany). The researcher decided not to consider these employees for this study due to their non-availability to this researcher in the survey period of 9 working days, as they are located all over Germany without any company internet access/email account. An overview of statistical data of the employees (n=455) is provided in Appendix 10.

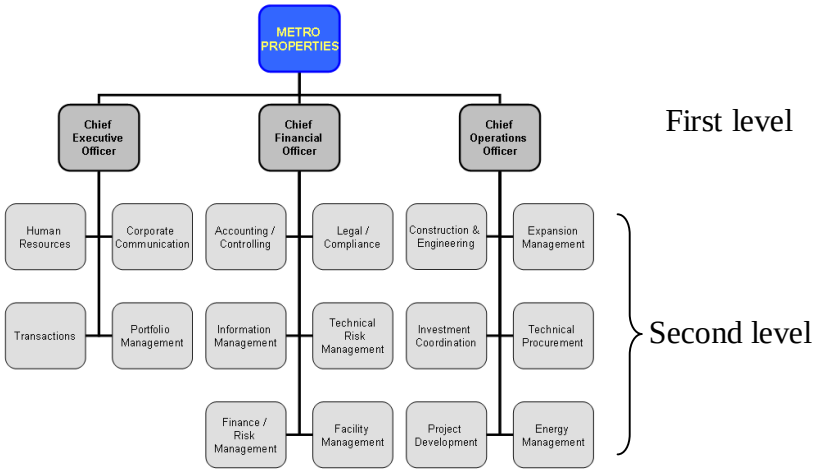
The Headquarters of MP is located in DUS, where 304 full-time internal employees work at present. A second administrative office is located in Saarbrucken (SAR), Germany, where currently 114 full-time internal employees are placed. Remaining 38 full-time internal employees are directly located at the shopping centres and warehouses ("other locations").

Worldwide, MP owns 686 retail properties and 153 further properties, such as offices or warehouses, with a total book value of eight billion Euros. In 2012, MP achieved an EBIT (earnings before interest and tax) of 607 million Euros. The core responsibility of MP is to sustainably secure and systematically increase the value of the CRE assets in the long term through an active and strategic portfolio management. As a service provider for RE search, acquisition, development and construction of retail locations, MP is supporting and accelerating the expansion of MAG's sales divisions. The service range also includes the energy management of the retail properties, facility management of the commercial, administrative and warehouse locations as well as the management of shopping centres in Germany, Poland and Turkey.

In general, the organisational structure of MP consists of four levels. At the top of the hierarchy, on the first level, there is the MP Management Board, i.e. the Chief Executive Officer (CEO), the Chief Operations Officer (COO) and the Chief Financial Officer (CFO). Below them, the second level is composed of Divisional Directors that are each responsible for a respective assigned division, which are subdivided into several departments on level three. These departments are managed by the respective Head of Departments. At the bottom of the hierarchy, employees on level four work in the different departments, without supervisory responsibility in a narrower sense. However, there are also Team Leaders on level four who are also responsible for their

teams (supervisory responsibility in a wider sense), but Head of Departments are accountable for all their employees below them. The organisational structure as of August 2012 is presented in Figure 5. The chart is simplified, as some divisions are not shown, e.g. Central Services (e.g. work council), and some divisions are combined, i.e. Legal and Compliance, and Accounting and Controlling, for comprehensibility reason.

Figure 5 Simplified Illustration of Case Study Unit's Organisation

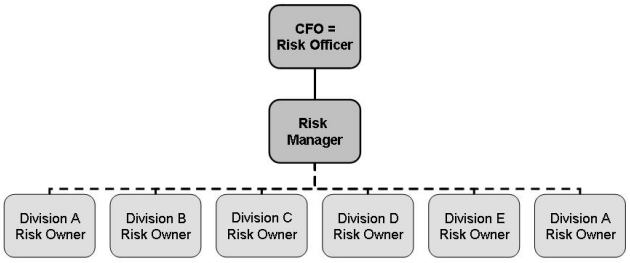


Source: Own illustration

5.1.2 The Case Study Unit's Risk Management Organisation

Each sales division or cross-divisional service company of MAG has their own Risk Officer, which is usually the respective CFO, who has nominated a 'Risk Manager' as the person responsible within the respective organisation with regards to all RM related matters. At MP, the RM function (Risk Manager) is combined with the position responsible for the Finance department; consequently the person in charge for Finance is also responsible for RM. In general, RM is a topic that is organised centrally, as the person in charge is responsible for all RM-related questions. That does not mean that risks are actually managed centrally, but the person in charge consolidates all identified risks from the different departments to an MP-wide view, which is reported to the MP Management Board as well as to MAG, so as to also have a MAG-wide picture about the risk portfolio, covering all sales divisions and cross-divisional service companies. The RM organisation in a general schematic manner is shown in Figure 6.

Figure 6 Case Study Unit's Risk Management Organisation



------ = reporting line (no supervisory responsibility)

Source: Own illustration

In March 2012, MAG implemented a new RM process that included a new template for risk reporting for the sales divisions and cross-divisional service companies to report their individual risks annually to MAG. Derived from the company's overall objectives, the only risks that are particularly considered are those that may hinder the organisation to achieve these goals, and therefore risks are clustered into strategy, operational, governance and event risks. RM does no longer just represent a risk inventory, where each and every risk is registered, but is focused on those relevant risks which may have a significant influence on the overall target achievement. Hence, there is a level of significance defined for risk reporting to MAG. From the company's understanding, it is more important to concentrate on a couple of most significant risks, than on lots of small risks that may not have any or just a little extent of loss or affect on the organisation. These identified relevant risks are monitored on a regular basis and appropriate counteractive measures are introduced, if possible and when required.

There is a MAG RM handbook available on the company's intranet that describes the relevant steps related to risk reporting. It also includes the risk strategy and a risk definition so that everybody understands what a risk is and when to report one. The process is described in detail and there were also trainings and workshops offered for the people involved in RM, i.e. the Risk Managers of the sales divisions and cross-divisional service companies, for them to train the respective Risk Owners, who are nominated to identify risk in their respective area of responsibility. However, attending these trainings was on a voluntary basis.

At MP, there were 21 persons nominated as Risk Owners, as of August 2012 most of whom were Divisional Directors on second hierarchy level. These persons are requested to report risk-fraught activities on a quarterly basis to the person in charge for RM, including their assessment regarding probability of occurrence and extent of loss or damage as well as the respective counteractive measures that are applied by the Risk Owner. In consequence, the Risk Owner is responsible for the actual dealing with the risk in a narrower sense, whereas the person in charge of RM plays a supporting, supervisory and coordinating role, as this person is responsible for an overview of the risk portfolio of MP in general.

The Risk Owners receive a quarterly request by email to complete a blank template in terms of identified risks, risk assessment and their responses. This represents the basis for the quarterly risk reporting to the CFO of MP by the MP Risk Manager, and to MAG RM on request, at least once a year as part of the full risk inventory.

5.2 Managerial Expectations of Target Risk Culture

The target RC defines the required values, beliefs, knowledge and understanding of an organisation about risks, requested by their management. It is the desired and shared understanding of the employees' attitude and approach towards risks that concerns the culture of the entire organisation, well beyond the RM function (IRM, 2012). To understand what the case study unit, i.e. MP expects from their employees when dealing with risks in organisations, the researcher decides to interview first (MP Management Board member) and second level (MP Divisional Directors) executives. From the 21 Risk Owners, 11 executives were asked about their willingness and availability to participate in this research, based on nomination by MP Management Board. Some persons were appointed due to the relevance of their job to RM, i.e. the divisions Finance/Risk Management, Technical Risk Management or Compliance.

From the nominated executives, two people refused to attend, due to lack of time according to their statement. Based on 9 out of 21 Risk Owners, this represents a coverage of 43%. For qualitative research with a purposeful sampling strategy, this is assumed to be an acceptable percentage, as the focus is not on generalisation back to the population, but on in-depth understanding of the phenomenon of interest. Whereas a response rate below 60% is barely acceptable in quantitative research, the intensive and

time-consuming nature of data collection by qualitative interviews justifies the use of smaller samples (Ewings, 2003; Hancock, 2002; Marshall, 1996).

From MP, nine executives were interviewed. Another two interviewees from MAG were added, who are experts in the area of RM with partial relevance to RE, i.e. the MAG Head of Risk Management and the MAG Head of Construction & Real Estate Audit (Internal Audit). These persons are both involved in the RM process of MP and are familiar with the MP business and the related risks in detail. That is why this researcher assumes a significant contribution from these persons when identifying the target RC of MP as requested. Hence, 11 executives were interviewed in total.

The interviews took place between 24th July and 9th August 2012 at the Headquarters of MP, i.e. DUS, as one-on-one sessions. The questions were presented to the 11 interviewees in the same order, as described in the methodology chapter. The interviews were conducted in German. As an example, two interview transcripts were completely translated into English, attached to this paper as Appendix 11.

From the interviews, the following chapters were developed to analyse the text material in a systematic and structured manner:

Status Quo & Background

- interviewee's background with regard to RM or RC
- the meaning of RC in general and within MP
- potential differences in RC within the case study company
- backlog demand with regards to RC

Target RC

- relevance of RC components to MP
- key attributes and characteristics of target RC
- management's assessment of RC target achievement at MP

5.2.1 Status Quo & Background

Interviewee's background with regard to RM or RC

With the following questions, the researcher asked the interviewees about their previous points of contact with or involvement in RM, or RC in particular:

- Have you ever concerned yourself with RM, or RC in particular?
- If yes, in which context or function?
- In which company or organisation (MAG/MP)?

As some executives were appointed due to the relevance of their job to RM, i.e. the divisions Finance/Risk Management, Technical Risk Management or Compliance, it was not surprising that these persons provided a positive answer to these questions. Some others described this topic as more or less virgin soil, although they mentioned that they were aware about the existence of a Risk Manager within MP, as they indicated that they are asked on a regular basis to report their identified risks. One person declared that he/she was never involved in the RM process before, as he/she indeed remembers a request to report risks in his/her area of responsibility, but so far he/she had never responded, with any further conversation or consequence. He/she claimed that the decision to report was up to him/her, and that no further guidance had been provided on how to identify and assess the risks, so he/she decided not to answer the risk inventory request at all. He/she also explained that he/she did not participate in any RM workshop, as this was announced as voluntary. However, he/she highlighted the importance of RM, but that this topic was not properly introduced and supported by the MP Management Board. To this researcher, this represents an important issue, as the selected interview partners are all nominated as Risk Owners, responsible to identify, assess, report and handle the company's risk-fraught activities and events.

The meaning of RC in general and within MP

By asking the following questions, the interviewees were requested to talk about what RC is, in their opinion or from their perspective, in general and at MP in particular:

- What is the first thing that crosses your mind when you think of RC in general?
- What do you associate with risk culture at MP?
- What is role of humans within RC in your opinion?
- Where do you see general strengths and weaknesses in this context?

Example excerpts from the interviews (Annex 11):

Interviewee A

"I would risk culture not necessarily separate from the corporate culture. It is awareness, an atmosphere of trust, professional cooperation, for example. These are all things that affect everything. Not only on risk culture. But in my view is a subset of the entire corporate culture. Or one aspect of it. It is difficult to define risk culture separately."

"This [RC] *is a difficult topic, an unpopular topic, a topic with negative connotations. The term risk alone still has very negative connotations. Presenting risks and communicating these openly is still a frowned topic, as it is associated with personal inadequateness in one's own area of responsibility. Or there is a safeguarding mentality, to present each and everything as a risk-fraught issue. There is a difficult relationship with the subject of risk here in the company."*

Interviewee B

"*Risk culture is almost a permanent evolutionary condition in which we constantly find ourselves.*"

"It [mankind] *is a decisive factor, as always. In addition to the tools we have. Ultimately, we have tools, as the term suggests, as a tool, and a tool in itself is worth nothing until humans use these tools. Or he is familiar with the tool, but does not use it at the moment because he prefers not to do so. And therefore the human factor is, as always, the decision maker, always."*

From the perspective of MP management, RC is generally understood as "the awareness and perception by people" and their "sensitising" towards potential risks. It is the "self-conception by employees" and the "interest by all employees", to identify and report risks in their environment, "actively and proactively". It is seen as the "willingness", "openness" and "understanding" of people, hence the precondition for RM that in turn represents the prerequisite of any successful business activity. In this, RC is not defined as something isolated or separated, but closely connected with corporate culture, in the opinion of the interviewees. RC is also characterised as "an atmosphere of trust" and

"setting a good example" of what is expected by management. RC is not just identifying and assessing risks properly "in their own little chamber", but also feeding back and an "exchange of best practice" between all departments, and all people involved "marching in lockstep". One interviewee describes RC as "a permanent evolutionary condition, in which the organisation should constantly find itself".

It was noticed that some interviewees share a common understanding of what RC is. With regards to the RC components as developed from the previous literature review, it was discovered that most of the interviewees mentioned Awareness/Perception in conjunction with the question "What is the first thing that crosses your mind, when you think of RC in general?" Six people interviewed replied to this question by using the above mentioned phrases, before the interviewer presented the RC components to the interviewees for prioritisation. The other components were only mentioned by one or two interviewees, as shown in Table 8.

Table 8 Interview Results: What is the first thing that crosses your mind..?

Question: What is the first thing that crosses your mind, when you think of RC in general?

	A	B	C	D	E	F	G	H	I	J
	Identification Role Model	Responsibility Competence Commitment	Perception Awareness	Ethics Values	Transparency Clarity	Trust Confidence	Development Learning	Liability Accountability	Skills Abilities	Strategy Limitations
Interviewee 1										
Interviewee 2			**x**							
Interviewee 3			**x**		**x**					
Interviewee 4			**x**			**x**				
Interviewee 5										
Interviewee 6		**x**								
Interviewee 7			**x**							
Interviewee 8										
Interviewee 9	**x**		**x**							
Interviewee 10										**x**
Interviewee 11			**x**			**x**				
	1	1	6	0	1	2	0	0	0	1

In contrary to that, the interviewees were also asked, "What do you associate with risk culture at MP?" The researcher also analysed the answers provided to this question with regards to the pre-developed components that are associated with RC in literature. As presented in Table 9, the people interviewed hardly mentioned any phrases in their responses. Surprisingly, none of them referred to Awareness/Perception when they were asked about RC at MP, although the aforementioned analysis about RC in general resulted in a relatively clear direction.

Table 9 Interview Results: What do you associate with RC?

Question: What do you associate with risk culture at MP?

	A	B	C	D	E	F	G	H	I	J
	Identification Role Model	Responsibility Competence Commitment	Perception Awareness	Ethics Values	Transparency Clarity	Trust Confidence	Development Learning	Liability Accountability	Skills Abilities	Strategy Limitations
Interviewee 1										
Interviewee 2										
Interviewee 3										
Interviewee 4										
Interviewee 5										
Interviewee 6										
Interviewee 7							**x**			
Interviewee 8						**x**				
Interviewee 9		**x**			**x**					
Interviewee 10										
Interviewee 11										
	0	1	0	0	1	1	1	0	0	0

To the interviewees, “humans generally play a significant, crucial role in RM”, as it is mainly dependent on human knowledge and experience. No matter how RM is performed in detail, it is of great importance how people actually behave. Consequently, RM is “only as good as the people that deal with it”. Humans are regarded as the “adjusting” or “binding screw” between the company and its risks, so if a company wants to deal with risks properly, it has to ensure that people understand this request, and is able and willing to act in a certain manner. RM tools and reporting systems are regarded as a “platform” where risks are converted to figures, to make them more comprehensible and comparable for the management and their decisions. Humans are also regarded as “the most incalculable factor” in RM. Whereas many events or activities are calculable in a certain way, people are not. So people represent an advantage for RM when they behave in the requested manner, but they may also play a destructive or damaging part when not. These statements by the interviewees fit the statement by some authors that an inappropriate RC itself may represent a significant corporate risk (Monjau, 2007; Bungartz, 2003).

Regarding strengths and weaknesses, the interviewees often stated that subjectivity of humans represents both. Whereas people involved in RM with goodwill and interest, profound knowledge and experience constitutes an advantage to the organisation when dealing with risks, people with the opposite characteristics often indicates a weak point in the company. Compared to RM tools and systems, “humans are able to contextualise on a qualitative level”. They use not only their experience and knowledge to identify and assess risks, but also their emotions, feelings and biased opinions that influence

them in their decisions, in either direction. That is why humans most probably have a "higher error ratio compared to machines", but "when the issue is not just white or black, humans can use their mind to judge" better than tools.

In summary, the researcher noticed that all interviewees have quite a clear understanding of what RC is, in general. Furthermore, all of them have highlighted the importance of people in RM that represents to them both strengths and weaknesses in the process, whereas the benefit prevails when a proper RC is developed. When it comes to RC at MP, the interviewees stated that there are many discrepancies and a backlog demand that is analysed in more detail in the next chapter. However, as the people interviewed take up different positions in the RM process within MP, i.e. the Risk Owners who are responsible for identifying and reporting risks in their working area and the persons in charge of RM who are responsible for compiling and monitoring risks, it was observed by the researcher that they often blame the other party for any failure or malfunction. Whereas one party complained about less face-to-face exchange and feedback, the other party complained about a lack of interest and commitment. Precise expectations seem not to be clearly communicated to each other, although all of them have the same (or at least a very similar) understanding of the important role of humans in RM. So what seems to be clear in theory appears not to be well-transferred into practice, so that everybody understands what is actually required from them. Further analysis on the actual backlog demand, according to the interviewees, follows in the next chapter.

Differences in RC within the case study company

With the following questions, the researcher intended to understand any potential difference in RC between MP and other MAG companies, as well as differences within MP, as the German organisation is located in two different cities in Germany:

- Do you see any difference in RC between MP and other divisions or companies of MAG?
- If so, where/what is it?
- Is there any difference in RC between MP in DUS and SAR?
- If so, where/what is it?

Example excerpts from the interviews (Annex 11):

Interviewee A

"In my view, MP has a solid basic understanding of RM in the CFO function, but the operative departments [of MAG] *still have too little understanding of it and that is perhaps the most difficult task."*

Interviewee B

"The old organisation has been mentioned once in a management conference by many participants when they were asked what animal image they see, that they would describe this as a snail. Instead, expansion at the sales line at that time was regarded as a wild animal, an unstructured animal. However, there is no unstructured animal, so I would say a wild animal. They were for sure not positioned so professional, but just extremely focused on expansion, extremely dynamic. Speed was more important than quality. The administrative work was seen as a necessary evil, but that of course is wrong. This is a very important prerequisite, to operate in a sustainable and reasonable way. This was certainly the strengths of the former organisation, historically. And now when I see today's Metro Properties organisation, then I think, that many positive elements were merged and the weaknesses were continuously reduced. The weaknesses are not completely gone, on both sides, but a lot has happened. And the fertilisation was very positive. One plus one is more than two; if only two is the result, that is a banal addition, but the goal is three, in other words added value."

"I have the impression that there are cultural differences. But this has, I think, nothing to do with regional differences in a narrower sense. So there is no difference where the office is located, e.g. SAR, Munich or somewhere. Although regional difference also has an influence on culture, as in some regions there is less fluctuation, so the people know each other for a long time and more intensive, compared to the people here [in DUS]. *Furthermore, the number of employees is smaller there than here. That means, of course, that there is a stronger formation of*

groups. But also a stronger feeling of togetherness, a stronger sense of we."

"Unity always makes you stronger. This is almost a law of nature. And proximity is always an advantage, as it facilitates unity. Social unity. Economic benefits are associated with it. Temporal advantages are associated with it. There are advantages only. That different cultures develop as a result of distances, or shall we say rather cultural differences, this is normal."

Regarding differences in RC compared to other MAG companies or divisions, the interviewees reported that, first of all, respective risks are different. Whereas the consequences of activities and decisions in the sales business mostly become visible immediately, e.g. a marketing event usually, shows the effect on sales without any further delay, the RE business is often characterised by long-term implications, e.g. whether or not the right location was selected that is accepted and honoured by the customers. Furthermore, in the RE business there is often only limited (or expensive) counteractive measures available to rectify or minimise negative consequences. As the property business is usually associated with large investments and high costs, a proper RM is therefore absolutely essential, as confirmed by the interviewees. Instead, regarding the RC, the interviewees assume that there is not much difference, as there are general guiding principles that are valid for both, e.g. process transparency or clarity of roles and responsibilities.

According to the interviewees, there was a cultural difference in the past (before 2010), when people from the sales division were responsible for expansion (RE strategy and land acquisition). They were more courageous in their decisions, sometimes a bit too courageous and rash compared to people from the former RE unit (at that time only responsible for land development and construction), that were often characterised as being ultraconservative and meticulous. This was always a conflict as the sales division aimed for fast expansion, with less attention paid to quality and costs, and probably potential risks, whereas the RE unit was regarded as too slow, delaying the process and sometimes losing business opportunities in fast growing and dynamic markets. This

phenomenon can be found in larger organisations, where conflicting cultures co-exist that should rather cooperate and interact (Ravasi & Schultz, 2006). This may be the result of different manager characteristics; this is probably also true for the case study unit, as also pointed out by the interviewees.

In 2010, when the respective employees from the sales division and the RE unit were merged into today's MP, the interviewees highlighted that this was of great benefit and a combination of strengths, as this resulted in an organisation that acquires and develops land with "courage, but not carelessness". As one interviewee said "One plus one is more than two; if only two is the result, that is a banal addition, but the goal is three, in other words, an added value". In the opinion of most of the interviewees from MP, this is true for MP today. This was also confirmed by interviewees from MAG, who has an independent view from outside MP. One emphasises that "MP has a solid basic understanding of RM in the CFO function", but "the operative departments still have too little understanding of RM". In his/her view, there is "a lack of gateway access to the entire organisation", and that is at this juncture perhaps the most difficult task, especially when the organisation was merged from two units into one that initially had different, maybe conflicting cultures. To address expectations or requirements call for different "tones" by management, in order to get through to different people. However, this has to be analysed based on the outcome of the employee survey.

With regards to the question on the two different locations of MP, i.e. DUS and SAR, the interviewees took up oppositional positions. Both groups clearly stated that there are different (sub-)cultures at the locations. Whereas one highlighted the advantage of each location, resulting from different tasks to be fulfilled, i.e. the DUS team has a more operative role (e.g. Expansion department, Construction department), instead of SAR, where the administrative team (e.g. Accounting department, IT department) is located. They argue that different roles required different cultures, e.g. there is no creative urges and courage required in Accounting, in contrast to Expansion or Construction department. Furthermore, SAR location is characterised by one interviewee as a "friendlier atmosphere" and a "familial relationship between colleagues" as people are more collegial with one another. There is a "stronger sense of we" and less "elbow society". The DUS location is regarded as "more driven by business attitude and

behaviour". However, there is no differentiation in the quality of work, just in the way employees treat each other, as confirmed by the interviewees.

One interviewee provided the reason that in SAR "there is low employee turnover" (fluctuation) compared to DUS, so people know each other longer on average. In addition to that, job availability is lower, so this is also a "hindrance to change position more often", as regarded by one interviewee. The reason for him/her is that "social costs are higher" so people are more "diligent, careful and conservative" in their daily job, compared to others. That, of course, influences the RC, as argued by one interviewee. This is in contrary to the view of others who indicated that there are "two isolated cultures" that do not benefit from each other, due to different locations that do not have much (personal) contact with each other. The RM function is located in SAR and there is not much contact with people from DUS, as claimed by one interviewee. Some interviewees see a clear risk that there is "no consistent culture" and that "unity always makes you stronger. And proximity is always an advantage, as it facilitates unity".

In summary, the interviewees regarded that MP has a solid cultural basis for RM, e.g. one hears "a certain ambient noise", compared to other companies and divisions of MAG. Instead within MP, the RC is described as inconsistent and incongruous in the different divisions and at the two locations. Whereas some cultural differences result from the respective business activity, e.g. people in Expansion department need to be more creative and serge ahead in comparison to the people in Accounting department, which is more justified and precise, there are some differences in RC assumed between the locations, that may not be appropriate, e.g. lack of interest, awareness or understanding with regards to risk in their working environment. Whether this is true or not has to be tested by the subsequent employee survey.

Backlog demand in RC

To find out the biggest cultural accumulated need at MP when dealing with risk, as noticed by the interviewees, the researcher asked the following questions:

- Where do you see the biggest backlog?
- What is the reason for that in your opinion?
- Who is responsible in your opinion (which department, function or the employee itself)?

Example excerpts from the interviews (Annex 11):

Interviewee A *"In my view, you need a clear mandate for the function. I have a bit of trouble seeing that. If you do not have this, then you do not know in which direction to go. Then you could rather say you do the 'bare necessities', that would be at least honest, or you want to manage the company differently without any risk management function or method, of course you can do that, but at least a clear statement is required. Or they really see the added value, then this has to be fully supported by the management, which is not the case today, I believe…This is the major problem from my perspective."*

Interviewee B "*Marching in lockstep. We have this between the three management resorts where we walk quite well in tandem, despite the recent change, I have no worries. But I see that within the divisions below, at least in my divisions I can say so, they are not marching in lockstep. I do not see any essential lockstep."*

Some interviewees complained that management does not take RM seriously and that it serves as an "alibi" and is nothing more than a "lip-service character" for MP. For two people who were interviewed, there is "no RC" within MP, but instead "only ad-hoc reactions". They do not associate "anything at all" with RC at MP, although all the interviewees are nominated by MP Management Board as Risk Owners for their area of responsibility to identify and manage risks. One interviewee added, "I actually do not have an RM, only because I currently have a Risk Manager…", indicating that nomination of a person responsible by management is not enough, although "a clear mandate for the function" represents a fundamental precondition.

This is affirmed by another interviewee who added that "the manner in which the RM function is set up is a signal to the organisation of how important the matter is considered to be". For others, "the right setting of priorities by management" did not happen in the past. From an interviewee's perspective there is also "perhaps not a good enough example being set" by management. In summary, a lack in the "role model function" and the "continuous setting of examples" is the reason for the interviewees that the "tone from the top" about the required significance of RM is not heard through

the entire organisation. This is confirmed by several interviewees, where one added that “when management signalises that a topic is not really very important, then both management and the topic lose credibility”, which is supported by another statement, “I am unconvinced as to whether that is all really being done seriously”.

Furthermore, almost all interviewed persons highlighted an un(der)developed, inconsistent culture within MP, not only due to the two locations, as discussed before but also between the departments. One of the interview partner mentioned “different types of managers with diverse impressions and understanding of risk” as a reason. Whereas different types of managers are required to fulfil different jobs within the organisation, as explained by one of them, a different understanding and perception of risks may hinder the company to pull together to the same direction. One interviewee pointed out that departments are “not marching in lockstep”. There is no exchange between departments but a “territorial egotism” and “silo mentality” as indicated by two interviewees independently. “Many employees really do not look beyond their own nose, which leads to a very restricted risk culture” and “many sit quietly in their own little chambers, which means that many opportunities are lost, because the ideas are missing and also the courage to think about things together and exchange ideas” are two statements that highlighted that there is no “strong sense of we” or “team spirit” and no “unlimited thinking” or “going against the grain sometimes”. “A healthy attitude towards joint responsibility” is missing.

Many employees “work only to rule”; they are “simply running with the crowd” with an “I've always done it this way” mentality. “A great deal of catching up must be done in sensitising employees” as stated by one interviewee, so as to establish a common understanding of RM. What is often missing is “pertinacity and spine, and a management that allows that”, as mentioned by one interviewee. They complained that the topic was “not at least a bit properly prepared”, “introduced in a slapdash manner” to the organisation, and has “not been prioritised well” by management. A lack of proper introduction and implementation was mentioned by some interviewees as a reason that employees are not yet completely aware that there is an RM (“If everyone knew that there is an RM..”) and what lies behind it (“RM is still a difficult topic, an unpopular topic, a topic with negative connotations”). “Someone who is not aware or

does not understand it cannot be expected to carry it out properly in an active manner", as one interviewee added.

At MP, the human side of RM is almost invisible to most of the persons interviewed. They reported that they receive an email on a quarterly basis that requests the completion of a blank template after having identified risks in their area of responsibility. There has neither been a discussion between experts nor feedback from anyone when the template was completed. To some interviewees, it is "not clear what happens with the data" that they have provided and there is also no feedback about what other departments have reported, so that they can investigate whether or not same or similar risks exist in their working environment. Some were not aware of the person in charge for RM, or not even aware that there was a person responsible for RM within MP at all.

In contrast to that, a "huge lack of interest" in RM and a "kind of ignorance" was reported by the Risk Manager of MP. Emails had been neglected and remained unanswered. However when reporting risks, "an increasing safeguarding mentality" was mentioned by some interviewees, as email distribution lists were becoming increasingly longer. As a consequence, "employees are confronted by an overload of e-mails and information", which is confusing rather than providing clarity. One reason may be, as indicated by some interviewees, that "within MP, this topic is associated with something negative". The term risk has "very negative connotations". Nobody really wants to think or talk about any negative influences on their activities. Different alternatives or ways that may arise when screening for risks which require decisions that some people are afraid of. This is supported by the organisation, as "decisions not taken are not punished, while wrong decisions tend to be punished", as reported by one interviewee. Another interview partner explained that "thumbscrews are being applied with increasing intensity, which does not exactly make people more receptive to risks, but rather the opposite." This all allows the conclusion that the people factor was not properly considered in RM in the past. However, the significance of humans in RM was recognised, as previously presented.

With regards to the RC components as previously developed, a tendency was noticed in conjunction with the question "Where do you see the biggest backlog within MP?"

towards the following: Responsibility/Commitment, Perception/Awareness, Trust/Confidence, Transparency/Clarity and Identification / Role Model, as shown in Table 10.

Table 10 Interview Results: Where do you see the biggest backlog?

Question: Where do you see the biggest backlog?

	A Identification Role Model	B Responsibility Competence Commitment	C Perception Awareness	D Ethics Values	E Transparency Clarity	F Trust Confidence	G Development Learning	H Liability Accountability	I Skills Abilities	J Strategy Limitations
Interviewee 1		**x**	**x**			**x**				
Interviewee 2		**x**	**x**		**x**		**x**		**x**	
Interviewee 3	**x**		**x**			**x**				
Interviewee 4						**x**				**x**
Interviewee 5		**x**				**x**				
Interviewee 6	**x**				**x**					**x**
Interviewee 7	**x**		**x**		**x**					
Interviewee 8										
Interviewee 9	**x**	**x**	**x**		**x**					**x**
Interviewee 10				**x**					**x**	
Interviewee 11		**x**			**x**					
	4	5	5	1	5	4	1	0	2	3

In summary, the biggest accumulated needs, in the opinion of the interviewees, exist in:

- insufficient management role model
- lack of people's sensitising and awareness
- inconsistent culture/territorial egotism
- missing people's commitment/little sense of responsibility
- lack of process clarity and transparency
- ultra-safeguarding mentality/lack of trust and confidence

These had to be tested by analysing the employee survey accordingly.

5.2.2 Target Risk Culture within MP

Relevance of RC components to MP

By asking the following questions, the interviewees were requested to select the most and least relevant RC components previously developed by this researcher:

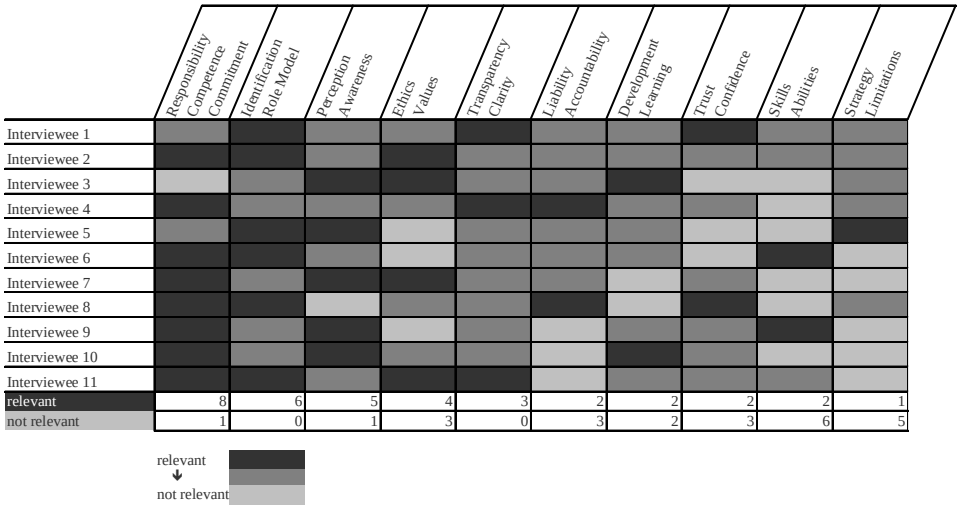
- From the presented components, please select from your opinion the three most relevant ones for MP target RC.

- From the remaining seven components, please select from your opinion the three least relevant ones for MP target RC.
- Why are these the most/least relevant for you?
- Is there any component that you would like to add to describe or characterise RC (in general or with regards to the target RC of MP)?

The ten (pairs of) key components of the 'House of Risk Culture' were presented to the interviewees, as presented in chapter 3.4.

In summary, Responsibility/Commitment, Identification/Role Model and Perception/ Awareness are the three most relevant key aspects that the interviewees associated with the target RC. Strategy/Limitations and Skills/Abilities are the components that the interviewees judged as least relevant in the context of their target RC. A summary of the interviewees' assessments is presented in Figure 7. Explanatory statements and justifications by the interviewees are provided in the following.

Figure 7 Overview of Component Assessment by Management



Source: Own illustration

The most relevant component associated with RC as assessed by most of the interviewees is Responsibility/Commitment. Some argued that Responsibility is key because people have to feel responsible and committed for what they are responsible for, so that they actually take care for. Consequently, it has "to be clearly defined in advance, who is responsible for which area" of competence, as added by one person interviewed. However, it is important to nominate a person responsible, but it is "all the

more relevant that the person nominated feels responsible" and committed to what he/she is assigned to. Due to this, some interview partners had selected this as key when dealing with risk. That also includes "taking consequences, when something went wrong or not as expected" in his/her area of competence, from the interviewees' understanding, in contrary to liability, where potential consequence, sanction, privation or obligation is imposed from outside.

As some interviewees indicated, it is "relevant for people to understand their role and responsibility as one part of the whole", as their contribution within the organisation, which for them is also true for RM. Without "responsibility, there cannot be any kind of liability", from one interviewee's perspective. Another one pointed out that it is not "responsibility for oneself or any shareholder" that is important for RC but the "responsibility in leadership" that for him/her also includes "staff, customers and suppliers". In contrary to that, one interviewee assessed Responsibility/Commitment as least relevant, whereas he/she mainly referred to competence, which for him/her is a fluctuating and variable element that changes permanently, as a consequence of dynamics and increased project-orientation at work. Within this, he/she confirmed that indeed responsibility and commitment is essential, but to him/her this refers to ethics and values, i.e. to comply with what is requested by the company. As this person assessed Ethics/Values as most relevant, in the view of this researcher, this allows the assumption that responsibility and commitment is indeed of certain relevance to this person, although this was highlighted in a slightly different context but with same meaning.

The second most relevant RC component that interviewees selected is Identification/Role Model. Some argued that role model by management plays the most significant role in RC, because people often take their supervisor as an example. By doing so, people tend to understand what is right and relevant for the organisation when dealing with risks. Here, "people need role models that they can refer to and they can identify with", as indicated by one interview partner. Identifying oneself with the company is important, "to feel (jointly) responsible to support the organisation" to deal properly with potential risks, that may hinder the company to meet their overall objectives. In return, "management should serve as a good example", i.e. "stick to their own rules and requirements" with regards to RM and to be "reliable, but also

predictable" to their employees. As one interviewee pointed out, predictability may also increase an employee's "relationship of trust with the supervisor". Another interview partner claimed "the highest example set by Management Board" as a key requirement in RC, whereas in their opinion this may be lower in middle management. He/she argued that the same level of role modelling cannot be expected by different levels in the hierarchy. The reason for this statement can be hypothesised in the extent of responsibilities for employees, assuming that the more employees are subordinated to a manager, the more people may be influenced by his/her behaviour or beliefs.

In addition to the aforementioned, the interview partners elected Perception/Awareness as the third most relevant component of RC in their opinion. As a very basic reason, interviewees highlighted that "people have to be aware of risks in order to manage them properly", as a precondition of RC. So, if people have not developed a proper perception or awareness in RM, they are not able to identify risks, as argued by one interviewee. In their opinion, people have to be sensitised towards risk, which represents a managerial task in the view of some interviewees, so that people are careful and prudent when being concerned with potential risk in their working environment. For one interviewee this also requires "looking further than one's own nose" to perceive risks not only in their own area of responsibility.

No clear direction was given to Ethics/Values, as some highlighted this as most relevant, whereas others decided it was least relevant. Those who classified ethics and values as most relevant argued that this represents "the fundamental element of any culture", as underlying assumptions or a basic moral concept. A sound attitude based on ethics and values is required to perceive risks, as a precondition for risk identification and assessment. One argued that Ethics/Values is "a very strong and powerful term in itself, cannot be insignificant, by no means". People who regard ethics and values as least relevant emphasised that "every person has a minimum level of ethics and values" and that "these have to be assumed in any event". Some even said that "ethics and values of a person in private life may differ from the ethics and values that are requested by the company", as long as these people play by the company's rules at work. This shows that Ethics/Values is probably the most intangible and contentious component in RC.

In contrast to that, the RC component Strategy/Limitations and Skills/Abilities appear to be of least relevance to the interviewees. Reasons for that, as provided by the interviewees, are that “there should not be any limitations” but rather “guide rails” to “allow a certain scope of action” and to allow “a good sense of business to a certain degree” or “entrepreneurship” that supports “unlimited thinking”. In the event of “exigent circumstances, it should be allowed to act contrary to the Strategy”, so for the respective person Strategy/Limitations is of minor relevance as it is “nice to have” but “should not hinder or limit” in any direction. Skills/Abilities were assessed as least relevant by the interviewees as it is a “basic precondition that we employ qualified people”. If this is assumed, Skills/Abilities can be regarded as least relevant, as claimed by a person interviewed. Others argued that it is rather a “healthy common sense”, “self-conception” and “keep one's eyes open” than “particular skills and abilities” that are required in a proper RC.

Interviewees who assessed Skills/Abilities as most important brought forward the argument that “certain skills and abilities are required to understand own behaviour and construe consequences from that”. Similar reason was mentioned by interviewees who assessed Strategy/Limitations as most relevant as “there must be a code of conduct” and “certain rules and regulations are required to better classify one’s own behaviour”, i.e. “the employee must know why he/she is doing something and what the consequences are”.

Furthermore, the researcher asked the interviewees about any further important elements or components that they would like to add to describe or characterise RC (in general or with regards to the target RC of MP. The following phrases were provided as answers by the interviewees: Courage, Latitude/Freedom, Consequences, Sustainability, Flexibility, Responsiveness, Reaction rate, Information (flow)/Communication, Objectives, Entrepreneurship, Restrictions, Budget/Cash/ Money and Laws/Legal requirements.

In the following the researcher analysed the application of these words during the interviews by screening the interview transcripts to understand their relevance. By doing so, the researcher noticed that Entrepreneurship and Sustainability were used relatively often in the context of unlimited and long-term thinking, in the interest of the

entire company. In addition to that, Information (flow)/Communication were found frequently in the interview transcripts, but the researcher decided to ignore these words, as this represented one of the main areas the RC components derived from. Budget/Cash/Money was also ignored by this researcher, due to the statements of different interviewees, that this is not relevant to RC, for example “tools and systems are a question of money. But when in doubt I don't need them as long as the right culture exists” and “RM can be performed at relatively low expenses; RM is not a matter of money, but of an overall corporate culture”. The other phrases were used rarely during the interviews, or covered by an existing component, such as Consequences in Liability/Accountability or Restrictions in Strategy/Limitations.

By screening the transcripts it was investigated that also Togetherness/Team Spirit as well as Proactivity/Initiative were used frequently by the interviewees. Proactivity/Initiative were often use in connection with Entrepreneurship, Team Spirit, Accountability, Awareness and Responsibility/Commitment, as a description that people should initiate something of their own accord, pro-actively. In summary, two more pair of components as raised from the interviews were added to the ten (pair of) key components, i.e. Togetherness/Team Spirit and Entrepreneurship/Sustainability. Consequently, the RC framework used for this case study consists of twelve RC components that were henceforth applied in this study.

Key attributes and characteristics of target RC

By answering the following questions, the researcher wanted the interviewees to describe and characterise the target RC that they assumed to be appropriate and required for MP:

- How would an ideal scenario or setting of RC at MP look like in your opinion?
- What are required collective visions and values (“what do we stand for”)?
- What are required collective objectives and missions (“what do we want to achieve jointly”)?
- Which limitations and restrictions should be set within the target RC of MP in your opinion? Why are these important or relevant?
- What can each individual do in your opinion to contribute to the target RC of MP (Rights and duties, responsibilities visible behaviour/attitude)?

- Which general skills and abilities should be particularly requested from the individual to contribute to the target RC within MP in your opinion? Why are these important or relevant?

In summary, the following attributes and characteristics are mentioned in context with the required target RC at MP:

1) As pointed out by one interviewee it is required "that what you expect from others must also be displayed by you first", whereas the "maximum example should be set by the management". This also includes "that we deliver what we promise", as stated by MP management, and that they "treat others" as they themselves "would like to be treated" by their employees. Management role model also refers to "communicating expectations to employees" and to send "a signal to the organisation of how important the matter is" and that "risks are taken seriously". Management should motivate employees to contribute and provide feedback and reward in return. Interviewees requested "the correct setting of priorities" by management that results in an employee's understanding and belief that RM is of importance for MP. When management shows convincingly that RM is significant, employees are more likely to follow.

➔ **Management role model (expected behaviour in RM) to be put into practice**

2) "A clear mandate to the function" by management is required as well as clarity in the process that includes "communicating expectations" as "it must be clear to every employee what is expected of him/her". Furthermore, everybody should know that there is an RMS in place, who the contact person is and what happens once employees have provided their input. That necessitates to "completely implement RM and to try to make it comprehensible and same in introduction to everybody" to make this topic "understandable to everybody". Consequently, management should "present a logically structured procedure as transparently and comprehensively as possible" to all employees at all hierarchy levels.

➔ **Clarity and transparency in RM process**

3) Another important element of the target RC as intended by MP management is that employees "take responsibility consciously" in their respective areas of work In a sound RC, people "proceed through the area with open eyes and do one's job responsibly" as they have a "healthy attitude towards responsibility", resulting in

commitment. In consequence, it should be someone's own motivation and intention to identify risks in their workplace. To support this, management should set the frame ("guard rail") and allow free space ("room to manoeuvre") to the employees, who should in return use this latitude to be "courageous, but not foolish" or careless, to develop a sound sense of responsibility.

➔ **Sound sense of responsibility and commitment for RM**

4) The target RC as highlighted by MP management requires interest at the workplace that is shown "when people act pro-actively" and "when one is open to new paths" and takes pleasure in testing new ways and approaches. Risk awareness is provided when "the employee engages consciously with his or her working environment" because then he/she "is in a position to discern where a risk might ensue or have occurred". Interest, awareness and consciousness represent the basis for employees to deal thoroughly and deliberately with potential risks in their working area. However, acting pro-actively is also associated with having relevant information available.

➔ **Risk awareness and interest for RM at the workplace**

5) "Better critical faculties" are required by MP executives so that people "admit one's mistakes" and "reflecting back" in order to learn and "expand the horizon". It is important that people do not associate the "topic with negative connotations" to "relieve employees of the fear of making a mistake". Others pointing out potential risks should not be regarded as failure but as a learning opportunity. Employees should not have worries or fear in telling management about risks. All the more, they should regard this as a chance to manage these. Therefore, a "healthy, well-developed and trained self-confidence" is required in the opinion of MP management.

➔ **Tolerate mistakes and learn from them; Critical abilities; Self-confidence**

6) A sound, healthy RC also requires to "look further than one's own nose" so that the entire organisation is "marching in lockstep". It is important to identify and assess risks in one's own workplace just as to support the others in doing the same by sharing relevant knowledge and experiences. To "generate a best practice exchange" it is required by MP management to break up "territorial egotism" or "silo mentality" between the departments. This requires "an atmosphere of openness and trust" and "a strong feeling of togetherness". Interviewees called for "courage to think about things

together and exchange ideas", "to see the bigger picture". A "strong team identity" and cross-departmental exchange also facilitates a "synchronisation of sectors," which was also highlighted as an accumulated need at MP.

➔ **Cross-departmental exchange about RM topics**

7) One interviewee highlighted that is it his/her "wish that everyone would think a little more entrepreneurially and embrace the matter at hand. Then we would have an accumulation of many small companies, all working in the same direction". Another person interviewed claimed "just keep thinking and think this topic through to its conclusion" as a call for "unlimited thinking". That facilitates the view "out of the box". Long-term thinking should be important, even if this is at the expense of short-term success, as RM should not only be seen as a benefit for the company, but for every employee to keep the area of work safe.

➔ **Entrepreneurial, unlimited, long-term thinking about RM**

In addition to that, the researcher also analysed the use pre-developed key components that are associated with RC. As presented in Table 8, the interviewees mentioned several of them more often than other phrases. The key components most said by MP management when asking them about their ideal scenario of RC within MP, were the following: Identification/Role Model, Responsibility/Commitment; Perception/ Awareness; Transparency/Clarity, Development/Learning and Entrepreneurship/ Sustainability, as shown in Table 11.

Table 11 Interview Results: How would an ideal scenario of RC look like?

Question: How would an ideal scenario or setting of RC at MP look like in your opinion?

	A Identification Role Model	B Responsibility Competence Commitment	C Perception Awareness	D Ethics Values	E Transparency Clarity	F Trust Confidence	G Development Learning	H Liability Accountability	I Skills Abilities	J Strategy Limitations	K Entrepreneurship Sustainability	L Togetherness Team Spirit
Interviewee 1	x	x	x	x	x		x			x	x	
Interviewee 2	x		x		x	x		x	x			x
Interviewee 3	x		x		x		x			x		x
Interviewee 4	x		x		x		x			x	x	x
Interviewee 5	x	x	x				x				x	
Interviewee 6	x	x	x									
Interviewee 7	x		x		x		x		x			
Interviewee 8		x					x	x		x	x	
Interviewee 9	x		x		x		x		x		x	
Interviewee 10	x	x			x						x	x
Interviewee 11		x			x							x
	9	6	8	1	8	1	7	2	3	4	6	5

Management's assessment of RC target achievement at MP

With the questions hereinafter, the researcher requires the interviewee's opinion about the achievement of current RC towards the target RC:

- By what percentage is the target RC already achieved within MP in your opinion?
- Why do you think so?

Overall, the answer on this question was provided consistently throughout all interviews, except for two persons who were not willing to answer, as they stated they did not dare do so. One of them provided the statement that there is "definitely room for improvement". The remaining nine people estimated the development of existing RC (compared to target RC) at 20% to 40%. Two of them added they see "rather a downwards tendency", whereas one of them even diagnoses the existing RC "a tendency to zero" as the organisation "lost track of what was initially intended" and there is "a certain kind of ignorance" by employees and management. Some of them hesitated to answer the question in the beginning ("I tend towards 5%, but…" or "this is difficult to say") but finally they also provided an answer between 20% and 40%. Furthermore, one interviewee highlighted that he/she distinguished that the development on "top level", with regards to the hierarchy level, is above 35%, with a tendency to 50%, but the lower the level then the lower the percentage of development, but on average it is 30% to 40%

5.2.3 Propositions developed from the Interviews

As presented in Chapter 2.6, based on the proposition "there is a difference in RC throughout the organisation", the researcher developed several sub-propositions (Prop_1 to Prop_7) to investigate the difference by certain socio-demographic characteristics. In addition to that, the researcher generates a further breakdown of RC, on the basis of the target RC as identified in the management interviews:

- management role model (expected behaviour in RM) to be put into practice
- clarity and transparency in RM process
- sound sense of responsibility and commitment for RM
- risk awareness and interest for RM at the workplace
- tolerate mistakes and learn from them; critical abilities; self-confidence
- team spirit; cross-departmental exchange about RM topics

- entrepreneurial, unlimited, long-term thinking about RM

Consequently, the researcher intends to determine the existing RC based on different aspects, as developed from the target RC, in the subsequent employee survey by the following propositions:

Prop_1: Is management role model in RM put into practice?

Prop_2: Is clarity and transparency in RM process provided?

Prop_3: Does sound sense of responsibility and commitment for RM exist?

Prop_4: Is risk awareness and interest for RM available at the workplace?

Prop_5: Do fault tolerance, critical abilities and self-confidence in RM exist?

Prop_6: Is cross-departmental exchange about RM topics facilitated?

Prop_7: Does entrepreneurial, unlimited, long-term thinking about RM exist?

With regard to socio-demographic characteristics, interviewees have assumed a different RC at the two locations, DUS and SAR. Employees located in SAR are characterised as more diligent, careful and conservative. This could lead to the assumption that they feel more responsible to contribute to RM and that they deal more thoroughly and deliberately with potential risks, compared to their colleagues from DUS. In return, employees from DUS are characterised as more courageous, which could lead to the assumption that they do not have any worries or fear in reporting any risk in their working environment to their supervisors. They may understand recognising mistakes and failures more as a chance for job-related improvement in contrast to the people located in SAR.

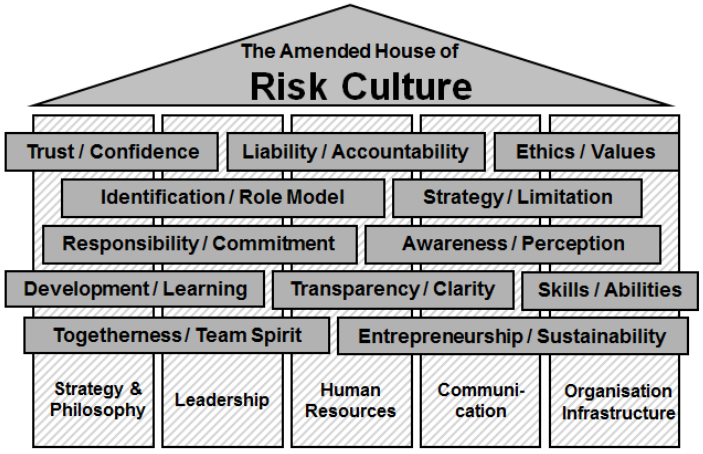
In addition to location, interviewees highlighted they assume a different RC by hierarchy level, i.e. between employees without and with supervisory responsibility. They hypothesised that employees with supervisory responsibility have developed a more appropriate RC, which corresponds to the target RC more in comparison to employees on lower hierarchy levels.

To accommodate these assumptions, the researcher decided to analyse the aforementioned propositions to understand if there is any significant difference in RC by location, i.e. DUS and SAR, and by hierarchy level, i.e. executive employees with supervisory responsibility and employees without any responsibility for staff.

5.2.4 The Amended House of Risk Culture

The 'House of Risk Culture' as presented in Figure 4 served as the conceptual framework to identify the managerial expectations, i.e. the target RC, of the case study unit. While doing so, the researcher has learnt the significance of two additional components that appeared to have high relevance for the case study unit's management, i.e. Togetherness/Team Spirit and Entrepreneurship/Sustainability. To consider this specific interview outcome, the researcher decided to extend the 'House of Risk Culture' by these, resulting in the 'Amended House of Risk Culture', as shown in Figure 8:

Figure 8 The Amended House of Risk Culture



Source: Own illustration

In comparison to existing literature and research, Togetherness/Team Spirit and Entrepreneurship/Sustainability was hardly mentioned and considered in the past. Only a few authors refer to team work, collaboration or enterprise-wide information sharing (e.g. Persad, 2011; Althonayan, Killackey & Keith, 2012; Hürlimann, 2011; Borge, 2013). In particular, Entrepreneurship/Sustainability could not be found frequently in the literature as relevant for RC to establish an unlimited, long-term thinking of RM throughout the organisations that the researcher recommends to consider in theory to a greater extent. A more detailed discussion on that is provided in Chapter 5.4.1.

5.3 Employees' Perception of Existing Risk Culture

After having identified the target RC as expected by MP management, such as clarity and transparency in RM processes or risk awareness and interest at the workplace, as stipulated in propositions, the researcher intended to determine the existing RC within MP, as perceived by their employees. Therefore, a survey was designed by the researcher, based on the propositions that represent the target RC of MP. As explained

in the methodology chapter, to allow a more sophisticated multi-dimensional analysis, the researcher decided to develop three or four statements that refer to each of the proposition. In the following, the relation of these survey statements to the 'Amended House of Risk Culture' (Figure 8) and managerial expectations concerning the target RC is presented:

Prop_1 Is management role model in RM put into practice?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Identification / Role Model	Management role model in RM	My direct line supervisor aims to identify risks in his / her area of responsibility
		My direct line supervisor is not receptive in listening to my doubts and concerns about risks
		Regarding my concerns and potential risks I receive sufficient feedback by my direct line supervisor
		Handling risks with awareness is important for METRO PROPERTIES in principle

Prop_2 Is clarity and transparency in RM process provided?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Transparency / Clarity	Clarity and transparency in RM processes	In general, the risk management policy of METRO PROPERTIES is clear and comprehensible to me
		I do not know what METRO PROPERTIES expects from me when dealing with potential risks
		In general, it is clear to me what happens with the information regarding potential risks when I report these to METRO PROPERTIES
		There is not enough information at METRO PROPERTIES available to me to deal with risks properly

Prop_3 Does sound sense of responsibility and commitment for RM exist?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Responsibility / Commitment	Sound sense of responsibility; Commitment;	I deal thoroughly and deliberately with potential risks of METRO PROPERTIES in my working area
		I have not yet reported potential risks in my working area to METRO PROPERTIES before
		It is not my responsibility to identify potential risks of METRO PROPERTIES in my working area
		I feel responsible to contribute to the risk management of METRO PROPERTIES

Prop_4 Is risk awareness and interest for RM available at the workplace?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Awareness / Perception	Awareness & Interest at the workplace	I have not yet identified potential risks for METRO PROPERTIES in my working area before
		I have a clear understanding of risk management in general
		I am aware of the risk management policy of METRO PROPERTIES
		I am not interested in contributing as a part to the overall risk management system of METRO

Prop_5 Do fault tolerance, critical abilities and self-confidence in RM exist?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Trust / Confidence	Tolerate mistakes and learn from them; Critical abilities; Self-confidence	I understand recognising mistakes and failures in my working area as a chance for job-related improvement and development
Development / Learning		I am expected by others to point out potential failures and risks in my working area that I might not have identified so far
		I have worries or fears in reporting to my supervisor about identified risks of METRO PROPERTIES

Prop_6 Is cross-departmental exchange about RM topics facilitated?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Togetherness / Team Spirit	Cross-departmental exchange	I do not discuss my concerns and potential risks of METRO PROPERTIES with colleagues from other departments
		In my working area potential risks of METRO PROPERTIES are discussed on a regular basis
		I support my colleagues in identifying and dealing with potential risks at METRO PROPERTIES
		In principle, risk management does only work when I collaborate with my colleagues, also from other departments

Prop_7 Does entrepreneurial, unlimited, long-term thinking about RM exist?

House of Risk Culture	Managerial Expectations	Employee Survey Statements
Entrepreneurship / Sustainability	Entrepreneurial, unlimited, long-term thinking	When dealing with risks, it is not important to think long-term, but mainly about short-term success
		It is not important for me to think "out of the box" to identify potential risks of METRO PROPERTIES beyond my working area
		If I deal thoroughly and deliberately with risks in my working area, there will be a benefit not only for METRO PROPERTIES, but also for me

The complete survey outline is provided in Appendix 13, showing the statement sequence that is presented to the survey participants. As presented above, out of these 26 statements that were presented to the respondents, 17 were designed in a positive wording, whereas nine statements had a negative orientation. As explained in the methodology chapter, this was done to increase the trustworthiness of the results. However, the statements were carefully worded, e.g. the double negatives were avoided and the vast majority were phrased in a positive way to support the sensitising character of this survey to the employees.

The web-based survey was accessible for participation between 18th and 28th February 2013, which represents nine working days. This is in line with the recommendation of Reilly and Wrensen (2007) that the survey should remain open for approximately seven to ten days, available 24 hours a day, so as to offer the possibility for the employees to respond early in the morning, before closing time or after work, whenever the most convenient for them. The participants were invited by email, after the survey was

announced on the Intranet of MP a week before. A reminder email was sent on 26th February 2013. The announcement (Appendix 14), invitation emails (Appendix 15) and the survey was available in both German and English language.

From n=455 employees who were contacted by this researcher, n^r=199 employees took part in this survey, which represents a response rate of 43.74% (statistical data of those who responded is presented in Appendix 10). As argued in the methodology chapter, this can be regarded as an acceptable rate for corporate surveys. However, there is also an informative value of response rate referring to RC. Rossiter (2001) found out a correlation between response rates and overall RC survey results. In other words, organisations with a strong RC have committed employees who are more willing to contribute to RM, make their voices heard and suggest improvements. Her response rates ranged from 30% to 85%. Consequently, a response rate of 43.74% may indicate a less strong RC, when following her theory.

In any case, a non-response rate of 56.26% (equivalent to 256 non-respondents) cannot be ignored by this researcher, in accordance with Reilly and Wrensen (2007), Baruch and Holtom (2008) or Rogelberg (2006). As already explained, this can be a result of passive (e.g. lack of time, technical access problem) or active (e.g. lack of interest in the company or topic) decision of employees. Due to positive pilot test feedback and 43.74% participation, a general technical access problem can be regarded as out of question, although individual difficulties might have occurred. As a contact person, email address and phone number for any questions or troubles was mentioned in both the invitation email (Appendix 15) as well as the survey. As this was not utilised in any single case, the researcher did not assume any technical issue as a reason for non-response.

In addition, the researcher was interested to understand how much which socio-demographic category is represented compared to the study population (n=455). The difference is that missing data, when a respondent either did not provide an answer or selected “not applicable”, is not considered in that statistical calculation. For example, there are 64 persons that fall into the group “30 years and below”; that represents 14.1 % of all employees (n=455). 26 persons have responded to be “30 years and below” that are 13.1% within all respondents (n=455), but within the group of “30 years and below”

(n=63) they are represented by 41.0%. As 13.1% may not sound much within all respondents, almost half of the people with an age of “30 years and below” participated in the study, which is a relatively high number (Appendix 10).

Employees with supervisory responsibility are “over-represented” as 49 persons out of 199 said they fulfil this characteristic, whereas from 455 there are only 39 with supervisory responsibility. The reason was already explained before, as the 49 persons also include Team Leaders on level four, that are not officially counted, as only level three is regarded as management level. As it cannot be distinguished between level three and level four, it cannot be assumed that the group of people with supervisory responsibility is fully represented. Therefore, a true coverage cannot be deduced. In contrary to that, as a consequence, it can be assumed that the group of people without supervisory responsibility is represented by at least 27.0% (Appendix 10).

It was interesting to see that 80.2% of the employees with “1-3 years” job tenure participated in the survey, whereas employees who had worked for less than one year at MP only counted for 22.6%. Consequently, it can be assumed that the interest to give an opinion to surveys increases significantly at MP when employees work there for more than one year up to three years. Without these extremes, all other groups are represented relatively equally between 31.6% and 49.9%. Appendix 10 shows the results of this analysis in detail.

In terms of location, i.e. DUS and SAR, a detailed analysis of the socio-demographic variables showed that DUS is characterised by more male respondents (58.0%) compared to female respondents (39.3%), whereas in SAR relatively more women (63.4%) participated in the survey compared to men (34.1%). Whereas age and job tenure is generally balanced with regard to DUS respondents, SAR respondents can be described as relatively older (48.8% reported to be ’40 to 49 years old’) with longer employment in the company (74.4% confirmed a job tenure of ‘more than 8 years’). As age and job tenure can usually be regarded as a precondition for a position higher in the organisational hierarchy, this may not necessarily be true for MP: More respondents from DUS confirmed their supervisory responsibility (30.7% compared to 59.6% without supervisory responsibility) in comparison to SAR respondents (23.3% compared to 69.8% without supervisory responsibility).

The analysis showed that 80.9% of the executive respondents are male, whereas for respondents on staff level the gender is relatively balanced (44.1% male; 51.4% female). Age did not appear to be a particular criterion, except for 'under 30 years' as none of the executive respondents confirmed to be in this age group, whereas 21.2% of the non-executive respondents are younger than 30 years. Long job tenure does not represent a guarantee for climbing the hierarchy chain from staff to executive level, as these are relatively mixed, but with a slight tendency towards longer employment for respondents with supervisory responsibility. Instead, gender appeared to be critical within MP, at least regarding the respondents, as only 10.8% of the women confirmed a supervisory status, whereas 38.8% men confirmed the same.

In summary, respondents from SAR can be characterised by higher age and longer job tenure, compared to employees from DUS. In DUS, there were more respondents with supervisory responsibility, in contrary to SAR. This was also indicated by the interviewees when comparing DUS and SAR location, and so confirmed by the analysis of the socio-demographic characteristics of the respondents. In addition to that the respondents' data showed that executives are more likely to be male than female. An overview of these figures are presented in Appendix 19.

The diverse propositions as developed by this researcher as a result of the management interviews, were investigated based on the respective statements, by considering the different socio-demographic characteristics. The outcome of the analysis is presented hereinafter. The complete overview of figures is presented in Appendix 16.

5.3.1 Management role model (expected behaviour in RM)

- My direct line supervisor aims to identify and communicate risks in his / her area of responsibility (Q4)
- My direct line supervisor is receptive in listening to my concerns about potential risks of MP in my working area (Q18)
- Regarding my concerns about potential risks of MP I receive sufficient feedback by my direct line supervisor (Q19)
- Handling risks with awareness is important for MP (Q2)

Table 12 Frequency Table for Management Role Model

Management role model (expected behaviour in RM) to be put into practice									
		Q 4		Q 18		Q 19		Q 2	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
valid	5	74	37,19	100	50,25	60	30,15	74	37,19
	4	64	32,16	55	27,64	56	28,14	68	34,17
	3	24	12,06	24	12,06	48	24,12	37	18,59
	2	21	10,55	13	6,53	21	10,55	15	7,54
	1	13	6,53	2	1,01	8	4,02	3	1,51
	total	196	98,49	194	97,49	193	96,98	197	98,99
missing		3	1,51	5	2,51	6	3,02	2	1,01
total		199	100,00	199	100,00	199	100,00	199	100,00

In summary, the vast majority of the respondents generally agreed with these statements, confirming that management role model in RM is put into practice within MP in the opinion of the respondents. It was confirmed by the respondents that their respective direct line supervisor aims to identify and communicate risks in his / her area of responsibility (in total 69.35% answered with “strongly agree” and “agree”). This is supported by the answers provided to the statement if handling risks with awareness is of importance for MP, through behaviour by management, as 71.36% agreed with this statement. With regard to the ability of their direct line supervisors to listen and provide feedback in the matter of potential risks, the respondents acknowledged both, whereas providing feedback (58.29%) appeared to be less developed than listing (77.89%).

Although the respondents generally agreed to the statements, indicating that their perception is mainly in line with managerial expectations, the researcher was interested to understand any potential significant differences in management role model when considering different socio-demographic variables, i.e. gender, age, location, supervisory responsibility and job tenure. Location and supervisory responsibility (hierarchy level) are of particular interest to the researcher as interviewees highlighted potential differences between employees located in DUS and SAR as well as executive employees versus non-executive employees.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in existence of identification with and role model for RM within MP	There is a no difference in existence of identification with and role model for RM within MP	0,767	0,005	0,971	0,003	0,158
			Null Hypo disproven as .05 is not exceeded			

Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

Comparing the means for the null hypotheses with regard to hierarchy level, the researcher found out that employees without supervisory responsibility (M=8.60; SD=3.57) scored significantly higher than employees with supervisory responsibility (M=6.94; SD=2.74), which means that employees who are lower in the hierarchical chain agreed comparatively more to the statements that referred to management role model within MP. Consequently, non-executive staff attested their supervisors a better fulfilling of the role model function, compared to executive employees at MP.

Furthermore, the researcher investigated a significant difference in management role model in RM by age. Comparing the means of age group "above 50 years" (M=6.49; SD=3.1), "30 years and below" (M=9.12; SD=3.41) and "31-39 years" (M=9.07; SD=3.17), the researcher found out that the employees above 50 years agreed comparatively less to the statements regarding management role model in RM than their younger colleagues.

In summary, managerial expectations are generally fulfilled and in line with employees' perception with regard to management role model to be put into practice. However, the results differ significantly by hierarchy level (non-executive versus executive staff) and by age (all age groups scored higher than age group "above 50 years"). With regard to location, gender and job tenure, no significant difference in management role model could be confirmed by the researcher.

5.3.2 Clarity and transparency in RM processes

- In general, the risk management policy of MP is clear and comprehensible to me (Q10)
- I do not know what MP expects from me when dealing with potential risks (Q8)
- In general, it is clear to me what happens with the information regarding potential risks when I report these to MP (Q16)
- There is not enough information at MP available to me how to deal with potential risks (Q11)

Table 13 Frequency Table for Clarity and Transparency in RM

Clarity and transparency in RM processes									
		Q 10		Q 8		Q 16		Q 11	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
valid	5	9	4,52	20	10,05	22	11,06	15	7,54
	4	29	14,57	60	30,15	32	16,08	54	27,14
	3	33	16,58	54	27,14	51	25,63	69	34,67
	2	3	1,51	37	18,59	54	27,14	35	17,59
	1	0	0,00	27	13,57	38	19,10	21	10,55
	total	74	37,19	198	99,50	197	98,99	194	97,49
missing		125	62,81	1	0,50	2	1,01	5	2,51
total		199	100,00	199	100,00	199	100,00	199	100,00

For the respondents, clarity and transparency in RM processes within MP show certain weaknesses. 34.68% of the respondents confirmed that there is not enough information available how to deal with potential risks. This is supported by another 34.67% who did not particularly disagreed with this statement. Furthermore, it seems not be clear for 40.20% of the respondents what MP expects from them when dealing with potential risks, whereas another 27.14% did not disagreed, assuming they are partly aware what is expected from them. As Q10 was only asked to those employees who responded that they completely or partly know the RM policy of MP, the high number of missing answers of 62.81% does not result from the employee's refusal to answer, but from their lack of awareness that this policy exists. Those who know the policy responded that this is generally clear and comprehensible to them. From 74 respondents, 38 persons provided agreement to this statement, whereas 33 answered that they neither agree nor disagree to it. Only 3 disagreed. This implies that there is room for improvement regarding clarity and comprehensibility of the policy, but there seems to be already a good basis to work on.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in cognition of transparency and clarity in RM processes within MP	There is no difference in cognition of transparency and clarity in RM processes within MP	0,806	0,056	0,606	0,849	0,765
		Null Hypo disproven as .05 is not exceeded				

Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

In summary, managerial expectations are not fulfilled as employees mainly disagreed with the expected clarity and transparency of RM processes within MP. There are no significant differences in the results for any socio-demographic characteristics, i.e. age, gender, location, hierarchy level or job tenure. Therefore, it can be assumed that all employees perceived towards the same direction that clarity and transparency of RM processes is not properly provided or established within MP.

5.3.3 Sound sense of responsibility and commitment for RM

- I deal thoroughly and deliberately with potential risks of MP in my working area (Q12)
- I have not yet reported potential risks in my working area to MP before (Q15)
- It is not my responsibility to identify potential risks of MP in my working area (Q14)
- I feel responsible to contribute to the risk management of MP (Q7)

Table 14 Frequency Table for Responsibility and Commitment for RM

Sound sense of responsibility and commitment for RM									
		Q 12		Q 15		Q 14		Q 7	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
valid	5	104	52,3	35	17,6	11	5,5	91	45,7
	4	76	38,2	37	18,6	21	10,6	81	40,7
	3	13	6,5	21	10,6	19	9,5	22	11,1
	2	2	1,0	50	25,1	53	26,6	3	1,5
	1	1	0,5	54	27,1	93	46,7	1	0,5
	total	196	98,5	197	99,0	197	99,0	198	99,5
missing		3	1,5	2	1,0	2	1,0	1	0,5
total		199	100,0	199	100,0	199	100,0	199	100,0

In addition to the interest of employees to contribute to the RM of MP (84.9), it was confirmed by 86.4% of the respondents that they feel responsible to do so. As a contingency analysis shows, from 169 who agreed they are interested to contribute, 156 confirmed that they feel responsible for the same. However, this does not represent causality, as the researcher cannot say that interest causes responsibility or the other way round, but a strong relationship between both can be assumed. Although many respondents feel responsible to participate in the RM process (86.4%), the researcher found it interesting to learn that 36.2% have not yet reported any potential risk in their working area to MP. This generally corresponds with the 55.3% of the respondents who confirmed not having identified any potential risks of MP in their working area before.

Interestingly, most of the respondents (90.5%) agreed to the statement that they deal thoroughly and deliberately with potential risks of MP in their working area. Same as the employee's interest to contribute to the RM process, a thorough and deliberate handling of risks represents a required precondition for a sound RC in the researcher's view.

Q14 (It is not my responsibility to identify potential risks of MP in my working area) and Q7 (I feel responsible to contribute to the risk management of MP) sound very similar. Therefore, it was interesting to see whether the responses have the same direction. Whereas Q14 is formulated with a negative orientation, Q7 is positive, which both have to be considered for their comparison. 73.4% disagreed with the statement in Q14 so they see risk identification as their responsibility within MP. 86.4% agreed they feel responsible to contribute. In general, this goes to the same direction. However, responsibility for contribution to the RM process does not necessarily include risk identification in the view of the respondents. Obviously, some see the responsibility to identify risks not with themselves (in particular or solely), which does not hinder them to feel generally responsible to contribute to it.

		Q7					
		+2	+1	0	-1	-2	Total
Q6	+2	0 0,0%	1 50,0%	0 0,0%	0 0,0%	1 50,0%	2 100,0%
	+1	1 20,0%	4 80,0%	0 0,0%	0 0,0%	0 0,0%	5 100,0%
	0	1 4,8%	8 38,1%	9 42,9%	3 14,3%	0 0,0%	21 100,0%
	-1	15 24,6%	37 60,7%	9 14,8%	0 0,0%	0 0,0%	61 100,0%
	-2	73 67,6%	31 28,7%	4 3,7%	0 0,0%	0 0,0%	108 100,0%
Total		90 45,7%	81 41,1%	22 11,2%	3 1,5%	1 0,5%	197 100,0%

To understand any potential significant differences in responsibility and commitment for RM, the researcher analysed the different socio-demographic variables, i.e. gender, age, location, supervisory responsibility and job tenure in more detail. Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in responsibility for and commitment to RM within MP	There is no difference in responsibility for and commitment to RM within MP	0,014	0,118	0,156	0,458	0,720

Null Hypo disproven as .05 is not exceeded

As a result of independent sample t-test, there is a difference in sense of responsibility and commitment for RM by gender within MP. Comparing the means for, the researcher found out that male employees (M=10.96; SD=1.89) scored higher than female employees (M=10.19; SD=2.17), which means that male employees agreed comparatively more to the statements that referred to sense of responsibility and commitment for RM compared to their female colleagues within MP.

In summary, managerial expectations are generally fulfilled with regard to the employees' sense of responsibility or commitment, whereas this is not put into practice, as employees disagreed with the statements that refer to actual risk identification or reporting. However, the results differ significantly by gender (female versus male employees). With regard to location, gender, age and job tenure, no significant difference in sense of responsibility or commitment could be confirmed by the researcher.

5.3.4 Risk awareness and interest for RM at the workplace

- I have not yet identified potential risks of MP in my working area before (Q13)
- I have a clear understanding of risk management in general (Q1)
- I am aware of the risk management policy of MP (Q9)
- I am not interested in contributing as a part to the overall risk management system of MP (Q6)

Table 15 Frequency Table for Risk Awareness and Interest in RM

Risk awareness and interest in the workplace								
		Q 13		Q 1		Q 9		Q 6	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
valid	5	14	7,0	47	23,6	20	10,1	2	1,0
	4	38	19,1	59	29,6	29	14,6	5	2,5
	3	34	17,1	62	31,2	25	12,6	21	10,6
	2	54	27,1	27	13,6	43	21,6	61	30,7
	1	56	28,1	3	1,5	80	40,2	108	54,3
	total	196	98,5	198	99,5	197	99,0	197	99,0
missing		3	1,5	1	,5	2	1,0	2	1,0
total		199	100,0	199	100,0	199	100,0	199	100,0

Interest and risk awareness presents a significant basis to perform RM, therefore it was interesting to learn that the majority of the respondents confirmed that they have a clear understanding of RM in general (53.2%) and they are interested to contribute to the RM of MP (84.9%). In particular, the latter represents a very good precondition for a sound RC in the opinion of this researcher. Although understanding (53.3%) and willingness to contribute (85.0%) was indicated by the respondents, only half of the respondents (55.3%) confirmed that they have already identified potential risks of MP in their working area. This may assume that there are departments where no risks exist at all, as the respective employee is interested in RM, but there was nothing found so far that may represent a risk, which appears to be questionable by this researcher. A reason for that may be that lots of them (61.8%) indicated they are not aware of the RM policy of MP. So there might be interested in RM, but there are not aware what MP regards as risks and expects from them how to handle these.

Therefore, the researcher was interested to explore the relation between the understanding of RM (Q1) and the awareness of the RM policy (Q9) by the respondents. 43 respondents (out of 106) who indicate they have an understanding of RM also know the RM policy. In contrary to that 51 of them do not know the RM policy of MP. This indicated that they have gained their knowledge about RM from other sources, beyond MP's RM policy. In addition to that, from 30 persons who acknowledged they do not have a clear understanding of RM in general, 27 are not familiar with the RM policy of MP. That may lead to the conclusion that these persons may obtain an understanding of RM, when knowing the RM policy, but this does not represent a direct consequence, unless the RC policy is clear and comprehensible.

		Q9					
		+2	+1	0	-1	-2	Total
Q1	+2	13	13	4	9	8	47
		27,7%	27,7%	8,5%	19,1%	17,0%	100,0%
	+1	5	12	8	12	22	59
		8,5%	20,3%	13,6%	20,3%	37,3%	100,0%
	0	1	4	11	15	29	60
		1,7%	6,7%	18,3%	25,0%	48,3%	100,0%
	-1	0	0	1	6	20	27
		0,0%	0,0%	3,7%	22,2%	74,1%	100,0%
	-2	1	0	0	1	1	3
		33,3%	0,0%	0,0%	33,3%	33,3%	100,0%
	Total	20	29	24	43	80	196
		10,2%	14,8%	12,2%	21,9%	40,8%	100,0%

The researcher was interested to understand any potential significant differences in risk awareness and interest for RM at the workplace by different socio-demographic variables, i.e. gender, age, location, supervisory responsibility and job tenure. Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in risk perception and awareness within MP	There is no difference in risk perception and awareness within MP	0,866	0,454	0,002	0,000	0,001

Null Hypo disproven as .05 is not exceeded

As the t-test confirmed, there is a difference in risk awareness and interest in risk topics by location, i.e. DUS and SAR. Comparing the means, the researcher found out that employees from DUS (M=9.93; SD=2.07) scored significantly higher than employees from SAR (M=8.65; SD=2.67), which means that DUS employees agreed comparatively more to the statements that referred to risk awareness and interest for RM at the workplace.

Comparing the means of age group, employees above 50 years (M=8.13; SD=2.34) disagreed to the statements more than employees of “30 years and below” (M=10.42; SD=1.88) and “31-39 years” (M=10.56; SD=1.93).

Comparing the means of job tenure group “1-3 years” (M=10.17; SD=2.13) and “4-7 years” (M=10.45; SD=2.09) with “up to 1 year” (M=8.36; SD=2.06) and “more than 8 years” (M=8.91; SD=2.37), the researcher found out that the employees with organisation tenure between one and seven years agreed comparatively more to the statements regarding risk awareness and interest for RM than their colleagues with shorter (“up to 1 year”) and longer (“more than 8 years”) company affiliation.

In summary, managerial expectations are generally fulfilled with regard to the employees' understanding in and interest for RM at their workplace. Instead, employees confirmed they are not aware of the respective policy, which represents a difference between employees' perception compared to the expectations by management. However, these results differ significantly by location (SAR employees appear to meet the expectations more compared to DUS employees, in particular with regard to the awareness of the policy), age (employees above 50 years stated to be less interested in RM) and job tenure (employees with organisation tenure between one and seven years confirmed to be comparatively more aware and interested in RM). With regard to gender and hierarchy level, no significant difference in risk awareness and interest for RM at MP could be confirmed by the researcher.

5.3.5 Tolerate mistakes and learn from them (Critical abilities)

- I understand recognising mistakes and failures in my working area as a chance for job-related improvement and development (Q26)
- I am expected by others to point out potential failures and risks of MP in my working area that I might not have identified so far (Q22)
- I do not have any worries or fears in reporting to my direct line supervisor any potential risks of MP in my working area (Q17)

Table 16 Frequency Table for Critical Abilities and Self-Confidence

Tolerate mistakes and learn from them							
		Q 26		**Q 22**		**Q 17**	
		Freq.	%	Freq.	%	Freq.	%
valid	5	71	35,7	97	48,7	135	67,8
	4	75	37,7	69	34,7	48	24,1
	3	37	18,6	22	11,1	8	4,0
	2	8	4,0	6	3,0	2	1,0
	1	6	3,0	2	1,0	5	2,5
	total	197	99,0	196	98,5	198	99,5
missing		2	1,0	3	1,5	1	0,5
total		199	100,0	199	100,0	199	100,0

Self-confidence appears to be well developed, as a high number of respondents (92.0%) confirmed that they do not have any worries or fears in reporting any potential risks of MP to their direct line supervisor. This indicates either a good relation between employees and supervisors or a healthy self-confidence of employees not being afraid of negative consequences. This is supported by another high amount of agreements by 83.4% of the respondents to the statement that they are expected by others to point out

potential failures and risks of MP that they might not have identified so far, which may attest good critical abilities. In addition to that, as 73.5% of the people agreed they understand mistakes and failures as a chance for job-related improvement and professional development, the respondents appear to tolerate mistakes and learn from them, by their own account. In summary, critical abilities and self-confidence as a basis for identifying and reporting risks without any fear of negative consequences represent a very good starting point for RM, and indicates an appropriate RC at MP.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in critical abilities and self-confidence in RM within MP	There is no difference in critical abilities and self-confidence with regard to RM within MP	0,830	0,707	0,453	0,642	0,853
		Null Hypo disproven as .05 is not exceeded				

Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

In summary, employees' perception is mainly in line with managerial expectations regarding critical abilities and self-confidence in RM as employees confirmed they have no worries or fear when reporting risks and when mistakes and failures are recognised in their working area. In that, there are no significant differences in the results for any socio-demographic characteristics, i.e. age, gender, location, hierarchy level or job tenure. Therefore, it can be assumed that all employees generally perceived towards the same direction in terms of tolerating mistakes and learning from them, which generally fulfils managerial expectations.

5.3.6 Cross-departmental exchange about RM topics

- I do not discuss potential risks of MP with colleagues from other departments (Q21)
- In my working area potential risks of MP are discussed on a regular basis (Q5)
- I support my colleagues in identifying and dealing with potential risks at MP (Q23)
- In principle, risk management does only work when I collaborate with my colleagues, also from other departments (Q20)

Table 17 Frequency Table for Cross-departmental Exchange in RM

Cross-departmental exchange about RM topics									
		Q 21		Q 5		Q 23		Q 20	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
valid	5	19	9,5	33	16,6	82	41,2	93	46,7
	4	38	19,1	57	28,6	83	41,7	69	34,7
	3	53	26,6	52	26,1	19	9,5	27	13,6
	2	54	27,1	39	19,6	9	4,5	7	3,5
	1	33	16,6	18	9,0	1	0,5	2	1,0
	total	197	99,0	199	100,0	194	97,5	198	99,5
missing		2	1,0	0	0,0	5	2,5	1	0,5
total		199	100,0	199	100,0	199	100,0	199	100,0

The majority of respondents reported that they support their colleagues in identifying and dealing with potential risks at MP (82.9%). A reason for that may be given in Q20, as 81.4% agreed that in their opinion RM does only work when they collaborate with their colleagues, also from other departments. In that context, it was noticed that only half of them (43.7%) confirmed they discuss potential risks of MP with colleagues from other departments. However, this was only particularly disagreed by 28.6%, whereas 26.6% neither agreed not disagreed. This indicates a relatively equal distribution between agreement and disagreement, with a tendency to agreement that they exchange and discuss risk issues that may result from unclear expectations or policies. This was also confirmed with the statement whether or not potential risks are discussed on a regular basis, which was agreed by 45.2%, whereas 28.6% disagreed and 26.1% provided a neutral answer.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in cross-departmental exchange about RM topics within MP	There is no difference in cross-departmental exchange about RM topics within MP	0,001	0,065	0,361	0,010	0,075
		Null Hypo disproven as .05 is not exceeded				

The researcher was interested to understand any potential significant differences in cross-departmental exchange about RM topics by different socio-demographic variables, i.e. gender, age, location, supervisory responsibility and job tenure. Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

Within MP, there is a difference in cross-departmental exchange about RM topics by gender, confirmed by t-test. Comparing the means, the researcher discovered that female employees (M=10.22; SD=2.27) scored higher than male employees (M=9.07; SD=2.15), which means that women agreed comparatively more to the statements that referred to cross-departmental exchange compared to their male colleagues within MP. Furthermore, the means of the age group "above 50 years" (M=8.57; SD=2.01) also differs significantly from the means of employees with an age of "30 years and below" (M=10.11; SD=2.3) and "31-39 years" (M=9.93; SD=2.21) in terms of cross-departmental exchange about RM topics within MP. Employees above 50 years agreed comparatively less to the statements regarding cross-departmental risk information sharing and discussions than their younger colleagues.

In summary, managerial expectations are generally fulfilled with regard to the employees' understanding of the importance of cross-departmental information sharing and exchange and they are open to support other colleagues. In fact, risk information is not shared and discussed with other departments and not with within departments, as confirmed by the employees. However, these results differ significantly by gender (female employees confirmed risk discussions with other departments comparatively more than male employees) and age (younger employees stated they exchange with others about risk topic more than older colleagues above 50 years). With regard to location, job tenure and hierarchy level, no significant difference in cross-departmental exchange about RM topics could be confirmed by the researcher.

5.3.7 Entrepreneurial, unlimited, long-term thinking about RM

- When dealing with risks, it is not important to think long-term, but mainly about short-term success (Q3)
- It is not important for me to think "out of the box" to identify potential risks of MP beyond my working area (Q24)
- If I deal thoroughly and deliberately with potential risks in my working area, there will be a benefit not only for MP, but also for me (Q25)

Table 18 Frequency Table for Entrepreneurial Thinking in RM

Entrepreneurial, unlimited, long-term thinking		Q 3		Q 24		Q 25	
		Freq.	%	Freq.	%	Freq.	%
valid	5	7	3,5	24	12,06	120	60,3
	4	16	8,0	16	8,0	55	27,6
	3	42	21,1	14	7,0	15	7,5
	2	51	25,6	48	24,1	4	2,0
	1	82	41,2	94	47,2	2	1,0
	total	198	99,5	196	98,5	196	98,5
missing		1	0,5	3	1,5	3	1,5
total		199	100,0	199	100,0	199	100,0

The majority of respondents (71.4%) confirmed that for them is important to think "out of the box" to identify potential risks of MP beyond their working area, which may be an evidence of entrepreneurial thinking of the employees. However, it has to be pointed out that 12.1% strongly disagreed with that statement, which cannot be fully ignored in the view of this researcher. This may indicated that for some employees, an isolated view and a silo mentality is the way they behave at work, which does not represent indication for a sound RC. However, 87.9% persons have confirmed that there is a benefit not only for MP, but also for them, if they deal thoroughly and deliberately with potential risks in their working area. In addition to that, more than half of the respondents (66.8%) feel that it is important to think long-term, and not only about short-term success when dealing with risks. That means they have indeed understand the benefit, but transferring this to their daily work appears to be lacking. This may represent room for improvement, but shows that understanding and awareness already exists in parts, so clarity and transparency about what is expected by them may be required to make RM work in their daily routine.

To understand any potential significant differences in entrepreneurial, unlimited, long-term thinking in RM, the researcher analysed the different socio-demographic variables, i.e. gender, age, location, supervisory responsibility and job tenure in more detail. Complete results of independent sample t-test for gender, supervisory responsibility and location, and ANOVA test for age groups and job tenure is presented in Appendix 20.

		T-Test results			ANOVA results	
Hypothesis	Null Hypothesis	Gender	Superv. Resp.	Location	Age	Job Tenure
There is a difference in entrepreneurial, unlimited, long-term thinking within MP	There is no difference in entrepreneurial, unlimited, long-term thinking within MP	0,481	0,526	0,636	0,994	0,020

Null Hypo disproven as .05 is not exceeded

As a result of ANOVA test, there is a difference in entrepreneurial, unlimited, long-term thinking about RM by job tenure within MP. Comparing the means, employees with job tenure of "1-3 years" (M=10.15; SD=1.86) agreed most to the related statements, whereas long-tenured employees with "more than 8 years" (M=8.96; SD=1.83) affiliation agreed least in comparison to other job tenure groups.

In summary, managerial expectations are generally fulfilled with regard to the employees' sense of responsibility or commitment, whereas this is not put into practice, as employees disagreed with the statements that refer to actual risk identification or reporting. However, the results differ significantly by job tenure. With regard to location, gender, age and hierarchy level, no significant difference in sense of responsibility or commitment could be confirmed by the researcher.

5.4 Interpretation & Critical Discussion

This chapter refers to interpretation of the results from both, the interviews with the executives as well as the survey conducted with all relevant employees.

5.4.1 Target Risk Culture

The identified target RC of MP consists of the following key statements that are required and intended by MP management, as summarised from the interviews:

- management role model (expected behaviour in RM) to be put into practice
- clarity & transparency in RM process
- sound sense of responsibility and commitment for RM
- risk awareness and interest for RM at the workplace
- tolerate mistakes and learn from them; critical abilities; self-confidence
- team spirit; cross-departmental exchange about RM topics
- entrepreneurial, unlimited, long-term thinking about RM

Furthermore, the components Responsibility/Commitment, Identification/Role Model and Perception/Awareness were the most important with regard to the RC as intended by MP management. In contrast to that, Strategy/Limitations and Skills/Abilities are the

least relevant for them. In the following, these are discussed regarding their relevance and meaning compared to the literature.

Management role model (expected behaviour in RM) to be put into practice

With regards to the target RC within MP, almost all of the interviewees highlighted that role modelling by management and a "continuous setting of examples" are essential in the context of their intended RC. That means that what management expects from others, i.e. their employees, must also be displayed by them first. This requirement is also confirmed by many authors who provide their understanding with regards to key indicators for a healthy RC. For example, Levy, Twining and Lamarre (2010) emphasise a visible and consistent role-modelling of desired behaviour and standards, just like Althonayan, Killackey and Keith (2012) who point out that a strong RC requires committed executive leadership and senior managers that model the RM culture they wish to see in the organisation.

This is also confirmed by a study conducted by Bungartz (2003) who found out that management has a very strong impact on RC, even more than staff from Controlling, Internal Audit and Risk Management department. A reason for that may be the general role modelling by management. In contrast to that, other authors do not refer explicitly to management role model, but to leadership in a broader sense. They highlight that management should give attention and resources to RM (Blue, 2011) and should clearly sponsor and challenge RM activities (Hindson, 2011). This does not necessarily mean to set an example by adhering to own rules and guidelines. However, the role model function by management was highlighted by the MP interviewees in particular, as it increases executive's credibility, which is more precise than just referring to a strong leadership, as some authors do.

With regards to CREM, management role model could not be found as a key requirement or need in any relevant literature. In contrast to theoretical knowledge, management role model seems to have relevance in CREM practice, as it was mentioned by MP interviewees. However, this appears not to be a particular requirement of CREM, but of RM and the expected behaviour.

Clarity and transparency in RM process

From the MP interviewees' perspectives, the target RC includes an RM process that is clear and transparent to all employees. That also required for them that expectations, as well as roles and responsibilities in RM, are clearly communicated through the entire organisation. This position is generally confirmed by most of the authors considered in this study. When defining a strong and healthy RC, most authors highlight clarity and transparency in the context of RM. For example, Levy, Twining and Lamarre (2010) emphasise a clear and well-communicated risk strategy, or Barrett and Baret (2012) who point out timely, transparent and honest communications as a key indicator for a sound RC. Furthermore, Blue (2011) refers to communicating risks openly. Clear processes also imply that roles and accountabilities for managing risks are defined, as noted by Hindson (2010), or that there is a clear accountability for and ownership of specific risks, as per IRM (2012). Transparency in internal processes also represents a key requirement in CREM. Especially, transparency of RM has increased, even if the nature of the CRE processes themselves are largely unchanged (CBRE, 2012).

Literature goes even further in terms of the grade of embedding RM in the working environment of CREM. For MP interviewees it is important that RM processes and guidelines are available to and clearly understood by their employees, but it still represents a task in addition to their daily work. A reason for that may be that many non-property companies regard CREM as a secondary business, as their company is not primarily in the RE industry (Brown, 1993; Schäfers & Gier, 2006). Although MP is indeed in the CRE business, they nevertheless regard RM not as part of their day-to-day routine but as a separate task by a few persons, i.e. the Risk Owners.

In view of MP, their employees need to know where to obtain required RM information or who to contact in case of questions or concerns. Instead, some authors regard it as essential that RM is embedded as part of every employee's daily job as a precondition for a strong and especially effective RC. To be more precise, Rasmussen and Marks (2010) demand devolving RM into the workplace and Hindson (2011) requires RM to be part of day-to-day core processes and procedures of the company. This is also confirmed by Barrett and Baret (2012) who require that risk is considered in all activities, from strategic planning to day-to-day operations, in every part of the organisation. For Hindson (2011), in an organisation with a strong RC, RM influences

key decisions in all areas. The respective authors seem to be more sophisticated and advanced compared to the needs and expectations of MP interviewees. In the opinion of this researcher, this could represent a second step, once the current accumulated need as identified by the interviewees is rectified.

Sound sense of responsibility and commitment for RM

The target RC is characterised by a healthy attitude towards responsibility and commitment, in the view of MP interviewees. These qualifications are also mentioned in almost all reviewed literature, e.g. high level of employee commitment (Musslewhite, 2005), pride and commitment drives continuous improvement (Hindson, 2011), individual and collective responsibility (Barrett & Baret, 2012), staff and management understand RM as joint responsibility (Brüesch & Kager, 2010), risk ownership is accepted and acted (Hindson, 2011) or sense of responsibility by all member of the organisation has strong relevance in the context of RC (Bungartz, 2003). Consequently, this is of equal high relevance for both MP and theorists.

Risk awareness and interest for RM at the workplace

Awareness and interest in the workplace represents a precondition for a strong RC, as required by MP interviewees. Risk awareness and consciousness are mentioned by many authors in literature as a major requirement for a healthy and sound RC, for example encouraging risk awareness across the organisation (Rasmussen & Marks, 2010; Hindson, 2010; Hürlimann, 2011; Box 2010). In contrast to that, interest at the workplace with regards to RM, i.e. to identify, assess, communicate and manage potential risks in one's own working area, is not mentioned in particular. Maybe interest is taken as a precondition to develop awareness and consciousness for risk, as someone who is not interested in a topic may not be perceptive to it. What is highlighted in particular is that awareness of reputation risk has become far more prominent in CREM, indicating that RM in CREM is no longer 'nice to have', but a major requirement (CBRE, 2012)

In the opinion of this researcher, this emphasises the importance of risk awareness not only for the MP interviewees, but also for other practitioners and theorists in equal measure. This is supported by the result that Perception/Awareness is selected under the

three most relevant RC components for MP management that are developed from the literature before.

Tolerate mistakes and learn from them; Critical abilities; Self-confidence

It is regarded as essential by MP interviewees that people in their organisation understand that risk identification enables its management and that an identified risk or failure is an opportunity to deal with it consciously, and learn from it. This requires critical abilities and self-confidence to accept and admit when a risk is detected by others in one's own area of responsibility. This qualification is also mentioned by others in connection with a strong and healthy RC. For example, Persad (2011) highlights active learning from mistakes as well as Hindson (2010), who advocates a sound RC where people learn from poorly managed risks without shooting the bringer of bad news. This actively seeking to learn from mistakes and near misses is also confirmed by IRM (2012). In the study by Bungartz (2003), the ability to manage conflict, that can also be associated with critics and confrontation, was highlighted as an attribute with very strong relevance to RC.

Others just refer to learning opportunities for employees without providing any further detail regarding what initiates or triggers this learning (Althonayan, Killackey & Keith, 2012). Some authors accentuate learning from positive events, i.e. incentives, which encourage people to do the right things (Levy, Twining & Lamarre, 2010) or skilled risk taking is rewarded and valued (Hindson, 2010). During the interviews, only one MP Manager claimed an incentive policy that is related to individual goals as required for a proper RC, whereas for the remaining interviewees this appears to be not worth mentioning. What seem to be more important is that risks and mistakes are tolerated, and they should be actively managed and there should be the ability to learn from them. Consequently, risks should not have any negative connotations, but represent valuable information that is shared across the entire organisation.

However, it is important to mention that 'tolerate' does not mean that mistakes are permitted, as errors can neither be allowed nor forbidden (Abed, 2007). Furthermore, it is important to communicate that errors are those from which something can be learned, but are not defects of people (IFF, 2009). However, mistakes involve a process of learning and enable human development. Therefore, an atmosphere without blaming

each other or finger-pointing is required, otherwise employees will probably prefer regulated processes and working routine, so innovation opportunities remain unused in a 'zero-error culture' (Abed, 2007). Due to this, it is important to tolerate mistakes, for both MP executives and the considered authors.

Team spirit; cross-departmental exchange about RM topics

"Territorial egotism" and "silo mentality" between the departments was mentioned by some MP interviewees as a weak point in their organisation. From their perspectives, sharing information and experiences as well as offering and accepting support among each other is required to come closer to the required target RC. This is confirmed by only a few authors, such as Rasmussen and Marks (2010) who suggest improving communication and team work, or Althonayan, Killackey and Keith (2012) who refer to information sharing and communication among departments and teams as an indicator for a sound RC within organisations. Hürlimann (2011) highlights that companies have to break down silos and managerial bottlenecks, as these barriers are almost always cultural instead of technical. For Borge (2013) 'collaboration' is important as employees have to be able to work together effectively on risk issues. The researcher noticed that many authors point out risk information flowing up and down the organisation and knowledge transfer between employees at all levels (IRM, 2012; Brüesch & Kager, 2010) or vertical escalation of threats (Persad, 2011), whereas not all of them also consider horizontal information sharing as relevant for a healthy RC. In the view of this researcher both are required, assuming that cross-departmental exchange was highlighted by MP interviewees, as this is lacking at present.

Since CREM has changed from their traditional role of isolated technical specialised knowledge to a more strategic relationship with their business units, team spirit and cross-departmental exchange is essential for CRE employees (Msezane & McBride, 2002). Consequently, it is not surprising that MP interviewees regard this also as a major requirement for their target RC.

Entrepreneurial, unlimited, long-term thinking about RM

This precondition for a healthy RC in the opinion of MP interviewees is closely linked to cross-departmental exchange but also goes a little further than that. It refers to an unlimited thinking in the long-term that concerns the entire organisation, in a way how

an entrepreneur would do for his/her own company. Compared to the literature, the researcher investigated that this issue is hardly mentioned in any context with strong RC. Only a few authors refer to thinking about the whole organisation (Persad, 2011) or establishing enterprise-wide thinking (Althonayan, Killackey & Keith, 2012).

In contrast to that, an entrepreneurial or managerial attitude is mentioned more often in the context of requirements of CREM employees, especially of CREM executives, as well as a more comprehensive, multifaceted view of the entire organisation (IREM, 2008; Veale, 1989; Pope, 1985). A reason for that may be the long-term character of CRE decisions as well as the dynamics of the operating unit and the company's core business that corporate properties has to correspond with. For example, if the operating unit intends to expand to a new country in the near future, the CRE unit has to be familiar of the respective RE market in advance (or have access to relevant information or consultants), to advise or recommend whether to lease or buy a property. Consequently, CRE employees have to keep an eye on the entire organisation to be prepared for any changes that may also affect their CRE. Having the long-term view internalised as a CRE unit, in the opinion of MP management the same attitude is important in RM when developing an appropriate RC.

Although RC is a conventional term in business one must take care not to prescribe one 'best' culture (Sloan, 2011). However, there are some characteristics that describe a strong and healthy RC in the opinion of different authors that are not explicitly mentioned by MP interviewees, as discussed in the following. Furthermore, there are certain characteristics of a strong RC relevant to some authors that are assessed as least important by MP interviewees, i.e. Skills/Abilities and Strategy/Limitations. For Levy, Twining and Lamarre (2010) a clear and well-communicated risk strategy indicates a strong RC. Similar evidence is given by Hindson (2010) who claims that appetite and boundaries of risk taking are discussed and agreed, within a sound RC. Persad (2011) requires evidence of management objectives linked to RM objectives as an indicator for a positive RC.

In fact, a study of KPMG (2013) confirmed that only 66% of 1,092 C-level executives from global companies of different sizes indicated their RM to be linked with strategic planning decisions. Referring to CREM specifics, the result of MP interviewees also fits

the assumptions of Krumm (2001) and O'Mara (1999) who point out that decisions about CRE are mostly taken near-sightedly without any strategic consideration, but on an ad hoc basis. Furthermore, it is recommended to CRE managers to ensure that their RE strategy is closely aligned with the corporate strategy assuming that this was not considered in the past by CRE managers (Holland, 2009). The same is true for their RM strategy to ensure integrity as well as a holistic approach in CREM (Huffman, 2002).

The same applies for Skills/Abilities, as there are authors with a different view, such as IRM (2012) who suggests that RM skills and knowledge are relevant and should be valued, encouraged and developed in a strong RC. In practice, a survey by KPMG (2013) highlights that 42% of 1,092 respondents say that a lack of relevant skills is the main obstacle to the full integration of RM functions in companies. Skills to identify and manage risks appear to be lacking in some crucial respects, although the importance was noticed by their organisations.

Whereas Seitter (2006) asserts that companies need to train and qualify their employees with regards to RM accordingly; this seems to be preconditioned or assumed in the view of MP interviewees that "only qualified people are employed" and that "no special skills and abilities are required" for RM. This may allow the conclusion that no particular attention is paid by MP to provide RM training to their employees, in contrast to the recommendation by different authors. According to Bon (1998) CREM is not a management field for which employees are especially educated prior to their employment. The same may be assumed for RM. Consequently, Bon (1998) expects that an important part of education in this field remains in the form of short training programs for those with specific needs, which may be true for CREM as well as RM. Today, there are specialised programs and courses offered at business schools and universities that focus on CREM or RM, such as the International Real Estate Business School (IREBS) at the University of Regensburg, Germany, who offer the 'Certified Real Estate Risk Manager'.

Furthermore, in the past, CREM was often regarded as a purely technical discipline (Ali, 2008). Due to this, non-property companies often employed only technical specialists in their CREM organisation, such as engineering/construction managers or architects (Krumm, 2001). The traditional scope of CREM in the past mainly included

construction and maintenance of buildings, however today, CRE requires a wide range of knowledge, starting from technical, legal, financial, marketing/sales to technical skills, depending on the respective position that is held in the CREM organisation. It also requires managerial skills, as CREM has become far more sophisticated and far more complex, and includes strategic considerations (IREM, 2008). It can be assumed that the smaller the CREM organisation is in terms of headcount, the broader the range of skills and knowledge of each individual is. In contrast to that, large CREM organisations may have access to more specialised employees in each specific department within the CRE organisation, such as RE lawyers in their legal department or RE accountants in their finance department. The latter is true for MP. Consequently, as the interviewees have indicated that "only qualified people are employed," it can be assumed that there are a lot specialised employees with expert knowledge in their respective working area. If so, these employees may lack the knowledge and experience beyond that of their specialised field, consequently they may require special training, such as training in RM, to develop an appropriate awareness and behaviour towards risks throughout the entire organisation, i.e. RC.

In addition to that, this researcher believes it is worth discussing Ethics/Values as there was no clear direction given by MP interviewees, as some highlighted this as most relevant, whereas others decided to the contrary. In the literature it was found that there are some authors who support ethics and values as an important characteristic. For example, Barrett and Baret (2012) refer to a commonality of purpose, values and ethics or IRM (2010) who advocate a commitment to ethical principles. In opposition to that, many authors do not mention ethics or values at all. This implies that there is also no clear direction in theory.

In the context of Ethics/Values, there is another issue worth mentioning, which is morality. Especially in CREM, which is closely linked with the construction industry, a lack of morality appears to be a critical matter, as it may also involve monetary benefits for individuals, e.g. in the tender and awarding process of services, when a company is accepted to participate or even wins a tender due to the bribery of employees. Once a fraud case is revealed or made public, this represents a reputation risk of both companies, i.e. the one which offers the bribe money and the bribe-taking company

(Wieland & Fürst, 2002). Within RC, good morality of all employees may protect the company against vulnerability in terms of bribery or corruption.

In contrast to the view of MP interviewees, some authors refer to certain technical conditions in the conjunction with RC. For example, Musslewhite (2005) brings forward stable and effective systems for getting things done as an indicator of a well RC. Also Rasmussen and Marks (2010), who state that determining controls before risks occur represent a predictor of a sound RC, do not provide any further detail how this control should look like, so that one could assume a technical or procedural instrument. In the opinion of this researcher, these points are not directly related to RC; an RC cannot be assessed healthy or sound when these are applied. These may represent procedures or tools that are placed by external management into the organisation. Instead, an indicator for a strong RC is that people comply with the risk policies and RM processes (Blue, 2011). This is completely supported by this researcher, although some people may take this for granted.

Furthermore, Hindson (2011) emphasises that a sustained RC is embedded in a company when it is robust, reproducible and not dependent on single individuals. As there is no further explanation available, one may assume that this also refers to RM, rather than to the RC in a narrower sense. On the other hand, this could refer to a strong RC that is not prone to external influences from outside the organisation or internal turbulences. If so, this may be contradictory to Musslewhite (2005), who points out that openness to and the ability to respond to changes in the external environment as characteristics for a successful RC. This researcher agrees with the latter, although a certain stability and sustainability of RC is certainly required.

In addition to that, MP interviewees refer to RC as an attitude that is developed from inside a person. It is described by these interviewees as “self-conception”, “self-confidence”, “common sense”, “interest” or “healthy attitude”. However, other interviewees highlighted that RC is more extrinsic in their understanding, as they refer to “an atmosphere of trust”, “sensitising people”, “communicating expectations” and “role model by management”. Comparing these statements with some RC definitions provided by literature, e.g. the norms of behaviour for individuals and groups within an organisation that determine the collective ability (Levy, Twining & Lamarre, 2010), a

pattern of basic assumptions that the group had learned and were to be taught to new members as the correct way to perceive (Cooper, 2010), it appears that RC is often regarded as imposed from the outside. In contrast to that, other authors claim that RC cannot simply be brought in but requires a kind of attitude or willingness by people to assimilate and adopt it (Musslewhite, 2005; Bungartz, 2006; Klügl, 2011). This important issue was identified by some interviewees of MP management who highlighted for example "self-conception", "interest" or "attitude" when they were asked about their connotation about RC. This supports the assumption that the intrinsic factor should not be underestimated or taken for granted regarding RC in working environments.

Moreover, the researcher was interested to learn more about the relevance of the RC components as previously developed from the literature. During the interviews, MP executives assessed them with regards to the relevance for their target RC. The outcome was that they assessed Responsibility/Commitment, Identification/Role Model and Perception/Awareness as the three most relevant. As this had not occurred before the last third of the interviews, this researcher intends to understand the application of the key components before presenting them to the interviewees. The reason was to learn how relevant these RC components are for the interviewees before providing them with these words for assessment. The frequency counting was conducted based on the first application of each component, i.e. either perception or awareness (or a closely related word as explained in the methodology chapter). It was not relevant to this researcher how often it was used, but if it was used at all before presenting these. This is why the overall application of one component could be eleven at most, based on the eleven interviews that were conducted.

When counting the frequency of occurrence of the RC components before presenting them to the interviewees, it was noticed that the three that were assessed as most relevant at a later stage, were also the most frequently used before the assessment, i.e. Responsibility/Commitment, Identification/Role Model and Perception/Awareness. For this researcher this represents a valid confirmation that these components indeed play a significant role with regards to RC. At least, they play a more important role than the other components for MP management. The results are presented in Table 19 and a more detailed description is provided in the following.

Table 19 Frequency of Occurrence of the RC Components

	A	B	C	D	E	F	G	H	I	J	K	L
	Identification Role Model	Responsibility Competence Commitment	Perception Awareness	Ethics Values	Transparency Clarity	Trust Confidence	Development Learning	Liability Accountability	Skills Abilities	Strategy Limitations	Entrepreneurship Sustainability	Togetherness Team Spirit
What is the first thing that crosses your mind, when you think of RC in general?	1	1	6	0	1	2	0	0	0	1	0	1
What do you associate with risk culture at MP?	0	1	0	0	1	1	1	0	0	0	0	0
Where do you see the biggest backlog?	4	5	5	1	5	4	1	0	2	2	2	2
How would an ideal scenario or setting of RC at MP look like in your opinion?	9	6	8	1	8	1	7	2	3	4	6	5
	14	**13**	**19**	**2**	**15**	**8**	**9**	**2**	**5**	**7**	**8**	**8**

As already highlighted, Responsibility/Commitment, Identification/Role Model and Perception/Awareness were the three most relevant key components for MP management in association with RC. Perception/Awareness is considered as particularly important in conjunction with RC in general, as well as for MP. In addition to that, the interviewees see the biggest accumulated need in that area. Surprisingly, also Transparency/Clarity resulted in a high position with regards to the ideal scenario and the backlog, but when it comes to the assessment, only three interviewees selected this as the most relevant. A reason for that potentially lies in the fact that this research asked them to select only three of them, whereas other key components have possibly taken precedence over this one. Furthermore, Transparency/Clarity was often used as an adjective to describe other key components in more detail, such as ‘clear responsibility’ or ‘clear role model’. That may be a reason why these words were included in the counting, as not only Transparency/Clarity was considered, but also closely connected words, such as ‘transparent’ and ‘clear’. In summary, Transparency/Clarity seems to serve as a characteristic for MP interviewees, to describe other important areas in more detail. That is why this has certain importance in this context, mainly together with other issues but not as self-contained key component.

Table 18 shows another issue worth mentioning. Whereas Development/Learning was not assessed as most relevant by the interviewees, it was often mentioned in the context of the ideal RC scenario for MP. From eleven interviewees, no less than seven people referred to this key component (or any closely related word) when describing the ideal scenario. As a potential reason, it was investigated that the interviewees used phrases such as “learning from mistakes”, “develop a sound sense of responsibility” or “develop an awareness” when talking about the ideal RC. As explained in the paragraph before, also Development/Learning was often used in relation with other key components. It was applied as a phrase to describe that other key components have to be learned or

developed, instead of having an independent relevance to the interviewees. However, it can be assumed that there is no accumulated need in the ability or willingness of the employees to learn, but in other issues that allow them to do so, such as Identification/Role Model or Transparency/Clarity as a potential precondition for Development/Learning.

A different assumption may be true for Trust/Confidence. MP interviewees assessed this as one of the three least relevant for the targeted RC. This was confirmed when counting the application of this phrase before presenting the key components. Only one interviewee stated this in the answer to the question about MP's ideal scenario of RC. Instead of this, four people interviewed referred to Trust/Confidence when reporting about the biggest accumulated need within MP.

In addition to that, it can be seen in Table 18 that the two components that were added to the framework, i.e. Entrepreneurship/Sustainability and Togetherness/Team Spirit appear to be relevant aspects for MP management. Especially when it comes to the target RC, these two were assessed as ideal and required by the interviewees. However, only two interviewees see an accumulated need in each of the two components.

Regarding the assessment of the current target RC achievement, management provided an almost consistent answer, i.e. 20% to 40%. As literature confirmed, this represents a similar result as previous studies also showed deficiencies in risk culture (Tritschler, 2001) or an insufficient enterprise-wide RC (Cheney, 2009). This is also acknowledged by Giebel (2006) who found out that especially in small and medium-sized companies the risk-oriented culture was assessed as insufficient.

Furthermore, in some studies respondents attested that their management had a very high risk awareness and explicit contribution to develop a strong RC, whereas risk awareness of other employees on lower hierarchy levels was regarded as less pronounced (Hoitsch, Winter & Bächle, 2005). It has to be considered that the respondents of this study consisted of Risk Management, Finance, Internal Audit and Accounting staff. A different view may emerge when including employees of other departments. However, this corresponds to one interviewee of the case study unit who also distinguished with regards to the hierarchy level. He/she assessed the development

of the target RC on top level above 35%, with a tendency to 50%, whereas lower hierarchy levels have less developed risk awareness in his/her opinion.

5.4.2 Existing Risk Culture

With regards to participation in the RC survey, it can be highlighted that comparatively more managers with supervisory responsibility (including 'Team Leaders') have participated in the survey. This may confirm an increased interest in this topic by them, or that they feel for more obliged, responsible or committed to contribute. However, the results of the survey confirmed no significant difference in risk awareness, interest, and sense of responsibility or commitment by hierarchy level. The only significant difference found out by this researcher was regarding management role model, as employees without supervisory level attested their supervisors (Divisional Director or Head of Department) a relatively higher extent in performing the role model function, compared to employees with supervisory responsibility that assessed their supervisors (Management Board). This is in contract to MP's own target RC requirement that maximum example should be set by the top management.

The same increased interest or sense of responsibility may be true for the employees who worked for MP for between one and three years, and participated in the study above the average (41 out of 51 = 80.2%). This may lead to the conclusion that a certain job tenure is required to feel responsible or committed, as only 22.6% of employees who are employees at MP for less than one year answered the survey (11 out of 49). Another reason may be that employees who are relatively new to an organisation feel that they have nothing valid to offer or add, as indicated by Foster Thompson and Surface (2007). After three years' employment, the participation rate continues to decline with increasing job tenure. Whereas from 92 employees with job tenure of four to seven years 39 of them participated (42.2%), from 263 persons who are employed at MP for more than eight years just 83 people responded (31.6%). Reasons for that may be that these employees regard participating in surveys as a waste of time when they have previously experienced that the company is reluctant to change, or they are satisfied as it is and want nothing to be changed in their working environment (Foster Thompson & Surface, 2007). There may be other reasons for these employees not responding, however it was confirmed for this study that employees with job tenure between one and three years are the most willing participants.

In terms of survey results by job tenure, there was indeed a significant difference in risk awareness and interest at the work place investigated by this researcher. Employees with job tenure between one and seven years agreed comparatively more to the respective statements compared to their colleagues who worked less than one year or longer than eight years for MP. The same is true for entrepreneurial, unlimited, long-term thinking in RM. It can be assumed that employees who exceeded one year's job tenure may have developed a certain commitment to the company, included an interest towards the company to have long-term success with a sustainable business. The same should also be true for employees with job tenure longer than eight years, so other reasons might exist for them to disagree to the survey statements to a greater extent compared to their other colleagues. Disappointment by the employer, disinterest in the company's health, complacency or self-assurance about job guarantee or a high severage package may represent reasons for long-term employees to be less interested in RM at the workplace. However, it may also be the case that they have not just obtained a clear understanding of the purpose of RM and the consequences of not having a proper RM in place.

For other categories, such as location (rages between 37.3% and 37.6%), gender (between 35.5% and 40.9%) or age (between 32.3% and 49.9), the results are relatively balanced and there are no further extremes to allow any specific interpretation of the reasons for their attendance or non-attendance. Instead, the survey results showed differences by gender and age. Male scored relatively higher to the statements referring to sense of responsibility and commitment for RM than their female colleagues that represents a surprising result to this researcher, without having any specific explanation for that in hand. Employees older than 50 years agreed comparatively less to the statements with regard to management role model, risk awareness and interest at the workplace as well as cross-departmental exchange. As there can be a relation between age and job tenure assumed within MP, the same reasons may apply as mentioned before: Disappointment by the employer, disinterest in the company's long-term survival or self-assurance about job guarantee or a high severage package.

However, the provided reasons by the researcher just represent a first interpretation. To deepen the search for individual justifications, that could be generalised for certain socio-demographic groups when statistically possible, it requires further qualitative

research in more depth with the employees who had attended the survey, such as interviews or another anonymous survey, to fathom and comprehend the reasons for their particular assessments. It could also be interesting to ask non-participating employees for their motives for not taking part in the survey. This represents a recommendation by this researcher, to allow more accuracy in the analysis of the results or the response rate. Without these data, the researcher feels no capable of confirming or disproving any correlation between response rate and survey results, such as Rossiter (2001), Reilly and Wrensen (2007) or Foster Thompson and Surface (2007), for this study.

To analyse and discuss the survey results in more detail, the researcher concentrated on single statement that raised particular interest by this researcher. In summary, there were four statements in the survey that received the most unfavourable assessments by the employees, compared to the target RC and consequently represents the weak points of the existing RC of MP.

I do not know what MP expects from me when dealing with potential risks (Q8)

Having analysed this statement with regards to statistical data, there are no particular differences recognised in any of the subgroups of gender, location, job tenure, age or supervisory responsibility. However, it can be highlighted that with increasing age there is a slight tendency towards better understanding of what is expected from them, which may result from increased work experience. Contradictory to that seems to be that respondents with job tenure of less than one year declare to know what is expected from them when dealing with risks, compared to respondents that are employed with MP longer than one year. Female respondents also seem to be less aware of the company's expectations, in contrary to male respondents, but the difference can be regarded as negligible.

I am aware of the RM policy of MP (Q9)

When considering statistical data, it has to be highlighted that there is a difference with regards to location. Whereas 72.6% of the employees who participated in the survey from DUS stated that they are not aware of the RM policy of MP, only half of the employees (48.8%) from SAR indicated the same. To crosscheck this result, 17.7% of DUS respondents confirmed they know the RM policy. In SAR, these are 37.2% of the

respondents. A reason for that may be that the person responsible for RM is located in SAR, and possibly maintains closer contact to SAR employees compared to the employees located in DUS.

This may be in contrast to the overall results for risk awareness and interest for RM at the workplace by location, where DUS employees scored significantly higher than their SAR colleagues, with regard to Q1, Q6, Q9 and Q13, whereof Q9 refers to the employees' knowledge of the RM policy. In fact, that means that respondents from DUS agreed to Q1, Q6 and Q13 that refer to previous risk identification, general interest in RM and a clear understanding of RM in general, to a higher extent than SAR employees, who confirmed being aware of the RM policy more often than DUS people.

In addition to the differences with regards to location, it is remarkable that only 33.3% of the respondents above 50 years declared they are not aware of the RM policy (48.9% confirmed they are). Instead, lack of policy knowledge was acknowledged by 55.0% to 88.5% by the other age groups (whereas only 3.8% to 28.8% confirmed they knew the policy). In that, it can be noted that the likelihood of awareness of RM policy increases in line with the age of the respondents. A reason for that may be that there are comparatively older employees located in SAR than in DUS.

With regards to supervisory responsibility, it is remarkable that there is no clear difference between respondents with and without supervisory responsibility. As the Management Board and Divisional Directors on the second hierarchy level are nominated as Risk Owners and are requested to identify, assess and report risk-fraught activities on a quarterly basis. As the Risk Owners are responsible for the actual dealing with the risk, it was expected by this researcher that they are aware of the RM policy of MP. However, survey results confirmed the opposite.

With regards to gender and job tenure, there are no major differences. Female respondents provided a slightly higher disagreement compared to their male colleagues, however, both tended to the same direction of not being aware of the RM policy of MP.

There is not enough information at MP available to me how to deal with potential risks (Q11)

In contrast to the aforementioned, 42.9% of the respondents with supervisory responsibility felt that there is not enough information at MP available how to deal with potential risks, whereas this is only confirmed by 23.9% of the respondents without this responsibility. As the Management Board and Divisional Directors on second hierarchy level are nominated as Risk Owners, and they have confirmed that they are unaware of the RM policy, it seems that they feel a certain need to receive more information on that. In contrast to that, respondents without supervisory responsibility appear to have a minor information demand, assuming they do not have information obtained from other sources beyond the RM policy that caused a satisfaction of this need. This is in line with the general interest in RM of MP respondents.

In addition to that, it is remarkable that respondents with an age above 50 years, whereof 48.9% confirmed they were aware of the RM policy of MP, seems to have an increased need of information, compared to their younger counterparts. 55.6% confirmed they do not have enough information available on how to deal with potential risks, whereas this is only confirmed by 10.6% to 29.5% of the younger respondents. As most of the respondents agreed that the RM policy is clear and comprehensible to them, the requirement of information appears not to be caused by poor quality of this policy. All the more, it can be assumed that employees who are aware of the RM policy require further, advanced information about RM. This may be constituted through the interest of the respondents in the RM topic.

The need of further information about RM seems to be more developed in SAR (35.5% stated there is not enough information at MP available) compared to DUS (only 19.3% confirmed the same). Same reason applies as assumed before. With regards to gender and job tenure, there are no clear differences within the different groups.

In general, it is clear to me what happens with the information regarding potential risks when I report these (Q16)

Employees with supervisory responsibility (42.9% confirmed this statement) generally appear to be better informed about the risk information flow within MP compared to employees without supervisory responsibility (only 21.2% confirmed this statement). A

reason for that may be that some of these persons are more involved in the management decision processes and they take part in regular directors' meetings with each other, so they have further information sources compared to their employees without supervisory responsibility. However, it is remarkable that the majority of respondents, with or without supervisory responsibility, did not agree with this statement, confirming that there is a general lack of understanding what happens with the risk information.

Furthermore, with increased age of employees who participated in the survey, clarity of RM communication in this regard seems also to ascend. This may be a result of increased professional experience about general information flow or work routines, or personal calmness or disinterest towards these information, just to name a few, so that this lack is compensated, resulting in increased agreement to this statement with ascending age of the respondents.

Female respondents confirmed slightly less clarity about what happens with information regarding potential risks when reported, compared to their male counterparts. Only 22.4% of the women agreed with this statement, whereas a contrasting 30.6% of the men did. This corresponds to the results with regards to the other statements, as female respondents feel a little less informed in RM issues, or they have an increased need for relevant information, in contrast to the male respondents.

The same result is true with regards to the different locations. More respondents located at SAR (39.5%) confirmed they are aware of what happens with risk information within MP, than the respondents from DUS (15.8%). The proximity of SAR employees to the person in charge of RM who is also located there, may represent a reason, or the nature of jobs, as many of SAR employees deal with Finance, Accounting or IT issues, where RM information may be communicated more often and more clearly, due to consideration of risk-relevant issues in the financials, e.g. accruals or provisions. So there might have a better understanding what happens with risk information and where these ultimately end up.

The following statements received the highest agreement in percentage, i.e. 'strongly agree' or 'agree'. In that, statements with negative orientation were transferred to the positive, and also the result that this statement received, i.e. the percentage of "strongly

disagree" was turned to 'strongly agree' and *vice versa*. Same applies for 'disagree' and 'agree', whereas 'neither agree nor disagree' stayed neutral and was not changed.

- I do not have any worries or fears in reporting to my direct line supervisor any potential risks (91.9%)
- I deal thoroughly and deliberately with potential risks of MP in my working area (90.5%)
- If I deal thoroughly and deliberately with potential risks in my working area, there will be a benefit not only for MP, but also for me (87.9%)
- I feel responsible to contribute to the RM of MP (86.4%)
- I am interested in contributing as a part to the overall RM system of MP (84.9%)

In summary, this indicates, that the respondents are interested in the topic, as they feel responsible for it and may have recognised the importance and benefit of it. In addition to the weaknesses of the existing RC, i.e. a lack of RM information, including management expectation and feedback, this represents a good starting point for harmonising the existing RC towards the target RC, as information and feedback is comparatively easily to provide, as interest and willingness to contribute is available, as confirmed by the employees of MP.

6 Conclusion & Recommendation

The final chapter presents the study findings and its conclusions, practical recommendations for the case study unit and suggestions for future research.

6.1 Findings, Conclusions & Practical Recommendations

In the following, the researcher provides responses to the respective research questions, as conclusion from this study, associated with recommendation that the researcher developed from both, the executive interviews and the employee survey, for MP.

RQ1 What are the key components of organisational RC?

From the literature about organisational culture, human-related issued in RM and works that refer to (general or organisational) RC in particular, the researcher has developed an RC framework, i.e. the 'House of Risk Culture', consisting of ten (pairs of) key components, i.e. Ethics/Values, Responsibility/Commitment, Skills/Abilities, Liability/

Accountability, Strategy/ Limitations, Awareness/Perception, Trust/Confidence, Development/Learning, Transparency/Clarity and Identification/Role model. As an outcome from the executive interviews, Entrepreneurship/Sustainability and Togetherness/Team Spirit were added to the RC framework as these aspects appear to have high relevance for the case study unit, resulting in the 'Amended House of Risk Culture'.

RQ2 What are managerial expectations in terms of the target RC within the case study unit?

Through a qualitative method, i.e. face-to-face interviews (n=11), the researcher has identified the target RC within MP, as intended and required by their management as follows:

- Management role model (expected behaviour in RM) to be put into practice
- Clarity and transparency in RM processes
- Risk awareness and interest for RM at the workplace
- Sound sense of responsibility and commitment for RM
- Cross-departmental exchange about RM topics
- Tolerate mistakes and learn from them; critical abilities and self-confidence
- Entrepreneurial, unlimited, long-term thinking about RM

The interviews showed that MP executives have a clear understanding what RC is, that generally corresponds to the definition as found in the literature. Furthermore, the willingness by all employees to contribute and participate in the company's RM was highlighted by MP executives that appear to be missed out by some authors. In contrary to that, literature highlights expertise in RM as important for employees to have the required skills and abilities, to perceive, assess and manage risks properly. However, MP executives assess skills and abilities as less relevant, assuming they only employ qualified staff. This may be true for the specific working areas, such as legal, accounting or engineering expertise and experiences, but for RM the required skills cannot be generally assumed. The researcher recommends RM trainings in the form of online courses or workshops, at least mandatory for the Risk Owners.

RQ3 What are the congruencies and differences between managerial expectations and employees' perception within the case study unit?

This RQ is answered based on the seven propositions as previously developed.

Prop_1: Is management role model in RM put into practice?

Survey respondents generally confirmed that management role model is put into practice within MP. However, executive employees attested their supervisors, i.e. the Management Board, a less developed, less visible or less consistent role modelling. This is in contrary to managerial expectations at MP, as "maximum example should be set by management". The researcher recommends Management Board to exemplify expected behaviour – in an authentic manner - through own conduct. By demonstrating the requested performance, this may triggers their employees to behave the same way, when this is consistent and faithful. This also includes RM to be linked to the company's risk strategy that follows from the overall corporate strategy. RM should be properly embedded in company's decision making processes, for employees to understand that RM is really being taken seriously by Management Board.

Prop_2: Is clarity and transparency in RM process provided?

The survey confirmed the biggest deficit within MP in clarity and transparency of the RM processes, consequently managerial expectations are not met. Clarity and transparency of processes have to be improved, for everyone to understand what is expected, what happens with the information provided and what consequences follow inappropriate behaviour. RM trainings that have been on a voluntary basis should be intensified, to introduce requirements properly, including precise expectations about desired behaviour towards potential risks and employee's expected contribution to RM. However, information overload has to be avoided, by concentrating on relevant information.

The RM organisation of MP generally shows a deficiency, as there is a dual responsibility with Finance department. The person in charge of Finance is also responsible for RM that may lead to a potential conflict of interest and delays in reporting. For example, whereas the person responsible for RM should report all risks, including those associated with financial issues, the person in charge of Finance may

tend not to show this in an official report as this may represent a weakness of business, or may tend to highlight these in relation to other risks. Also with regards to risk assessment a person with dual responsibility may tend to underestimate risks in the own area, i.e. Finance, whereas other risks such as technical or legal risk may be overestimated, or vice versa, depending on the risk understanding and orientation of the person in charge. However, independence of the person responsible for RM is not guaranteed when this person has a dual responsibility. Due to this, the researcher recommends a separate RM department, with a direct reporting line to the CFO, to reduce potential bias and conflict of interest. A clear mandate should be provided and has to be maintained by management through attention and availability for urgent issues, whenever required, including responsiveness and decisiveness.

Although SAR participants scored significantly higher than their DUS colleagues with regard to employees' knowledge of the RM policy, SAR employees disagreed comparatively more to general interest in RM and a clear understanding of it. This implies that the existing RM policy is not able of stimulating employees' interest for RM or providing the information employees need to gain a clear understanding of it. Therefore, the researcher recommends to revise the RM policy of MP in terms of comprehensibility and attractiveness, e.g. with less difficult RM terminology and more practical examples, clear expectations and consequences. The RM policy should represent all employees' guiding principles in daily business to deal properly with the company's risks. Therefore, it also requires Management Board's absolute support of and compliance with RM procedures and policies, to serve as a good example and motivate employees to follow accordingly (see Prop_1). It is assumed that the level of monitoring and controls are increased far beyond what any RM tool alone can ever accomplish.

Prop_3: Does sound sense of responsibility and commitment for RM exist?

In general, employees' perception is in line with managerial expectation in terms of sound sense of responsibility and commitment. At least, employees confirmed they feel responsible and committed, although half of the respondents stated they have not yet reported any risk to MP. This may have different reasons, such as worries or fear in risk reporting or lack of knowledge how to do so. The first could not be confirmed by this study (see Prop_5), whereas the latter can be assumed (see Prop_2).

Prop_4: Is risk awareness and interest for RM available at the workplace?

Interest for RM at the workplace is generally in line with managerial expectations, as confirmed by the respondents, whereas risk awareness is capable of development. This potentially results from the lack of knowledge of the RM policy.

In particular older or long-tenured employees seem to have lost their interest and commitment, maybe due to boredom from routine or organisational blindness, for the company's well-being. This is of particular importance as these employees may have the hightest / most expatiated experience to provide, so MP should pay particular attention to recapture interest for RM at the workplace of the elderly with longer company affiliation. This is of particular importance as senior employees often represent a role model for younger employees, so there might be a positive multiplier effect, if managed properly (see Prop_1).

In general, information should be tailored to particular needs of the different groups, to increase the possibility of a common understanding and interest of all employees with regards to RM requirements and expected behaviour. Interesting articles published in the employee newsletter or an information desk with helpful leaflets at MP's annual in-house fair could attract attention and increase interest in the topic. RM information could also be included in different initiatives, such as within the induction training for new employees, regulars' tables with senior staff or the talent programme for young employees at MP, to stimulate different people's interest in that topic.

Prop_5: Do fault tolerance, critical abilities and self-confidence in RM exist?

As confirmed by the survey respondents, there is no difference between employees' perception and managerial differences in terms of tolerating mistakes and learn from them. Although assumed by interviewees, an ultra-safeguarding mentality or lack of trust or confidence could not be affirmed. Respondents acknowledged not having any worries or fear in reporting any risks to their supervisors, as they indicated to regard recognised mistakes as learning opportunity. This should be further supported by management.

In contrary to previous research that women often feel less self-confident and more concerned, in particular with regard to risks resulting from technology, a significant

difference in critical abilities or self-confidence by gender could not be confirmed within MP. However, whereas more mal employees responded they ‘strongly agree’ to these statements, women mainly ‘agreed’, so strengthen fault tolerance and courage of female employees may be beneficial for MP.

Prop_6: Is cross-departmental exchange about RM topics facilitated?

The survey confirmed a major deficit within MP in cross-departmental exchange about RM topics, consequently employees’ perception do not meet managerial expectations. Many respondents indicated they do not discuss potential risks with colleagues from other departments and / or on a regular basis. However, most of them stated they have understood RM does only work when they collaborate with their colleagues. A significant difference in the responses could be found by gender as well as by age. Male and older employees disagreed comparatively more to the statements that referred to cross-departmental exchange compared to other colleagues within MP. Consequently, a feeling of solidarity, team-spirit and team work should be facilitated by horizontal information sharing, to break up territorial egotism and a silo mentality within MP divisions and departments.

Particularly with regard to the two locations DUS and SAR, it should be ensured that employees from both locations receive the same information and support by the Risk Manager will facilitate that the feeling of “two isolated cultures” and “no consistent culture” can be changed towards “marching in lockstep” and “a strong feeling of togetherness” as expected by MP management. It represents a challenge to combine the proper characteristics towards a sound RC of employees from both locations, i.e. to be diligent and careful with risks whilst maximising opportunities. Therefore, it is important to focus on horizontal exchange of employees from both locations with each other in particular, to overcome these cultural distances. Joint workshops and teamwork in RM processes should be encouraged and ideas and feedback should be shared, to equally involve all employees in RM, as a precondition for a sound and healthy RC.

Prop_7: Does entrepreneurial, unlimited, long-term thinking about RM exist?

In terms of entrepreneurial, unlimited, long-term thinking about RM, employees’ perception is generally in line with managerial expectations. A significant difference can only be highlighted by job tenure, as respondents with company affiliation of above

8 years agreed least to the related statements, compared to colleagues with less job tenure. However, it was notice that a certain affiliation (here above one year) seems to be required to develop an entrepreneurial, long-term thinking about RM within MP. This corresponds to previous research, as certain job tenure is necessary to feel committed and dedicated. This could be accelerated by joint induction workshops or networking initiatives for new employees. For long-tenures employees, who may have lost their commitment to the company and its well-being in the future, it is important to reactivate their interest and willingness to contribute, as they usually have the expertise and experience that is required for an unlimited, multifaceted enterprise-wide view (see Prop_4). Appropriate incentive systems (not focussing on short term success, but rather on long-term implications) and special development programs for long-tenures employees may encourage this process that is not only beneficial for RM, but the entire company performance.

Furthermore, MP should learn to establish RM as part of their day-to-day routine, instead of a separate task. RM should be fully embedded in the organisation to support major decisions and strategic planning, which includes entrepreneurial, unlimited, long-term thinking in RM. As executive interviewees pointed out there seems to be a deficit in aligning RM with strategic planning within MP, consequently the researcher recommends harmonising all three, i.e. overall corporate, RM and RE strategy.

6.2 Broader Significance & Contribution

As introduced in the beginning of this work, RE markets had been concerned with diverse turbulences and crises in the past, and as a consequence CRE managers have generally realised the necessity of RM to protect their business against negative developments. The study generally contributes to the ’people’ aspect in RM that is required to enable the effectiveness of RM tools and processes that would represent dummy dashboards, unless accompanied by an appropriate RC. The study helps towards the theoretical knowledge of RM through a contrasting juxtaposition of different existing RC models, frameworks and empirical studies as a starting point for this study. This resulted in main areas that involve RC, from which this researcher has further developed underlying, but observable layers of RC, that were brought together to a comprehensive framework, i.e. the ‘House of Risk Culture’ and subsequently the

‘Amended House of Risk Culture’, that present a more comprehensive view of the human factor in RM than expressed by the current literature.

Furthermore, RM theory could learn from this study that risk awareness may imply interest by employees as an essential precondition for their willingness to contribute. Risk awareness cannot be taken for granted but has to be triggered by management, for example by information, what RM is for, what is expected and what may be the consequences of not having a proper RM in place. People need to understand what their individual benefit is, when identifying and assessing a company’s risk. RM theory also appeared to concentrate comparatively more on communication that flows vertically in the organisation. Only a few authors considered horizontal information sharing that facilitates cross-departmental exchange. This is of particular importance in the view of this researcher, as Hindson (2011), for example, emphasises that RC should not be dependent on single individuals to be solid. By facilitating a vertical and horizontal communication consistently through the organisation, a sustainable and robust RC can be proactively supported.

The risk context indicated that is has different meaning to people, depending on their individual perception, experience or cultural, social environment. Literature has generally confirmed that this understanding of risks in business is usually built vertically, from information by employees to assessment by executives. Mostly, risks are discussed in expert groups. However, the concept of risks requires a more multi-faceted view that also calls for horizontal exchange to come to a common understanding of risks. This also involves the perception and experience of people that are usually not heard. It does not matter how to define risk but to enrich the way these are identified, assessed and managed. The study contributes to shift the concept to a more complex perception through diverse perspectives.

Furthermore, a wide range of mathematical tools and statistical methods exist to manage risks. Since the financial crisis, there is a change in the expert’s opinion that this was not caused by technical failure, but by weak cultures. This thesis contributes to understand these cultures in a more comprehensive view. Technology was overemphasized in the past, so it requires shifting it back to people. However, there is a tendency to use even more automatically or technical driven methods and tools in the future and to reduce staff that may result in neglect human experience and sensitiveness

in risk management. This study supports that interest and willingness by employees is essential in risk management. It contributes that it is required to change the concept of risk management towards people, although there might be a tendency to use more automatism or more sophisticated risk management software in the future, to reduce costs or speed up processes, but risk management without an appropriate culture behind may be counterproductive and is more likely to fail again.

A theoretical contribution for CREM is made by this study as it highlighted management role modelling as a significant requirement in practice. MP executives pointed out during the interviews that sending a signal to the organisation from the top of how import a matter is by adhering to own rules and requirements may lead the employees to follow and behave the same. Whereas role model is already considered in RM literature, this appears to be only rarely mentioned in CREM theory. As this case study indicated management role model to have high relevance in CREM practice, the researcher recommends deepening theoretical investigation to this direction. Role Modelling by management is of specific importance as people in the RE business, for example when dealing with property acquisitions or applying for certain permits from the governments, are often concerned with fraud and corruption issues. When bribery, which represents a major risk in the RE industry, is tolerated or not persecuted and punished by disciplinary measures, people may not develop a feeling of illegitimacy. Therefore, CREM could learn from RM in terms of management role modelling.

6.3 Suggestions for Future Research

This study represents an insight at a specific point in time, i.e. when the executives were interviewed and the survey participants completed the questionnaire. It would be beneficial to carry out further studies longitudinally, i.e. to repeat the same approach at a later point in time or frequently over a given period, to uncover changes in the viewpoint of study participants. This would require replication of the research, by using the same design, including participants and questions, to obtain a deeper understanding of the long-term development of the collective mindset and shared assumptions of the case study unit's employees. In addition, any potential change in the survey response rate would be interesting to investigate, and the executive's assessment, by what percentage the target RC is achieved in their opinion. Furthermore, the effectiveness and consequences of measures, initiated by the Management Board to close the gap between

target and existing RC, may become visible. Consequently, a longitudinal study is recommended by the researcher within the case study unit.

Moreover, it could be of interest to investigate the existing RC of the case study unit employees that are not located in Germany. From 455 employees based in Germany, there are remaining 845 employees who work abroad. In Russia, Turkey, Poland and China, large sub-organisations of MP exist that may be worth exploring as a separate, self-contained culture each. Comparing different country-specific cultures regarding their shared assumptions and views towards risks and RM would be beneficial for the case study unit as a whole. This would require deeper insight into cultural differences between countries, including further theories and practical studies in this area, but could provide an in-depth understanding of differences in RC, when several nationalities are concerned. Therefore, the researcher recommends future research on that, by using the same research design, to ensure consistency and comparability.

Furthermore, it could be interesting to expand the range of socio-demographic variables. Within MP, employees' affiliation to a certain division or department may represent a relevant aspect when dealing with risks, as it can be assumed that employees from different departments, such as Accounting, Legal or Construction, may have a different understanding and judgement on risk. Literature about risk perception has confirmed there are much more aspects than gender, age or hierarchy level that may have an effect on RC. Consequently, different socio-demographic characteristics should be considered in further research, such as educational level, income, religious orientation or political preference (Chauvin, Hermand & Mullet, 2007; Sjöberg, 2000; Palmer, 2003).

In addition to that, it could be beneficial and illuminating to study RC in other CREM organisations located in Germany and abroad. This could provide further insight in this phenomenon using multiple cases, as pointed out by Yin (2009). It could offer additional lenses through which RC could be observed, assuming that similar organisations are willing to participate in a case study. As highlighted by different authors, like Warren (2010), Gibson and Louargand (2002) or Reymen, Dewulf and Blokpoel (2008) there is need for further research in CREM, in particular with regards to strategic, forward-looking and proactive issues such as RM. This justifies the

researcher's recommendation for future investigation in RC, to compare similarities and differences in target and existing RC of different, but similar CREM organisations.

Finally, further empirical studies or cases could be developed from this research, by expanding, modifying or realigning the RC framework, i.e. the House of Risk Culture. This could strengthen or enlarge the practical relevance or its application with different focal points. A more detailed identification and assessment of RC will enable it to be more strongly developed, influenced and directed by organisations. Correlational studies, so as to understand potential causalities in RC, might be worth exploring in order to discover the relation between causes and effects, by determining direct and indirect factors, to be used for an organisation to develop the existing RC towards their desired culture. This could also lead to further theoretical foundations. Different perspectives or experiences from other industries or organisations could be further valuable to contribute to the existing body of knowledge in RM, and RC in particular.

The financial crises starting in 2007 represents a turning point in rethinking cultural aspects of RM in organisations, but empirical research with practical relevance still has to catch up. By all means, larger positivistic research should be conducted in a broader range, i.e. different CREM organisations or other industries, and investigating a further layer, i.e. more detailed or concrete interviews and survey questions, in order to enhance the resilience and robustness of the RC framework, as developed in this study. Although a sound and healthy RC does not necessarily reduce or eliminate risks, it does also not necessarily mean taking less, but the 'right' ones, i.e. those which are associated with good opportunities required for business continuity. This kind of rethinking has to be substantiated and supported by further research. Because companies have to understand that employees in an inappropriate or ineffective RC also run the risk of taking too little of it, too.

6.4 Epilogue

As a doctoral candidate at the University of Gloucestershire, United Kingdom, I have been studying RC in the CRE environment since 2010. The research topic has aroused my interest due to my professional background since 2003 in both CREM and internal audit for RE of large non-property organisations in Germany and the US. I have learnt how important properties are as a production factor to the core business, especially in non-property companies and I have gained an understanding of associated strategic concerns and specifics. I have also enlarged my knowledge with regards to required standards and procedures, internal controls and RM. In particular, the latter represents a fundamental component to support a company's resistibility against risks that might jeopardise business continuity, especially when dealing with real estate that represents expensive, long-term and strategic decisions. A total working experience of ten years prepares me well for my next challenge in business: As a personal outcome from my study, I was nominated as the Lead of RM department within MP.

In contrast to the situation before, RM within MP is no longer a part-time activity of the Head of Finance, but a separate department in a newly-founded division, i.e. Integrated Governance, Risk & Compliance. Due to an increased attention by the Management Board, the RM department is provided with ample resources and the required mandate to advance the existing RM approach with important elements, such as to promote clarity about roles and responsibilities, process transparency, departmental exchange and feedback. Through individual workshops and close continuous support in all risk-related matters, I intend to encourage risk intelligence throughout the entire organisation, using my research findings as a basis for my work. I understand risk intelligence as the organisational ability to think holistically about risk and uncertainty, speak a common risk language and effectively apply a forward-looking risk concept that is essential to survival, success and relevance of companies in the post-crisis world (Tilman, 2012)

Hubbard (2009) raised a very interesting question: How do you know that your RM actually works? Is it just because of the lack of proof that it does not? In my opinion, for a professional Risk Manager, it is not acceptable to believe that a risk does not exist, only because it is neither identified within the organisation nor yet occurred. Hubbard claims the measurement of RM performance or success. Just meeting minimum regulatory requirements, without measuring any risk mitigation or avoidance, does not necessarily mean that RM is successful. This is in line with the belief of most Risk

Managers that quantitative data and measurement is inherently more credible and reliable. In the past, the positivist paradigm appears to have been a widely held view and commonly accepted in business, due to the assumption that quantitative data reflects objective reality (Skinner, Tagg & Holloway, 2000).

Although positivism is well-established and still dominates the more interpretive approaches in management, I would challenges the usability of a natural science model for the study of organisations as social systems. This is especially so in RM, where everybody aims for objectivity, and consequently receives correct results from most of the stages of the risk identification and assessment process involve subjectivity, sometimes to a considerable extent. There is reliance on judgement, i.e. identification, assessment and the decision for a certain counteraction, so there can be no guarantee that it will be made to a reasonable approximation, by an expert or an inexperienced novice. Judgement introduces subjectivity, and consequently uncertainty and the likelihood of inaccuracy. RM conducted by one Risk Manager is unlikely to result in the same risk identification and assessment made by others starting with the same information. However, I am highly convinced that subjectivity offers advantages in business, as it facilitates new perspectives and approaches that are required to research intangible matters, i.e. RC.

In summary, I understand my research findings as valuable and beneficial for both, MP and the CRE industry. I also believe in practical and theoretical contribution of my study to others, without being closed-minded for any criticism. I am convinced that this represents a valid starting point for further research and serious discussions on RC and I would appreciate taking part in it in both, the academic and business environment, as RC has become a matter of personal importance to me.

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APPENDICES

APPENDIX 1: Management Board approval for employee survey

Proposed Resolution

for the Management Board of

METRO PROPERTIES GmbH & Co. KG

Risk Culture within METRO PROPERTIES Germany

Employee survey from January 25th to February 8th, 2013

Submitted by: **Ms. Denise Schoenfeld**

Aligned with: **METRO PROPERTIES Finance / Risk Management**
METRO PROPERTIES Work Council
METRO PROPERTIES Human Resources
METRO PROPERTIES Public Relations & Communications

Draft Resolution

The Management Board of METRO PROPERTIES GmbH & Co. KG decides the consent to conduct the web-based employee survey within METRO PROPERTIES Germany with regard to Risk Culture from January 25th to February 8th, 2013.

Reasons For The Request: Status Quo And Problem Posed

Risk Culture (RC) as the collective mindset and shared assumptions of individuals within METRO PROPERTIES that determines attitude and behavior towards potential risks represents the precondition for an effective, comprehensive and sustainable risk management (RM). Furthermore, a sound and healthy RC as prevention is more efficient than ex-post acting risk controls. Due to this, RC requires awareness and involvement of all employees, and therefore particular attention by management.

On November 9th, 2012, the results from the interviews on management level with regard to the target RC of METRO PROPERTIES were presented to the Management Board. It was confirmed that there is a need to make the topic more available within METRO PROPERTIES. After having identified the target RC, it is required to understand the existing RC, in order to initiate appropriate measures to harmonise any potential gap.

The target RC was identified as follows:

- Management role model (expected behavior in RM) to be put into practice
- Clarity & transparency in RM processes, roles & responsibilities
- Risk awareness & interest in the workplace
- Sound sense of responsibility / commitment for RM
- Cross-departmental exchange about RM topics
- Tolerate mistakes and learn from them; Critical abilities / Self-confidence
- Entrepreneurial, unlimited, long-term thinking

Goal, Proposed Solution, Alternatives

To understand the existing RC, i.e. the employee's level of interest, information and involvement in RM, a web-based survey by all employees of METRO PROPERTIES Germany (n= 455 internal employees with e-mail account) is proposed. The survey contains 26 statements, derived from the target RC, for the respondents to provide their agreement or disagreement. The online survey available in both, German and English, will take approximately 10 minutes, is voluntary and can be terminated at any time. The answers will be analysed anonymously and data will absolutely be kept in confidence. A summary of the results will be made available to the Management Board of METRO PROPERTIES.

The 26 statements (see attachment 1) are aligned with METRO PROPERTIES Finance / Risk Management, Human Resources, Work Council and Public Relations & Communications. METRO PROPERTIES Work Council provided their consent on January 7th, 2013. A separate employer / works council agreement is not required. A pilot test was already conducted to ensure a fluent run of the tool and comprehensibility of statements.

The web-based survey is planned to take place from January 25th to February 8th, 2013. Participants will be invited by email through [email address] de that will contain a link to the survey. A previous announcement will be placed on the Intranet on January 21st, 2013.

Economic Analysis

Not applicable

Summary / Recommendation

The consent for conducting the web-based employee survey within METRO PROPERTIES Germany with regard to Risk Culture from January 25th to February 8th, 2013, is recommended in order to understand employee's level of interest, information and involvement in RM. Furthermore, it represents an opportunity to make employees aware about the importance of RM for METRO PROPERTIES.

Attachment 1 to Proposed Resolution

Dear colleagues,

We are pleased about your support to investigate our risk culture at METRO PROPERTIES. We would like to understand how much you are already informed about risk management and involved in the process.

The survey will take approximately 10 minutes. There are 26 statements for you to judge by means of the answers provided. The survey is voluntary and can be terminated at any time by closing the web browser window. In this event, your answers can not be considered. However, you can participate by restarting the survey, until you have submitted your answers. The answers will be analysed anonymously and will absolutely be kept in confidence. In any case, it is not possible to draw any conclusions about individuals.

With your responses, you make a valuable contribution to improve continuously the risk management processes within METRO PROPERTIES as well as the required involvement and information of all employees

In case of any question or suggestion, please contact us at any time. Thank you very much for your support. Denise Schoenfeld [phone] [email address]

Statistical Data:

Gender (male / female)

Age (30 or below / 31-39 / 40-49 / above 50 years)

Job Tenure (at METRO PROPERTIES) (up to 1 / 1-3 / 4-7 / more than 8 years)

Supervisory Responsibility (yes / no)

Location (Dusseldorf / Saarbrucken / other location)

Statements:

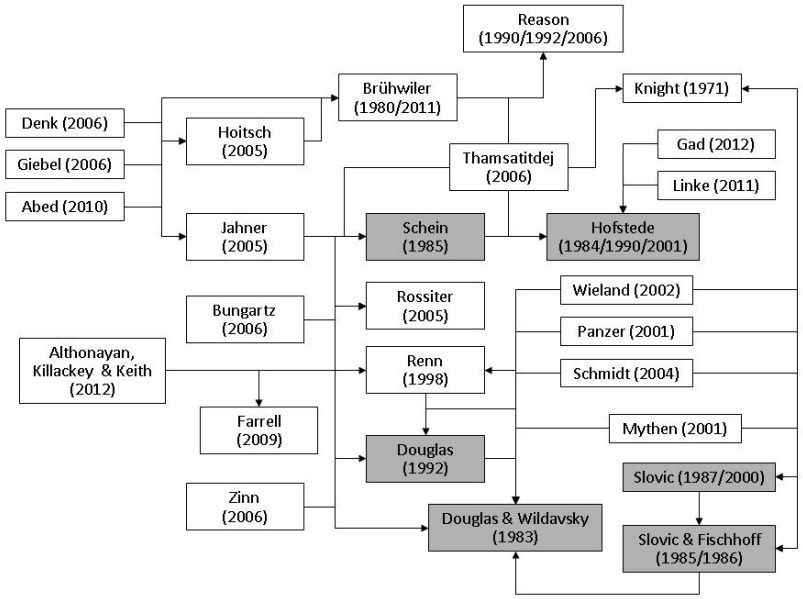
1) I have a clear understanding of risk management in general
2) Handling risks with awareness is important for METRO PROPERTIES
3) When dealing with risks, it is not important to think long-term, but mainly about short-term success
4) My direct line supervisor aims to identify and communicate risks in his / her area of responsibility
5) In my working area potential risks of METRO PROPERTIES are discussed on a regular basis
6) I am not interested in contributing as a part to the overall risk management system of METRO PROPERTIES
7) I feel responsible to contribute to the risk management of METRO PROPERTIES
8) I do not know what METRO PROPERTIES expects from me when dealing with potential risks
9) I am aware of the risk management policy of METRO PROPERTIES
10) In general, the risk management policy of METRO PROPERTIES is clear and comprehensible to me
11) There is not enough information at METRO PROPERTIES available to me to deal with risks properly
12) I deal thoroughly and deliberately with potential risks of METRO PROPERTIES in my working area
13) I have not yet identified potential risks of METRO PROPERTIES in my working area before
14) It is not my responsibility to identify potential risks of METRO PROPERTIES in my working area
15) I have not yet reported potential risks in my working area to METRO PROPERTIES before
16) In general, it is clear to me what happens with the information regarding potential risks when I report these to METRO PROPERTIES
17) I do not have any worries or fears in reporting to my direct line supervisor about identified risks of METRO PROPERTIES in my working area
18) My direct line supervisor is receptive in listening to my doubts and concerns about risks
19) Regarding my concerns and potential risks I receive sufficient feedback by my direct line supervisor

20) In principle, risk management does only work when I collaborate with my colleagues, also from other departments
21) I do not discuss my concerns and potential risks of METRO PROPERTIES with colleagues from other departments
22) I am expected by others to point out potential failures and risks in my working area that I might not have identified so far
23) I support my colleagues in identifying and dealing with potential risks at METRO PROPERTIES
24) It is not important for me to think 'out of the box" to identify potential risks of METRO PROPERTIES beyond my working area
25) If I deal thoroughly and deliberately with risks in my working area, there will be a benefit not only for METRO PROPERTIES, but also for me
26) I understand recognising mistakes and failures in my working area as a chance for job-related improvement and development

Minutes (extract) of the Board Meeting on January 16th, 2013

METRO PROPERTIES Boards decides to conduct a web-based Employee Survey within METRO PROPERTIES Germany with regard to risk culture, starting mid of February 2013.

APPENDIX 2: Identification of Key Authors (Excerpt)



Source: Own illustration

APPENDIX 3: Comparison of different philosophical perceptions

	Positivism	**Critical realism**	**(Social) Constructivism**
Ontology	Reality is real and apprehensible	Reality is real, but only imperfectly and probabilistically apprehensible	Multiple (socially) constructed realities
	Reality as a concrete structure	Reality as a contextual field of information; independent of human consciousness	Reality as a projection of human imagination
Epistemology	Knowledge is valid, based on observations of an external reality	Knowledge is a result of social conditioning; multiple interpretations exist	Knowledge is relative, based on view points, experiences and context
	To construct a concrete science	To understand patterns and map contexts	To understand how (social) reality is constructed
Role of researcher	Researcher is objective and distant	Researcher views from different angles and at multiple levels, both subjective and objective	Researcher is subjective and participating
Methodology	Quantitative research	Both quantitative and qualitative research, mostly qualitative research	Qualitative research

Source: Adapted from Holden & Lynch, 2010; Sobh & Perry, 2006

APPENDIX 4: Overview of different Risk Culture models and studies

Different risk culture models, frameworks and theories:

Model	Cultural Theory of Risk	Risk Type Compass	Risk Aspect Model / Risk Culture Diagnostic	Risk Maturity Model	Competing Values Model
Date	1983	2010	2010	1997	2012
Researcher	Douglas & Wildavsky	Trickey	Hindson	Hillson	Cardinal
Approach	Grid-Group-Matrix	Placing people to Risk Types	Governance Spirit - Pressure to Conform - Matrix	Level of Organisation's Sophistication	Two value dimensions
Orientation	People (individual)	People (individual)	Organisation (holistic)	Organisation (holistic)	Organisation (holistic)
Dimensions	Commitment level; freedom to choose	Eight risk types, i.e. wary, prudent, deliberate, composed, adventurous, carefree, spontaneous and intense	Tone of the top; governance; competency; decision making	Culture; process experience application	Stability / Control vs. Flexibility / Discretion; Internal Focus / Integration vs. External Focus / Differentiation
Outcome	Four types of culture; i.e. hierarchical, individualistic, egalitarian and fatalistic	high risk takers (progressive mindset); low risk takers (conservative mindset),	Four culture; i.e. engaged, chaotic, complier and sleep-walking culture	Four levels; i.e. naive, novice, normalised and natural	Four types of culture; i.e. clans, hierarchies, markets and adhocracies

Different empirical studies with regard to risk culture:

Author	Tritschler	Hoitsch, Winter & Bächle	Giebel	Cheney	Levy, Twining & Lamarre	Versey	Tower Watson	Richardson
Date	2001	2005	2006	2009	2010	2010	2010	2012
Title of Work / Paper	Risk Management Systems – an empirical study of current state of integration in German and international companies	Risk culture and risk policies: Proposals for structering and empirical results	Current state and development tendencies of industrial risk management	Internal audit: More worries, work	Taking Control of organizational risk culture	Risk management part of corporate culture: Survey	Financial Crisis Puts Spotlight on ERM An ERM Update on the Global Insurance Industry	Risk Culture: Not a tick-box exercise
Subject of Research	940 German & inter-national companies; Controlling staff	German DAX 30-listed companies; RM, Finance, Internal Audit & Accounting staff	138 large and small/medium-sized German companies from different industries	260 CFO & CRO from large organisations	Global Investment Bank; Global Professional Service Firm; both on management level	782 Risk Managers in private & public organisations from several European countries	Global insurance companies; 465 executives (2/3 were CFO & CRO)	30 UK Insurance companies; C-level employees of RM, audit and finance department
Research Method	Questionnaire	Telephone interviews	Online survey	Survey	Case Study; survey	Survey	Online survey	Online survey; interviews
Studied Dimensions	RC in general	Risk awareness; risk communication; obligation to risk-oriented behaviour; significance of RC	Risk organisation; risk strategy / policy; risk objectives	*Not specified*	Transparency; acknowlegdement; responsiveness; respect	*Not specified*	Questions about risk-control techniques, other ERM techniques, balance sheet measures, risk appetite statements, ERM implementation, capital usage, etc.	Leadership; strategy; training; reward
Research Result	"deficiencies in risk culture"	"very high risk awareness and contribution by management, less at employee level.."	"especially in small/medium-sized companies, the risk-oriented culture was assessed as insufficient"	85% claimed an "insufficient enterprise-wide risk culture"	Boths firms showed deficiencies in RM processess, communication and leadership	78% believed "RM is properly embedded" as an indicator for a proper RC"	64% stated "a strong RC enhanced their company's performance"; 41% identified "RC as a challenge, suggesting that they may have ongoing difficulties with fully embedding ERM in their respective organizations"	"Most respondents did not describe their RM as mature, not embedded in business or aligned with organisation's RC"

APPENDIX 5: Interview outline for target Risk Culture identification

Part 1

- Have you ever concerned yourself with Risk Management, or Risk Culture in particular?
- If yes, in which context or function?
- What is the first thing that crosses your mind when you think of Risk Culture in general?
- What is role of humans within Risk Culture in your opinion?
- Where do you see general strengths and weaknesses in this context?

Part 2

- What do you associate with Risk Culture at METRO PROPERTIES?
- How would an ideal scenario or setting of Risk Culture at METRO PROPERTIES look like in your opinion?
- What are required collective visions and values ('what do we stand for')?
- What are required collective objectives and missions ('what do we want to achieve jointly')?
- Which limitations and restrictions should be set within the target Risk Culture METRO PROPERTIES in your opinion? Why are these important or relevant?
- What can each individual do in your opinion to contribute to the target Risk Culture of METRO PROPERTIES (Rights and duties, responsibilities visible behaviour / attitude)?
- Which general skills and abilities should be particularly requested from the individual to contribute to the target Risk Culture of METRO PROPERTIES in your opinion? Why are these important or relevant?
- Do you see any difference in Risk Culture between METRO PROPERTIES and other divisions of the holding company? If so, where / what is it?
- Is there any difference in Risk Culture between METRO PROPERTIES's different locations? If so, where / what is it?

Part 3

- From the presented key aspects and components, please select from your opinion the three most relevant ones for METRO PROPERTIES's target RC.
- From the remaining seven key aspects and components, please select from your opinion the three least relevant ones for METRO PROPERTIES's target RC
- Why are these the most / least relevant for you?
- Is there any component that you would like to add to describe or characterise RC (in general or with regard to the target RC of METRO PROPERTIES)?

Part 4

- Based on what would you agree that the target RC is achieved?
- By what percentage is the target RC already achieved within METRO PROPERTIES in your opinion? Why do you think so?
- Where do you see the biggest backlog with regard to RC at METRO PROPERTIES?
- What is the reason for that in your opinion?
- Who is responsible in your opinion (which department, function or the employee itself)?

APPENDIX 6: List of codes and sub-codes

Codes	Sub-Codes			
Identification	Orientation	Vision statement		
Role Model	Tone from the top	Signalling	by example	top-down
Responsibility	Charge			
Competence	Governance	Authority	Mandate	
Commitment	Dedication	Willingness		
Perception	Cognition	Sense	Feeling	
Awareness	Understanding	Interest	Attention	Notice
Ethics	Moral	Mentality	Conscience	Tolerance
Values	Norms	Level of Care	Respect	Honesty
Transparency	Openess	Structure		
Clarity	Visibility	Comprehensibility		
Trust	Security	Stability	Reliability	
Confidence	Continuity	Consistency	Durability	
Development	Experience	Progress		
Learning	Training	Education	Instruction	Schooling
Liability	Bindingness	Obligation		
Accountability	Consequence	Implication		
Skills	Knowledge	Qualification		
Abilities	Capabilities			
Strategy	Objectives	Guide rails	Appetite	Philosophy
Limitations	Restrictions	Rules	Guideline	Boundaries
Entrepreneurship	Holism	Proactivity		
Sustainability	Perpetuity	Persistency	Longevity	Long-term
Togetherness	Cooperation	Solidarity	Coherence	Cohesion
Team Spirit	Team work	Sense of we	Collaboration	Feedback

APPENDIX 7: Example page from web-based employee survey

APPENDIX 8: Non-disclosure agreement for employee survey

Vertraulichkeitserklärung im Zusammenhang mit der Durchführung einer Mitarbeiterbefragung zur Risiko Kultur bei der METRO PROPERTIES / Confidentiality agreement in the context of employee survey regard risk culture of METRO PROPERTIES

Sehr geehrte Frau Schoenfeld, im Rahmen Ihrer Promotion haben Sie angeboten die herrschende Risiko Kultur bei der METRO PROPERTIES zu untersuchen und zu analysieren. Hierfür werden Sie eine web-gestützte Mitarbeiterbefragung durchführen / *Dear Ms. Schoenfeld, within the scope of your dissertation you have offered to investigate and analyse the existing risk culture of METRO PROPERTIES. In that, you intend to conduct a web-based employee survey.*

Sie werden hierbei als Auftraggeber der Firma online Service 2ask tätig, der die web Plattform für die Mitarbeiterbefragung zur Verfügung stellt. Der Dienstleister 2ask hat sich Ihnen gegenüber verpflichtet die beigefügten Datenschutzbestimmungen einzuhalten / *You intend to act as the contracting body towards the services company 2ask which provides the web tool for the employee survey. The service company 2ask is obliged to comply with the attached data protection regulations.*

Wir weisen in diesem Zusammenhang auf die Verschwiegenheitsverpflichtungen in Ihrem Anstellungsvertrag hin und verpflichten Sie darüber hinaus auf die strikte Einhaltung der maßgeblichen Datenschutzbestimmungen wie sich die Firma 2ask Ihnen gegenüber verpflichtet hat / *We advise you of the obligations of confidentiality within your employment contract and pledge you to strictly comply with the data protection regulations in the same way as 2ask has commited to you.*

Frau Schönfeld ist es gestattet, die anonymisierten Ergebnisse der Mitarbeiterbefragung zur Risiko Kultur der METRO PROPERTIES im Rahmen Ihrer Dissertation auszuwerten und zu verwenden / *Ms. Schoenfeld is allowed to analyse and use the anonymised results of the employee survey regarding risk culture of METRO PROPERTIES within the scope of the dissertation.*

Mit freundlichen Grüßen / *Best regards*

<signature>	<signature>
Leiter der Personalabteilung	Datenschutzbeauftragter
Head of Human Resourses	*Data Security Officer*

APPENDIX 9: Clustering of Risk Culture key words

Excerpt from Key Word Clustering

Clustering of Key Words				
Ethics	Values	Respect, Tolerance	Honesty, Level of care	
Liability	Accountability			
Trust	Stability	Security	Reliability	Consistency
Responsibility	Competence	Governance, Authority	Empowerment	Commitment
Skills	Abilities	Knowledge	Experience	Capabilities
Development	Learning	Training	Education	
Awareness	Perception			
Transparency	Clarity	Visibility		
Strategy	Limitations / Limits	Boundaries	Appetite	
Identification	Role Model	Tone from the top	Signalling	

Autor	Titel	Key Words				
		Leadership	Stragey & Philosophy	Human Resources	Communication	Organisation & Infrastructure
Musselwhite	Culture of Risk	senior executives' attitudes toward change Make senior manage-ment is aware of their personal preferences and biases	Build a climate of respect and tolerance for different ideas and perspectives	ability to innovate rapidly / ability to respond to changing markets High level of empowerment and employee commitment Openness to and ability to respond to changes in the external environment Create an awareness and appreciation among employees of these change preferences Acknowledge and reward people who take intelligent risks. Encourage employees to ask tough questions about impending change		Stable, effective systems for getting things done A clear understanding of the organization's purpose and direction
Boards	Employee Risk Culture Survey	Conducting an Employee Risk Culture Survey also sends a message to your people about the importance your organisation places on having an appropriate risk culture and appropriate risk behaviours.	Risk clarity and alignment: * Risk appetite * Risk strategy * Organisation structure * Risk management framework * Values * Policies * Incentive schemes * Continual improvement * Competitor benchmarking	Risk resources and embedding risk: * Risk personnel * Risk resources * Risk management systems * Education and awareness * Latest developments * Employee buy-in * Risk, return and capital * Embed in business processes * Risk register	Communications and accountability: * Tone at the top * Risk policies * Common terminology * No surprises * Whistleblower processes * Accountability * Authority limits * Rapid response * Consequence management	Risk identification and controls: Compliance obligations * Understand business * Identification of risks * New business risks * Risk reviews refreshed * Flow on effect of risks * Risk control framework * Exposure limits * Risk mitigation
Borghouts	Hands up! Who's responsible for RM	Lead from the front: Show your business unit managers that you're serious about risk management by regularly reviewing key risks, rewarding those who manage risks well and punishing those who don't.	Establishing a culture in which the right people do the right thing at the right time, regardless of the circumstances, is critical to an organisation's ability to seize the right risks and avoid the wrong ones. This paper explains organisational culture, how it can support your business strategy, goals and risk appetite and how important it is to get this balance right.	Focus on personal accountability: Spell out the responsibility, authority and accountability of every individual in the organisation		
Bowen	Cultural Alignment and Risk Management: Developing the Right Culture					Organizational Awareness

Box	Developing a strong risk culture	Senior management to set a strong and influential **'tone from the top'** frontline teams **responsible** and accountable for risk management **clear** leadership from the board and ensuring that frontline teams accept **responsibility** for managing the risks they take.		**risk awareness** as a key part of **staff training**, performance objectives and evaluation RM team encouraged to contribute to and challenge decisions		**risk awareness** in the culture, mindset and behaviour of your organisation Close cooperation between RM team and HR
Compliance and Ethics Institute Risk culture survey questionnaire design	Risk Management Culture	Integrity & **ethical value** Commnunication of mission & objectives **Tone at the top** Personal **ethical** practices	Top down alignment of **strategy**	**Commitment** to **competence**, **training** HR Policies & practises & performance measurement Assignment of **authority** & **responsibility** discipline, performance **Accountability** & Reinforcement	Information & communication Information quality Top-down communication	Establish processes & controls Identify & asess risks **Process Reliability** & efficiency System access & **security** Control effectivesness & efficiency
Cooper	Strategic Risk Management Risk Culture Methodologies	Leadership shapes organizational risk culture Leaders' beliefs, actions, and **values** often become sources for organizational folklore and organizational reference points	With a "what gets measured, gets done" attitude, performance-driven organizations often have high risk cultures Clarifying organizational risk expectations to employees	personal factors influencing culture The **ability** for risk managers to influence and be heard in **strategy** and planning becomes critical for the management of **strategic** risk	Communications plays a fundamental role in outlining the **mission, vision, values** and culture Communicating roles, **responsibilities**, authorities, and **accountabilities**	**Developing** policies, procedures to support risk culture
		Where organizations experienced high degrees of internal managerial control, they determined that risk taking cultures supported **managerial trust** in employees Senior management engagement and support		**Training and development**	Common language across business lines	
Bevil	Creating a Culture of Care	Involve all levels of staff and leadership LEADERSHIP TOWARDS ORGANIZATIONAL CHANGE	Vision, **Value**, and Mission	**WORKFORCE DEVELOPMENT**	Make the vision, **values** and mission **visible** USING DATA TO INFORM PRACTICE	Organizational priorities: to identify and manage conflicting priorities Policies and Procedures
Althonayan	ERM Culture Alignment to Enhance Competitive Advantage	**Committed executive leadership** and senior managers that model the ERM culture they wish to see in the organization Board of directors, executives and managers engaged in the risk management of the organization	**shared values**, beliefs and behaviors organization's risk **tolerance** or risk portfolio considered in decision making	Incentives that reward **risk awareness** among departments, teams and employees to establish enterprise-wide thinking employees rewarded for demonstrating **organizational risk awareness** condition of the **learning** environment for employees to apply ERM to their day-to-day jobs	Information sharing and communication among departments and teams **Learning opportunities** for employees open information sharing and communication between departments and teams in the organization	organization's policies

Cooper	Creating a Culture of Risk Management	**philosophy** communicated from the top down and embraced enterprise-wide The **process must begin at the top**—changing the attitude of the Board of Directors and getting the support of executive management		**Responsibility** and **accountability** for risk management permeates the entire organization **everyone in the organization is encouraged to identify risks without fear of repercussions** everyone in the organization becomes a participant in the risk management program	risk culture should put mechanisms in place that **empower** employees to raise issues and talk about what action to take	policies and procedures that **clearly** articulate the expectations for managing risk The risk culture needs to permeate throughout the organization and be used in day-to-day decision-making adopt appropriate technology for improved **transparency** and control
Cornish	Organizational **Philosophy**/ Culture	Roles and **responsibilities** of managing risk	Linkage to **ethics and values**	Valuing employees' contribution to risk management	Linkage to internal communication and feedback on risks	
Deloitte	Cultivating a Risk Intelligent Culture	Management & Leadership Motivation, incentives **Accountability** Communications from leadership using a common risk management vocabulary **Leadership commitment**	Commonality of purpose, **values, and ethics** Understanding of the **value** of effective risk management **Strategy** & Objectives Reposition individuals to reflect changes to business **strategy** and priorities	A learning organization **Responsibility** — individual and collective Expectation of challenge **Knowledge, Skills, Learning**, Recruiting & induction Motivation, incentives	Timely, **transparent**, and honest communications Communication	Universal adoption and application Policies, processes & procedures **Risk Governance** Measurement and reporting
Farrell	What's Your Company's Risk Culture?	creating the right risk **management tone** throughout the enterprise	**management must follow their own risk management policies** so that employees will know that non-compliant behavior will not be tolerated and that the organization takes risk management seriously	risk management **education** and **training** so that they **clearly** understand the company's approach to risk	Good communication: **Leadership must send a message that is heard throughout all levels of the organization**	A Code of Conduct should set forth the organization's **core values**, **ethical standards** and expectations for its employees
Frigo	COSO Thought Leadership in ERM	Support **from the Top** is a Necessity	**Development** and communication of a **risk management philosophy** for the organization	ERM **education and training** for business-unit management	The organization next needs to develop its initial approach to risk reporting including its communication processes, target audiences, and reporting formats	Policies and action plans to embed ERM processes into the organization's functional units such as procurement, IT, or supply chain units
Harvey	Risk: from framework to culture	Board and **management sustained commitment**, is critical to success Leadership **clearly** sponsor and challenge activity.	•Risk awareness •**Risk Appetite** •Risk Ownership and **Accountability** • Performance & Recognition **Transparency**, Acknowledgement, Responsiveness and **Respect** for Risk Make the link to **organisational values**, it will put risk culture into context Pride and **commitment** drives continuous improvement	• Training & Development Robust, reproducible and not dependent on single individuals	• Communication and Engagement • Common language Outcomes are **visible** and actively discussed.	Part of day-to-day core processes and procedures

Hewitt	Culture and Risks	Culture is a response to politics Time and resources **commitment**	**Trust** and **transparency**	Role and **responsibilities** **Learning** and memory	Communication and **education**	
Hindson	Embedding risk management and creating a risk culture	**Tone at the Top** Risk leadership (how to get management sustained interest and **commitment**?) Responding to bad news Risk decisions (how to provide the right information to support management decisions and demonstrate its use?)	**Risk governance** **Risk transparency** (how to provide information useful and timely for management decisions and move beyond compliance?)	**Competency** Risk resources Risk **competence** (Weakest area and key to „winning hearts and minds" –where is the focus on **training** and **development**?)		–Risk Policy and Standards –**Risk appetite and tolerances** –Roles and **accountabilities** –Risk reporting Rewarding appropriate risk taking (how to connect risk management to the performance management & appraisal system?)
Hindson	Risk culture - what is it and how to embed it throughout the organisation	Management focus **Tone at the top** Power Structure	Mission Statement **Values and beliefs** Signalling that managing risk is part of everyone's **responsibilities** •**Signalling** that managing risk is part of 'business asusual'and is a valued **skill**	• Encouraging challenge and learning from risk management judgements • Encouraging discussion and analysis of unexpected results • Securing **training** and support to ensure that those tasked with managing risks are capable of doing so Leadership behaviours to foster risk culture	**Clearly** communicating **boundaries** of acceptable risk	Typical **organisational values**:: Integrity -Doing the right thing, **trust** Courage-Facing the **truth** and acting decisively Empathy -Listening, showing **respect**, **showing we care** Motivation -Aiming higher and delivering Diversity -Celebrating difference Teamwork -Working together
Hindson	Risk Culture What is it? How do I get one?			A set of rules? A common language? A business process? Effective tools? A set of **shared values**? A common perspective ? **Consistent** behaviours?		
Houngbedji	How to Develop a Strong Risk Culture	**Strong support from the Board & Management** (Setting the stage for the culture change –Establishing the vision and firm wide rules and guidelines related to risks) **Develop** a strong risk culture is a journey, a long process of **consistent** communication, **education**, and management	**Accountability** and Ownership, Risk **Transparency** Ensure that risk positions are **consistent** with **risk appetite** and are well understood by risk takers •Improve risk reporting, risk dashboard, stress testing framework, back testing process and risk analytics •Create risk advisory/discussion/forum/ at senior management level to step up the firm wide risk discussions	**Training** (Enhance risk **awareness** through **training**), Partnership & Collaboration Improve cooperation and dialogue with risk takers to enable the pursue of sustainable profitable growth opportunities •Work proactively with businesses to establish **trust** and open conversion about risks related issues •Ensure that **consistent** risk information is shared with all business lines •Establish risk champions (CRO & Risk Head) for the firm & major business lines •Share rewards by celebrating success	Communication, **Clear** and well communicated risk **strategy and risk appetite**, Rapid escalation of threats and concerns understanding of business expectations, performance measurements and compensation implications	Strong Integrated Risk Management Framework Enhance processes, **skills**, **education**, models, technologies that support risk management activities

APPENDIX 10: Statistical data of employees and survey participants

METRO PROPERTIES Germany

All Employees			**Survey Participants**			**All Employees vs. Survey Participants**	
Gender	n = 455	%	n^r = 199	%		%	
male	240	52,6	98	49,2		40,9	
female	215	47,4	76	38,2		35,3	
n/a			25	12,6			
Supervisory responsibility	n = 455	%	n^r = 199	%		%	
yes	36	7,9	49	24,6	*	136,1	*
no	419	92,1	113	56,8		27,0	
n/a			37	18,6			
* = including Team Leaders							
Location	n = 455	%	n^r = 199	%		%	
Dusseldorf	304	66,7	114	57,3		37,6	
Saarbrucken	114	25,0	43	21,6		37,8	
other location	38	8,3	14	7,0		37,3	
n/a			28	14,1			
Age	n = 455	%	n^r = 199	%		%	
30 years and below	63	13,9	26	13,1		41,0	
31 - 39 years	94	20,7	47	23,6		49,9	
40 - 49 years	158	34,8	61	30,7		38,6	
50 years and above	139	30,6	45	22,6		32,3	
n/a			20	10,1			
Job tenure	n = 455	%	n^r = 199	%		%	
up to 1 year	49	10,7	11	5,5		22,6	
1 - 3 years	51	11,2	41	20,6		80,2	
4 - 7 years	92	20,3	39	19,6		42,2	
more than 8 years	263	57,8	83	41,7		31,6	
n/a			25	12,6			

APPENDIX 11: Example interview transcripts

Interviewee A (August 9th, 2012)

Have you ever concerned yourself with risk management, or risk culture in particular?

[Text deleted to ensure anonymity / confidentiality of the interviewee]

What is role of humans within risk culture in your opinion?

This is the crucial factor. Without humans it does not work. Without those, who understand and also support the issue. Tools can certainly support, for example to make a reporting process more efficient, but the human factor is certainly the decisive criterion.

Where do you see general strengths and weaknesses in this context?

Human has certainly the better.. How shall I say? For instance, if you consider risk consolidation and try to show all of them together, that is very complex. That is an abundance of information that is obtained during the risk inventory that you could consolidate mathematically in parts. There are methods that support you, but especially in our business, there is no valid data basis to conduce for example a Monte Carlo simulation. So the human factor is crucial, to identify relationships and dependencies, also on a qualitative level, to come to conclusions, from discussions and different indicators, that a machine cannot.

Do you also see any weaknesses there?

Yes, the weaknesses are the usual human frailties, as feelings, emotions, power play and interests are involved. A human is never objective, but just very driven by subjective interests, resulting in subjectively biased versions, with regard to the outcome and interpretation of the risk inventory. Additionally, there are different perceptions of certain topics.

What is the first thing that crosses your mind when you think of risk culture in general?

I would risk culture not necessarily separate from the corporate culture. It is awareness, an atmosphere of trust, professional cooperation, for example. These are all things that affect everything. Not only on risk culture. But in my view is a subset of the entire corporate culture. Or one aspect of it. It is difficult to define risk culture separately.

What do you associate with risk culture at METRO PROPERTIES?

This is a difficult topic, an unpopular topic, a topic with negative connotations. The term risk alone still has very negative connotations. Presenting risks and communicating these openly is still a frowned topic, as it is associated with personal inadequateness in one's own area of responsibility. Or there is a safeguarding mentality, to present each and everything as a risk-fraud issue. There is a difficult relationship with the subject of risk here in the company. It is certainly the case that many risks are well managed. However, risk management is not limited to the risk management function. In contrary, it is more, in my view, a coordination or information management. The actual doing and managing of risks is everyone's daily business. There is also a controlling in place as well as an internal audit. Even the whole organisational structure represents already a risk management. And that is also the difficulty, simply the acceptance of the risk management function that generates business information for others, right up to the management, which actually tries to manage all risks and opportunities for the company. And the function is indeed more of a supportive, as I said, more of a coordinating role. Trying to present things as transparent and comprehensive as possible with all potential relationships and then reflecting it to generate a best-practice exchange and support for others so that they can do their business as good as possible, to avoid any risks. Here, managing risks is not the responsibility of the risk management function, but rather of the management board or the departments responsible, or the respective risk owner ultimately.

Do you see any difference in risk culture between METRO PROPERTIES and other divisions of the holding company?

One could say that METRO PROPERTIES has at least a separate department that is called risk management that shares experiences on a regular basis with the CFO, Controlling, Accounting and so on. This definitely represents a very useful process, a permanent alignment. On the other hand, there are certain limitations regarding this topic and there is a lack of penetration throughout the entire organisation where this matter is potentially not yet presented as it should, for different reasons. In my view, METRO PROPERTIES has a solid basic understanding of the CFO function, but the operative departments still have too little understanding of it and that is perhaps the most difficult task. Risk management has a very strong regulative background, so you need to see how to conduct it in the most reasonable way.

What can each individual do in your opinion to contribute to the target risk culture of METRO PROPERTIES?

To me, that not necessarily risk management itself. It is just the way you do your job. Whether you work on the assembly line and perform your task again and again in the same way, or if you look around, what the others are doing. Keep your eyes open and do your job responsibly. That does not directly involve risk management, but is definitely a part of it.

From the presented key components, which are the three most relevant ones for METRO PROPERTIES's target risk culture in your opinion?

I chose 'identification and role model', 'transparency and clarity' and 'trust and confidence'. Identification and role modelling represent the example set by the management board or by the decision makers. Therefore, it is important to have a clear mandate and support. That is crucial. Also here, not only a lip-service character, but rather in fact, or not, then we do it differently. Well, at least you have to be honest. In this context, I also see 'transparency and clarity'. This is what risk culture aims for. Transparency. This assumes that any participating person, each risk owner, on each level, is transparent and clear. That requires trust and confidence of staff to the risk management function and trust and confidence of the management to the employees. This goes beyond risk culture. That is a basic atmosphere that certainly helps. From the presented components there is not a single one that I would assess as insignificant in this context..

From the remaining seven key aspects and components, which are the three least relevant ones for METRO PROPERTIES's target risk culture in your opinion?

I would not choose any of them. They are all similarly relevant. And this is not limited to characterise risk culture, but the overall culture of the company.

Is there any component that you would like to add to describe or characterise risk culture?

No, I would not add anything now.

Based on what would you agree that the target risk culture is achieved?

Successful companies have probably also a reasonable and good culture. This is certainly a correlation. Traditionally, you make queries or employee satisfaction surveys. So, if everyone is happy, then there is also a good culture. Furthermore, soft issues are a good indication. So when you go to meetings for a board presentation, you can feel an atmosphere of openness, trust, interest in the subjects, the correct setting of priority setting, and such things. And that you can realise from top down, from the management board meetings to the divisional meetings down to the team meetings, and

when everyone feels comfortable, this is ultimately an indication of a good culture. Show your interest. But this is a personal perception. Even the silo mentality between the areas that we have that is a sign of a not so great culture, especially in difficult times. If the company is doing well, everything is simple. If the company is not doing so well, of course it is harder..

So is risk culture a question of money and good financial position?

No, I think you can run risk management at a manageable time and effort, in terms of resources. You do not need a hundred men; you do not need huge tools. Ultimately, it represents a part of the overall culture. This is truism. I must be clear about my goals; I have to consider what critical success factors I have and what endangers the achievement of my goals, these are the risks. This is actually a model approach, which is independent of whether there is a risk management system or not. This is more a logical, structured approach. That is why you do not need too much money to do risk management. If everyone does so, then the risk management function only has to collect and compile the information. If each department has a good overview about that continuously than you will also achieve transparency with relatively little effort. So, this is not a question of money. This is a question of the overall corporate culture.

By what percentage is the target risk culture already achieved within METRO PROPERTIES in your opinion? Why do you think so?

We are perhaps at 30%, maybe 40%. There are many departments where it is quite well done. There are many good approaches. There is a fundamental interest in the topic and it is also taken quite serious. Certainly, there are things to be improved, but there is already a certain ambient noise. The central issue is that is has to come ‘from the top”. The manner in which the risk management function is set up is a signal to the organisation of how important the matter is considered to be. Not only a lip service character. If this risk inventory results are not clearly demanded by management, this also represents a sign. I think, we do not have any problem in our organisation, there is a problem somewhere else..

Where do you see the biggest backlog at METRO PROPERTIES?

In my view, you need a clear mandate for the function. I have a bit of trouble seeing that. If you do not have this, then you do not know in which direction to go. Than you could rather say you do the ‘bare necessities”, that would be at least honest, or you want to manage the company differently without any risk management function or method, of course you can do that, but at least a clear statement is required. Or they really see the added value, than this has to be fully supported by the management, which is not the case today, I believe.. This is the major problem from my perspective.

Are there any further important issues or relevant questions that you would like to address or ask?

Everything well discussed. Very nice. All topics covered.

Thank you very much for the interview.

Interviewee B (August 3rd, 2012)

Have you ever concerned yourself with risk management, or risk culture in particular?

You are confronted with it every day when you march with an appropriate awareness through the world. This is at least my perception. Especially in our company, I would say. In projects such as [*Text deleted to ensure anonymity / confidentiality of the interviewee*], we consider always such dimensions, opportunities and risks, which are closely connected with each other, but depend strongly on the behaviour of the persons involved. If you take [*Text deleted to ensure anonymity / confidentiality of the interviewee*] as an example, where the target was to reduce costs, then this is not just a reasonable but a permanent claim to management that could end very negatively, if it is pushed a bit too far. When I ostensibly save costs or reduce expenses, but prevent doing things in the future, that may cause risks, that it, as I would like to say, not just cut away the fat, but also the muscle and sever any tendons, just to use this as a picture. Insofar, risk culture is almost a permanent evolutionary condition in which we constantly find ourselves.

What is role of humans within risk culture in your opinion?

It is a decisive factor, as always. In addition to the tools we have. Ultimately, we have tools, as the term suggests, as a tool, and a tool in itself is worth nothing until humans use these tools. Or he is familiar with the tool, but does not use it at the moment because he prefers not to do so. And therefore the human factor is, as always, the decision maker, always.

Where do you see general strengths and weaknesses in this context?

I am an optimistic person, in general, and so I would see there is always a chance, and not just risks. The more optimistic humans approach things, the more he will put weight on the chances. That is obvious. And the pessimist rather risk. And for me, that does not mean that optimists are good, and pessimist bad - not at all. Same as in soccer, where a defensive team wins the game, instead of the offensive one. Therefore, the pessimist probably survives longer. The optimist, who often lives shorter but maybe more

fortunate, in my point of view. However, everyone needs to decide this for himself. However, in a company, it's not just for the fun. The issue is, at least according to our value system, as it is about success, and about parameters achieved. And so you have to be less emotional, but rather soberly in evaluating things. And therefore, you must of course have a proper risk culture, to use the available tools to limit and reduce potential risks. But a residual risk always remains. Only the better the tools are that you have, and the better they are used, the greater is the limitation, and the lower the residual risk. This is the logic of tools.

What do you associate with risk culture at METRO PROPERTIES?

There are several aspects. This is the fundamental task of the company. In the following order: Maintaining value and driving value. [*Text deleted to ensure anonymity / confidentiality of the interviewee*]

Do you see any difference in risk culture between METRO PROPERTIES and other divisions of the holding company?

Not at all. [*Text deleted to ensure anonymity / confidentiality of the interviewee*]

How does the target risk culture at METRO PROPERTIES ideally look like?

Taking maximum chances with controlled, albeit increased risk. I would have absolutely no stress to go for maximum risk, or an even stronger one, when bigger chances arise that do not bring the overall objectives at risk, in the worst case. This is for me the limit of risk taking. Always.

What can each individual do in your opinion to contribute to the target risk culture of METRO PROPERTIES?

To behave exactly this way. That is, to take maximum previously assessed and by supervision agreed risks in the sense of over-compensation of opportunities, backed-up by a worst case scenario for a total consideration. This is valid for all levels. From the maintenance man to the management board, I would not to make any difference in the methodology, and in logic, because only then team spirit will result from it. If certain hierarchy levels behave different from the other levels, then there might be a disharmony that we need to avoid. Of course, you need to be aware of what you expect of each level, but I think that is logical. The one on the higher level who has higher possibilities / abilities has different approaches. That is why they are on these levels – hopefully. The also have a different standing and can also manage risks better.

Who is responsible for that in your opinion?

I see everything, absolutely everything, under the mandate of leadership. And that's why it fits so well into the logic of the previous question. With increasing levels management must exemplify leadership. Maximum example set by the board. Same for level 2. Level 3 with certain restrictions. One can not expect the lower levels to set the same example as the higher levels do. And so I see requirements that increase accordance to the rank. Extreme exemplification. What you expect from others must also be displayed by you clearly.

What can each individual do in your opinion to contribute to the target risk culture of METRO PROPERTIES?

I think, based on this topic, a healthy, developed, trained and skilled self-confidence is very important. I believe that this is the most important issue. Secondly, a profound assessment of all risk aspects. And then, a valid preparation of the issues and a certain behaviour, and exemplification and execution. Very important here is a corresponding strong personality that is training and also formed in this aspect. It is relevant that certain skills are developed and requested. You need to have a plan, as a risk culture can not just be imposed from outside. It must be organised precisely.

From the presented key components, which are the three most relevant ones for METRO PROPERTIES's target risk culture in your opinion?

Identification and role model first. This is actually relevant for almost all subjects. I would take this first for everyone to understand what we are talking about, what is the headline, what is the target. One should identify with oneself first, than with the company and employees. At least, this should be the aim. Regarding your earlier questions, for which level this is required, I would say, for all. The company has to identify with a certain vision of this risk culture. This is clearly a value. I am very sorry that I was not allowed to select a few more that would fit well here now as a transition, because this is always associated with ethical and moral values. That is very clear. But I would assume so in our society. This is actually a triad.

Secondly, responsibility, commitment and competence. Topic, name, date, we do not need here, but always subject or target, or what is the responsibility of the individual as part of the whole, like a puzzle. And for what is he responsible. Always connect this with a specific name. What I expect from whom. And so I connect a target. And so I combine a date as to when it should be reached. And here again the puzzle, that everyone knows what is to be his part and what is his contribution to the whole. He knows the entire picture, and he knows his share of that. And when he delivers as

required, and if everyone do so, then there finally is the whole picture out of it, and then there is success on it. And you know who has not delivered at the end. And then, it is also transparent, it is honest, to make it comprehensible, and thus can also be notice relatively early any potential weaknesses, if it is clearly organized and managed, tracked and monitored. Then you do not need to slap on the people but you have to help the people. But there might be in consequence that you realise that someone is overstrained. Then you can either adjust it or you need to replace the person, in the extreme case.

Trust and confidence. People must have confidence in their environment. Confidence they have only when they trust. So this is a two-way street, in both directions. First you give confidence, then you get confidence back. This also refers to responsibility and commitment. And this provides trust and safety in the company that always has priority. Not the individual, but the company, the whole thing. So, there is security for the company. But there is also security for the individual. Security results from confidence.

In order to see the whole thing again in this context, then this results in a whole thing. And finally, accountability and liability is actually a consequence of responsibility and competence, ethics and values. The issue, who is doing what and when. Then it becomes mandatory. ‘To improve’ or ‘to reduce’ or ‘to achieve’ - that's all jelly to the wall - one of the major weaknesses in many management processes. If a task is not tagged with a name, with figures, with a date, then there is no liability. And if there is no liability, it is all very gaseous, then it is all gone. And therefore, always pin someone down to it. This all begins with the identification of the company and with the mission. And this is determined by the company. Well, by the management. And this runs like a golden thread through everything, and this results in liability. And liability is not a bad word, as escalation is not a bad word. Someone is liable. And the company is liable. The individual is liable. Culture. This is actually important, the word culture. This can be connected with everything. And liability is a significant element of a culture, in my world view. Otherwise you could just say environment, or basis, or society. But culture is already a high demand. A high ethical claim. And liability is something elementary. Without liability, I mean, there is not really a culture.

From the remaining seven key aspects and components, which are the three least relevant ones for METRO PROPERTIES’s target risk culture in your opinion?

Development and learning. That is to me a given need. This is an important process. That's not a question, but I take it as a given. Otherwise I can not establish anything or increase it. Awareness and perception is similar. Abilities and skills I would absolutely preassume, too.

Is there any component that you would like to add to describe or characterise risk culture?

Yes, I would say, targets. This I would like to see. And figures, related to objectives. But the important issues are already on the table.

Based on what would you agree that the target risk culture is achieved?

You can measure this easily against the goals we have set ourselves.

[Text deleted to ensure anonymity / confidentiality of the interviewee]

By what percentage is the target risk culture already achieved within METRO PROPERTIES in your opinion? Why do you think so?

Two things must be considered, in my understanding. First the timeline and then the achievement. A timeline of two years, as I would say, to develop a culture – I mean this is not a cultural change, not a radical, but a cultural development, and this requires a timeline of two years, in a large organisation that we are. And when I look at those two years, whereof a first half is gone, we are, I would say, at 40%. That means, in relation to the time, that we are a little ahead. When I say that in a year we need to have achieved that, this would be too optimistic. As I do not do so, then we hang a little bit back to it. But I think we are all doing well.

Where do you see the biggest backlog at METRO PROPERTIES?

Marching in lockstep. We have this between the three management resorts where we walk quite well in tandem, despite the recent change, I have no worries. But I see that within the divisions below, at least in my divisions I can say so, they are not marching in lockstep. I do not see any essential lockstep. Coming back to the puzzle, that is maybe a bit too static, because we are an organisation that is in a permanently movement, that looks like a puzzle, from a strategic and orientation perspective, but we are constantly in action. And that is why the walking in same pace is so important to me. And the divisions, except for the management board, they still do not work in lockstep. There I see a big gap. There I see a problem. I would say, the caravan should not be adjusted to suit the slowest camel, but neither should it be oriented to the racing camel. Divisions that are too dynamic, you have to slow down, and the slower ones, you need

to push them a little bit, at a reasonable speed. This would work. Otherwise there will be to difficulties. And it makes little sense if some people achieved their goals too early. That distorts the organisation. And that could also destroy them in the worst case. This is a risk when developing a culture.

Do you see any difference in risk culture between the former organisation and today's METRO PROPERTIES?

The old organisation has been mentioned once in a management conference by many participants when they were ask what animal image they see, that they would describe this as a snail. Instead, expansion at the sales line at that time was regarded as a wild animal, an unstructured animal. However, there is no unstructured animal, so I would say a wild animal. They were for sure not positioned so professional, but just extremely focused on expansion, extremely dynamic. Speed was more important than quality. The administrative work was seen as a necessary evil, but that of course is wrong. This is a very important prerequisite, to operate in a sustainable and reasonable way. This was certainly the strengths of the former organisation, historically. And now when I see today's Metro Properties organisation, then I think, that many positive elements were merged and the weaknesses were continuously reduced. The weaknesses are not completely gone, on both sides, but a lot has happened. And the fertilization was very positive. 1 plus 1 is more than 2; if only 2 is the result, that is a banal addition, but the goal is 3, in other words added value. This is what I expect from it. And we are on a very good way, I think.

Do you see any difference in risk culture between METRO PROPERTIES in DUS and SAR?

Absolutely yes.

What are these differences? What is the reason for that?

Unity always makes you stronger. This is almost a law of nature. And proximity is always an advantage, as it facilitates unity. Social unity. Economic benefits are associated with it. Temporal advantages are associated with it. There are advantages only. That different cultures develop as a result of distances, or shall we say rather cultural differences, this is normal. *[Text deleted to ensure anonymity / confidentiality of the interviewee]*. I have the impressions that there are cultural differences. But this has, I think, nothing to do with regional differences in a narrower sense. So there is no difference where the office is located, e.g. SAR, Munich or somewhere. Although regional difference also has an influence on culture, as in some regions there is less fluctuation, so the people know each other for a long time and more intensive, compared to the people here (in DUS). Furthermore, the number of employees is smaller there

than here. That means, of course, that there is a stronger formation of groups. But also a stronger feeling of togetherness, a stronger sense of we. I have deliberately taken a negative as well as a positive term, depending on the way you want to see that. There a certain advantages, but also certain disadvantages. And that's why I would never allow saying that there is a better culture here or in SAR.

But I think that there are simply certain necessities, such as Asian or Russian markets, that you can not completely arrange from here. However, you should aim for a reasonable economic solution. And this does not result in branches in Cologne or Oberhausen or Mannheim, I am now a little bit provocative, to make it clear. You need to try to bring together the locations, at least nationally. Decentralised where necessary, and centralised where possible, for these reasons. Because the advantages, also the economic nature and the social exchanges, are obvious. Quite simple.

Are there any further important issues or relevant questions that you would like to address or ask?

Yes. I would try to recommend you to provoke. To provoke our company with theses. So do not just ask, but present theses, and then discuss these with the people that you have previously provided with questions, to watch their reactions. This means that you will automatically get out of your safety area as the interviewer. That is what I always criticize at reporters or moderators, who can always step back. They follow the public interest, and do not provoke. This is mission, and this is responsibility, and commitment. Of course, the ice is much thinner there. This I would like to recommend. It has something to do with my offensive attitude. With the emphasis on opportunity, not risk.

Thank you very much for the interview.

APPENDIX 12: Key Authors for Risk Management Main Areas with Cultural Reference

Leadership	Human Resources	Communication	Strategy & Philosophy	Organisation & Infrastructure
Althonayan, Killackey & Keith, 2012	Althonayan, Killackey & Keith, 2012	Althonayan, Killackey & Keith, 2012	Althonayan, Killackey & Keith, 2012	
	Abed, 2010			
		Agens, 2011		
Anderson, 2011			Anderson, 2011	
				Ashby, Palermo & Power, 2012
		Barrett & Baret, 2012	Barrett & Baret, 2012	
		Bennett, 2013	Bennett, 2013	Bennett, 2013
Borge, 2013				Borge, 2013
Borghouts, 2009	Borghouts, 2009			
Box, 2010				Box 2010
	Bungartz, 2006		Bungartz, 2010	Bungartz, 2006
Brühwiler & Kahla-Witzsch, 2011	Brühwiler & Kahla-Witzsch, 2011			Brühwiler & Kahla-Witzsch, 2011
Cooper, 2010	Cooper, 2010			Cooper, 2010
Conen, 2007			Conen, 2007	
		Cornish, 2002		Cornish, 2002
Farrell & Hoon, 2009		Farrell & Hoon, 2009	Farrell & Hoon, 2009	Farrell & Hoon, 2009
Florig, 2013		Florig, 2013	Florig, 2013	
Harvey, 2012	Harvey, 2012		Harvey, 2012	Harvey, 2012
			Hewitt, 2009	
Hindson, 2010; 2011	Hindson, 2011		Hindson, 2010	Hindson, 2010
	Houngbedji, 2011		Houngbedji, 2011	Houngbedji, 2011
	Hoitsch, Winter & Bächle, 2005	Hoitsch, Winter & Bächle, 2005		
	Klügl, 2011			Klügl, 2011
			Kulesa & Wilkenfeld, 2008	Kulesa & Wilkenfeld, 2008
Lehmann, 2010		Lehmann, 2010		Lehmann, 2010
Levy, Twining & Lamarre, 2010			Levy, Twining & Lamarre, 2010	Levy, Twining & Lamarre, 2010
Mäe, 2011				Mäe, 2011
		Maskin, 2009	Maskin, 2009	
	Musslewhite, 2005			Musslewhite, 2005
	Neff, 2009		Neff, 2009	Neff, 2009
			Owen, 2010	Owen, 2010
Persad, 2011	Persad, 2011			Persad, 2011
Rasmussen & Marks, 2010			Rasmussen & Marks, 2010	
	Reason, 2006		Reason, 2006	
		Rotter, 2003		Rotter, 2003
Sloan, 2011	Sloan, 2011			Sloan, 2011

APPENDIX 13: Employee survey outline (statements)

1) I have a clear understanding of risk management in general
2) Handling risks with awareness is important for METRO PROPERTIES
3) When dealing with risks, it is not important to think long-term, but mainly about short-term success
4) My direct line supervisor aims to identify and communicate risks in his / her area of responsibility
5) In my working area potential risks of METRO PROPERTIES are discussed on a regular basis
6) I am not interested in contributing as a part to the overall risk management system of METRO PROPERTIES
7) I feel responsible to contribute to the risk management of METRO PROPERTIES
8) I do not know what METRO PROPERTIES expects from me when dealing with potential risks
9) I am aware of the risk management policy of METRO PROPERTIES
10) In general, the risk management policy of METRO PROPERTIES is clear and comprehensible to me
11) There is not enough information at METRO PROPERTIES available to me to deal with risks properly
12) I deal thoroughly and deliberately with potential risks of METRO PROPERTIES in my working area
13) I have not yet identified potential risks of METRO PROPERTIES in my working area before
14) It is not my responsibility to identify potential risks of METRO PROPERTIES in my working area
15) I have not yet reported potential risks in my working area to METRO PROPERTIES before
16) In general, it is clear to me what happens with the information regarding potential risks when I report these to METRO PROPERTIES
17) I do not have any worries or fears in reporting to my direct line supervisor about identified risks of METRO PROPERTIES in my working area
18) My direct line supervisor is receptive in listening to my doubts and concerns about risks
19) Regarding my concerns and potential risks I receive sufficient feedback by my direct line supervisor

20) In principle, risk management does only work when I collaborate with my colleagues, also from other departments
21) I do not discuss my concerns and potential risks of METRO PROPERTIES with colleagues from other departments
22) I am expected by others to point out potential failures and risks in my working area that I might not have identified so far
23) I support my colleagues in identifying and dealing with potential risks at METRO PROPERTIES
24) It is not important for me to think ‘out of the box” to identify potential risks of METRO PROPERTIES beyond my working area
25) If I deal thoroughly and deliberately with risks in my working area, there will be a benefit not only for METRO PROPERTIES, but also for me
26) I understand recognising mistakes and failures in my working area as a chance for job-related improvement and development

APPENDIX 14: Intranet announcement of employee survey

Risk Culture Survey of all METRO PROPERTIES employees in Germany

By redesign of the METRO AG risk management system and the respective guidelines, in March 2012 there were preconditions set also for METRO PROPERTIES, to meet the increased legal requirements and counter unfavourable developments with appropriate measures already in good times.

In general, the risk management presents a core process as information and decision basis for the Management Board. This does not only facilitate to manage risks, but also to use opportunities, in order to realise future potentials for success. By integrating risk management into the business process a reduction of the administrative effort is supported; a connection with the business objectives additionally improves the decision basis on all hierarchy levels.

Risk management, including its requirements and defined processes, serves as an important framework that only works with collaboration of all employees. At this, the active attendance and willingness by all employees is required, to contribute with knowledge and experience in their working area, in order to enable a comprehensive and sustainable effect of the risk management. In addition to that, a culture in which employees identify and reports potential risks at an early stage is often more efficient than ex-post acting risk controls.

To work continuously on the improvement of risk management, whereas priority is given to the involvement of all employees, a survey with regard to METRO PROPERTIES Risk Management will be conducted, to understand the level of information as well as the level of employee participation. For this, all employees of METRO PROPERTIES Germany will be invited to take part in this survey at first. This survey is independent of any survey conducted by HR department. For your participation we would like to thank you in advance. In case of any question or suggestion, please contact us at any time. Thank you.

Denise Schoenfeld [phone number] [email address]

APPENDIX 15: Invitation email for employee survey

Dear colleagues,
As introduced to you on the Intranet last week, we intend to work continuously on the improvement of METRO PROPERTIES Risk Management, whereas priority is given to the involvement of all employees. In a short survey on the Risk Culture topic, we would like to understand your level of information, your interest as well as your level of participation in the risk management of METRO PROPERTIES.

The following link provides you with access to the survey as of now: <<link>>

The survey will take approximately 10 minutes and is available until 28.02.2013. Your participation is voluntary and completely anonymous. It is not possible to draw conclusions about individuals.

For your participation and support in that regard we would like to thank you in advance.

In case of questions or suggestions, please contact the respective person as mentioned below. Thank you very much.

Best regards
Denise Schoenfeld [phone number] [email address]

APPENDIX 16: Overview of employee survey results (total numbers & percentages)

Management role model (expected behaviour in RM) to be put into practice		Q4								Q18								Q19								Q2							
		My direct line supervisor aims to identify and communicate risks in his / her area of responsibility								My direct line supervisor is receptive in listening to my concerns about potential risks of MP in my working area								Regarding my concerns about potential risks of MP I receive sufficient feedback by my direct line supervisor								Handling risks with awareness is important for MP							
		5		4		3		2		1		5		4		3		2		1		5		4		3		2		1	
Supervisory Resp.	no	38	34,2%	34	30,6%	18	16,2%	14	12,6%	7	6,3%	50	45,0%	33	29,7%	19	17,1%	6	5,4%	2	1,8%	27	24,3%	31	27,9%	32	28,8%	14	12,6%	6	5,4%	42	37,8%	40	36,0%	19	17,1%	9	8,1%	2	1,8%
	yes	22	45,8%	19	39,6%	4	8,3%	3	6,3%	0	0,0%	31	64,6%	14	29,2%	1	2,1%	2	4,2%	0	0,0%	22	45,8%	17	35,4%	6	12,5%	3	6,3%	0	0,0%	21	43,8%	14	29,2%	9	18,8%	3	6,3%	1	2,1%
	n/a	9	30,0%	11	36,7%	2	6,7%	3	10,0%	5	16,7%	15	50,0%	8	26,7%	3	10,0%	4	13,3%	0	0,0%	8	26,7%	8	26,7%	8	26,7%	3	10,0%	2	6,7%	9	30,0%	11	36,7%	7	23,3%	3	10,0%	0	0,0%
JobTenure	< 1 years	6	54,5%	5	45,5%	0	0,0%	0	0,0%	0	0,0%	7	63,6%	4	36,4%	0	0,0%	0	0,0%	0	0,0%	2	18,2%	4	36,4%	5	45,5%	0	0,0%	0	0,0%	5	45,5%	4	36,4%	2	18,2%	0	0,0%	0	0,0%
	1 - 3 years	15	36,6%	10	24,4%	4	9,8%	6	14,6%	6	14,6%	18	43,9%	12	29,3%	5	12,2%	5	12,2%	0	0,0%	9	22,0%	11	26,8%	10	24,4%	7	17,1%	3	7,3%	9	22,0%	16	39,0%	5	12,2%	8	19,5%	2	4,9%
	4 - 7 years	10	26,3%	16	42,1%	7	18,4%	4	10,5%	1	2,6%	16	42,1%	12	31,6%	9	23,7%	2	5,3%	0	0,0%	9	23,7%	13	34,2%	12	31,6%	3	7,9%	2	5,3%	15	39,5%	10	26,3%	12	31,6%	2	5,3%	0	0,0%
	> 8 years	30	37,0%	29	35,8%	12	14,8%	8	9,9%	2	2,5%	44	54,3%	23	28,4%	8	9,9%	3	3,7%	2	2,5%	29	35,8%	23	28,4%	17	21,0%	7	8,6%	3	3,7%	34	42,0%	31	38,3%	13	16,0%	3	3,7%	1	1,2%
	n/a	9	47,4%	4	21,1%	1	5,3%	2	10,5%	3	15,8%	12	63,2%	4	21,1%	1	5,3%	2	10,5%	0	0,0%	8	42,1%	5	26,3%	3	15,8%	3	15,8%	0	0,0%	10	52,6%	4	21,1%	3	15,8%	2	10,5%	0	0,0%
Age	< 30 years	9	36,0%	9	36,0%	1	4,0%	4	16,0%	2	8,0%	12	48,0%	8	32,0%	4	16,0%	2	8,0%	0	0,0%	2	8,0%	8	32,0%	8	32,0%	3	12,0%	5	20,0%	8	32,0%	10	40,0%	6	24,0%	2	8,0%	0	0,0%
	31 - 39	12	25,5%	19	40,4%	8	17,0%	7	14,9%	1	2,1%	15	31,9%	19	40,4%	8	17,0%	4	8,5%	0	0,0%	11	23,4%	14	29,8%	15	31,9%	6	12,8%	0	0,0%	7	14,9%	14	29,8%	15	31,9%	9	19,1%	1	2,1%
	40 - 49	20	33,9%	20	33,9%	9	15,3%	5	8,5%	5	8,5%	31	52,5%	16	27,1%	6	10,2%	4	6,8%	1	1,7%	16	27,1%	17	28,8%	16	27,1%	6	10,2%	2	3,4%	24	40,7%	26	44,1%	7	11,9%	1	1,7%	2	3,4%
	> 50 years	25	55,6%	13	28,9%	4	8,9%	2	4,4%	1	2,2%	31	68,9%	9	20,0%	4	8,9%	0	0,0%	1	2,2%	23	51,1%	15	33,3%	4	8,9%	2	4,4%	1	2,2%	26	57,8%	13	28,9%	4	8,9%	2	4,4%	0	0,0%
	n/a	5	33,3%	3	20,0%	2	13,3%	2	13,3%	3	20,0%	9	60,0%	3	20,0%	1	6,7%	2	13,3%	0	0,0%	6	40,0%	2	13,3%	4	26,7%	3	20,0%	0	0,0%	8	53,3%	2	13,3%	4	26,7%	1	6,7%	0	0,0%
Gender	male	35	36,1%	37	38,1%	9	9,3%	10	10,3%	6	6,2%	49	50,5%	27	27,8%	14	14,4%	5	5,2%	1	1,0%	32	33,0%	32	33,0%	18	18,6%	9	9,3%	5	5,2%	39	40,2%	29	29,9%	18	18,6%	8	8,2%	3	3,1%
	female	27	36,5%	23	31,1%	14	18,9%	7	9,5%	3	4,1%	37	50,0%	23	31,1%	8	10,8%	5	6,8%	1	1,4%	17	23,0%	19	25,7%	26	35,1%	8	10,8%	3	4,1%	23	31,1%	32	43,2%	14	18,9%	6	8,1%	0	0,0%
	n/a	9	52,9%	2	11,8%	1	5,9%	2	11,8%	3	17,6%	11	64,7%	3	17,6%	1	5,9%	2	11,8%	0	0,0%	9	52,9%	2	11,8%	3	17,6%	3	17,6%	0	0,0%	9	52,9%	4	23,5%	3	17,6%	1	5,9%	0	0,0%
Location	DUS	35	31,0%	42	37,2%	15	13,3%	14	12,4%	7	6,2%	50	44,2%	39	34,5%	18	15,9%	5	4,4%	1	0,9%	29	25,7%	35	31,0%	30	26,5%	12	10,6%	6	5,3%	39	34,5%	39	34,5%	23	20,4%	12	10,6%	1	0,9%
	SAR	16	38,1%	12	28,6%	7	16,7%	4	9,5%	3	7,1%	25	59,5%	9	21,4%	2	4,8%	5	11,9%	1	2,4%	13	31,0%	11	26,2%	10	23,8%	5	11,9%	2	4,8%	13	31,0%	18	42,9%	9	21,4%	1	2,4%	2	4,8%
	other	7	50,0%	6	42,9%	1	7,1%	0	0,0%	0	0,0%	9	64,3%	3	21,4%	2	14,3%	0	0,0%	0	0,0%	6	42,9%	5	35,7%	3	21,4%	0	0,0%	0	0,0%	9	64,3%	4	28,6%	1	7,1%	0	0,0%	0	0,0%
	n/a	10	55,6%	4	22,2%	1	5,6%	1	5,6%	2	11,1%	11	61,1%	4	22,2%	1	5,6%	2	11,1%	0	0,0%	8	44,4%	5	27,8%	3	16,7%	2	11,1%	0	0,0%	10	55,6%	4	22,2%	2	11,1%	2	11,1%	0	0,0%

Clarity and transparency in RM processes		Q10								Q8								Q16								Q11							
		In general, the risk management policy of MP is clear and comprehensible to me								I do not know what MP expects from me when dealing with potential risks								In general, it is clear to me what happens with the information regarding potential risks when I report these								There is not enough information at MP available to me how to deal with potential risks							
		5		4		3		2		1		1		2		3		4		5		5		4		3		2		1	
Supervisory Resp.	no	4	3,5%	13	11,5%	18	15,3%	1	0,9%	0	0,0%	13	11,5%	36	31,9%	30	26,5%	20	17,7%	14	12,4%	7	6,2%	17	15,0%	30	26,5%	35	31,0%	24	21,2%	8	7,1%	35	31,0%	41	36,3%	17	15,0%	10	8,8%
	yes	5	10,2%	10	20,4%	7	14,3%	1	2,0%	0	0,0%	3	6,1%	12	24,5%	13	26,5%	11	22,4%	10	20,4%	11	22,4%	10	20,4%	13	26,5%	9	18,4%	5	10,2%	6	12,2%	11	22,4%	11	22,4%	14	28,6%	7	14,3%
	n/a	0	0,0%	6	20,0%	7	23,3%	1	3,3%	0	0,0%	4	13,3%	8	26,7%	9	30,0%	6	20,0%	3	10,0%	4	13,3%	4	13,3%	6	20,0%	8	26,7%	8	26,7%	1	3,3%	6	20,0%	14	46,7%	4	13,3%	4	13,3%
JobTenure	< 1 years	1	9,1%	3	27,3%	2	18,2%	0	0,0%	0	0,0%	0	0,0%	3	27,3%	1	9,1%	5	45,5%	2	18,2%	2	18,2%	2	18,2%	2	18,2%	4	36,4%	1	9,1%	0	0,0%	3	27,3%	4	36,4%	3	27,3%	1	9,1%
	1 - 3 years	0	0,0%	4	9,8%	2	4,9%	0	0,0%	0	0,0%	4	9,8%	18	43,9%	11	26,8%	6	14,6%	2	4,9%	3	7,3%	4	9,8%	5	12,2%	14	34,1%	15	36,6%	5	12,2%	13	31,7%	14	34,1%	7	17,1%	2	4,9%
	4 - 7 years	2	5,1%	3	7,7%	4	10,3%	1	2,6%	0	0,0%	2	5,1%	14	35,9%	10	25,6%	9	23,1%	4	10,3%	3	7,7%	4	10,3%	7	17,9%	15	38,5%	10	25,6%	6	15,4%	9	23,1%	15	38,5%	5	12,8%	3	7,7%
	> 8 years	6	7,2%	14	16,9%	22	26,5%	2	2,4%	0	0,0%	13	15,7%	16	19,3%	24	28,9%	13	15,7%	17	20,5%	10	12,0%	18	21,7%	32	38,6%	15	18,1%	7	8,4%	3	3,6%	24	28,9%	27	32,5%	16	19,3%	12	14,5%
	n/a	0	0,0%	5	26,3%	2	10,5%	0	0,0%	0	0,0%	1	5,3%	6	31,6%	6	31,6%	4	21,1%	2	10,5%	4	21,1%	4	21,1%	3	15,8%	4	21,1%	4	21,1%	1	5,3%	4	21,1%	6	31,6%	4	21,1%	3	15,8%
Age	< 30 years	0	0,0%	0	0,0%	3	11,5%	0	0,0%	0	0,0%	2	7,7%	10	38,5%	9	34,6%	5	19,2%	0	0,0%	0	0,0%	1	3,8%	4	15,4%	15	57,7%	6	23,1%	2	7,7%	10	38,5%	8	30,8%	4	15,4%	1	3,8%
	31 - 39	0	0,0%	6	12,8%	2	4,3%	1	2,1%	0	0,0%	3	6,4%	20	42,6%	15	31,9%	7	14,9%	2	4,3%	1	2,1%	5	10,6%	11	23,4%	17	36,2%	13	27,7%	7	14,9%	14	29,8%	21	44,7%	5	10,6%	0	0,0%
	40 - 49	1	1,6%	9	14,8%	17	27,9%	1	1,6%	0	0,0%	8	13,1%	15	24,6%	14	23,0%	16	26,2%	8	13,1%	7	11,5%	11	18,0%	21	34,4%	11	18,0%	10	16,4%	3	4,9%	19	31,1%	20	32,8%	12	19,7%	6	9,8%
	> 50 years	8	17,8%	11	24,4%	9	20,0%	1	2,2%	0	0,0%	7	15,6%	7	15,6%	9	20,0%	6	13,3%	16	35,6%	12	26,7%	13	28,9%	11	24,4%	4	8,9%	5	11,1%	2	4,4%	6	13,3%	12	26,7%	13	28,9%	12	26,7%
	n/a	0	0,0%	3	20,0%	1	6,7%	0	0,0%	0	0,0%	0	0,0%	5	33,3%	6	40,0%	3	20,0%	1	6,7%	2	13,3%	2	13,3%	3	20,0%	5	33,3%	3	20,0%	1	6,7%	4	26,7%	6	40,0%	1	6,7%	2	13,3%
Gender	male	5	5,1%	16	16,3%	21	21,4%	3	3,1%	0	0,0%	8	8,2%	30	30,6%	20	20,4%	23	23,5%	17	17,3%	11	11,2%	19	19,4%	26	26,5%	23	23,5%	18	18,4%	8	8,2%	27	27,6%	30	30,6%	19	19,4%	14	14,3%
	female	4	5,3%	8	10,5%	11	14,5%	0	0,0%	0	0,0%	10	13,2%	23	30,3%	25	32,9%	9	11,8%	9	11,8%	8	10,5%	9	11,8%	20	26,3%	23	30,3%	16	21,1%	5	6,6%	21	27,6%	30	39,5%	13	17,1%	4	5,3%
	n/a	0	0,0%	3	17,6%	0	0,0%	0	0,0%	0	0,0%	1	5,9%	5	29,4%	7	41,2%	3	17,6%	1	5,9%	2	11,8%	2	11,8%	3	17,6%	6	35,3%	4	23,5%	1	5,9%	5	29,4%	6	35,3%	1	5,9%	3	17,6%
Location	DUS	2	1,8%	11	9,6%	15	13,2%	3	2,6%	0	0,0%	11	9,6%	42	36,8%	29	25,4%	21	18,4%	11	9,6%	6	5,3%	12	10,5%	30	26,3%	37	32,5%	29	25,4%	11	9,6%	35	30,7%	45	39,5%	16	14,0%	6	5,3%
	SAR	4	9,3%	8	18,6%	10	23,3%	0	0,0%	0	0,0%	5	11,6%	8	18,6%	12	27,9%	10	23,3%	8	18,6%	7	16,3%	10	23,3%	12	27,9%	10	23,3%	4	9,3%	2	4,7%	10	23,3%	13	30,2%	12	27,9%	5	11,6%
	other	3	21,4%	5	35,7%	5	35,7%	0	0,0%	0	0,0%	0	0,0%	1	7,1%	4	28,6%	4	28,6%	5	35,7%	3	21,4%	6	42,9%	5	35,7%	0	0,0%	0	0,0%	0	0,0%	2	14,3%	3	21,4%	4	28,6%	5	35,7%
	n/a	0	0,0%	4	21,1%	2	10,5%	0	0,0%	0	0,0%	3	15,8%	5	26,3%	7	36,8%	2	10,5%	2	10,5%	5	26,3%	3	15,8%	2	10,5%	4	21,1%	4	21,1%	1	5,3%	5	26,3%	5	26,3%	3	15,8%	4	21,1%

Sound sense of responsibility and commitment for RM		Q12								Q15								Q14								Q7							
		I deal thoroughly and deliberately with potential risks of MP in my working area								I have not yet reported potential risks in my working area to MP before								It is not my responsibility to identify potential risks of MP in my working area								I feel responsible to contribute to the risk management of MP							
		5		4		3		2		1		1		2		3		4		5		1		2		3		4		5		5		4		3		2		1	
Supervisory Resp.	no	59	52,7%	41	36,6%	11	9,8%	0	0,0%	1	0,9%	22	19,6%	24	21,4%	15	13,4%	31	27,7%	20	17,9%	5	4,5%	9	8,0%	16	14,3%	36	32,1%	47	42,0%	44	39,3%	50	44,6%	18	16,1%	0	0,0%	1	0,9%
	yes	27	56,3%	20	41,7%	0	0,0%	1	2,1%	0	0,0%	4	8,3%	5	10,4%	4	8,3%	12	25,0%	24	50,0%	4	8,3%	6	12,5%	1	2,1%	7	14,6%	30	62,5%	33	68,8%	14	29,2%	2	4,2%	0	0,0%	0	0,0%
	n/a	13	43,3%	14	46,7%	2	6,7%	1	3,3%	0	0,0%	7	23,3%	6	20,0%	1	3,3%	7	23,3%	9	30,0%	1	3,3%	6	20,0%	1	3,3%	9	30,0%	13	43,3%	10	33,3%	16	53,3%	1	3,3%	3	10,0%	0	0,0%
JobTenure	< 1 years	4	36,4%	6	54,5%	1	9,1%	0	0,0%	0	0,0%	2	18,2%	4	36,4%	1	9,1%	3	27,3%	1	9,1%	1	9,1%	1	9,1%	1	9,1%	4	36,4%	4	36,4%	6	54,5%	4	36,4%	1	9,1%	0	0,0%	0	0,0%
	1 - 3 years	17	41,5%	18	43,9%	5	12,2%	0	0,0%	1	2,4%	8	19,5%	5	12,2%	3	7,3%	18	43,9%	7	17,1%	1	2,4%	7	17,1%	4	9,8%	9	22,0%	20	48,8%	14	34,1%	24	58,5%	3	7,3%	0	0,0%	0	0,0%
	4 - 7 years	22	56,4%	13	33,3%	3	7,7%	1	2,6%	0	0,0%	9	23,1%	4	10,3%	5	12,8%	11	28,2%	10	25,6%	5	12,8%	4	10,3%	2	5,1%	12	30,8%	15	38,5%	14	35,9%	15	38,5%	8	20,5%	2	5,1%	0	0,0%
	> 8 years	47	58,0%	29	35,8%	4	4,9%	1	1,2%	0	0,0%	9	11,1%	18	22,2%	11	13,6%	15	18,5%	29	35,8%	4	4,9%	7	8,6%	9	11,1%	22	27,2%	41	50,6%	44	54,3%	30	37,0%	8	9,9%	0	0,0%	1	1,2%
	n/a	10	52,6%	9	47,4%	0	0,0%	0	0,0%	0	0,0%	5	26,3%	5	26,3%	0	0,0%	3	15,8%	6	31,6%	0	0,0%	2	10,5%	2	10,5%	5	26,3%	10	52,6%	10	52,6%	7	36,8%	1	5,3%	1	5,3%	0	0,0%
Age	< 30 years	9	34,6%	12	46,2%	5	19,2%	0	0,0%	0	0,0%	3	11,5%	8	30,8%	5	19,2%	6	23,1%	4	15,4%	2	7,7%	2	7,7%	3	11,5%	12	46,2%	7	26,9%	7	26,9%	13	50,0%	5	19,2%	1	3,8%	0	0,0%
	31 - 39	22	46,8%	19	40,4%	5	10,6%	1	2,1%	0	0,0%	10	21,3%	5	10,6%	3	6,4%	20	42,6%	9	19,1%	3	6,4%	8	17,0%	5	10,6%	13	27,7%	18	38,3%	17	36,2%	23	48,9%	6	12,8%	1	2,1%	0	0,0%
	40 - 49	34	57,6%	21	35,6%	2	3,4%	1	1,7%	1	1,7%	8	13,6%	11	18,6%	7	11,9%	12	20,3%	22	37,3%	2	3,4%	4	6,8%	4	6,8%	12	20,3%	38	64,4%	33	55,9%	24	40,7%	3	5,1%	0	0,0%	1	1,7%
	> 50 years	30	66,7%	14	31,1%	1	2,2%	0	0,0%	0	0,0%	8	17,8%	7	15,6%	5	11,1%	9	20,0%	16	35,6%	4	8,9%	5	11,1%	3	6,7%	11	24,4%	22	48,9%	26	57,8%	13	28,9%	6	13,3%	0	0,0%	0	0,0%
	n/a	6	40,0%	9	60,0%	0	0,0%	0	0,0%	0	0,0%	4	26,7%	5	33,3%	0	0,0%	3	20,0%	3	20,0%	0	0,0%	2	13,3%	3	20,0%	4	26,7%	6	40,0%	6	40,0%	7	46,7%	1	6,7%	1	6,7%	0	0,0%
Gender	male	53	55,2%	39	40,6%	1	1,0%	2	2,1%	1	1,0%	8	8,3%	11	11,5%	9	9,4%	31	32,3%	38	39,6%	6	6,3%	10	10,4%	6	6,3%	20	20,8%	56	58,3%	56	58,3%	36	37,5%	6	6,3%	0	0,0%	0	0,0%
	female	39	51,3%	26	34,2%	11	14,5%	0	0,0%	0	0,0%	20	26,3%	17	22,4%	11	14,5%	16	21,1%	12	15,8%	5	6,6%	7	9,2%	10	13,2%	27	35,5%	26	34,2%	25	32,9%	34	44,7%	14	18,4%	2	2,6%	1	1,3%
	n/a	8	47,1%	8	47,1%	1	5,9%	0	0,0%	0	0,0%	6	35,3%	5	29,4%	0	0,0%	2	11,8%	4	23,5%	0	0,0%	3	17,6%	2	11,8%	3	17,6%	9	52,9%	7	41,2%	8	47,1%	1	5,9%	1	5,9%	0	0,0%
Location	DUS	55	48,7%	45	39,8%	10	8,8%	2	1,8%	1	0,9%	19	16,8%	18	15,9%	9	8,0%	33	29,2%	34	30,1%	8	7,1%	14	12,4%	9	8,0%	31	27,4%	52	46,0%	51	45,1%	48	42,5%	15	13,3%	0	0,0%	0	0,0%
	SAR	23	53,5%	19	44,2%	1	2,3%	0	0,0%	0	0,0%	7	16,3%	12	27,9%	7	16,3%	10	23,3%	7	16,3%	2	4,7%	3	7,0%	7	16,3%	14	32,6%	16	37,2%	21	48,8%	15	34,9%	5	11,6%	1	2,3%	1	2,3%
	other	11	78,6%	3	21,4%	0	0,0%	0	0,0%	0	0,0%	1	7,1%	0	0,0%	3	21,4%	5	35,7%	5	35,7%	0	0,0%	0	0,0%	1	7,1%	2	14,3%	11	78,6%	7	50,0%	7	50,0%	0	0,0%	0	0,0%	0	0,0%
	n/a	8	44,4%	8	44,4%	2	11,1%	0	0,0%	0	0,0%	5	27,8%	5	27,8%	0	0,0%	2	11,1%	7	38,9%	0	0,0%	4	22,2%	1	5,6%	4	22,2%	10	55,6%	7	38,9%	9	50,0%	1	5,6%	2	11,1%	0	0,0%

Risk awareness and interest in the workplace		Q13										Q1										Q9										Q6									
		I have not yet identified potential risks of MP in my working area before										I have a clear understanding of risk management in general										I am aware of the risk management policy of MP										I am not interested in contributing as a part risk management system of M									
		1		2		3		4		5		5		4		3		2		1		5		4		3		2		1		1		2		3		4			
Supervisory Resp.	no	10	8,9%	25	22,3%	21	18,8%	31	27,7%	25	22,3%	25	22,3%	32	28,6%	34	30,4%	19	17,0%	2	1,8%	11	9,8%	12	10,7%	14	12,5%	26	23,2%	50	44,6%	1	0,9%	4	3,6%	14	12,5%	38	33
	yes	1	2,0%	6	12,2%	7	14,3%	15	30,6%	20	40,8%	18	36,7%	14	28,6%	13	26,5%	3	6,1%	1	2,0%	9	18,4%	8	16,3%	5	10,2%	12	24,5%	14	28,6%	1	2,0%	1	2,0%	2	4,1%	15	30
	n/a	3	10,3%	7	24,1%	3	10,3%	8	27,6%	8	27,6%	4	13,8%	13	44,8%	9	31,0%	4	13,8%	0	0,0%	0	0,0%	9	31,0%	5	17,2%	4	13,8%	12	41,4%	0	0,0%	0	0,0%	4	13,8%	8	27
JobTenure	< 1 years	0	0,0%	1	9,1%	6	54,5%	3	27,3%	1	9,1%	4	36,4%	3	27,3%	4	36,4%	0	0,0%	0	0,0%	3	27,3%	1	9,1%	2	18,2%	3	27,3%	2	18,2%	0	0,0%	0	0,0%	1	9,1%	3	27
	1 - 3 years	3	7,3%	10	24,4%	7	17,1%	15	36,6%	6	14,6%	8	19,5%	9	22,0%	15	36,6%	8	19,5%	1	2,4%	1	2,4%	4	9,8%	1	2,4%	12	29,3%	23	56,1%	0	0,0%	0	0,0%	4	9,8%	16	39
	4 - 7 years	2	5,1%	6	15,4%	5	12,8%	7	17,9%	19	48,7%	4	10,3%	17	43,6%	13	33,3%	4	10,3%	1	2,6%	2	5,1%	6	15,4%	1	2,6%	7	17,9%	22	56,4%	0	0,0%	1	2,6%	6	15,4%	11	28
	> 8 years	8	9,8%	15	18,3%	11	13,4%	24	29,3%	24	29,3%	26	31,7%	24	29,3%	22	26,8%	10	12,2%	0	0,0%	13	15,9%	15	18,3%	17	20,7%	14	17,1%	24	29,3%	2	2,4%	3	3,7%	7	8,5%	29	35
	n/a	1	5,6%	6	33,3%	2	11,1%	5	27,8%	4	22,2%	5	27,8%	6	33,3%	3	16,7%	4	22,2%	1	5,6%	1	5,6%	3	16,7%	3	16,7%	6	33,3%	6	33,3%	0	0,0%	1	5,6%	2	11,1%	2	11
Age	< 30 years	1	3,8%	6	23,1%	7	26,9%	6	23,1%	6	23,1%	4	15,4%	7	26,9%	12	46,2%	3	11,5%	0	0,0%	0	0,0%	1	3,8%	2	7,7%	6	23,1%	17	65,4%	0	0,0%	0	0,0%	6	23,1%	10	38
	31 - 39	2	4,3%	8	17,0%	7	14,9%	16	34,0%	14	29,8%	7	14,9%	10	21,3%	20	42,6%	10	21,3%	0	0,0%	1	2,1%	6	12,8%	1	2,1%	12	25,5%	26	55,3%	0	0,0%	0	0,0%	3	6,4%	22	46
	40 - 49	6	10,0%	11	18,3%	6	10,0%	18	30,0%	19	31,7%	14	23,3%	23	38,3%	16	26,7%	7	11,7%	1	1,7%	6	10,0%	11	18,3%	11	18,3%	9	15,0%	24	40,0%	2	3,3%	2	3,3%	3	5,0%	17	28
	> 50 years	4	8,9%	8	17,8%	9	20,0%	10	22,2%	14	31,1%	20	44,4%	12	26,7%	7	15,6%	4	8,9%	1	2,2%	13	28,9%	9	20,0%	8	17,8%	8	17,8%	7	15,6%	0	0,0%	2	4,4%	5	11,1%	10	22
	n/a	1	7,1%	5	35,7%	2	14,3%	4	28,6%	2	14,3%	2	14,3%	7	50,0%	2	14,3%	3	21,4%	1	7,1%	0	0,0%	2	14,3%	2	14,3%	7	50,0%	4	28,6%	0	0,0%	1	7,1%	3	21,4%	2	14
Gender	male	6	6,2%	7	7,2%	15	15,5%	32	33,0%	37	38,1%	31	32,0%	31	32,0%	25	25,8%	8	8,2%	2	2,1%	13	13,4%	18	18,6%	14	14,4%	13	13,4%	39	40,2%	1	1,0%	4	4,1%	7	7,2%	30	30
	female	6	7,9%	23	30,3%	14	18,4%	17	22,4%	16	21,1%	14	18,4%	20	26,3%	29	38,2%	13	17,1%	0	0,0%	6	7,9%	9	11,8%	8	10,5%	21	27,6%	32	42,1%	1	1,3%	1	1,3%	10	13,2%	27	35
	n/a	1	6,3%	7	43,8%	2	12,5%	3	18,8%	3	18,8%	1	6,3%	7	43,8%	3	18,8%	5	31,3%	1	6,3%	0	0,0%	1	6,3%	2	12,5%	6	37,5%	8	50,0%	0	0,0%	0	0,0%	2	12,5%	2	12
Location	DUS	8	7,1%	20	17,7%	20	17,7%	32	28,3%	33	29,2%	23	20,4%	37	32,7%	36	31,9%	15	13,3%	2	1,8%	6	5,3%	14	12,4%	11	9,7%	28	24,8%	54	47,8%	0	0,0%	3	2,7%	12	10,6%	38	33
	SAR	5	11,6%	12	27,9%	7	16,3%	11	25,6%	8	18,6%	13	30,2%	12	27,9%	12	27,9%	5	11,6%	1	2,3%	6	14,0%	10	23,3%	6	14,0%	9	20,9%	12	27,9%	1	2,3%	0	0,0%	4	9,3%	21	48
	other	0	0,0%	0	0,0%	3	21,4%	4	28,6%	7	50,0%	7	50,0%	3	21,4%	4	28,6%	0	0,0%	0	0,0%	6	42,9%	4	28,6%	3	21,4%	1	7,1%	0	0,0%	0	0,0%	2	14,3%	1	7,1%	1	7
	n/a	1	5,6%	5	27,8%	1	5,6%	6	33,3%	5	27,8%	3	16,7%	7	38,9%	4	22,2%	5	27,8%	0	0,0%	1	5,6%	1	5,6%	4	22,2%	4	22,2%	9	50,0%	1	5,6%	0	0,0%	3	16,7%	1	5

Tolerate mistakes and learn from them; Critical abilities / Self-confidence		Q26										Q22										Q17									
		I understand recognising mistakes and failures as a chance for job-related improvement and development										I am expected by others to point out potential failures and risks that I might not have identified so far										I do not have any worries or fears in reporting to my direct line supervisor any potential risks									
		5		4		3		2		1		5		4		3		2		1		5		4		3		2		1	
Supervisory Resp.	no	44	38,9%	41	36,3%	20	17,7%	7	6,2%	1	0,9%	54	47,8%	38	33,6%	15	13,3%	4	3,5%	0	0,0%	71	62,8%	33	29,2%	5	4,4%	1	0,9%	3	2,7%
	yes	15	31,3%	18	37,5%	9	18,8%	1	2,1%	5	10,4%	27	56,3%	14	29,2%	4	8,3%	2	4,2%	2	4,2%	37	77,1%	10	20,8%	1	2,1%	0	0,0%	1	2,1%
	n/a	10	33,3%	16	53,3%	4	13,3%	0	0,0%	0	0,0%	12	40,0%	15	50,0%	3	10,0%	0	0,0%	0	0,0%	22	73,3%	4	13,3%	2	6,7%	1	3,3%	1	3,3%
JobTenure	< 1 years	4	36,4%	4	36,4%	2	18,2%	1	9,1%	0	0,0%	4	36,4%	5	45,5%	2	18,2%	0	0,0%	0	0,0%	8	72,7%	2	18,2%	0	0,0%	0	0,0%	1	9,1%
	1 - 3 years	14	34,1%	19	46,3%	8	19,5%	0	0,0%	0	0,0%	22	53,7%	13	31,7%	2	4,9%	3	7,3%	1	2,4%	27	65,9%	12	29,3%	2	4,9%	0	0,0%	0	0,0%
	4 - 7 years	16	41,0%	13	33,3%	7	17,9%	2	5,1%	1	2,6%	21	53,8%	8	20,5%	8	20,5%	0	0,0%	1	2,6%	29	74,4%	7	17,9%	2	5,1%	0	0,0%	1	2,6%
	> 8 years	31	37,8%	31	37,8%	12	14,6%	3	3,7%	5	6,1%	38	46,3%	33	40,2%	8	9,8%	3	3,7%	0	0,0%	53	64,6%	23	28,0%	3	3,7%	1	1,2%	3	3,7%
	n/a	4	21,1%	8	42,1%	5	26,3%	2	10,5%	0	0,0%	9	47,4%	8	42,1%	2	10,5%	0	0,0%	0	0,0%	14	73,7%	3	15,8%	1	5,3%	1	5,3%	0	0,0%
Age	< 30 years	9	34,6%	12	46,2%	4	15,4%	1	3,8%	0	0,0%	12	46,2%	11	42,3%	3	11,5%	0	0,0%	0	0,0%	18	69,2%	5	19,2%	1	3,8%	0	0,0%	2	7,7%
	31 - 39	15	31,9%	23	48,9%	7	14,9%	2	4,3%	0	0,0%	19	40,4%	16	34,0%	8	17,0%	2	4,3%	2	4,3%	28	59,6%	16	34,0%	3	6,4%	0	0,0%	0	0,0%
	40 - 49	23	38,3%	20	33,3%	12	20,0%	2	3,3%	3	5,0%	33	55,0%	17	28,3%	6	10,0%	3	5,0%	0	0,0%	43	71,7%	16	26,7%	1	1,7%	1	1,7%	0	0,0%
	> 50 years	19	42,2%	14	31,1%	7	15,6%	2	4,4%	3	6,7%	25	55,6%	17	37,8%	2	4,4%	1	2,2%	0	0,0%	34	75,6%	6	13,3%	2	4,4%	0	0,0%	3	6,7%
	n/a	3	20,0%	6	40,0%	5	33,3%	1	6,7%	0	0,0%	6	40,0%	6	40,0%	3	20,0%	0	0,0%	0	0,0%	9	60,0%	4	26,7%	1	6,7%	1	6,7%	0	0,0%
Gender	male	37	37,8%	33	33,7%	18	18,4%	4	4,1%	6	6,1%	51	52,0%	30	30,6%	13	13,3%	3	3,1%	1	1,0%	71	72,4%	23	23,5%	2	2,0%	0	0,0%	2	2,0%
	female	29	38,2%	33	43,4%	12	15,8%	2	2,6%	0	0,0%	33	43,4%	30	39,5%	8	10,5%	2	2,6%	1	1,3%	47	61,8%	20	26,3%	5	6,6%	1	1,3%	3	3,9%
	n/a	3	17,6%	7	41,2%	5	29,4%	2	11,8%	0	0,0%	11	64,7%	5	29,4%	1	5,9%	0	0,0%	0	0,0%	12	70,6%	3	17,6%	1	5,9%	1	5,9%	0	0,0%
Location	DUS	44	38,6%	40	35,1%	23	20,2%	3	2,6%	4	3,5%	57	50,0%	32	28,1%	17	14,9%	5	4,4%	2	1,8%	78	68,4%	28	24,6%	6	5,3%	0	0,0%	2	1,8%
	SAR	15	35,7%	19	45,2%	4	9,5%	3	7,1%	1	2,4%	18	42,9%	19	45,2%	4	9,5%	1	2,4%	0	0,0%	25	59,5%	13	31,0%	1	2,4%	1	2,4%	3	7,1%
	other	5	35,7%	6	42,9%	2	14,3%	0	0,0%	1	7,1%	8	57,1%	5	35,7%	1	7,1%	0	0,0%	0	0,0%	10	71,4%	4	28,6%	0	0,0%	0	0,0%	0	0,0%
	n/a	3	15,8%	10	52,6%	4	21,1%	2	10,5%	0	0,0%	10	52,6%	9	47,4%	0	0,0%	0	0,0%	0	0,0%	15	78,9%	2	10,5%	1	5,3%	1	5,3%	0	0,0%

Cross-departmental exchange about RM topics		Q21										Q5										Q23										Q20									
		I do not discuss potential risks of MP with colleagues from other departments										In my working area potential risks of MP are discussed on a regular basis										I support my colleagues in identifying and dealing with potential risks at MP										In principle, RM does only work when I collabo my colleagues, also from other departme									
		1		2		3		4		5		5		4		3		2		1		5		4		3		2		1		5		4		3		2			
Supervisory Resp.	no	9	8,0%	23	20,5%	34	30,4%	30	26,8%	16	14,3%	14	12,5%	31	27,7%	29	25,9%	27	24,1%	12	10,7%	44	39,3%	47	42,0%	12	10,7%	7	6,3%	0	0,0%	52	46,4%	37	33,0%	20	17,9%	3	2,7%
	yes	4	8,2%	7	14,3%	9	18,4%	16	32,7%	13	26,5%	15	30,6%	17	34,7%	10	20,4%	6	12,2%	1	2,0%	25	51,0%	20	40,8%	1	2,0%	2	4,1%	1	2,0%	26	53,1%	17	34,7%	3	6,1%	2	4,1%
	n/a	4	13,3%	7	23,3%	8	26,7%	8	26,7%	3	10,0%	2	6,7%	8	26,7%	10	33,3%	6	20,0%	4	13,3%	9	30,0%	15	50,0%	5	16,7%	0	0,0%	0	0,0%	12	40,0%	12	40,0%	4	13,3%	2	6,7%
JobTenure	< 1 years	0	0,0%	4	36,4%	2	18,2%	2	18,2%	3	27,3%	2	18,2%	6	54,5%	3	27,3%	0	0,0%	0	0,0%	5	45,5%	5	45,5%	1	9,1%	0	0,0%	0	0,0%	5	45,5%	5	45,5%	0	0,0%	1	9,1%
	1 - 3 years	4	9,8%	5	12,2%	10	24,4%	17	41,5%	5	12,2%	5	12,2%	8	19,5%	14	34,1%	8	19,5%	6	14,6%	19	46,3%	12	29,3%	7	17,1%	3	7,3%	0	0,0%	22	53,7%	15	36,6%	2	4,9%	1	2,4%
	4 - 7 years	5	12,8%	10	25,6%	6	15,4%	13	33,3%	5	12,8%	4	10,3%	12	30,8%	8	20,5%	10	25,6%	5	12,8%	12	30,8%	20	51,3%	3	7,7%	3	7,7%	1	2,6%	12	30,8%	13	33,3%	10	25,6%	3	7,7%
	> 8 years	9	11,0%	12	14,6%	28	34,1%	19	23,2%	14	17,1%	17	20,7%	24	29,3%	21	25,6%	17	20,7%	4	4,9%	37	45,1%	35	42,7%	5	6,1%	3	3,7%	0	0,0%	40	48,8%	32	39,0%	11	13,4%	0	0,0%
	n/a	0	0,0%	6	31,6%	5	26,3%	3	15,8%	5	26,3%	3	15,8%	6	31,6%	4	21,1%	4	21,1%	2	10,5%	6	31,6%	10	52,6%	2	10,5%	0	0,0%	0	0,0%	11	57,9%	2	10,5%	4	21,1%	2	10,5%
Age	< 30 years	2	7,7%	6	23,1%	6	23,1%	11	42,3%	1	3,8%	0	0,0%	10	38,5%	8	30,8%	5	19,2%	3	11,5%	9	34,6%	12	46,2%	3	11,5%	2	7,7%	0	0,0%	10	38,5%	7	26,9%	7	26,9%	2	7,7%
	31 - 39	3	6,4%	10	21,3%	12	25,5%	21	44,7%	1	2,1%	7	14,9%	10	21,3%	13	27,7%	13	27,7%	4	8,5%	13	27,7%	20	42,6%	9	19,1%	4	8,5%	0	0,0%	20	42,6%	21	44,7%	5	10,6%	1	2,1%
	40 - 49	9	15,0%	9	15,0%	15	25,0%	14	23,3%	13	21,7%	7	11,7%	18	30,0%	16	26,7%	14	23,3%	6	10,0%	29	48,3%	24	40,0%	3	5,0%	2	3,3%	1	1,7%	28	46,7%	25	41,7%	4	6,7%	2	3,3%
	> 50 years	4	8,9%	6	13,3%	15	33,3%	6	13,3%	14	31,1%	17	37,8%	14	31,1%	9	20,0%	3	6,7%	2	4,4%	24	53,3%	18	40,0%	1	2,2%	1	2,2%	0	0,0%	27	60,0%	12	26,7%	6	13,3%	0	0,0%
	n/a	0	0,0%	6	40,0%	4	26,7%	2	13,3%	3	20,0%	1	6,7%	4	26,7%	4	26,7%	4	26,7%	2	13,3%	5	33,3%	8	53,3%	2	13,3%	0	0,0%	0	0,0%	6	40,0%	2	13,3%	5	33,3%	2	13,3%
Gender	male	9	9,3%	14	14,4%	26	26,8%	29	29,9%	19	19,6%	20	20,6%	35	36,1%	23	23,7%	14	14,4%	6	6,2%	49	50,5%	42	43,3%	3	3,1%	3	3,1%	0	0,0%	53	54,6%	32	33,0%	10	10,3%	2	2,1%
	female	8	10,5%	17	22,4%	19	25,0%	23	30,3%	9	11,8%	9	11,8%	15	19,7%	23	30,3%	20	26,3%	9	11,8%	23	30,3%	32	42,1%	12	15,8%	6	7,9%	1	1,3%	28	36,8%	31	40,8%	13	17,1%	3	3,9%
	n/a	1	5,9%	5	29,4%	5	29,4%	2	11,8%	4	23,5%	3	17,6%	5	29,4%	2	11,8%	5	29,4%	2	11,8%	8	47,1%	6	35,3%	2	11,8%	0	0,0%	0	0,0%	9	52,9%	2	11,8%	4	23,5%	2	11,8%
Location	DUS	10	8,8%	23	20,4%	27	23,9%	33	29,2%	20	17,7%	14	12,4%	35	31,0%	30	26,5%	23	20,4%	12	10,6%	44	38,9%	49	43,4%	13	11,5%	6	5,3%	1	0,9%	50	44,2%	39	34,5%	19	16,8%	4	3,5%
	SAR	4	9,3%	7	16,3%	14	32,6%	14	32,6%	4	9,3%	8	18,6%	8	18,6%	14	32,6%	10	23,3%	3	7,0%	19	44,2%	18	41,9%	3	7,0%	1	2,3%	0	0,0%	18	41,9%	20	46,5%	4	9,3%	1	2,3%
	other	1	7,1%	2	14,3%	6	42,9%	2	14,3%	3	21,4%	6	42,9%	5	35,7%	2	14,3%	1	7,1%	0	0,0%	8	57,1%	6	42,9%	0	0,0%	0	0,0%	0	0,0%	10	71,4%	3	21,4%	1	7,1%	0	0,0%
	n/a	2	10,5%	4	21,1%	3	15,8%	5	26,3%	5	26,3%	3	15,8%	7	36,8%	3	15,8%	4	21,1%	2	10,5%	7	36,8%	8	42,1%	2	10,5%	1	5,3%	0	0,0%	11	57,9%	4	21,1%	2	10,5%	2	10,5%

Entrepreneurial, unlimited, long-term thinking		Q3										Q24										Q25									
		When dealing with risks, it is not important to think long-term, but mainly about short-term success										It is not important for me to think "out of the box" to identify potential risks of MP beyond my working area										If I deal thoroughly and deliberately with potential risks in my working area, there will be a benefit not only for MP, but also for me									
		1		2		3		4		5		1		2		3		4		5		5		4		3		2		1	
Supervisory Resp.	no	4	3,6%	12	10,7%	24	21,4%	28	25,0%	44	39,3%	7	6,3%	10	8,9%	11	9,8%	30	26,8%	53	47,3%	68	60,7%	31	27,7%	10	8,9%	2	1,8%	2	1,8%
	yes	0	0,0%	2	4,1%	10	20,4%	12	24,5%	25	51,0%	8	16,3%	2	4,1%	0	0,0%	10	20,4%	29	59,2%	33	67,3%	13	26,5%	0	0,0%	1	2,0%	0	0,0%
	n/a	3	10,0%	1	3,3%	6	20,0%	9	30,0%	11	36,7%	7	23,3%	3	10,0%	3	10,0%	7	23,3%	10	33,3%	15	50,0%	9	30,0%	5	16,7%	1	3,3%	0	0,0%
JobTenure	< 1 years	0	0,0%	3	27,3%	2	18,2%	2	18,2%	4	36,4%	1	9,1%	1	9,1%	0	0,0%	4	36,4%	5	45,5%	6	54,5%	4	36,4%	1	9,1%	0	0,0%	0	0,0%
	1 - 3 years	2	5,0%	1	2,5%	4	10,0%	10	25,0%	23	57,5%	3	7,5%	2	5,0%	2	5,0%	12	30,0%	22	55,0%	23	57,5%	10	25,0%	4	10,0%	1	2,5%	2	5,0%
	4 - 7 years	0	0,0%	1	2,6%	9	23,1%	11	28,2%	18	46,2%	4	10,3%	5	12,8%	4	10,3%	9	23,1%	16	41,0%	19	48,7%	16	41,0%	2	5,1%	2	5,1%	0	0,0%
	> 8 years	4	4,8%	10	12,0%	21	25,3%	21	25,3%	27	32,5%	13	15,7%	5	6,0%	6	7,2%	19	22,9%	39	47,0%	53	63,9%	22	26,5%	6	7,2%	1	1,2%	0	0,0%
	n/a	1	5,3%	0	0,0%	4	21,1%	5	26,3%	9	47,4%	1	5,3%	2	10,5%	2	10,5%	3	15,8%	11	57,9%	16	84,2%	1	5,3%	2	10,5%	0	0,0%	0	0,0%
Age	< 30 years	0	0,0%	2	7,7%	5	19,2%	9	34,6%	10	38,5%	4	15,4%	5	19,2%	1	3,8%	10	38,5%	6	23,1%	8	30,8%	12	46,2%	4	15,4%	0	0,0%	2	7,7%
	31 - 39	2	4,3%	3	6,5%	6	13,0%	12	26,1%	23	50,0%	6	13,0%	2	4,3%	7	15,2%	13	28,3%	17	37,0%	25	54,3%	14	30,4%	6	13,0%	2	4,3%	0	0,0%
	40 - 49	2	3,3%	4	6,6%	13	21,3%	15	24,6%	27	44,3%	9	14,8%	5	8,2%	2	3,3%	9	14,8%	36	59,0%	38	62,3%	20	32,8%	0	0,0%	1	1,6%	0	0,0%
	> 50 years	2	4,4%	6	13,3%	11	24,4%	10	22,2%	16	35,6%	2	4,4%	2	4,4%	2	4,4%	11	24,4%	28	62,2%	35	77,8%	7	15,6%	3	6,7%	0	0,0%	0	0,0%
	n/a	1	6,7%	0	0,0%	5	33,3%	3	20,0%	6	40,0%	1	6,7%	1	6,7%	2	13,3%	4	26,7%	7	46,7%	12	80,0%	0	0,0%	2	13,3%	1	6,7%	0	0,0%
Gender	male	4	4,1%	6	6,1%	19	19,4%	20	20,4%	49	50,0%	14	14,3%	8	8,2%	3	3,1%	21	21,4%	52	53,1%	62	63,3%	25	25,5%	5	5,1%	2	2,0%	2	2,0%
	female	2	2,7%	8	10,7%	16	21,3%	25	33,3%	24	32,0%	7	9,3%	6	8,0%	9	12,0%	23	30,7%	29	38,7%	38	50,7%	27	36,0%	9	12,0%	2	2,7%	0	0,0%
	n/a	1	5,9%	0	0,0%	4	23,5%	4	23,5%	8	47,1%	2	11,8%	0	0,0%	2	11,8%	2	11,8%	11	64,7%	16	94,1%	0	0,0%	1	5,9%	0	0,0%	0	0,0%
Location	DUS	4	3,5%	7	6,1%	19	16,7%	29	25,4%	55	48,2%	14	12,3%	14	12,3%	8	7,0%	25	21,9%	52	45,6%	66	57,9%	33	28,9%	9	7,9%	3	2,6%	2	1,8%
	SAR	1	2,3%	5	11,6%	11	25,6%	12	27,9%	14	32,6%	2	4,7%	1	2,3%	3	7,0%	17	39,5%	19	44,2%	22	51,2%	16	37,2%	4	9,3%	1	2,3%	0	0,0%
	other	1	7,1%	3	21,4%	5	35,7%	2	14,3%	3	21,4%	2	14,3%	0	0,0%	0	0,0%	2	14,3%	10	71,4%	11	78,6%	3	21,4%	0	0,0%	0	0,0%	0	0,0%
	n/a	1	5,3%	0	0,0%	5	26,3%	5	26,3%	8	42,1%	4	21,1%	0	0,0%	3	15,8%	2	10,5%	10	52,6%	15	78,9%	1	5,3%	2	10,5%	0	0,0%	0	0,0%

APPENDIX 17: Cronbach's Alpha and Inter-Item Correlation Matrix

Reliability Statistics | **Inter-Item-Korrelationsmatrix**

Management Role Model

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,830	,829	4

	Q4	Q18	Q19	Q2
Q4	1,000	,713	,713	,388
Q18	,713	1,000	,695	,404
Q19	,713	,695	1,000	,376
Q2	,388	,404	,376	1,000

Clarity & Transparency

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,785	,804	4

	Q10	Q9	Q16	Q11
Q10	1,000	,566	,553	,605
Q9	,566	1,000	,390	,426
Q16	,553	,390	1,000	,502
Q11	,605	,426	,502	1,000

Responsibility & Commitment

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,516	,558	4

	Q12	Q15	Q14	Q7
Q12	1,000	,112	,148	,307
Q15	,112	1,000	,250	,303
Q14	,148	,250	1,000	,317
Q7	,307	,303	,317	1,000

Awareness & Interest

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,489	,506	4

	Q13	Q1	Q9	Q6
Q13	1,000	,198	,073	,201
Q1	,198	1,000	,426	,181
Q9	,073	,426	1,000	,142
Q6	,201	,181	,142	1,000

Critical Ability & Self-Confidence

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,228	,235	3

	Q26	Q22	Q17
Q26	1,000	,024	,117
Q22	,024	1,000	,138
Q17	,117	,138	1,000

Cross-departmental Exchange

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,557	,582	4

	Q21	Q5	Q23	Q20
Q21	1,000	,186	,145	,208
Q5	,186	1,000	,371	,263
Q23	,145	,371	1,000	,377
Q20	,208	,263	,377	1,000

Entrepreneurial Thinking

Cronbach's Alpha	Cronbach's Alpha based on standardized Items	No of Items
,197	,223	3

	Q3	Q24	Q25
Q3	1,000	,031	,079
Q24	,031	1,000	,152
Q25	,079	,152	1,000

APPENDIX 18: Intranet announcement of survey results

Results of the Risk Culture Survey at METRO PROPERTIES

In February this year, the employees of METRO PROPERTIES Germany were invited by email to participate in a survey with regard to risk culture. In that, the focus was to understand the level of information as well as the level of employee participation in the risk management process of METRO PROPERTIES.

It is most welcome that almost half of all employees of METRO PROPERTIES Germany took the opportunity to share their view and level of knowledge to allow a continuous work on the improvement of risk management. At this, the active attendance and willingness by all employees is required, to contribute with knowledge and experience in their working area, in order to enable a comprehensive and sustainable effect of risk management.

In summary, the survey participants generally agreed, that there is a sound sense of responsibility as well as a long-term thinking when dealing with risks at METRO PROPERTIES Germany. The participants declared an essential willingness to contribute to risk management, but in their opinion there is room for improvement with regard to clarity and transparency of the respective processes and required information.

It is very positive to learn that most participants said they are interested in that topic and they talk to their direct line supervisors about potential risks of METRO PROPERTIES. Many participants agreed that their direct line supervisors set a good example when dealing with risks. However, they require feedback and exchange within their departments and cross-departmental, to a greater extent.

By integration and further development of the risk management function within an independent division Integrated Governance, Risk and Compliance (IGRC), METRO PROPERTIES lays additional foundation to advance clarity and transparency of the risk management processes. In particular, the division will concentrate to provide the required information, support cross-departmental exchange and raise the required awareness of the importance of risk management within METRO PROPERTIES. Furthermore, the survey represents the basis for a repetition in the next year that will also cover other countries in addition to Germany, to assess the risk culture of METRO PROPERTIES holistically.

Contact: Denise Schoenfeld [phone number] [email address]

APPENDIX 19: Overview of Socio-Demograhic Variables

			Supervisory Responsibility					TOTAL
			no		yes		n/a	
Gender	male	in total	49	44,1%	38	80,9%	11	98
		in percent	26,1%		20,2%		5,9%	52,1%
	female	in total	57	51,4%	8	17,0%	9	74
		in percent	30,3%		4,3%		4,8%	39,4%
	n/a	in total	5	4,5%	1	2,1%	10	16
		in percent	2,7%		,5%		5,3%	8,5%
TOTAL		in total	111	100,0%	47	100,0%	30	188
		in percent	59,0%		25,0%		16,0%	100,0%
Age	under 30 years	in total	24	21,2%	0	0,0%	2	26
		in percent	12,5%		0,0%		1,0%	13,5%
	31 - 39 years	in total	26	23,0%	14	28,6%	6	46
		in percent	13,5%		7,3%		3,1%	24,0%
	40 - 49 years	in total	32	28,3%	18	36,7%	10	60
		in percent	16,7%		9,4%		5,2%	31,3%
	above 50 years	in total	25	22,1%	17	34,7%	3	45
		in percent	13,0%		8,9%		1,6%	23,4%
	n/a	in total	6	5,3%	0	0,0%	9	15
		in percent	3,1%		0,0%		4,7%	7,8%
TOTAL		in total	113	100,0%	49	100,0%	30	192
		in percent	58,9%		25,5%		15,6%	100,0%
Job Tenure	up to 1 years	in total	7	6,2%	3	6,1%	1	11
		in percent	3,6%		1,6%		,5%	5,7%
	1 - 3 years	in total	27	23,9%	11	22,4%	3	41
		in percent	14,1%		5,7%		1,6%	21,4%
	4 - 7 years	in total	22	19,5%	13	26,5%	4	39
		in percent	11,5%		6,8%		2,1%	20,3%
	more than 8 years	in total	52	46,0%	21	42,9%	9	82
		in percent	27,1%		10,9%		4,7%	42,7%
	n/a	in total	5	4,4%	1	2,0%	13	19
		in percent	2,6%		,5%		6,8%	9,9%
TOTAL		in total	113	100,0%	49	100,0%	30	192
		in percent	58,9%		25,5%		15,6%	100,0%

			Location						TOTAL
			DUS		SAR		other	n/a	
Gender	male	in total	65	58,0%	14	34,1%	13	5	97
		in percent	34,9%		7,5%		7,0%	2,7%	52,2%
	female	in total	44	39,3%	26	63,4%	1	2	73
		in percent	23,7%		14,0%		,5%	1,1%	39,2%
	n/a	in total	3	2,7%	1	2,4%	0	12	16
		in percent	1,6%		,5%		0,0%	6,5%	8,6%
TOTAL		in total	112	100,0%	41	100,0%	14	19	186
		in percent	60,2%		22,0%		7,5%	10,2%	100,0%
Supervisory Responsibility	no	in total	68	59,6%	30	69,8%	11	2	111
		in percent	35,8%		15,8%		5,8%	1,1%	58,4%
	yes	in total	35	30,7%	10	23,3%	2	2	49
		in percent	18,4%		5,3%		1,1%	1,1%	25,8%
	n/a	in total	11	9,6%	3	7,0%	1	15	30
		in percent	5,8%		1,6%		,5%	7,9%	15,8%
TOTAL		in total	114	100,0%	43	100,0%	14	19	190
		in percent	60,0%		22,6%		7,4%	10,0%	100,0%
Job Tenure	up to 1 years	in total	10	8,8%	1	2,3%	0	0	11
		in percent	5,3%		,5%		0,0%	0,0%	5,8%
	1 - 3 years	in total	35	30,7%	5	11,6%	0	0	40
		in percent	18,4%		2,6%		0,0%	0,0%	21,1%
	4 - 7 years	in total	33	28,9%	5	11,6%	0	1	39
		in percent	17,4%		2,6%		0,0%	,5%	20,5%
	more than 8 years	in total	32	28,1%	32	74,4%	14	3	81
		in percent	16,8%		16,8%		7,4%	1,6%	42,6%
	n/a	in total	4	3,5%	0	0,0%	0	15	19
		in percent	2,1%		0,0%		0,0%	7,9%	10,0%
TOTAL		in total	114	100,0%	43	100,0%	14	19	190
		in percent	60,0%		22,6%		7,4%	10,0%	100,0%
Age	under 30 years	in total	23	20,2%	3	7,0%	0	0	26
		in percent	12,1%		1,6%		0,0%	0,0%	13,7%
	31 - 39 years	in total	37	32,5%	6	14,0%	0	2	45
		in percent	19,5%		3,2%		0,0%	1,1%	23,7%
	40 - 49 years	in total	29	25,4%	21	48,8%	6	4	60
		in percent	15,3%		11,1%		3,2%	2,1%	31,6%
	above 50 years	in total	21	18,4%	12	27,9%	8	3	44
		in percent	11,1%		6,3%		4,2%	1,6%	23,2%
	n/a	in total	4	3,5%	1	2,3%	0	10	15
		in percent	2,1%		,5%		0,0%	5,3%	7,9%
TOTAL		in total	114	100,0%	43	100,0%	14	19	190
		in percent	60,0%		22,6%		7,4%	10,0%	100,0%

			Gender					
			male		female		n/a	TOTAL
Supervisory Responsibility	no	in total	49	50,0%	57	77,0%	5	111
		in percent	26,1%		30,3%		2,7%	59,0%
	yes	in total	38	38,8%	8	10,8%	1	47
		in percent	20,2%		4,3%		,5%	25,0%
	n/a	in total	11	11,2%	9	12,2%	10	30
		in percent	5,9%		4,8%		5,3%	16,0%
TOTAL		in total	98	100,0%	74	100,0%	16	188
		in percent	52,1%		39,4%		8,5%	100,0%
Age	under 30 years	in total	10	10,2%	16	21,3%	0	26
		in percent	5,3%		8,4%		0,0%	13,7%
	31 - 39 years	in total	21	21,4%	23	30,7%	2	46
		in percent	11,1%		12,1%		1,1%	24,2%
	40 - 49 years	in total	36	36,7%	21	28,0%	2	59
		in percent	18,9%		11,1%		1,1%	31,1%
	above 50 years	in total	29	29,6%	14	18,7%	1	44
		in percent	15,3%		7,4%		,5%	23,2%
	n/a	in total	2	2,0%	1	1,3%	12	15
		in percent	1,1%		,5%		6,3%	7,9%
TOTAL		in total	98	100,0%	75	100,0%	17	190
		in percent	51,6%		39,5%		8,9%	100,0%
Job Tenure	up to 1 years	in total	6	6,1%	5	6,7%	0	11
		in percent	3,2%		2,6%		0,0%	5,8%
	1 - 3 years	in total	24	24,5%	15	20,0%	1	40
		in percent	12,7%		7,9%		,5%	21,2%
	4 - 7 years	in total	17	17,3%	22	29,3%	0	39
		in percent	9,0%		11,6%		0,0%	20,6%
	more than 8 years	in total	47	48,0%	31	41,3%	2	80
		in percent	24,9%		16,4%		1,1%	42,3%
	n/a	in total	4	4,1%	2	2,7%	13	19
		in percent	2,1%		1,1%		6,9%	10,1%
TOTAL		in total	98	100,0%	75	100,0%	16	189
		in percent	51,9%		39,7%		8,5%	100,0%

APPENDIX 20: Results of independent sample t-test and ANOVA test

a) management role model (expected behaviour in RM) to be put into practice

b) clarity and transparency in RM process

c) sound sense of responsibility and commitment for RM

d) risk awareness and interest for RM at the workplace

e) tolerate mistakes and learn from them; critical abilities; self-confidence

f) team spirit; cross-departmental exchange about RM topics

g) entrepreneurial, unlimited, long-term thinking about RM

Gender (independent sample t-test)

Group Statistics

Gender		N	Mean	Standard Deviation	Standard Error Mean
a	male	96	8,1354	3,58541	,36593
	female	71	8,2958	3,24871	,38555
b	male	45	12,1556	1,80851	,26960
	female	23	12,2609	1,32175	,27560
c	male	96	10,9583	1,89690	,19360
	female	75	10,1867	2,16666	,25018
d	male	95	9,5053	2,28722	,23466
	female	76	9,5658	2,39074	,27424
e	male	98	5,1327	1,80285	,18212
	female	74	5,1892	1,55868	,18119
f	male	97	9,0722	2,15178	,21848
	female	74	10,2162	2,26510	,26331
g	male	96	9,4896	1,99470	,20358
	female	73	9,2877	1,62001	,18961

Independent Samples Test

		Levene Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	Lower	Upper
a	Equal variances assumed	,594	,442	-,297	165	,767	-,16036	,53949	-1,22555	,90483
	Equal variances not assumed			-,302	158,279	,763	-,16036	,53156	-1,21023	,88951
b	Equal variances assumed	1,138	,290	-,247	66	,806	-,10531	,42605	-,95595	,74532
	Equal variances not assumed			-,273	57,790	,786	-,10531	,38554	-,87711	,66649
c	Equal variances assumed	1,071	,302	2,479	169	,014	,77167	,31122	,15729	1,38605
	Equal variances not assumed			2,439	147,861	,016	,77167	,31634	,14653	1,39681
d	Equal variances assumed	,285	,594	-,169	169	,866	-,06053	,35915	-,76953	,64848
	Equal variances not assumed			-,168	157,618	,867	-,06053	,36093	-,77341	,65236
e	Equal variances assumed	1,574	,211	-,216	170	,830	-,05654	,26216	-,57405	,46098
	Equal variances not assumed			-,220	166,847	,826	-,05654	,25690	-,56373	,45065
f	Equal variances assumed	1,359	,245	-3,367	169	,001	-1,14405	,33979	-1,81482	-,47328
	Equal variances not assumed			-3,344	152,979	,001	-1,14405	,34215	-1,82000	-,46810
g	Equal variances assumed	4,021	,047	,706	167	,481	,20191	,28613	-,36298	,76681
	Equal variances not assumed			,726	166,246	,469	,20191	,27820	-,34736	,75118

Supervisory Responsibility (independent sample t-test)

Group Statistics

Supervisory Responsibility		N	Mean	Standard Deviation	Standard Error Mean
a	no	108	8,6019	3,57546	,34405
	yes	48	6,9375	2,74758	,39658
b	no	36	12,4444	1,71455	,28576
	yes	23	11,6087	1,40580	,29313
c	no	112	10,3929	2,02399	,19125
	yes	47	10,9362	1,90428	,27777
d	no	111	9,5946	2,35248	,22329
	yes	48	9,2917	2,30594	,33283
e	no	111	5,1802	1,72784	,16400
	yes	48	5,2917	1,68798	,24364
f	no	110	9,7909	2,22618	,21226
	yes	49	9,0816	2,20640	,31520
g	no	110	9,4273	1,75812	,16763
	yes	47	9,6170	1,60912	,23471

Independent Samples Test

		Levene Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	Lower	Upper
a	Equal variances assumed	4,350	,039	2,869	154	,005	1,66435	,58019	,51819	2,81052
	Equal variances not assumed			3,170	115,606	,002	1,66435	,52502	,62445	2,70426
b	Equal variances assumed	1,375	,246	1,954	57	,056	,83575	,42776	-,02082	1,69231
	Equal variances not assumed			2,042	53,380	,046	,83575	,40937	,01479	1,65670
c	Equal variances assumed	,044	,835	-1,571	157	,118	-,54331	,34580	-1,22632	,13970
	Equal variances not assumed			-1,611	91,436	,111	-,54331	,33724	-1,21316	,12653
d	Equal variances assumed	,006	,938	,750	157	,454	,30293	,40400	-,49505	1,10090
	Equal variances not assumed			,756	90,954	,452	,30293	,40079	-,49321	1,09906
e	Equal variances assumed	,431	,513	-,376	157	,707	-,11149	,29644	-,69701	,47404
	Equal variances not assumed			-,380	91,237	,705	-,11149	,29369	-,69485	,47188
f	Equal variances assumed	,071	,791	1,860	157	,065	,70928	,38132	-,04390	1,46245
	Equal variances not assumed			1,866	92,984	,065	,70928	,38001	-,04534	1,46389
g	Equal variances assumed	,143	,705	-,635	155	,526	-,18975	,29890	-,78020	,40070
	Equal variances not assumed			-,658	94,516	,512	-,18975	,28843	-,76239	,38289

Location (independent sample t-test)

Group Statistics

Location		N	Mean	Standard Deviation	Standard Error Mean
a	Dusseldorf	111	8,4865	3,18481	,30229
	Saarbrucken	41	8,4634	4,14184	,64685
b	Dusseldorf	31	12,3226	1,10716	,19885
	Saarbrucken	22	12,0909	2,11365	,45063
c	Dusseldorf	113	10,6549	2,09067	,19667
	Saarbrucken	42	10,1190	2,05061	,31642
d	Dusseldorf	111	9,9279	2,07457	,19691
	Saarbrucken	43	8,6512	2,67158	,40741
e	Dusseldorf	113	5,1770	1,75372	,16498
	Saarbrucken	41	5,4146	1,67296	,26127
f	Dusseldorf	113	9,8319	2,21562	,20843
	Saarbrucken	41	9,4634	2,16907	,33875
g	Dusseldorf	112	9,4375	1,99450	,18846
	Saarbrucken	42	9,5952	1,32627	,20465

Independent Samples Test

		Levene Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	Lower	Upper
a	Equal variances assumed	3,401	,067	,036	150	,971	,02307	,63342	-1,22850	1,27465
	Equal variances not assumed			,032	58,367	,974	,02307	,71400	-1,40595	1,45210
b	Equal variances assumed	4,589	,037	,519	51	,606	,23167	,44609	-,66389	1,12723
	Equal variances not assumed			,470	29,200	,642	,23167	,49256	-,77542	1,23876
c	Equal variances assumed	,093	,761	1,425	153	,156	,53582	,37590	-,20680	1,27844
	Equal variances not assumed			1,438	74,717	,155	,53582	,37256	-,20640	1,27804
d	Equal variances assumed	5,755	,018	3,152	152	,002	1,27677	,40512	,47637	2,07716
	Equal variances not assumed			2,822	62,610	,006	1,27677	,45250	,37240	2,18113
e	Equal variances assumed	,098	,754	-,752	152	,453	-,23764	,31593	-,86182	,38653
	Equal variances not assumed			-,769	74,051	,444	-,23764	,30900	-,85333	,37804
f	Equal variances assumed	,025	,876	,917	152	,361	,36844	,40173	-,42525	1,16214
	Equal variances not assumed			,926	72,317	,357	,36844	,39774	-,42437	1,16126
g	Equal variances assumed	10,344	,002	-,474	152	,636	-,15774	,33262	-,81490	,49942
	Equal variances not assumed			-,567	110,638	,572	-,15774	,27821	-,70904	,39357

Age (ANOVA test)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
a	Between Groups	188,050	4	47,012	4,157	,003
	Within Groups	2058,453	182	11,310		
	Total	2246,503	186			
b	Between Groups	3,788	4	,947	,341	,849
	Within Groups	188,897	68	2,778		
	Total	192,685	72			
c	Between Groups	15,566	4	3,891	,912	,458
	Within Groups	793,712	186	4,267		
	Total	809,277	190			
d	Between Groups	156,924	4	39,231	8,636	,000
	Within Groups	840,444	185	4,543		
	Total	997,368	189			
e	Between Groups	7,267	4	1,817	,630	,642
	Within Groups	536,680	186	2,885		
	Total	543,948	190			
f	Between Groups	65,390	4	16,347	3,448	,010
	Within Groups	877,221	185	4,742		
	Total	942,611	189			
g	Between Groups	,808	4	,202	,058	,994
	Within Groups	636,631	184	3,460		
	Total	637,439	188			

Descriptives

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
d	30 years and below	26	10,4231	1,87985	,36867	9,6638	11,1824	7,00	14,00
	31 - 39 years	46	10,5652	1,92818	,28429	9,9926	11,1378	6,00	14,00
	40 - 49 years	60	9,3833	2,33682	,30168	8,7797	9,9870	4,00	14,00
	above 50 years	44	8,1364	2,33866	,35257	7,4253	8,8474	4,00	14,00
	n/a	14	9,4286	1,45255	,38821	8,5899	10,2672	7,00	12,00
	Total	190	9,5263	2,29719	,16666	9,1976	9,8551	4,00	14,00
a	30 years and below	25	9,1200	3,40735	,68147	7,7135	10,5265	4,00	17,00
	31 - 39 years	45	9,0667	3,16515	,47183	8,1157	10,0176	4,00	17,00
	40 - 49 years	57	8,2281	3,47449	,46021	7,3062	9,1500	4,00	18,00
	above 50 years	45	6,4889	3,10148	,46234	5,5571	7,4207	4,00	19,00
	n/a	15	8,5333	4,13809	1,06845	6,2417	10,8249	4,00	16,00
	Total	187	8,1551	3,47534	,25414	7,6537	8,6565	4,00	19,00
f	30 years and below	26	10,1154	2,30351	,45176	9,1850	11,0458	6,00	14,00
	31 - 39 years	46	9,9348	2,20507	,32512	9,2800	10,5896	4,00	14,00
	40 - 49 years	59	9,6102	2,27442	,29610	9,0175	10,2029	5,00	16,00
	above 50 years	44	8,5682	2,08425	,31421	7,9345	9,2019	4,00	15,00
	n/a	15	10,2667	1,66762	,43058	9,3432	11,1902	8,00	14,00
	Total	190	9,5684	2,23324	,16202	9,2488	9,8880	4,00	16,00

Multiple Comparisons

Tukey-HSD

Dependent Variable			Mean Difference (I-J)	Standard Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
d	30 years and below	31 - 39 years	-,14214	,52296	,999	-1,5828	1,2985
		40 - 49 years	1,03974	,50044	,234	-,3389	2,4184
		above 50 years	2,28671*	,52724	,000	,8342	3,7392
		n/a	,99451	,70656	,624	-,9520	2,9410
	31 - 39 years	30 years and below	,14214	,52296	,999	-1,2985	1,5828
		40 - 49 years	1,18188*	,41770	,041	,0312	2,3326
		above 50 years	2,42885*	,44945	,000	1,1907	3,6670
		n/a	1,13665	,65058	,408	-,6556	2,9289
	40 - 49 years	30 years and below	-1,03974	,50044	,234	-2,4184	,3389
		31 - 39 years	-1,18188*	,41770	,041	-2,3326	-,0312
		above 50 years	1,24697*	,42304	,029	,0815	2,4124
		n/a	-,04524	,63262	1,000	-1,7880	1,6976
	above 50 years	30 years and below	-2,28671*	,52724	,000	-3,7392	-,8342
		31 - 39 years	-2,42885*	,44945	,000	-3,6670	-1,1907
		40 - 49 years	-1,24697*	,42304	,029	-2,4124	-,0815
		n/a	-1,29221	,65402	,282	-3,0940	,5095
	n/a	30 years and below	-,99451	,70656	,624	-2,9410	,9520
		31 - 39 years	-1,13665	,65058	,408	-2,9289	,6556
		40 - 49 years	,04524	,63262	1,000	-1,6976	1,7880
		above 50 years	1,29221	,65402	,282	-,5095	3,0940
a	30 years and below	31 - 39 years	,05333	,83889	1,000	-2,2581	2,3648
		40 - 49 years	,89193	,80674	,803	-1,3309	3,1148
		above 50 years	2,63111*	,83889	,017	,3197	4,9425
		n/a	,58667	1,09837	,984	-2,4397	3,6130
	31 - 39 years	30 years and below	-,05333	,83889	1,000	-2,3648	2,2581
		40 - 49 years	,83860	,67064	,722	-1,0092	2,6864
		above 50 years	2,57778*	,70900	,003	,6243	4,5313
		n/a	,53333	1,00267	,984	-2,2293	3,2960
	40 - 49 years	30 years and below	-,89193	,80674	,803	-3,1148	1,3309
		31 - 39 years	-,83860	,67064	,722	-2,6864	1,0092
		above 50 years	1,73918	,67064	,076	-,1087	3,5870
		n/a	-,30526	,97593	,998	-2,9943	2,3837
	above 50 years	30 years and below	-2,63111*	,83889	,017	-4,9425	-,3197
		31 - 39 years	-2,57778*	,70900	,003	-4,5313	-,6243
		40 - 49 years	-1,73918	,67064	,076	-3,5870	,1087
		n/a	-2,04444	1,00267	,252	-4,8071	,7182
	n/a	30 years and below	-,58667	1,09837	,984	-3,6130	2,4397
		31 - 39 years	-,53333	1,00267	,984	-3,2960	2,2293
		40 - 49 years	,30526	,97593	,998	-2,3837	2,9943
		above 50 years	2,04444	1,00267	,252	-,7182	4,8071
f	30 years and below	31 - 39 years	,18060	,53428	,997	-1,2913	1,6525
		40 - 49 years	,50522	,51258	,862	-,9069	1,9173
		above 50 years	1,54720*	,53865	,036	,0633	3,0311
		n/a	-,15128	,70604	1,000	-2,0963	1,7938
	31 - 39 years	30 years and below	-,18060	,53428	,997	-1,6525	1,2913
		40 - 49 years	,32461	,42831	,942	-,8553	1,5046
		above 50 years	1,36660*	,45918	,027	,1016	2,6316
		n/a	-,33188	,64745	,986	-2,1155	1,4518
	40 - 49 years	30 years and below	-,50522	,51258	,862	-1,9173	,9069
		31 - 39 years	-,32461	,42831	,942	-1,5046	,8553
		above 50 years	1,04199	,43375	,119	-,1529	2,2369
		n/a	-,65650	,62967	,835	-2,3912	1,0782
	above 50 years	30 years and below	-1,54720*	,53865	,036	-3,0311	-,0633
		31 - 39 years	-1,36660*	,45918	,027	-2,6316	-,1016
		40 - 49 years	-1,04199	,43375	,119	-2,2369	,1529
		n/a	-1,69848	,65106	,073	-3,4921	,0951
	n/a	30 years and below	,15128	,70604	1,000	-1,7938	2,0963
		31 - 39 years	,33188	,64745	,986	-1,4518	2,1155
		40 - 49 years	,65650	,62967	,835	-1,0782	2,3912
		above 50 years	1,69848	,65106	,073	-,0951	3,4921

* The mean difference is significant at the .05 level

Job Tenure (ANOVA test)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
a	Between Groups	79,865	4	19,966	1,672	,158
	Within Groups	2161,969	181	11,945		
	Total	2241,833	185			
b	Between Groups	5,070	4	1,267	,459	,765
	Within Groups	187,615	68	2,759		
	Total	192,685	72			
c	Between Groups	9,003	4	2,251	,522	,720
	Within Groups	798,161	185	4,314		
	Total	807,163	189			
d	Between Groups	95,109	4	23,777	4,960	,001
	Within Groups	882,140	184	4,794		
	Total	977,249	188			
e	Between Groups	3,926	4	,981	,336	,853
	Within Groups	539,990	185	2,919		
	Total	543,916	189			
f	Between Groups	41,686	4	10,421	2,159	,075
	Within Groups	888,124	184	4,827		
	Total	929,810	188			
g	Between Groups	39,139	4	9,785	3,006	,020
	Within Groups	595,734	183	3,255		
	Total	634,872	187			

Descriptives

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
d	up to 1 year	11	8,3636	2,06265	,62191	6,9779	9,7493	5,00	11,00
	1-3 years	41	10,1707	2,13193	,33295	9,4978	10,8437	5,00	14,00
	4-7 years	38	10,4474	2,08854	,33881	9,7609	11,1339	5,00	13,00
	more than 8 years	81	8,9136	2,36748	,26305	8,3901	9,4371	4,00	14,00
	n/a	18	9,3333	1,68034	,39606	8,4977	10,1689	7,00	12,00
	Total	189	9,5026	2,27994	,16584	9,1755	9,8298	4,00	14,00
g	up to 1 year	11	9,1818	1,83402	,55298	7,9497	10,4139	6,00	11,00
	1-3 years	39	10,1538	1,85725	,29740	9,5518	10,7559	5,00	15,00
	4-7 years	38	9,5526	1,63901	,26588	9,0139	10,0914	6,00	12,00
	more than 8 years	81	8,9630	1,83333	,20370	8,5576	9,3683	4,00	12,00
	n/a	19	9,4737	1,86692	,42830	8,5739	10,3735	5,00	12,00
	Total	188	9,3936	1,84256	,13438	9,1285	9,6587	4,00	15,00

Multiple Comparisons

Tukey-HSD

Dependent Variable			Mean Difference (I-J)	Standard Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
d	up to 1 year	1-3 years	-1,80710	,74349	,112	-3,8554	,2412
		4-7 years	-2,08373*	,74967	,047	-4,1491	-,0184
		more than 8 years	-,54994	,70358	,936	-2,4883	1,3884
		n/a	-,96970	,83797	,776	-3,2783	1,3389
	1-3 years	up to 1 year	1,80710	,74349	,112	-,2412	3,8554
		4-7 years	-,27664	,49305	,980	-1,6350	1,0817
		more than 8 years	1,25715*	,41967	,026	,1010	2,4133
		n/a	,83740	,61910	,659	-,8682	2,5430
	4-7 years	up to 1 year	2,08373*	,74967	,047	,0184	4,1491
		1-3 years	,27664	,49305	,980	-1,0817	1,6350
		more than 8 years	1,53379*	,43053	,004	,3477	2,7199
		n/a	1,11404	,62651	,389	-,6120	2,8401
	more than 8 years	up to 1 year	,54994	,70358	,936	-1,3884	2,4883
		1-3 years	-1,25715*	,41967	,026	-2,4133	-,1010
		4-7 years	-1,53379*	,43053	,004	-2,7199	-,3477
		n/a	-,41975	,57056	,948	-1,9916	1,1521
	n/a	up to 1 year	,96970	,83797	,776	-1,3389	3,2783
		1-3 years	-,83740	,61910	,659	-2,5430	,8682
		4-7 years	-1,11404	,62651	,389	-2,8401	,6120
		more than 8 years	,41975	,57056	,948	-1,1521	1,9916
g	up to 1 year	1-3 years	-,97203	,61597	,513	-2,6691	,7251
		4-7 years	-,37081	,61775	,975	-2,0728	1,3312
		more than 8 years	,21886	,57977	,996	-1,3785	1,8162
		n/a	-,29187	,68358	,993	-2,1752	1,5915
	1-3 years	up to 1 year	,97203	,61597	,513	-,7251	2,6691
		4-7 years	,60121	,41127	,589	-,5319	1,7343
		more than 8 years	1,19088*	,35165	,008	,2220	2,1598
		n/a	,68016	,50478	,662	-,7106	2,0709
	4-7 years	up to 1 year	,37081	,61775	,975	-1,3312	2,0728
		1-3 years	-,60121	,41127	,589	-1,7343	,5319
		more than 8 years	,58967	,35476	,460	-,3878	1,5671
		n/a	,07895	,50695	1,000	-1,3178	1,4757
	more than 8 years	up to 1 year	-,21886	,57977	,996	-1,8162	1,3785
		1-3 years	-1,19088*	,35165	,008	-2,1598	-,2220
		4-7 years	-,58967	,35476	,460	-1,5671	,3878
		n/a	-,51072	,45992	,801	-1,7779	,7564
	n/a	up to 1 year	,29187	,68358	,993	-1,5915	2,1752
		1-3 years	-,68016	,50478	,662	-2,0709	,7106
		4-7 years	-,07895	,50695	1,000	-1,4757	1,3178
		more than 8 years	,51072	,45992	,801	-,7564	1,7779

* The mean difference is significant at the .05 level