Ground-Breaking Contingency Planning with Risk- & Disaster Management
A Case Study at Höganäs Japan K.K.

Final Thesis
Author: David Häggberg, 880621
Field of Research: Management

Supervisor: Richard Nakamura
(Daniel Ericsson)
Examiner: Daniel Ericsson
Semester: Spring 2015, VÄXJÖ
Course code: 4FE10E
ECTS-points: 30 HP
Date: 2015-05-29
ACKNOWLEDGMENTS

I will not say that the journey of constructing this thesis has been a piece of cake, neither will I say that it has been difficult or tough since I have meet a lot of people along the way that have helped me keep my spirit up, something I am truly grateful for. Extensive, would probably be the most adequate description of this process and the thesis itself as it so happens. Though most journeys worth taking usually are and if not to find out the true meaning at the final destination then hopefully the journey in itself will provide gained insight and experience that will help oneself navigate more efficiently in the future. I cannot guarantee that all of whom picks up this document will find it rewarding for the direct purpose they seek to utilize it for, though I will make the bold claim that somewhere along the enormous conveyor belt called life the one whom dare read it all may find it helpful at least indirectly in their future endeavors. If not, you can always send me a letter at the end of the road, though unfortunately I cannot guarantee my mailing address.

What I am trying to say is that just as this thesis does not guarantee any quick fixes, neither does the subject of Risk Management, the reward is often that nothing happens, a celebration with few participants. Though in that regard this thesis and RM differs quite a lot, because there are many participants behind and within this thesis that needs celebration and proper acknowledgment. I would like to start applauding all the people I have interviewed in both Japan and Sweden, without you there would be no thesis. A special ‘Thank you’ to my contact person whom arranged everything at Höganäs and helped me throughout my time in Tokyo. Teachers, supervisors and fellow students also need their fair share of respect for their endurance in providing constructive feedback on my endless drafts. My main supervisor has been Richard Nakamura whom helped me during the majority of this thesis project but since the project got prolonged he later had to move on to other projects and instead Daniel Ericsson provided me with some feedback during the final stage of the study to help me over the finish line. I guess I also have to thank my so called friends and family for constantly nagging me into diving deeper into the sea of Risk Management by telling me how simply they would have solved the matters I have been contemplating.

Finally I would like to thank you, the current reader, for even reading this part and if you muster up enough strength to read the whole thing…well what was it now again… oh right, I give no guarantees.

..: Though tread carefully because with Mother Nature there is never a dull moment :..
PREFACE

The usage of global networks through internet in modern business practice has more or less become something that we take for granted. Real-time updates of stock volumes, videoconferences, ordering, financial transactions, online customer services and so on are no longer complements to primary means for conducting business but has instead become constants that we depend on. That this crucial access to internet sometimes relies on something as simple and fragile as a single cable or two is it few that concerns themselves with.

On the 26 December 2006 close to southwest coast of Taiwan, in the Luzon Strait, the so called Hengchun earthquake occurred. Fortunately the number of injured people was low with only a few fatalities reported. However the earthquake severely damaged some under-water cables providing other parts of Asia with telecommunication and internet. This is reported to have had grave effects primary on the financial market as well as on businesses relying on global sourcing networks. (Andersen & Schrøder, 2010:7)

Even though natural disasters of major scales might be relatively rare in most parts of the world it would be ignorant not to take available precautions if the effects of an incident would be catastrophic to one’s business, even if the odds of an occurrence might be small. Still an even bigger mistake would be to regard oneself as completely safe just because one has been taking all kinds of ‘rational’ precautions.

"It is very likely that something very unlikely will occur”
(Aristotle 384-322 B.C.)

On the 28 March 2011 approximately 90 percent of the internet users in Armenia (3.2 million people) lost their access to internet due to unknown cause. Fortunately the connection was reestablished after about five hours. Still the reason behind the disruption would be found first after 10 days, close to Tbilisi, the capital of Georgia (Armenia’s main internet provider). An unusual type of hacker got the blame, namely a 75 year old Georgian woman who accidentally had damaged a fiber-optic cable with her spade while digging for copper to sell. (Parfitt, 2011)

What I am trying to say here is that true Risk Management is not all about taking proactive measures, it is not a task to complete and be done with. It is instead a way of working, thinking and practice in everyday business. Last but not least it is a way of taking action in the midst of an immediate disaster when needed to. Because nobody cares about how much precautions you have taken in order to avoid something from happening, when it happens, all that matters is to solve it as quick and painless as possible.
ABSTRACT


Author: David Häggberg
Supervisor: Richard Nakamura (Daniel Ericsson)

Title: Ground-Breaking Contingency Planning with Risk- & Disaster Management
Subtitle: A Case Study at Höganäs Japan K.K.

Background: On the 11th of March 2011, Japan was hit with one of the largest earthquakes in modern history at a magnitude of 9.0 on the Richter scale. This caused wide spreading and lasting delays in production in large parts of the world due to organizations supply chain being connected to Japan. Subsequently Risk Management has received renewed and increasing attention, both in Japan and the rest of the world. The proactive concept of Risk Management primary builds its models around probability and utilizes this concept as a basis for determining which risks that should be mitigated through countermeasures and financial investments. Though when faced with an environment filled with uncertainty and an additional level of indirect risk exposure due to the potential domino effect of natural disasters such as earthquakes, can Risk Management really handle that, a world where probability fails? The reactive approach used by Disaster Management might contain clues for making Risk Management more flexible.

Research Question: How can a transnational corporation adapt their Risk Management strategy and plan for contingencies in a country with an unstable natural environment?

Purpose: This thesis seeks to investigate how a strategy for Risk Management can be created and adapted with the regard to uncertainties such as an unstable environmental situation. The goal is further to highlight how traditional Risk Management can be combined with other related areas such as Disaster Management, in order to make a more complete strategy and a more flexible plan for action. An adaption to the Risk Management strategy that would be made in order to make the strategy applicable on a global level and including areas with unstable environmental situations.

Method: This study has utilized a multi-strategy approach and the main source of data for this case study has come from semi-structured interviews and a complementary survey. The author has found it necessary to adopt a pragmatic standpoint with a qualitative focus in order to explore the research question and understand the collected data to its fullest extent.

Conclusion: Adopting the local practices and mindset that strives to constantly secure the supply chain and fulfill customer obligations by creating contingencies the risk exposure can be mitigated. Utilizing a quickly adaptable approach instead of long-term planning in combination with concepts such as a Disaster Recovery Plan the Risk Management strategy can be altered towards becoming more flexible.
TABLE OF CONTENTS

1 INTRODUCTION ........................................................................................................... 8
   1.1 Background ............................................................................................................. 8
      1.1.1 Risk Management .......................................................................................... 9
   1.2 Problem Discussion ............................................................................................. 11
   1.3 Research Question ............................................................................................... 14
   1.4 Purpose ................................................................................................................ 14
   1.5 Limitation & Focus ............................................................................................. 14
   1.6 Disposition of the thesis ..................................................................................... 15

2 THEORETICAL FRAME ................................................................................................. 17
   2.1 PART I – TRADITIONAL RISK MANAGEMENT ................................................. 17
      2.1.1 History .......................................................................................................... 17
      2.1.2 What is Risk? ............................................................................................... 18
      2.1.3 What is Risk Management (RM)? ................................................................. 20
      2.1.4 What is Enterprise Risk Management (ERM)? ........................................... 22
      2.1.5 What is Strategic Risk Management (SRM)? .............................................. 24
      2.1.6 Strategy ........................................................................................................ 26
      2.1.7 The RM-process .......................................................................................... 31
      2.1.8 The Nature of Risks .................................................................................... 38
      2.1.9 Attitudes ....................................................................................................... 42
      2.1.10 Communicating RM .................................................................................. 45
      2.1.11 Responsibility .............................................................................................. 50
      2.1.12 Further Reading ......................................................................................... 52
   2.2 PART II – DISASTER MANAGEMENT ................................................................. 54
      2.2.1 Flexibility ...................................................................................................... 54
      2.2.2 The HRO-mindset ....................................................................................... 55
      2.2.3 Disaster Management .................................................................................. 56
      2.2.4 The Disaster Recovery Plan ........................................................................ 59
   2.3 PART III – CRISIS MANAGEMENT .................................................................... 68
      2.3.1 Internal Crisis Management ....................................................................... 68
      2.3.2 External Crisis Management ....................................................................... 73

3 METHOD ....................................................................................................................... 76
   3.1 Scientific Aspects & Perspectives ....................................................................... 76
      3.1.1 Ontology ....................................................................................................... 76
      3.1.2 Epistemology ............................................................................................... 77
      3.1.3 Quantitative & Qualitative Research ............................................................ 77
      3.1.4 The Scientific Approach of this Thesis ......................................................... 81
3.2 Case Study ______________________________________________________ 86
3.3 Sampling ______________________________________________________ 86
3.4 Gathering of Empirical Data_______________________________________ 87
  3.4.1 Interviews ____________________________________________________ 87
  3.4.2 Survey _______________________________________________________ 89
  3.4.3 Documents, Observation & Participation __________________________ 90
3.5 Theoretical Frame _______________________________________________ 90
3.6 Structure of the thesis ____________________________________________ 91
3.7 Measures of Quality ______________________________________________ 92
  3.7.1 Trustworthiness ______________________________________________ 93
  3.7.2 Authenticity __________________________________________________ 94
  3.7.3 The description of the Empirical Data ____________________________ 95

4 EMPIRICAL DATA _________________________________________________ 96
  4.1 PART I – RISK MANAGEMENT AT HJKK & HÖGANÄS AB __________ 97
    4.1.1 What is HJKK? ______________________________________________ 97
    4.1.2 RM at HJKK an Overview____________________________________ 98
    4.1.3 RM at Höganäs AB (HSAB) ____________________________________ 100
    4.1.4 Awareness & Kick-Off ______________________________________ 102
    4.1.5 Methods and Systems ________________________________________ 104
    4.1.6 Getting Started ____________________________________________ 106
    4.1.7 The Saitama Factory ________________________________________ 107
    4.1.8 Business as Usual __________________________________________ 111
    4.1.9 Customers Concern _________________________________________ 113
  4.2 PART II – DM & BCP AT HJKK DURING THE EARTHQUAKE 115
    4.2.1 Consequences of the Earthquake ______________________________ 116
    4.2.2 Business Contingency Planning at HJKK ________________________ 118
    4.2.3 What happened at the Saitama Factory? ________________________ 120
    4.2.4 What happened at the Akasaka Office? _________________________ 122
    4.2.5 Chain of Command _________________________________________ 123
    4.2.6 Crisis Communication at HJKK ________________________________ 124
    4.2.7 Disaster Management in general at HJKK ________________________ 125
  4.3 PART III – THE JAPAN SITUATION _________________________________ 126
    4.3.1 Mindset & Japanese Society __________________________________ 127
    4.3.2 Risk Management in Japan ___________________________________ 130
    4.3.3 Improvements & Solutions ____________________________________ 132
    4.3.4 Survey from HJKK _________________________________________ 134

5 ANALYSIS ______________________________________________________ 135
PART I – TRADITIONAL RM & EXTERNAL RISKS

5.1 PART I – TRADITIONAL RM & EXTERNAL RISKS

5.1.1 Probability

5.1.2 What if probability does not work?

5.1.3 Both External & Internal affects

5.1.4 Flexibility of Strategy & Opportunities

5.2 PART II – ADAPTING THE RM STRATEGY

5.2.1 The Japanese Mindset

5.2.2 Unconscious RM – A Development over Time

5.2.3 The Backwards Solution

5.2.4 The Extended 11-point DRP

5.2.5 Localization

5.2.6 Crisis Communication

5.2.7 Working towards RM

5.3 PART III – THE FUTURE

5.3.1 Creating Awareness

5.3.2 Working Backwards

6 CONCLUSIONS

7 REFERENCES

Attachments

List of Figures & Tables

Figure I – Basic RM Process
Figure II – RM Process & Components
Figure III – Example Charts: Likelihood, Timing & Impact
Figure IV – Example Risk Circle
Figure V – Morgan’s Classification of Multi-Strategic Research
Figure VI – Thoughts on Earthquake Probability
Figure VII – The Japan Extended Risk Circle
Figure VIII – Thoughts on RM
Figure IX – Evacuation
Figure X – New Ideas & Communicating RM
Table I – Interviewed Departments
Table II – Structure of the Thesis
Table III – Definitions of Risk Management
Table IV – Risk Rating (Likelihood & Impact)
Table V – Example Matrix: Interdependency
Table VI – Survey from HJKK
Table VII – The content of the 11-point DRP
1 INTRODUCTION

This chapter is about introducing the background to this thesis and why the subject of Risk Management is a complex as well as interesting field of research. After the background the chapter continues with a discussion concerning the problematic situation Höganäs Japan K.K. find themselves in and the chapter concludes with introducing the research question and the purpose of this study.

On the 11th of March 2011, the Japanese society, its citizens and the world got reminded once again of the devastating power of Mother Nature when Japan was hit with one of the largest earthquakes in modern history at a magnitude of 9.0 on the Richter scale. An earthquake that got followed by a tsunami with a wave height up to 14 meters and as an effect also a meltdown in the reactors of the Fukushima nuclear power plant.

The extensive reconstruction work of affected Japanese cities and Japanese business facilities has since then been receiving much attention as well as shown the effects it have had on business and production worldwide. The wide spreading and lasting delays in production in large parts of the world, in various kinds of industries which is depending on suppliers stationed in Japan have pawed way for a renewed and increasing interest in Risk Management, both in Japan and the rest of the world.

1.1 Background
In today’s business world we have come far in making production more efficient and less costly by keeping down stock volumes through the practice of Just-In-Time delivery, Kanban, Lean production and other specialized manufacturing systems. Many of the concepts have originated from or have a strong connection to Japanese business practice and been popularized since long in both major and smaller companies worldwide.

Still the gain in efficiency comes with a price, the price of to a greater extent exposing the supply flow in the supply chain to disruption of production caused of unpredicted risks and threats. What happens then, when production for some reason breaks down while having 1-2 days of finished goods in stock and a customer in direct need of your components? Chaos and skyrocketing costs for extra express deliveries from the factory across the globe is likely in some cases, other cases might
include having your customer turning to some other supplier, if there is one. Bottom line; the situation will almost certainly lead to a disaster for the supplier and perhaps even the customer.

Then how to avoid this catastrophe? Simple, do not let the production break down. That is easier said than done to borrow some wisdom from the book of understatements and not very realistic. Still one can see the situation from another angle; instead of trying to achieve never disrupted production one instead seek to make the downtime as short as possible, to the extent it pretty much does not affect the production at all. In other words embrace the fact that disruptions will occur and be prepared to deal with them as fast as possible by having a contingency plan in place. But be prepared for what and how? It is here Risk Management comes in, as a concept for identifying, preparing for and dealing with potential risks in a proactive as well as organized way.

1.1.1 Risk Management
Dealing with Risk Management one soon realizes that there are many different kinds of Risk Management such as; Strategic Risk Management (SRM), Financial Risk Management, Facilities Risk Management or the overall umbrella term most commonly referred to as Enterprise Risk Management (ERM).

There are some principles that act as the fundamental building stones in the concept of Risk Management and have been working very well in all kinds of organizations since it is so adaptable to different kinds of businesses. Traditional Risk Management is based on a probability concept of taking proactive measures in order to minimizing damage caused by functions most likely to experience problems and lead to disruptions of the business. Another basic principle in Risk Management is that by making evaluations and qualified guesses about which risks are “worth” taking proactive measures against seen from a financial point of view are given primary focus and the rest is left for insurance or simply accepted as a risk without any countermeasures. Furthermore it focuses on finding the small “incidents” and errors before they evolve and become a greater threat. In turn the opposite pole of this scale is what is classified as “disasters” and is in general given much less attention, as well
as in most cases seen as something very difficult to protect the company from once they have occurred, hence somewhat ignored. The trail of though is quite logical since the probability of a disaster to occur is extremely low in comparison to incidents and smaller disrupting problems. (Hamilton, 1996)

“The problem with Risk Management is that when you get serious and really deep down into the details of analyzing the potential risks you soon realize that there is no limit to what actually could happen...” (Carl-Gustav Eklund)

The subject is huge; you can find risks of everything from external effects such as power breakdowns to random human error with coffee spill in the wrong place that would disrupt the production. The many natures of risks that the production and the company might face are a problem in itself and it is important that the whole organization understands the concept and the reason behind it, as well as strives towards upholding the ideal behavior. It is pretty pointless to have fire drills if people still smoke in the same area as where the gas canisters are kept.

The Risk Management concept must be deeply rooted in the organizations in order to work. Strategic Risk Management takes this perspective and advocates that Risk Management should be a part of the overall strategic approach by the company as a mean for identifying and handle risks that might pose a threat to the fulfillment of strategic goals. (Frigo & Anderson, 2011:21-22)

A common strategic goal for most companies is to keep their customers satisfied and deliver as promised in order to maintain a successful relationship. The situation is no different for Höganäs Japan K.K. which is a manufacturer of metal powder with a large portion of its customer market in the automotive industry. Höganäs has a very specialized product and in short term the customers are strongly dependent on the product supply by Höganäs in order to be able to continue their own production as scheduled. They are active on the Japanese market where quality comes first and service as well as reliability is of the highest essence when dealing with both major and smaller clients. In most cases there is no room for error or missed shipments.

1 Interview, Carl-Gustav Eklund, CEO, Höganäs Japan K.K., Tokyo, 14 Feb 2012 [author’s transl.]
"[…] 95 percent delivery reliability might work in the rest of the world, but here nothing else than 100 percent is acceptable. […] If our production goes down and we are not able to deliver, it is only a matter of one or two days before some of our major client’s production stops…” (Carl-Gustav Eklund)²

The Höganäs Group has a strong focus on service and in order to meet their customers demand for service and quality they have since long discovered the importance of Risk Management. Though it is quite recently that they have started with creating a guiding plan for how the Risk Management work should be done and organized on a global level, in order to create a high level of standard at their sites throughout the world. Extensive policy documents with large ambitions and strict regulation plans for periodical control of internal risks are now beginning to take place. Though there is also a second side to the coin of Risk Management which is the risks caused by external events.

There are plenty of different kinds of external events that might cause disturbance in the production flow or delay important shipments. It could be anything from snowstorms that forcing delivery trucks off the road or strikes of flight personnel in transportation by airplane. Even though the potential external events are many, most of them still share the common factor that the effects usually are shared by a large region. Such as if a transportation strike occurs in Germany also the rest of Europe is affected and the transportation companies of neighboring countries are quick to dive in. Though there are some external events that most regions have been spared from, when others have not been so lucky, namely natural catastrophes such as earthquakes.

1.2 Problem Discussion
Even though Risk Management is a developed field of research (e.g. Gallagher, 1956, Froot, Scharfstein & Stein, 1994, Hamilton, 1996, Frigo & Anderson, 2011) and many companies practice it in some way since long, the threat of earthquakes and how their aftermaths affect business from a Risk Management perspective is not a very developed area. For an international company such as Höganäs with an established Risk Management strategy at a group level this would not necessary be a

² Interview, Carl-Gustav Eklund, CEO, Höganäs Japan K.K., Tokyo, 14 Feb 2012 [author’s transl.]
problem but cause of their presence in Japan an additional perspective must be added to the existing framework, in order to make it complete. The unstable environmental situation in Japan with frequent earthquakes demand a more specially adapted Risk Management strategy in order for Höganäs to be able to make proper contingency plans for handling threats when they occur.

Then how come an additional perspective is needed? Is not the field of Risk Management enough to deal with this situation? Apparently not according to Andersen & Schrøder (2010:167) which mean that while considering external risks surrounding the organization there are ways of dealing with some level of uncertainty, as long as one has certain indicators which can be monitored and analyzed to formulate a plan from. Still the authors mean that under some circumstances the complexity and the unpredictability become too large and lead to that the estimation of outcomes are truly unknown.

“In such an [complex & unpredictable] environment, it is naïve to assume that the corporation can design an appropriate and foolproof set of contingency plans…”

Andersen & Schrøder (2010:167) [author’s note]

According to Andersen & Schrøder (2010:167) the problem is that some risk events has aspects which cannot be taken into account nor planned for since they are out of the managements reach and view. Without acknowledging this the organization might be lead to believe that they have a solid contingency plan in place which makes them ignore any further monitoring and preventive actions due to a feeling of false security.

Let us take a closer look at the previously mentioned principles of Risk Management in order to further understand the complexity of the situation that Höganäs is facing. Based on the above discussion by Andersen & Schrøder (2010) it can be further argued that Risk Management has a somewhat fundamental flaw in its principles that creates this kind of false assurance. The relation between the key principals in Risk Management that make the whole concept successful can actually cause unforeseen trouble in environments with a high rate of complexity and unpredictability. It is the matter of combining the principles of; probability, the financial motivated measures
and the scale from incident to disaster that creates somewhat a dead-end. The relation between these principles is the foundation for risk analysis and for taking proactive measures. Simply put the very way of dealing with the concept of risks by comparing them against each other and ranking them in order of e.g. probability. So what happens when the scale from incidents to disasters is rocked, when probability calculations no longer can be counted upon, when almost anything can happen and detached from any previous likelihood rankings?

This situation occurs in areas with a high presence of natural disasters. The probability that the ground splits open under the factory due to an earthquake or that a typhoon swoops through the warehouse is to say the least quite small. That is perhaps one of the more common pictures that pop into one’s head when speaking about natural disasters from a business perspective. Though the effects are so much more than that and do not have to be direct in that sense at all. So what makes natural disasters so special? The answer is that when you operate the business in a country or region with frequent natural disasters, the directly affected areas or parties might indirectly affect the own business with a far greater probability. This simply means that the occurrence frequency of different external risks to be realized accelerates without any real logic. What if your key customer’s warehouse is destroyed and they need immediate resupply or what if the local power company cannot supply you with electricity due to blown down power masts? What if important highway routes are demolished or jammed and hinders your supply of raw material or if the closest harbor becomes non-operable due to a tsunami? It is the domino effects that might be the biggest threat in case of natural disasters and the more or less random effects they will have, which render probability calculations useless. Because now you do not only have to consider what can happen to your own business under normal circumstances but also what could happen to any organization you are the least connected with, under extreme conditions. So can traditional risk management really handle this kind of situation?

The situation seems nearly hopeless to handle by human means and no, I would say that traditional Risk Management cannot handle this. Still it was not developed for this particular reason either since it in first hand has a proactive focus. There is need
for a more flexible standpoint in order to quickly respond to different scenarios than the one traditional risk management can provide. Still the traditional Risk Management concept is great in many ways and is of course needed in its existing sense even in areas heavily affected by natural disasters. Still it also needs a complementary input as well as modifications in order to make it durable even when natural disasters comes in to the equation on a higher rate than normal.

Risk Management has as mentioned above a proactive viewpoint with making preparations today in order to avoid problems tomorrow. Disaster and Crisis Management on the other hand focus on taking action once the disaster is a fact in order to solve it (Hamilton, 1996). The gap that needs to be bridged is between these two areas, in other words a combination of Risk and Disaster Management in order to make a more complete framework for dealing with treats and contingencies.

1.3 Research Question
How can a transnational corporation adapt their Risk Management strategy and plan for contingencies in a country with an unstable natural environment?

1.4 Purpose
This thesis seeks to investigate how a strategy for Risk Management can be created and adapted with the regard to uncertainties such as an unstable environmental situation. The goal is further to highlight how traditional Risk Management can be combined with other related areas such as Disaster Management, in order to make a more complete strategy and a more flexible plan for action. An adaption to the Risk Management strategy that would be made in order to make the strategy applicable on a global level and including areas with unstable environmental situations.

1.5 Limitation & Focus
The study has primary been limited to Höganäs AB’s subsidiary Höganäs Japan K.K. even though the view from the headquarters is discussed on a smaller scale as a complementary perspective on the situation. The main focus has been put on the human side of Risk Management, meaning that proactive work for dealing with concrete risks in the production facility of a mechanical nature is not given as much attention in this study. Seen to this focus and the purpose of the thesis the viewpoints
from the regional office in Tokyo are discussed on a greater extent than the ones from
the production facility. Further description of how the study has been conducted and
the reasoning behind can be found in Chapter 3 – Method.

1.6 Disposition of the thesis

Chapter 1 – Introduction: This chapter has discussed the background to this thesis,
the reasoning behind the research question as well as the purpose of the study.

Chapter 2 – Theoretical Frame: This chapter consists of three parts (a concept
described more in detail in Chapter 3 – Method). The first part focus on describing
what can be regarded as traditional Risk Management and is given the biggest focus
in this chapter. The second part is regarding Disaster Management and discusses
complementary theories and business contingency. The third part discusses Crisis
Management and primary the human side of the situation as well as how it can affect
the people involved.

Chapter 3 – Method: This chapter describes how the study has been conducted as
well as which choice that has been made and for what reasons. Furthermore it
describes how the gathering of theoretical and empirical data has been done as well
as how these two areas are connected and meant to be analyzed.

Chapter 4 – Empirical Data: This chapter describes the viewpoints from interviewed
people at primary Höganäs Japan K.K. but also complementary perspectives from
other persons of interest. The chapter also shows the result from a survey that has
been conducted and contains a shorter description of the Japanese market situation
for international companies.

Chapter 5 – Analysis: This chapter analysis the two previous chapters (Theoretical
Frame & Empirical Data). Areas that will be discussed are for instance how to
identify and deal with external risks, how to adapt the strategy, how to communicate
the initiative and how to develop the work for the future.
Chapter 6 – Conclusions: In this chapter concludes and summarizes the thoughts from the analysis chapter. Furthermore recommendations and areas for improvement are listed for Höganäs Japan K.K. In this chapter I also take a few steps back and discuss the study by using a more zoom-out perspective on the situation and the conclusions that has been made.

Chapter 7 – References: This chapter contains the references to the sources used and cited in this study.

Appendix: The appendix contains complementary and more detailed information of subjects discussed in the thesis, such as templates with interview questions and survey results.
2 THEORETICAL FRAME
This chapter describes a selection of theories and concepts from the field of Risk Management and related areas of research. The chapter is divided into three parts:

**Part I – Traditional Risk Management:** This part has the primary focus and describes what Risk Management is, how it works and how it can be used in the context of natural disasters.

**Part II – Disaster Management:** This part focuses on complementary concepts and theories, in order to make the Risk Management strategy more adapted to the faced conditions with a special focus on business contingency.

**Part III – Crisis Management:** This part puts special attention on the human side of disasters and how to cope with crisis situations both internally and externally.

2.1 PART I – TRADITIONAL RISK MANAGEMENT

2.1.1 History
The concept behind Risk Management is by no means something new. Instead it is more like something that has been part of the human life in some form since the beginning of mankind. Because if we go to the bottom of what it is all about; it is plain and simple to avoid unnecessary danger and to protect oneself from threats. Keeping a fireplace going to scare off wild animals and living in caves for protection against storms or any other imaginable threats is a kind of Risk Management. It might be in its simplest form but still each and every one of us conducts our own Risk Management every day, for instance when we lookout for cars before walking across the street or checking the best before date on the milk package before drinking. Most of these things we do automatically and it is indeed a part of our human nature. (Hamilton, 1996:65-66)

Hamilton (1996) means that early signs of a more organized form of Risk Management can be found dating back as far as to the people of Phoenicia about 4000 years ago. In order to protect their shipments they started to establish rules for how cargo should be stocked, that no fires were allowed onboard and so on. When losses did occur the costs were shared among the involved but in order to deal with different variables such as the size of the ship and the nature of the cargo they had to create some kind of system in order to determine the premium. This way of dealing with risk has several similarities with today’s Risk Management. (Hamilton, 1996:65-66)
The modern form of Risk Management began as a reaction to the high insurance premiums that industrial companies faced in the U.S. after the Second World War. The concept of captive insurance companies got popularized as a result during the 1950s. A few years later did the term ‘Risk Manager’ reach the public’s ears for the first time during a speech by Professor Wayne Snider at the Pennsylvania University. Shortly after the presses also got set to print the topic “Risk Management: New Phase of Cost Control” by Russell B. Gallagher (1956) for the Harvard Business Review. (Hamilton, 1996:9-10)

2.1.2 What is Risk?
Risk is a tricky term and the main reason for this is that it means different things to different people. If you ask a machine operator in the factory you will get one answer, if you ask the plant manager you will get another one, the same with the CFO or CEO. It does not matter if you ask a hundred people with the same occupation, the same age, from the same town and with the same hairdresser; you will most likely get a hundred different answers anyway. Still there are a few things about the term ‘Risk’ that can be said on a general level, so let us try and box in this highly complex term.

Using mathematics and probability is maybe the simplest way of getting on terms with the concept of risk. Though Hamilton (1996) means that the only problem with this is that people do not really respond to risk when it is described as numbers but rather make their own estimation of the situation based on their experience. Experience is one of the keywords here, for instance do we usually overestimate new risks and underestimate old ones. New technology is scary but chopping tomatoes and watching TV over the kitchen counter at the same time is just everyday multitasking. According to Hamilton (1996) does our acceptance of risk strongly depend on if we have a choice in the matter or not. Drinking alcohol and smoking cigarettes we might choose to do, but being forced to live next to a newly opened polluting refinery is less likely to be accepted. Our understanding of possible
preventing measures against certain risks also has great impact on our acceptance of risk. If we think a risk is non-avoidable or not possible to control; we simply do not care. Notice that what we ‘think’ and what we ‘know’ is what forms our estimations, our judgment and finally our actions depending on the situation. Hence our access to information and our knowledge about risk is essential to our understanding of risk and how we perceive it. (Hamilton, 1996:12-14)

“Risk is anything that gets in the way of an organization achieving its objectives.”
Burnaby & Hass (2009:540)

One distinction that needs to be made is the difference between risks and threats. As an example; while strolling along the sidewalk the traffic on the street next to you is a risk but does not become a threat until you are about to cross the street. In other words one could say that risk is the indirect possibility that something negative might happen while threats are the direct presence of a dangerous situation. Needless to say we surround ourselves with numerous risks every day but only a few of them poses direct treats and it is primary those that we need to protect ourselves from. (Hamilton, 1996:12)

Risk & Chance

Another interesting distinction is that risk does not always have to be something negative or bad but rather on the contrary it can be something positive and even an opportunity. According to Andersen & Schrøder (2010) this is something usually forgotten and can make users of Risk Management to miss out on much of the advantages of the concept by failing to realize important opportunities when they present themselves. The authors mean that the focus on protective measures of known risks has been so strong that a big shadow has been cast upon the less known risks of the future. While they might be more difficult to control they could still turn out to be a possibility rather than a threat in the right hands. Andersen & Schrøder (2010) means that by closing off the Risk Management work to a certain area or department of the organization in a traditional Risk Management manner; the focus will remain on protective measures. On the other hand by involving the whole organization and getting the information to the right people the Risk Management work can be more awarding (we will return to this under ERM & SRM). (Andersen & Schrøder, 2010)
Even though it is practical that the Chinese language has the same sign/expression for ‘Risk’ and ‘Chance’ let us divide them into two categories. Risks that are commonly referred to as Static risks are risks with only negative outcomes, such as an electric blackout or a fire. Dynamic risks on the other hand can have both positive and negative outcomes, such as the risk of new laws and regulations or the risk of a marketing campaign. The traditional focus of risks inside the company (e.g. the production) consist mostly of static risks while the company’s surrounding environment have both dynamic and static risks which the field of Risk Management have given more attention to lately. (Hamilton, 1996:13-16)

2.1.3 What is Risk Management (RM)?
Defining what Risk Management is can be a bit complicated since it highly depends on; the chosen approach, the goal with the RM-program, the extent and last but not least how one regards ‘risk’ in general. Under this topic I will define what RM is on a general level without any specific focus. The two following topics will explain two more specified approaches before we continue with taking a closer look at how to work with RM.

In the table below a selection of definitions and summarizing explanations of RM from different authors are presented. Together they provide a set of keywords (underlined) which makes up the core of traditional Risk Management and will be discussed underneath.

<table>
<thead>
<tr>
<th>Table III – Definitions of Risk Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>“RM is common sense when finding cost effective ways to either prevent or pay for accidental losses” Original American definition of RM according to Hamilton (1996:65)</td>
</tr>
<tr>
<td>“Risk management is the human activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources.” Agrawal (2009:43)</td>
</tr>
<tr>
<td>“Risk Management is a systematic way in trade and industry to protect an organization’s resources and income opportunities against risks of damage in such way that the organization’s targets can be reached with minimum disruptions.” Original Swedish definition of RM according to Hamilton (1996:65) [author’s translation]</td>
</tr>
</tbody>
</table>
We find that it first of all is about protecting the organization and about avoiding losses in a preventive manner. In order to do this it is about the recognition (or identification) of risks and making assessments (or analysis) of these risks in a systematic manner. Different types of strategies are developed in order to prevent and eliminate the risks, or mitigate the possible damage if that is the only option. Still some losses will occur. Hence it is also about paying (or financing) those risks that will result in damage once they are realized. Protection against every possible risk is impossible and only proactive measures which are financially motivated should be carried out, the treatment for the risk protection should never be more expensive than the potential losses itself. Hence it is about being cost efficient and reducing cost both today and in the future. Risk Management primary uses managerial resources as its mean for protection and is very much a human activity. Using common sense to avoid unnecessary risks might be one of the most fundamental and simplest ways of practicing RM. The reason for working with Risk Management is to avoid disruptions, by doing this the organization can better protect its income opportunities and create a greater chance of reaching its goals.

Seen to the keywords discussed from the definitions above we can now take a quick look at the basic Risk Management process which is described in the illustration below.

![Figure 1 – Basic RM Process (Andersen & Schröder, 2010:13)](image)

The basic Risk Management process begins with identifying the organizations risks. Step two consists of analyzing these risks by using different methods and techniques in order to establish how frequent they might occur, the effect of an occurrence and what level of economic impact it may cause. The third step is to let the management
decide if they regard the risks as acceptable by evaluating possible proactive measures for eliminating risk or mitigating the possible damage of a realized incident. The last step is to implement the chosen response for handling the risks, by for example using different activities for risk-transference, mitigating the risk by some means or to insure the risk. The overall process is regarded as a continuing process by repeating the four steps regularly from time to time as well as to locate new risks, in order to maintain the organizations risk level according to their risk policy. (Andersen & Schrøder, 2010:12-13)

Hamilton (1996:11) summarizes the advantages and purpose with RM as “reducing future losses/damage” [author’s translation]. Furthermore Hamilton (1996:11) states the goal of the Risk Management function as “minimizing the total risk cost” [author’s translation].

“In practice, the risk management initiatives are overwhelmingly concerned with the elimination of potential losses with a focus on cost reduction.”

Andersen & Schrøder (2010:3)

The quote in the frame above corresponds to how the Risk Management work usually has been interpreted by practitioners. This means that the prevailing definition of Risk Management among companies has traditionally been consisting of a strong focus on reducing costs by eliminating known risks, rather than seeking and exploiting opportunities in the RM work. (Andersen & Schrøder, 2010) The effect of this focus has lead the Risk Management work to become isolated to the RM department or even delegated to single manager in the production function, with prime focus on mechanical disruptions. The problem with isolating the RM activity like this is the lack of overview by those involved. Risks that the production staff regards as insignificant to their work might be of grave importance to the sales division and vice versa. Without any communication over the department borders and without involving the whole organization in the RM work much of its efficiency is lost. (Beasley & Frigo, 2007)

2.1.4 What is Enterprise Risk Management (ERM)?
The rise of the Enterprise Risk Management (ERM) concept has come as a reaction to the conventional Risk Management practice and just as the name indicates does it
advocate the involvement of the whole enterprise. Numerous frameworks containing principles and guidelines on the subject of ERM have been issued the last decade by large trading associations. One of the most popular frameworks was presented in 2004 by the Committee of Sponsoring Organizations of Treadway Commission (COSO) and has been frequently referenced to in Risk Management literature since then (e.g. Andersen & Schrøder, 2010, Frigo, 2009, Burnaby & Hass, 2009).

We are not going to make any deep immersions into the ERM framework. Since RM and ERM rests on the same foundation we here instead focus on the differences from traditional RM by beginning with the definition. According to Beasley & Frigo (2007) is COSO’s definition of ERM in their publication Enterprise Risk Management – Integrated Framework the following (keywords are underlined):

```
“Enterprise risk management is a process, effected by the entity’s board of directors, management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within the risk appetite, to provide reasonable assurance regarding the achievements of entity objectives.” (Beasley & Frigo, 2007:26)
```

Beasley & Frigo (2007:26) means that there are three key parts in this definition. The first one is that ERM starts from the top and that the ERM work ultimately is the top management’s responsibility both to initiate and support actively throughout the process. The second key part is ERM’s connection to strategy setting, an essential function which is required in order to make the ERM activity value creating and not only a protective function. The third key part according to the authors is that the goal of the ERM initiative is to contribute to the fulfillment of the organization’s targets. Furthermore we can also note that the definition defines the ERM-work as an activity meant to be performed across the whole organization. Additionally we do no longer talk about only risks, losses, costs and threats but rather the identification of ‘events that may affect the entity’. This indicates that there are also opportunities to be located in the ERM-work which positively can contribute to the organization’s direct objectives.
Differences between RM & ERM

According to Andersen & Schrøder (2010) there are several fundamental differences between the approach that conventional RM takes and the ERM approach. In addition to the differences already discussed Andersen & Schrøder (2010) stresses the issue of ERM’s connection to the fulfillment of organizational objectives and the link to strategy setting. The authors mean that conventional RM misses this linkage due to that the responsibility has been delegated to a special unit and is not managed centrally as ERM is. They advocate that Risk Management needs to be a part of the very core of the organization, part of daily routine and not performed as an occasional checklist exercise which conventional RM tend to become. The authors continue with pointing out the larger scope of risks that is being considered within ERM, adding primary operational and external risks. Still Andersen & Schrøder (2010) mean that the biggest difference between RM and ERM can be noticed when the affected components of the initiative are regarded. They mean that ERM is not only a process with four stages (as previously discussed) but does also involve essential elements such as organizational culture and leadership with a focus towards risk. Furthermore ERM needs to be thoroughly organized by the usage of appropriate systems for monitoring and reviewing the Risk Management work. The ERM initiative must also be tailor-made for the current organization, to fit the organizations capabilities, resources and intended objectives. (Andersen & Schrøder, 2010:128-131)

Andersen & Schrøder (2010) mean that even though Enterprise Risk Management compared to conventional Risk Management is a large step in the direction towards a more awarding Risk Management practice there is yet a third level of integration to be reached, namely Strategic Risk Management.

2.1.5 What is Strategic Risk Management (SRM)?

Strategic Risk Management (SRM) could be regarded as the third stage of development in the field of Risk Management and is a relatively new phenomenon which has only been around for a few years. The strategic connection to Risk Management has as previously discussed been popularized on a broader level through the emerging ERM approach (e.g. COSO 2004) and the term SRM started showing up in management literature shortly afterwards. Indeed it is difficult to determine if
ERM and SRM are synonyms, if SRM is part of ERM, if it is another level of ERM or if they are in fact separate from each other. There are different opinions on the matter but to Frigo & Anderson (2011) there seems to be little doubt in the answer (see quote below).

“SRM is a critical part of an organization’s overall ERM process. It isn’t separate from ERM...” Frigo & Anderson (2011:21)

Frigo (2009) means that SRM is a form of risk management that is integrated in the organization’s strategic function and must be rooted in the core of the risk management initiative in order to work. The author means that it is a process of detecting, analyzing and handling risks that can pose a threat to the organization’s strategy for generating value to its stakeholders. Once risks are realized SRM also embraces the thought of contingency plans with immediate action in order to take advantage of the situation and turn what seems like a misfortunate event into an opportunity. Evaluating a widespread mixture of both internal and external risks including everything from the supply chain to the employee’s commitment to risk management provides an essential way of getting a grip of how different scenarios might affect the organization’s value creation and its revenue streams. Frigo (2009) continues with stressing the issue of an all or nothing approach to risk management and mean that it is of grave importance that the risk management initiative is taken seriously by the whole organization, a half-hearted approach to risk management can be just as dangerous as no risk management at all. (Frigo, 2009:7-10)

Andersen & Schröder (2010) on the other hand seems to regard SRM as being the third step in a stairwell containing conventional RM, ERM and finally SRM; all with different approaches for different reasons and all of them essential for handling the organization’s wide spectra of risks. The authors mean that conventional RM focus on mainly exogenous risks in two primary categories, economic risks (e.g. interest rates, general demand) and hazards (e.g. natural catastrophes, man-made disasters). In response to these risks conventional RM uses for instance portfolio diversification, general preparedness and different types of insurance contracts. Andersen & Schröder (2010) continues with explaining that ERM primary focus on operational risks (e.g. disruptions) and to deal with these additional risks ERM uses for instance different
types of production systems (e.g. TQM) and quality certification procedures (e.g. ISO). Finally SRM focus on the external environment by considering strategic risks (e.g. competitors moves, political changes, new technology) and respond to these risks by measures such as environmental scanning and contingency planning. Seen to this discussion the authors mean that all three steps (RM, ERM & SRM) of the Risk Management stairwell are needed. (Andersen & Schrøder, 2010:76-81)

Even though the authors have some different opinions on where SRM fits in to the mazelike field of risk management there are some things we can be certain of; that SRM is about a total integration with the organizations strategy setting, a strong focus on gaining competitive advantage by swift action, finding opportunities in identified risk events and considering all kinds of risks, not the least external ones. The further away one gets from conventional RM the more the scope shifts towards finding opportunities and creating new value in contrast to only preserving existing value which much of the traditional RM practice has been about (Andersen & Schrøder, 2010). This is a risk in itself since SRM cannot stand alone without the support from a concrete risk management foundation with a protective focus and a sincere commitment to the risk management initiative. There are no shortcuts to practicing either ERM or SRM and the steps towards developing the initiative should be taken with the maturity of the organization’s existing risk management practice in mind (Frigo & Anderson, 2011:61).

Before we continue with discussing how to create a solid risk management foundation we will make a quick pit stop and elaborate on the subject of strategy.

2.1.6 Strategy
Strategic Risk Management might be a relatively new phenomenon but as previously mentioned the whole field of Risk Management is not. If we trace RM’s antecedent even further back we find that it has a strong connection to if not to say partly derives from the even larger field of Strategic Management. The primary reason for this topic is to highlight that the term ‘strategy’ is not as clear cut as it might seem when it is casually thrown around like a kite in a snowstorm by the management literature. More specifically there are several different perspectives of ‘what strategy really is?’ and how it should be used as well as for what reason. This section will in short
present two of the four approaches discussed by Whittington (2001) which is highly relevant for a more in-depth understanding of the complexity behind the research question explored in this thesis.

The Classical Perspective
With roots tracing back to military tactics in Ancient Greece there is little doubt that what Whittington (2001) classifies as the Classical Perspective is the oldest of its kind, still it also the most popular seen to management literature and has in turned inspired both extensions and counter theories. Resting on the solid foundation of rational long-term planning, analysis and directed orders from top management with profit-maximizing as its primary goal, it is not that difficult to understand its popularity. One of the main advocators of the classical approach to strategy is the former President of General Motors, Alfred Sloan which was involved with the company from 1918 until 1956. According to Whittington (2001) does Sloan (1963) in his biography *My Years with General Motors* underline several of the key components of the classical approach. The author discusses how Sloan (1963) strongly emphasizes the focus on profit-maximization and how the creation of strategic plans is exclusively the job for top management which then commands lower ranking management to carry out ‘the strategy’ without questions or influence. (Whittington, 2001:2-4,11-13)

Whittington (2001) continues with discussing how the classical perspective has a very logical and calculating approach towards strategy. The author means that the perspective advocates that as long as you look in the right place you will find the information you need, by analyzing it correctly and taking the appropriate actions it will lead to increased profitability in the long run, which is the whole point of the strategy. This approach takes a few things for granted, such as that the organization’s strategy can be planned by a small committee or even a single person and then the rest of the organization will carry it out perfectly, much like a commander ordering his army into battle where being victorious is the only viable option. Hence simplifying the fact that the rest of the organization consists of human beings, whom might or might not act in such a ‘rational’ manner with the same goal or reason as the formulator of the strategy intended. Furthermore Whittington (2001) explains that the
perspective regard information as always being available for making supreme analysis and decisions, meaning that by doing it correctly the organization can more or less control its environment and future. In this regard the formulation of a strategy is a highly conscious and deliberate process with a clear goal of being profitable in the long run, where the ‘game’ consists of being more logical and more reasonable than its competitors. (Whittington, 2001:2-4, 12-15)

The Processual Perspective

The Processual approach to strategy has not the same kind of faith in human beings and top management’s ability for being rational or correctly analyzing the future as the Classical approach has. Still it has more confidence in the rest of the organization’s capabilities when it comes to being flexible and adapting to unforeseen events.

Whittington (2001) means that the Processual perspective regards strategy as more fluent, something emerging step-by-step rather than something you can carefully plan in strict terms to last during a long period of time. The author continues with explaining how the perspective views the image of the perfectly rational person as a myth. Instead it regards the human minds ability to monitor/plan/analyze/execute as severely limited due to the unwillingness to collect the necessary amount of information that would be needed to make those kinds of decisions, the information would also be twisted seen to individual interpretations and the final solution would be one reached due to convenience that it fits the profile rather than being the supreme option. Whittington (2001) explains how the highlighting of the ‘flawed rational man’ and the focus towards behavior science in a quest to find a more accurate description of human beings capabilities in dealing with strategy is primary due to the work done by the American Carnegie School and foremost Richard Cyert, James March and Herbert Simon. Whittington (2001) continues with emphasizing the Carnegie Schools contribution in illuminating the internal complexity of organizations where people tend to have their own agenda and unanimous decisions only can be reached by compromising and more or less haggling over which goals and resources should be given attention in an attempt to reach consensus over all departments and divisions. This type of thinking is in clear contrast to the united
organization which could be commanded and controlled by top management strategy wise as advocated by the Classical approach. (Whittington, 2001:4, 21-23)

According to Whittington (2001) the Processual perspective do not advocate long-term planning and rather regards strategies for the long run as being simplifications of a surrounding reality which is to uncertain and confusing to make sense of. Hence managers create them only to give false comfort, with the train of thought that if we have a plan/strategy there is no chaos and we know where we are going, consequently the content of the plan and its accuracy is not as important as the plan’s sole existence for establishing confidence. Whittington (2001) illustrates this by retelling a story told by Weick (1990) where a troop of soldiers got lost in the mountains during an exercise and sequentially find their way back safely guided by a map found by one of the soldiers in his pocket, later to discover that the map was not even of the same country. By this Whittington (2001) describes that the Processual approach advocates action with confidence and flexibility at mind rather than inaction while endlessly contemplating the best option since it cannot be reached anyway. The author means that by doing this unexpected opportunities will arise and by making use of the organization’s core capabilities all kinds of advantages can be gained which does not only consist of striving towards the sole target of maximizing profit. (Whittington, 2001:22-25)

Whittington (2001) continues with discussing how the Processual approach preaches a down to earth attitude, a state at high alert where the constantly evolving environment surrounding the organization forces continual adaption and rearrangement of the ongoing ‘strategy’. Through this process the ‘strategist’ and the organization learn as it gains experience by trial and error, furthermore it is the recognition that you cannot plan for everything in small details from the beginning and be safe along the road, sometimes you have to take risks and chances to prevail according to the Processual perspective. Hence successful (or faulty) strategies can more or less only be discovered in hindsight as they emerge over time in contrast to the deliberately planned strategy by the Classical approach. Where the Classical perspective credits the strategist for pulling the right strings at the right time in order
to exploit external opportunities, the Processual approach means that; the organizational culture, core competences and an acknowledgement in managers own limitations wins the battle by creating superior internal strength which will better handle necessary adaptions. (Whittington, 2001:23-26)

Even though both these two perspectives contradict each other in most areas there is still some common ground which will be explored later on in this thesis. At the moment I will leave you with the hint that RM could be argued to have a connection to the Classical approach while Disaster Management which will be elaborated further on in this chapter seems to share some fundamentals with the Processual approach.

After this short detour we will now continue with discussing which elements are of importance for building a solid risk management foundation in order to both preserve and create value through a Risk Management initiative. We will begin by taking a closer look at the extended RM-process.

Comment

Please note that so far in Part I conventional RM, ERM and SRM has been discussed as three different approaches to Risk Management or rather different stages of development in the field of Risk Management. This has been done in order to establish the outer borders of the existing Risk Management paradigm and the advocated approach to dealing with risks.

The rest of Part I will focus on how the Risk Management work is conducted e.g. the process, communication and training. Onwards no difference will be made between the approaches, instead the accumulated knowledge of the RM paradigm regarding how the work should be done in the current context will be discussed. In order to differentiate it clearly from Part II, the content of Part I henceforth will be referred to as Traditional Risk Management (TRM), even though ERM and SRM might not be regarded as traditional in other contexts.
2.1.7 The RM-process

We have previously familiarized ourselves with the basic RM-process with the four steps: identifying, analyzing, evaluating and responding to risks. In the ERM discussion we could see how additional supporting functions were required as well as how the linkage to the organization’s objective was essential. We can now construct a model explaining the full range of components in the RM-process (see illustration below) and afterwards take a closer look at each step.

Figure II – RM-process & Components (Andersen & Schröder, 2010:131)

Step 1 – Identifying

The first step begins with identifying the organization’s risks and there are different methods and models for doing this depending on which kind of risks one are looking for. Since there is such a wide range of possible risks it is essential that one starts with the major risks. A smart way of handling this is to categorize the organization into different risk areas where the most suitable method for identifying risks afterwards is applied. When dealing with for instance the production; disruptions and malfunctioning machines might be considered as two major risks and when dealing with the human resource department; stressed and unmotivated personnel can be considered. Note that the two issues can be interrelated and difficult to get to the bottom of if not both factors are identified and analyzed with different method. One
simple way of mapping and categorizing the organization’s risks is to use a Risk Circle (which will be discussed under the next topic). (Hamilton, 1996)

**Step 2 – Risk Analysis**

Once the risks has been identified it is time to analyze how likely it is that the risks will be realized and what consequences this might cause as well as what could be done in order to avoid it (Burnaby & Hass, 2009:540). Identifying risks and analyzing them are two very interrelated steps and are usually conducted more or less at the same time. Hence the methods and models are very similar. Hamilton (1996:69) even means that identifying and analyzing the risks are one single step which the author refers to as *Risk Analysis*. In this thesis we are going to use this assumption and below discuss some different models for both risk identification and analysis.

**General Techniques**

One of the most basic techniques for risk identification and analysis is ‘Brainstorming Sessions’ (e.g. Delphi method) within a group consisting of people with different areas of expertise. The method is simple and the group starts with making a selection of important risks that is supposed to be investigated. A discussion around the risks extent, occurrence frequencies and their implications are conducted. Applying this kind of group approach is an advantage when it comes to analyzing the risks from different perspectives and finding hidden factors as well as when it comes to discussing different countermeasures. A well organized and constructed group of individuals will be able to find all significant risks by applying an appropriate scope for risk identification. This technique is a good way to start off the RM-process and can advantageously be combined with other methods for analysis in more detailed financial terms after the key risks and countermeasures have been identified. In this way one narrows the risk scope in an adequate way before detailed analysis take over and avoid huge amount of unnecessary data that often becomes too overwhelming to handle. Still it should be noted that the success of the technique strongly depends on the appointed group; their expertise, moral and their in-group chemistry in order to avoid that the result of the analysis becomes bias or insufficient. (Hamilton, 1996:75)
The ‘What if’ technique is another simple method to start off the RM-process with and can be combined with other form of brainstorming or conducted as a part of a workshop-day revolving risk management in the company. The method has a focus on the cause of a problem or an anomaly and what kind of consequences it might lead to in order to find hidden risks. The start scenario is status quo and then the question is ‘What if X happens?’. An example could be ‘What if machine A stops?’, what happens then and how does it affect the overall process. The questions are aimed at personnel with experience and throughout knowledge of a specific area or process. Splitting up the questions into different risk areas and making follow-up sessions is essential to minimize the risk of leaving something out. The method could be regarded as a form of light scenario planning and allows the involved to think outside the box and also consider possibilities that might be remote but yet devastating if they were to occur. (Hamilton, 1996:79-80)

After these more light methods have been used the result of the identified and analyzed risks can be put into models focusing on rating the different risks in relation to each other by using different kinds of Tables & Charts. Let us begin by using two factors for this rating process; likelihood and impact. Then it comes to likelihood; each identified risk is given a score (e.g. from 1 to 6) corresponding to the level of likely occurrence. The second factor describes the economic impact of the risk by rating them in an identical way with a score-system. (Andersen & Schrøder, 2010:155-156)

Table IV – Risk Rating (Likelihood & Impact)

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Score</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>Frequent occurrence</td>
<td>3+ times/year</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Almost certain</td>
<td>1-3 times/year</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Likely</td>
<td>Once every 1-3 years</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Moderate</td>
<td>Once every 3-10 yrs.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Unlikely</td>
<td>Once every 10-25 yrs.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Rare</td>
<td>Once every 25+ yrs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Impact</th>
<th>Score</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>Catastrophic</td>
<td>Threatening the organization’s existence</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Severe</td>
<td>Loss est. exceed two months profit</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Major</td>
<td>Losses between ten days-two months</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Significant</td>
<td>Losses between 1-10 day average profit</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Moderate</td>
<td>Losses 10-100% of daily average profit</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Minor</td>
<td>Losses less than 10% of daily average profit</td>
</tr>
</tbody>
</table>

Source: Table input from Andersen & Schrøder (2010:155-156)
When the risks has been rated a chart (chart I below) with impact on the Y-axis and likelihood on the X-axis can be plotted in order to make the risks comparable to each other and to make it possible to consider which risk-protection-level the organization is willing to uphold. The risks closest to origin are the risks with the lowest level of economic impact and likelihood. A third factor which is also important to consider is time. Adding the variable time is essential since some risks might have short term effects and in need of immediate attention while other risks are more long term and should be handle accordingly. By plotting a new chart (chart II below) with economic impact on the Y-axis and time for countermeasures (short-long term) on the X-axis the risks can be divided into two groups. The first group symbolizes risks in need of immediate attention and is usually handled by personnel at the operational level while the second group of risks tends to fall under the responsibility of top management including areas of strategy setting and so on. (Andersen & Schröder, 2010:155-158)

![Chart I - Likelihood & Impact](chart1.png)
![Chart II - Timing & Impact](chart2.png)

**Figure III – Example Charts (based on Andersen & Schröder, 2010:156-157)**

Furthermore Andersen & Schröder (2010:157-159) mean that there is also a forth variable that could be included in order to show any interdependency between the risks by using an influence matrix. The matrix simply lists the same risks on both the Y-axis and the above X-axis and estimate the interdependency between all risks by using a score-system (e.g. 0-3) in a similar way as described above during the other risk rating tables. In the example matrix below 11 different risks/situations are described and their impact on each other are indicated by the numbers; 0 – No Impact, 1 – Some Impact, 2 – High Impact, 3 – Critical Impact.
**Table V** – Example Matrix: Interdependency (based on Andersen & Schrøder, 2010:157-159)

**Reading the Matrix – Horizontally:** Beginning with No. 1 Major Earthquake we can see that in the first row and the second column there is a ‘3’, this indicates that if a major earthquake were to happen it would have critical impact on the company’s computer server and would probably cause a server breakdown due to the damage of the earthquake. Given the same situation (first row, seventh column) the earthquake would have no impact on an influenza outbreak, hence ‘0’. The total column (blue) which summarizes each row horizontally describes the total impact of each specific risk in relation to the other risks/situations in the matrix. The total value do also indicate which risk has the highest impact on all other risks/situations and therefore also states which risk is the “greatest”, in the example above it is the major earthquake with a total score of 18. Other risks with a large total impact are for instance; No. 6 Work/Production Stop and No.7 Influenza Outbreak. The lowest total impact has No. 3 Laptop Breakdown. (Andersen & Schrøder, 2010:157-159)

**Reading the Matrix – Vertically:** If we take a look at the horizontal total row (green) in the above matrix we find the total score of indirect impact on each risk. For instance last row, second column corresponds to the total indirect impact on the company’s computer server with the total score of ‘6’. Here we find that possibility of server breakdowns is only affected by the risk of earthquakes (major [3], medium [2], minor [1]) among the risks considered in the matrix. The highest indirect impact can be found for Work/Production Stop with the score ‘19’. Other interesting total scores of indirect impact can be found for the personnel’s stress level and motivation which can be considered a typical example of indirect impact. This is because if for

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Level of Impact:</th>
<th>No Impact = 0</th>
<th>Some Impact = 1</th>
<th>High Impact = 2</th>
<th>Critical Impact = 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

| Total            | 0             | 6               | 2               | 13                  |
|                  | 1             | 2               | 12              | 19                  |
|                  | 0             | 2               | 0               | 2                   |
|                  | 0             | 1               | 0               | 1                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |

| Total            | 0             | 6               | 2               | 13                  |
|                  | 1             | 2               | 12              | 19                  |
|                  | 0             | 2               | 0               | 2                   |
|                  | 0             | 1               | 0               | 1                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
|                  | 0             | 0               | 0               | 0                   |
instance the production stops or a major earthquake occurs the stress level is bound to rise in the same way as an influenza outbreak probably will lower the motivation of going to work due to the risk of exposure. (Andersen & Schrøder, 2010:157-159)

**Specialized Analyze Techniques**

In comparison to these more general methods for risk analysis there are also those which are more suitable for special areas such as the *SWOT-analysis* in the case of strategic risk (even though it can be used in other cases as well). The acronym SWOT stands for Strength, Weaknesses, Opportunities, Threats and judging by the terminology it is pretty much a direct match with what Strategic Risk Management focus on. The SWOT-analysis primary functions as a tool for making an easy summary of data consisting of already identified and analyzed factors which then is categorized as either a threat, an opportunity and so on in preparation for further evaluation. It can be a good way to summarize and deal with those risks that has been identified and analyzed as strategic risks with a more long term focus for the top management in earlier stages of the RM-process. (Andersen & Schrøder, 2010:153-155)

Today many of the manufacturing organizations use some kind of production system such as Total Quality Management (TQM), Lean or Six Sigma. Included in these production systems there are already established procedures and methods for insuring quality, avoiding disruptions and dealing with similar kinds of risks in an adequate way. There is a strong focus on continuous improvement and much of the principles that are found in these production systems have large similarities with the philosophy surrounding Risk Management. It is important to have a clear understanding of already existing procedures when implementing the RM initiative in order to avoid unnecessary confusion and double work. (Andersen & Schrøder, 2010:13, Hamilton, 1996:59-60)

One of the techniques for handling risks in the context of the production is the Failure Mode and Effect Analysis (FMEA) which is commonly used together with the above mentioned production systems. The method aims at finding critical functions in the production by identifying units and functions in risk of failure and furthermore
conducts analyzes in order to find the root cause of the potential failure. The impact of the failure is further examined in order to minimize or eliminate the potential consequences. In similarity with previously discussed techniques does FMEA use a numeric approach for rating the most critical functions by constructing a Risk Priority Number (RPN) for each risk. The higher the RPN is the more critical is the function and should therefore receive more attention than functions with lower RPN. The RPN value is calculated from the variables severity (S), occurrence (O) and detection (D) where each variable is given a number from 1 to 10 depending on the specifics circumstances. (Abdelgawad & Fayek, 2010:1028)

Another method primary suitable in production is the use of Checklists in order to analyze the situation in the relation to a set standard. This means that using checklists is usually something meant to maintain an already implemented risk management standard and to keep the preferred level of exposure. The technique is useful and easily specialized but does strongly depend on the questions it contains and needs to be carefully constructed in order to not miss anything. The method also leaves little space for further development of the RM initiative and can lead to that too much focus is put on controlling/checking and makes Risk Management synonym with internal control. (Hamilton, 1996:75)

After this lengthy discussion about the first and second step in the RM-process let us continue with the third step, namely the risk evaluation.

Step 3 – Risk Evaluation

When all risks has been identified and analyzed it is time for the risk evaluation. This step is usually performed by top management whom are given the analyzed material and evaluates identified risks and their possible countermeasures in relation to the organization’s objectives. The analyzed material can with benefits be presented through the use of previously mentioned tables, charts and matrixes which facilitate the procedure and make the result more panoptic. The most severe risks should then be evaluated if they poses a threat to the fulfillment of the organization’s goals and those risks that can get in the way should be prioritized when considering countermeasures. It is in this step where the final categorization of which risks that
are the most important ones will be conducted and the result of the procedure is a set of key risks that will be focused upon by monitoring, further investigating and mitigating the exposure. (Andersen & Schrøder, 2010:132-133)

*Step 4 – Risk Response*

The fourth and last step in the RM-process is to take action in order to either eliminate or mitigate the risk exposure for the key risks which got established in the previous step. This step is usually performed at operational level and the exact implemented response is depending on the specifics of the exposure from case to case. As an example; the response to the risk of a server breakdown due to an earthquake from a previous example might be to create a back-up of the server and store it in another building or in another city. (Andersen & Schrøder, 2010:132-133)

“To prevent damage is to lower the occurrence frequency, to limit damage is to minimize the extent.” Hamilton (1996:97) [author’s translation]

We will now continue with discussing the supporting frame (e.g. leadership, culture) from the RM-process illustration. This discussion will be spread out over the remaining topics of Part I.

**2.1.8 The Nature of Risks**

In order to coordinate the RM-work in an efficient way it is essential to systematically map different risks into certain risk areas in order to avoid gaps in the RM initiative. It can be quite a challenge but if there is not a clear-cut definition of which areas and risks are connected before the RM-process is put in motion there is bound to be risks that are mistakenly left out. Especially risks that are in a gray zone responsibility-wise seen to extent or pure complexity are in danger of being ignored due to lack of overview and the presumption that it is somebody else’s area of responsibility. For instance in case of a major fire in the production the staff present might be well trained in emergency firefighting and how to evacuate properly but who will deal with media or the police once they have shown up? What if several people do it at the same time and leave different information? A good method to divide the organization’s wide range of risks into specific risk areas in order to avoid confusion can be to use a *Risk Circle* (illustration below), a model presented by Hamilton (1996:16).
The Risk Circle is a useful concept and can be modified to suit the specifics required by pretty much any type of organization. The illustrated example above is split into two half circles; the left side (blue) describes the organization’s external risks and the right side (green) describes the organization’s internal risks. Let us begin from the outside and work ourselves inwards. The outer circle shows ‘all’ the organization’s risks and they are categorized into different risk-areas. For instance one internal risk-area is Personnel Issues and comprises risks such as work injuries and stress in the personnel force. The middle circle states which department is responsible for dealing with these types of risks, regarding personnel issues we can see that it is the HR-department that handles these issues and can also include a physician and the
workforce union. The inner circle is just as it states the ‘Risk Management Committee’ and the committee is meant to include all the involved and responsible people for the Risk Management initiative which is described in the middle circle. In charge of coordinating the work being done in the RM committee is usually an appointed RM-Manager (discussed further under ‘2.1.10 Responsibility’). (Hamilton, 1996:15-20)

External Risks
In some risk-areas in the illustration above the responsibility is shared among different managers. This is because the risk-areas include risks that are extra complex and somewhat falls in the range of responsibility for several managers. This is especially common on the left (blue) side of the circle which as previously mentioned describes the external risks which tend to be more difficult to categorize. The reason for this is among other things that many of the external risks are dynamic risks; which can both be a risk and an opportunity. While the internal risks on a higher rate tend to be static risks with only negative impact if realized. For instance can we see that Market Risks/Opportunities includes risks such as exchange rates, customers and competitors. Depending on the market climate these risks can both be considered as positive and negative. During a harsh financial climate customers might start going bankrupt but at the same time so might competitors do, which presents new opportunities, which in turn needs a strategic approach in order to be realized. Hence those responsible for these types of risks are not only Sales Management but also the CEO and the CFO. (Hamilton, 1996:13-20)

There are also those risk-areas that are in a gray zone between external and internal risks, such as IT-risks (white). Naturally one would perhaps presume that IT-risks is an internal risk in case of hardware failure and actual breakdowns of computers/servers but seen to modern IT & business systems there are also external aspects to consider. Many global organizations have their business systems linked to a central server at their headquarters and depend on the nonstop operation of this server in order to get access to real-time updates concerning for example stock volumes. If something were to happen to the central server it may as well temporarily stop administrative processes at subsidiaries across the globe. Even though short
disruptions might not be resulting in any immediate economic losses the cost-stairwell has large escalating steps and a few extra hours or even one day of downtime will soon lead to heavy losses. If the problem is not fixed in a couple of days the economic losses are bound to be devastating and the risk of bankruptcy keep escalating in such a way that most companies will not be able to handle downtime for more than a week. Even though the internal access to data is crucial the risk of lost data (no back-up) or stolen information (hacking) is even more dangerous since it cripples the company in the long run. Other external risks concerning IT are for example the dependence on internet connection on local level or the risk of viruses. (Hamilton, 1996:25-28, Wallace & Webber, 2011:315-319)

*Internal Risks*

When it comes to internal risks (green side) we can distinguish two large categories of reasons for realizing these risks and it is either some kind of *mechanical failure* that will cause disruption, spill or any form of leakage, or it is some kind of *human error*. Since machines do not have minds of their own it is up to the operator or the user to ensure that proper maintenance is done so that the machine is up to date and will run smoothly. Whatever the cause is for a machine to breakdown or the reason for any type of mechanical failure it can be traced back to the actions (or inactions) of people interacting with it (or to the manufactures). If one does not agree with this type of reasoning it is still the responsibility of the people who needs to use the mechanical device to fix the failure as fast as possible in order to be able to continue working. Hence, bottom line it is all about human error, no matter if it is mechanical failures or lack of communication. Hamilton (1996:17) even goes as far as to say that human error causes more than 80 percent of all direct or indirect harm worldwide and that the remaining 20 percent is caused by natural disasters. Hamilton (1996:19-20) continues with discussing one of the gurus behind Quality Control, Joseph M. Juran, his theories and concepts has been used extensively in modern production systems (e.g. TQM, Lean). Juran regard the matter of human error a bit differently and mean that even though human error is the cause of occurring problems the “blame” can only be contributed to the workers 15 percent of the time, the big remaining majority should be prescribed to the management. Hamilton (1996:20) means that the situation it is usually regarded the other way around during discussions of causes for errors,
where management failures are the minority and human errors of the workforce along with technical failures are responsible for the rest.

No matter which view one prefers to adopt the reason for errors are still the result of human behavior and action, either workers, management, or most likely a combination of them both. Still Hamilton (1996:18) mean that the really important question is not if it is human error or whose fault it is but rather why things have happened the way it has. Being satisfied with only labeling the cause of a problem as human error should never be accepted. So now we come to the simple question of ‘why human errors do occur?’, which obviously is such a complex question that there are separate research fields for the subject which still have not found any simple solution to the matter. Even though there are numerous reasons for why human errors do occur we will still discuss a few of them under the following topics, beginning with attitudes towards risk and risk management.

2.1.9 Attitudes
Two of the largest contributing reasons for human errors or for accidents to occur in the workplace are nowadays considered being either the lack of motivation or lack of knowledge. Seen to this the focus on how to minimize errors and avoid accidents as well as disruptions have strived towards creating a better working environment in order to encourage employees motivation and increase efficiency. Without proper motivation any educational or knowledge-creating efforts will lose much of its effect. (Hamilton, 1996:11, 24)

Motivation
The essence of motivation towards Risk Management by everyone involved cannot be underlined enough since it more or less determines the success of the initiative. A RM-program needs the active participation of the whole organization in order to be effective. Even though RM is prescribed to be a top-down initiative it is seldom the management whom faces or spots the risks first hand, instead it is the employees who are closest to the source that foremost needs to believe in the idea of Risk Management. They are the ones whom will identify risks during processes they are involved in daily and will know best how to counter these situations. Hence the idea-generating function of the employees on all levels and in all functions is one of the
most valuable proactive measures towards minimizing unnecessary disruptions. (Andersen & Schrøder, 2010:27, 135)

A common and important motivator is the priority of employee safety in the workplace and ergonomic improvements in order to avoid injuries e.g. due to monotonic working positions. Once employees feel safe and comfortable in their surroundings first then will they be able to turn their attention towards spotting other kinds of indirect risks which otherwise would be clouded by the presence of direct threats troubling them. (Hamilton, 1996:32)

Burnaby & Hass (2009:539) advocate that Risk Management needs to be a part of daily operations and not something additional that burden the employees. Andersen & Schrøder (2010:139) agrees and mean that in some implementations of RM-program managers tend to interpret RM activities as yet another task they have to perform simultaneously with their already heavy workload. With this kind of interpretation of RM the managers regard the RM-activity as something they can complete and afterwards be able to continue with their next assignment. Though RM is not a task and neither can it be completed, it is an ongoing process and more of an activity or a mindset nurtured in a Risk Management friendly culture with awareness turned towards spotting risks and taking proactive measures. Andersen & Schrøder (2010:139) continues with describing how RM-initiatives in some cases also tend emphasis too much monitoring and control which leads to the extensive use of checklists to maintain a predetermined standard. The authors mean that this creates a ‘straightjacket’ seen to creativity and hinders the creation of new ideas towards developing the RM-initiative and only serves as a way for executives to be able to say that they have done what is necessary in case problems would occur. Burnaby & Hass (2009:548) is also concerned with the possibility that the RM-initiative will be considered as yet another form of reporting duty. The authors advocate the solution of running Pilot-tests (e.g. in one department) during a few months before company-wide implementation in order to convince the rest of the organization that the concept works. Furthermore a review of how the employees involved in the Pilot-test interpreted the concept should be conducted for the possibility of further development.
Support from Top Management

Even though the motivation towards RM among employees is highly important, the active support from top management is no less crucial. Burnaby & Hass (2009:541) discusses several steps to implement a Risk Management program and like many others (e.g. Andersen & Schrøder, 2010:133) they highlight the importance of the top management’s involvement in the process. Hence one of their steps is ‘Mandate from the top’. The authors mean that it is essential that top management supports the RM-process and contribute with the linkage between the RM-process and the organization’s objectives, or in other words the strategic perspective. Furthermore the authors point out that it is the top management’s responsibility to enlighten the employees of what kind of risk level the organization strives towards in order for the employees to further understand which risks that are accepted or not, and why that is the case.

Gallagher (1956:79) also discussed the support from top management and mean that it is vital that executives wholeheartedly accept the RM-initiative and actively cooperates in the process. The author means that it is not necessary to implement the RM-program in all departments at once but instead it can be done gradually in relation to the management’s acceptance and commitment in each department. Gallagher (1956:79) continues to advocate that an outsider cannot solely establish a successful RM-program, the insight and the knowledge needed for this task resides only in the organization’s managers. Gallagher (1956:79) also means that a common characteristic of many executives is a mindset of rather aggressive optimism which can contribute to a lacking interest for discussing possibilities of losses due to realized risks. The author means that a more realistic frame of mind is needed in order to cover all bases for possible losses. Another reason for why managers attitude in some cases have a habit of being sour towards Risk Management concerns the need of initial investments. Gallagher (1956:79) mean that some managers tend to ignore the risk of future threats by choosing a cheaper investment option which might be considered questionable in the long run but will preserve profit in the short-term. McCuaig (2000:17) also discusses the problem of dealing with managers whom see no need to participate in the RM activities and means that this is a serious problem since the support from top management is highly necessary. According to McCuaig
The problem with non-cooperative managers is troublesome and can become a major hindrance since simple acceptance of the RM-initiative is not sufficient, there is need for an active involvement.

Even though employees might have a positive attitude towards RM they will only take the program as serious as the management does. Andersen & Schröder (2010:190) discusses the danger of having managers who does not take RM seriously since the attitude transfers to the surrounding group of employees whom which in turn stops to prioritize RM activities and soon the majority follows the same path. It is a form of group-thinking which can be a major obstacle towards creating a corporate culture revolving around risk awareness. Hamilton (1996:13) also discusses the subject and means that groups of people tend to downplay possible risks by assuring each other there is no danger in sight. Both authors mean that these risks would have received more attention if considered individually and rationally without a predetermined set of mind. Hence communicating the importance of Risk Management clearly in order to create awareness and interest is one of the most vital tasks while initiating a RM-program.

2.1.10 Communicating RM
When coordinating a Risk Management program it is essential to give it meaning and create interest towards the initiative through proper communication of the purpose with the process. It is no easy task, especially not when regarding large complex organizations with subsidiaries in different nations which will complicate the matter even more and the situation will demand crystal clear communication from the headquarters as well as committed informers on site (Hamilton, 1996:135). One of the problematic matters with communicating RM is as previously mentioned that ‘risk’ means different things to different people and that is why the company’s own definition of what ‘risk’ and ‘risk management’ really is becomes one of the most important parts of the initial communication. Froot, Scharfstein & Stein (1994:91) discusses that even in companies where RM has been practiced since long it is not unusual that managers have problems defining the true objective of the risk management initiative, which is one of the most basic principles to keep in mind. We have already in this chapter discussed RM’s principles as well as its goal and since
we now focus on communication let us take a closer look at what kind of channels could be used to communicate this type of information, beginning with ‘Policy’.

Policy & Text Material
Distributed text material such as policy statements, manuals or handbooks is one of the most common communication channels while implementing RM or any other type of companywide improvement program. When it comes to policy writing there are several traps one can fall into that will limit the communication effect and in worst case jeopardize the interest in the RM initiative. A few ground-rules concerning the content of the policy document should be that it is; 1) easy to understand, 2) informative but simple, 3) clear as crystal and 4) easy to access. Frigo (2009:10) points out perhaps the most important rule of all by stating that one must use common language so that everybody understands the objective of the RM initiative and what fuels the project. Too much text material in fancy and cryptic language is pushed out only to end up as fill-out material in reports of Corporate Social Responsibility (CSR) on the company’s homepage or collecting cyber-dust in employee’s inboxes. The policy is meant to inform and communicate with the company’s employees who in turn transform the content in to reality during everyday practice. Hence if they do not understand the content or find it too extensive and boring to read through, it is just a waste of paper and ink. Burnaby & Hass (2009:543) discusses the idea of constructing a RM dictionary/handbook in order to clearly define the meaning of key terms in the project. Having access to a dictionary means less room for confusing of what RM really is which in turn makes it easier to adopt the same view of the initiative as one’s fellow co-workers. Andersen & Schrøder (2010:153) also discusses the importance of a common RM terminology and a united understanding of key expressions throughout the organization in order to make the RM effort comparable between departments as well as facilitate coordination and analysis.

Gallagher (1956:85) also discusses the content of policies and manuals as means of communicating efficiently within the organization. The author advocates that a manual of RM purpose should in an understandable way explain; 1) The organization’s policy – here aiming at the reason for the initiative, 2) The means – focusing on how to apply the policy, and 3) The assignment – which clearly states the
task at hand and formally points out the responsibility of administrating the initiative as well as the importance of also delegating the work further down the line. It is clear that the author finds that the manual is meant primary for managers but still emphasizes on the significance of making the manual as simple to understand as possible in order to make it easier to convey to subordinates. Gallagher (1956:85) mean that the manual should mainly be distributed to supervisors and lower level of management in the purpose of explaining procedures. Secondly the distribution should focus on the intermediate level of management with an informative aim. A more limited amount of manuals should be distributed to top management with the primary purpose of giving advice. The author continues with focusing on the practical usage of the manual and mean that all non-relevant information should be left out (e.g. financial data) in order to avoid making the manual overwhelming.

We have so far discussed how different types of text material play a major role as a communication channel to create a united understanding towards the purpose of the RM initiative. Still there are many other channels to use and other aspects to consider while implementing and working with RM. One of these channels is the next topic, Training, which will further contribute to the creation of a genuine Risk Management culture within the organization. This can in turn be considered as the ‘ultimate objective’ of the RM communication.

*Training/Practical Education*

Continuing from the established policy which describes the organization’s reason for working with RM other text material and theoretical education carry on to draw a map containing the preferred path the organization should embark on with the RM initiative. The first steps in the favored direction is taken through practical training which is an essential element in the process of equipping the employees with the required set of capabilities needed for navigating the RM work towards the intended target. The needed capabilities varies between organizations and can take many forms, they primary depend on the overall objective of the RM initiative and the preferred level of RM which the organization strives to uphold. (Andersen & Schröder, 2010:138)
More general training in applying the concept of Risk Management can consist of training sessions such as workshops or seminars focusing on applying techniques meant for problem-solving. A good start for practical training could be to aim at enhancing the understanding of how the basics work in reality, such as the four steps of the RM process (Identifying, Analysis, Evaluation, Response) by practicing with known cases and using techniques such as ‘SWOT’ to present the result. Some other examples of methods such as the simple ‘What if-technique’ can be practiced in order to open up the employee’s minds towards dealing with complex risks and difficult situations. We have previously in this chapter already discusses some of the methods that can be practiced during these kind of training sessions under 2.1.6 The RM-process and the topic General Techniques.

Frigo & Anderson (2011:22) highlights the importance of training and mean that too many organizations have not emphasized enough on training their managers in even the most basic RM activities. This of course also poses as a problem when their subordinates have questions regarding RM and expects answers from their superiors. As we discussed under the topic motivation the employee’s interest for RM will also falter if the managers do not seem to care or know. Still it is not only managers who need training. Alexander (1992:18) mean that everybody concerned with RM on all levels should be educated and trained in Risk Management. The author means that the key objectives of the training is to provide all employees with the right awareness towards spotting risks and make them alert of the tools at their disposal.

In order to reach this kind of behavior within the organization with a heighten awareness towards risk handling, then policies and training is not enough. The organization must make risk management integrated to such a level that it is as natural as office meetings and PMs, it should surround the employees constantly in order to make the whole organization breathe RM. The only way to reach the full potential of RM is to foster a RM friendly culture which we will now continue with discussing.
Creating a RM-culture

Adopting a RM-culture is the most effective communication channel for utilizing the potential of the RM initiative and its practitioners but it is also the most demanding and extensive approach. Andersen & Schrøder (2010:135) means that one should strive towards establishing an organizational culture that emits trust and emphasizes honesty in order to enable mistakes to surface instead of being covered up, which in turn makes it possible to learn from past mistakes. The authors also advocate the sharing of information to show confidence towards the employees and encourage discussions of complex risks in order to boost the generating of new ideas. Burnaby & Hass (2009:542) also discusses the creation of ideas and mean that there should be a visible link between success in the RM effort and the possibility of individual promotion as well as compensation which will act as a strong incentive. Andersen & Schrøder (2010:138) agrees and advocates that a compensation scheme might work as an incentive to encourage the adapting of new behavior in line with a more RM focused culture.

“Managing risks is not just about avoiding downside losses; it is also a process of developing and probing innovative and responsive ideas that can help the organization to gain insights about new opportunities under changing environmental conditions.”
Andersen & Schrøder (2010:30)

Beasley & Frigo (2007:53) also highlights the importance of having a culture where new developments are shared immediately in order to quickly get on top of a potential crisis situation and enable the involvement of the right people. Without this kind of information sharing the risk of missing “iceberg-problems” is much greater, problems which eventually will develop into true disasters if not given proper attention and seen from the right perspective. It is not the matter of being able to identifying the potential end result of every single piece of development by joggling perspectives from all departments of the organization as a single person. Instead what is important is the understanding that this change might affect some part of our organization in a negative way and that is why I should notify somebody such as a manager who can take a closer look in order to clear the suspicion or take the matter further. In order to be able to read information in this way one must feel connected to the organization as a whole and feel involved in the RM program no matter what kind
of assignment one has in the organization. One of the most dangerous misunderstandings is that RM is only done in and around the production or in the RM department. Still making the whole organization understand this is far from easy and demands extensive communicative effort and building of culture. Alexander (1992:18) means that everyone in the organization must be made aware of their role in the RM initiative and take it seriously enough to understand that brushing off RM as somebody else’s job in the long run might jeopardizes the survival of the organization and in turn the individual job security.

Burnaby & Hass (2009:542) agrees with the above and discusses how the organization must utilize the information it gets by making everybody understand the importance of RM, since in many cases the risks are causing waves long before they spillover into crisis situations, only not in the right pool. Frigo (2009:10) means that one way of creating a more widespread understanding of RM and strengthen the relation towards RM is to use RM teams made up by people from different departments, this will contribute to erasing the image of RM as one department and somebody else’s job.

Andersen & Schrøder (2010:135) continues the discussion of culture by bringing up how top management not only needs to be supportive but rather become leaders of the RM initiative and practice by example. The authors use the term champions and mean that these people need to radiate true belief in the RM program and be actively involved in the effort in order to motivate and gain support among the employees. Being able to act accordingly of course requires being fully briefed on the overall RM effort which in turn means to put down a substantial amount of time for information and acquisition of RM related knowledge. This is one of the reasons for why many authors advocate the appointing of a RM-Manager which we will discuss under the next topic.

2.1.11 Responsibility
Then who is responsible for conducting the RM process in the organization? The answer should be quite clear by now; everyone in the organization. Everybody needs to be educated and trained in RM at least in the basics, understand its importance, knowing how their role fits into the RM matrix and how they can contribute to the initiative. (Burnaby & Hass, 2009, Andersen & Schrøder, 2010)
“Risk Management is the responsibility of everyone in the business enterprise.”
Alexander (1992:18)

Still what is not so clear is who is responsible for making everyone aware of this fact, in other words responsible for administrating the RM initiative. Seen to previous discussions in this chapter we can see that traditionally the RM function has been isolated to a single department or even to a single manager whom been appointed to the Risk Manager/Officer. The development of RM throughout the years (e.g. ERM & SRM) has led to a focus away from the single department/manager in order to emphasize that RM is everybody’s job. Still the authors mean that the RM department or the RM Manager plays a critical role in the RM initiative but for another reason than the original assignment.

Hamilton (1996:68) advocates that the RM Manager functions as a coordinator who organizes for instance joint sessions between department heads to discuss the allocation of the RM effort. The author means that the role is mainly used for coordinating different processes since most of the RM work is connected and performed by already existing functions such as quality control, internal control and environmental management. Hamilton (1996:135-137) continues by describing that the RM Manager act as a form of coach and advisor in RM related issues on site. The RM Manager organizes everything related to RM such as education, training sessions, formulating of policy, review of protocol and act as the very core of the RM initiative. Furthermore the RM Manager is responsible for public relations in the area of risk handling and cooperates with government, local authorities, trade associations as well as companies closely connected to the own organization. The RM Manager is much of an administrator and is of course highly involved in the organization’s insurance work, related assessments as well as legal obligations.

Andersen & Schrøder (2010:137) also discusses the role of a RM Manager but uses more the perspective of a large organization, assumed to have a RM department and therefore stipulates the term Chief Risk Officer (CRO). The CRO is here portrayed as purely a coordinator and somebody that oversees the whole initiative, much in the same way as described above but someone that takes more of a bird’s view and creates the framework for the RM initiative and then delegate responsibility. A larger
focus is put on the strategic approach towards RM involving the development of the initiative, processing of reports, communication with stakeholders and acting as the linkage between department heads and executives in RM issues. Still the authors mean that the role works best when it is a mix of being a coordinator of the whole initiative and a support towards supervisors on site. Furthermore the appointing of a CRO is one way to underline the importance of the RM initiative, which of course also requires that top management takes the role seriously.

Burnaby & Hass (2009:541-542) advocates the establishing of a RM department in charge of collecting risk reports on monthly basis and also means that it is preferable to have a high-level risk officer responsible for supervising the RM initiative. Still they recognize the restrictions of a smaller organization and mean that a Risk Manager/CRO can substitute the RM department in this case, though they find it highly essential to at least have one appointed manager responsible for RM. Hamilton (1996:137) also discusses the dilemma of combining the role of a RM Manager with a smaller organization and advocates that in this case the CEO should assume responsibility of overseeing the whole RM initiative.

2.1.12 Further Reading
We have now reached the concluding section of Part I which has been the main part of the theoretical frame chapter. Before we continue with Part II and Disaster & Crisis Management this topic will shortly describe some subjects which have not been discussed in this chapter due to the extensive space required for such an explanation. These subjects are still closely connected to the chosen perspective of this thesis and could be interesting for further reading by the curious reader as well as the potential RM implementer.

Methods for Risk Identification & Analysis
We have previously in this chapter discussed a selection of methods and techniques for conducting the RM-process such as Likelihood & Impact analysis as well as Interdependency Matrix. Still there are of course countless other methods for risk identification and analysis, some more appropriate and specified for certain industries than others. Hamilton (1996:82-85) discusses for instance Fault Tree Analysis (FTA) which graphically presents and analysis unfavorable incidents which might befall a
process or a product if a certain function would stop working. E.g. if this wire ruptures what will happen? The technique results in a set of demands and necessary protections which should be considered if the incident is wished to be avoided.

Does RM pay?
One obstacle while considering RM can be to convince the participants that an implementation is necessary and good for the organization. Especially executives is usually interested in knowing if RM is worth the investment it requires, something that can be rather complicated to prove. Andersen & Schrøder (2010:21-23) discusses Risk Management Effectiveness (RME) which uses a mathematical approach towards determine how the organization’s risk exposure affects the earnings of the organization. Hence the method is a good way to put actual figures on what there is to gain financially from implementing RM and in turn reducing these risks.

Related Areas of Research
Many techniques used in Risk Management are similar to those used in other improvement programs and some are strongly affiliated with modern production systems such as Lean and TQM. Hence before implementing new techniques one should have a clear view of what kind of analysis the organization already uses and are familiar with. Consequently additional interesting techniques can be found in literature focused on production systems, quality control and internal control. Andersen & Schrøder (2010:13) briefly mentions the valuation of risks in Project Management. The standpoint of handling risks in project management can be considered comparable to the focus of this thesis, namely the need for a flexible approach. Risk assessment in projects generally has a mixture of initial planning (proactive measures) and a focus towards handling unexpected events (disasters/crisis) which might occur during the process. Simply one can say that handling risks in projects have a similarity with the combination of Risk Management and Disaster Management but on a smaller scale.

***

Now let us continue with discussing Disaster Management as a complement to Risk Management in Part II. A shorter summary of the whole theoretical frame can be found in the end of this chapter.
2.2 PART II – DISASTER MANAGEMENT

2.2.1 Flexibility
Throughout Part I we have explored Risk Management (RM) which has had a strong focus on how to limit or eliminate known and identifiable risks in order to mitigate the organization’s risk exposure. RM primary emphasises proactive measures in order to deal with risks and strongly depend on the ability to identify possible incidents and predict possible scenarios before they actually occur. Hence when RM is faced with an environment consisting of unpredictable factors and unknown risks such as the burden of operating in a country with many natural disasters and their complex aftermatts the concept becomes a little crippled. In such an environment there is need for a more flexible approach with quicker actions than traditional RM can offer. We search for this component of flexibility in this second part by exploring what Disaster Management can contribute with in order to complement the approach of RM.

“Particularly the management of more unpredictable and unknowable risk elements is challenging and requires a combination of risk management approaches.”
Andersen & Schröder (2010:187)

Andersen & Schröder (2010:187) discusses the importance of having a strong core of RM that is the central function in the organization when dealing with predictable risks but means that there is also a need for being able to take swift actions in unpredictable crisis situations. The authors continue with underlining the significance of an organizational culture which emphasises risk awareness. Awareness in this sense corresponds to the enhanced ability for perceiving risks on an early stage and spotting the development of potential threatening events which requires quick responsiveness in order to contain as well as the creation of alternative solutions. The authors mean that this kind of awareness calls for a certain mindset of the employees which can only be fostered in an organizational culture with genuine focus towards risk handling. Depending on the unpredictability of the organization’s environment the need for a mindset of risk awareness increases at the same rate as the unpredictability does. Furthermore Andersen & Schröder (2010:167) means that one must realize that all risks cannot be recognized in beforehand and handled automatically in a standardized process.
One way of increasing the flexibility and the risk awareness among the employees is to adopt a similar mindset that is used by organizations that are operating in fields where small errors can mean the difference between life and death, namely High Reliability Organizations (HROs) which is the next topic.

2.2.2 The HRO-mindset

High Reliability Organizations (HROs) consists of organizations were its members act strictly according to code of conduct for safety reasons since small mistakes can have catastrophic effects. Still they also need to maintain a certain degree of flexibility in order to counter unexpected complications and swiftly deal with these developments. Examples of HROs are for instance nuclear power plants, fire and rescue services and organizations handling transportation of dangerous (e.g. explosive/toxic) content. The primary reason for why benchmarking of HROs are to consider is because these organization seems to be better at intercepting weak signals of potential threats. By scanning the environment in a more trained way which allows them to quicker find irregularities as well as predict the potential impact of an unattended development. The mindset of having risk awareness as we have discussed above is here represented as having a state of ‘mindfulness’. In more descriptive terms this means that each employee should adopt the attitude of being highly conscious of their surroundings and alert to small changes. The capabilities usually associated with the HRO-mindset are stated in the checklist below. (Andersen & Schrøder, 2010:169-170)

- “a well-developed situational awareness;
- an ability to see significant meaning in weak signals;
- giving strong responses to weak signals;
- being reluctant to accept simplifications; and
- articulating mistakes and organizing to handle them.”

(Andersen & Schrøder, 2010:192)

Andersen & Schrøder (2010:193) continues to discuss how one can develop these capabilities through training. The authors mean that conducting joint discussions is a useful method to engage both employees and managers in dialogs revolving around
how individual actions can have implications for the whole organization. This is important for developing a common understanding of how the organization’s different parts are tied together and affect each other, which is why both upstream and downstream communication should be discussed. The discussions can also deal with old cases in order to make it possible to learn from previous errors. The authors also mentions practicing worst-case scenarios since simulations can be a powerful tool for analyzing how the members of the organization behave in a crisis situation and detecting which holes have been left unfilled.

2.2.3 Disaster Management
The need for flexibility is especially emphasized in the discourse of Disaster Management (DM), sometimes also referred to as Disaster Recovery Planning. RM and DM have a lot in common seen to the use of policy, analytic tools and the evaluation of potential risks but there is a clear distinction when it comes to where the primary focus is directed. We have discussed how RM concentrates on the proactive and more literally how to avoid disasters, DM on the other hand focuses on how to deal with disasters when they occur as well as how to recover from them afterwards. In other words DM steps in and takes command when RM fails.

“Risk is a function of how poorly a strategy will perform if the ‘wrong’ scenario occurs.” Porter (1985:476)

What is a disaster?
The word ‘disaster’ is often used to describe something going wrong on an enormous scale, something terrible and out of control such as a natural disaster. ‘Catastrophe’, ‘calamity’ or ‘tragedy’ are commonly used synonyms for describing the same thing but in the case of business the normal understanding of the word ‘disaster’ can be misleading and even obstructive. Sandhu (2002:2) states that a disaster is any event that disrupts the organization’s normal operations unintentionally. According to this definition a five minute power outage or a temporarily loss of internet connection could be a disaster. In these cases the terms used would probably be a small ‘error’ or ‘issue’ rather than a disaster. Still what if the power does not return in five minutes, what if the main power cord accidentally has been cut off by some construction workers four blocks away and it will take several hours or maybe even days before
the power is fully restored, and then all of a sudden there is a disaster. What both RM and DM are teaching us is that small errors can have big consequences and what especially DM is preaching is that dealing with a potential disaster is much more rewarding than dealing with a realized one. In other words one should regard all disruptions no matter how small they may seem as a potential disaster because all disasters start with something small and escalates.

One might argue that in some cases such as earthquakes there is little to no warning and that there is nothing that could be done either before or during the disaster if a particular major one strikes directly the business or facility that one is trying to protect. The result most definitely would be devastating no matter the actions taken. It is a fair point but fortunately these cases of maximized bad luck are rare, instead there is a much larger probability that an earthquake or any other natural disaster will strike elsewhere but still cause the organization problems or even disasters indirectly. Frigo (2009) and Waters (2011) both discusses a common example of how a natural disaster can cause an indirect disaster elsewhere in the case about a supplier to Nokia and their rival Ericsson which can be found in Appendix A.

Why use DM?
The scenario of a fire erupting in the organization’s facilities is an adequate example for highlighting the importance of practicing DM. First of all the fire can be caused by a number of sources which are both difficult to predict and tough to protect the organization from, such as; a thunderstorm, arson, electric malfunction or human error. This means that even though the organization has a supreme RM function in place there is still a risk of a major fire erupting. Gallagher (1956:84) discusses fires under the topic of hidden economic costs and mean that much of the physical damage done to the organizations assets and employees as well as the cost for the interruption of business can be determined and regained through the insurance company. Still the so called hidden economic costs generally range from about 50 percent to 600 percent of the actually collected amount through the insurance. The author means that the level of stress put on employees both under and after the event of a fire can seriously affect concentration, memories and the general atmosphere among the employees. This dramatically heightens the risk of human error and can cause problems such as
misplacement of gears and parts as well as lead to aftereffects such as hasty and careless maintenance of machines and insufficient quality checks of products. This type of errors can in turn lead to everything from extra waste to further interruptions and refunded products, which all means further economic losses. Alexander (1992:16) also discusses the subject of fires and means that in cases where organizations lack a proper contingency plan as many as 40 percent of the organizations stricken by a major fire does not return to business.

**Objectives & Purpose of DM**

When facing a major fire or any other type of disaster there is a lot of actions that needs to be done quickly in order to minimize the damage caused by the disaster. These actions correspond to the objectives of DM which can be described in three wide categories; 1) Safety of Humans – Evacuating personnel and preventing injuries/fatalities 2) Safety of Assets – Stopping damage from spreading 3) Safety of the future – Contingency for continuing business operations. The exact objectives depend on the organization and should be discussed and listed when creating a disaster recovery plan but the big majority of the sub-objectives can be sorted in one of the above categories. These categories have been constructed from a more extensive list of common sub-objectives which can be found in Appendix A. (Sandhu, 2002:130-131)

Sandhu (2002:130-131) means that specific objectives a side DM have the key purpose of dealing with any type of disaster that threatens to damage the organization by quickly responding to it and recovering from the situation. The *response procedures* are the initial actions taking place immediately after the disaster has been realized which focuses on the safety of personnel and protecting property. After the immediate disaster has been dealt with the *recovery procedures* starts and are aimed at minimizing the aftermaths of the disaster in order to shorten the disruption of business operations as much as possible. Both response and recovery procedures should be documented carefully in the organization’s disaster recovery plan which will be further explained under the next topic.
2.2.4 The Disaster Recovery Plan
We have now reached one of the topics which most clearly highlight the difference between RM and DM. During Part I we have learned about the *RM-process*, indicating something ongoing, an initiative, a program, something never-ending, a corporate culture or even a philosophy if you so like. Disaster Management’s counterpart is *The Disaster Recovery Plan*, which have a clear beginning and end, hence a plan and not a process.

“The disaster recovery plan is a comprehensive set of statements created to address any disaster that could damage an organization.” Sandhu (2002:2)

The Disaster Recovery Plan (DRP) is a form of guidebook or a tool meant to help the person holding it to deal with the disaster at hand. *The* disaster or rather *any* disaster, while you cannot plan specifically for all possible disasters you could still distinguish a main thread containing actions that should be taken no matter the disaster at hand. E.g. an evacuation of the facility and where to gather afterwards is done roughly in the same way no matter what caused the need for it. One cannot expect one person to deal with the whole disaster alone of course but there will always be this one person or a small group which is faced with the initial signs of the disaster. Hence the DRP is a simple form of instructive document telling you *whom* to contact, *what* to do, *where* and *when* to do it, but maybe most importantly *why* and *how* to do it. (Wallace & Webber, 2011:101-102)

For example most people discovering a small fire would automatically call the fire department or try to put out the fire with a fire extinguisher. Though the material burning might be toxic or explosive and you do not have the specifics since you are just an office worker on overtime late at night passing by the storage after grabbing a cup of coffee. Perhaps you usually come and go through a small door in the fence and have no access code or key for the main gate that is needed to let the fire truck in on the site. Your supervisor might be at the movies or on vacation and not answering his cellphone, so whom do you call instead?

Those kinds of questions are what the DRP is meant to answer, in a first step to last step kind of way. All of it might seem as basic knowledge which everyone should
already know if they work at the organization and that would of course be ideal, but that is not the point. The point is that the DRP should be simple enough to instruct anyone in the organization how to act as the first responder in the most efficient way if faced with a disaster, until the key people can take over the rest of the recovery project (which also should be described in the DRP). An easy assumption is that the situation will be to say the least stressful and important steps might be overlooked during the confusion or two people might do the same thing twice or give different information to authorities, all which will delay the recovery. Since time is of the essence while dealing with a disaster and literally life and death can be at stake, wasting it is the last thing you would want to do. (Wallace & Webber, 2011:101-102)

Even though the DRP should describe the very first thing to do by the very first person to encounter the disaster, it should also be detailed enough to be a guide for the rest of the recovery procedure when the key personnel or the recovery team has arrived at the site. Though let us start at the beginning and look at what to consider while making the DRP in the first place, which is the next topic.

What to consider while making the plan
Under an earlier topic we discussed the objectives and purpose of DM, namely; 1) Safety of Humans 2) Safety of Assets 3) Safety of the future. These categories of objectives should of course be closely studied and determined based on the kind of operation the organization is involved in. The first category, Safety of Humans is the most fundamental one and at the same time the most complex since most organizations consists of and depend on their human capital. This category and the potential affects a disaster might have on the personnel will be discussed separately under the topic of Crisis Management. Further elaboration than stating that ‘the procedure of how to evacuate the organization’s facilities in a safe manner should be at the top of list of things to consider while making a DRP’ I do not find particular necessary under this topic. Category no. 2 and 3 on the other hand are more straightforward and closely connected to each other since they are linked to the recovery of the organization’s business operations. Hence after all personnel and surrounding individuals are safe what do you need to do in order to protect current assets and the organizations future operations?
In order to determine this you need a recovery strategy. The strategy is meant to be the backbone of the DRP and determines where the recovery should start and what it should continue with afterwards, as well as what the organization can be without for the time being. Because the strategy is not about reestablishing everything to the way it was before the disaster, instead it is about restoring critical functions as quickly as possible in a way that business operations can continue at least at the most fundamental degree. The main reason for this is time, the amount of time the organization can stay inactive without losing customers, too much revenue or before eventually reaching a point of no return. This is very much depending on the type of business the organization is involved in, for some it could be days or even weeks, while other organizations only have hours to get back up and running. The Recovery Time Objective (RTO) is the organization’s deadline for how long they can afford to be inactive. This deadline is established by analyzing which functions are crucial that they are working to some extent before how long and adapting the DRP towards reaching the RTO no matter what. This way the RTO determine how costly and extensive the DRP becomes. Meaning that if you conclude that your organization has a RTO at 24 hours or else your Just-in-time customers will sue you for millions and permanently move on to another supplier it probably justifies having a very expensively prepared DRP. (Wallace & Webber, 2011:71-74)

For example, what if the storage for raw material gets destroyed in a fire, can we wait two weeks until a new shipment gets delivered? In that case where do we put it once delivered, or if we cannot wait do we have a secondary smaller storage somewhere else? Which machines must always have available back-ups or extra spare parts? Which machine gets checked/repaired first and which ones can be put on hold and instead performing the task manually for a day or two? During a disaster recovery procedure it is all about priorities. Having a clear set of objectives and tasks can give the recovery procedure a head start, that way there is no need for confusing discussions regarding what should be done first and who are supposed to be doing it.
When you construct your recovery strategy and examine which your organization’s critical functions are and in which priority-order they should be restored there is a lot of groundwork that needs to be done in the area of risk assessment in order to determine this. Fortunately for us we have already discussed this and several practical methods earlier in this chapter under the topic 2.1.6 The RM-process and General Techniques, hence I will spare you from repetition. Let us instead take a look at the overall content of the DRP under the next topic.

What a DRP should contain
Under this topic the content of a basic DRP will be discussed, it consists of 11 points, hence let us call it ‘The 11 point DRP’. This DRP is the simplest of its kind but it is still very potent and will provide fundamental assistance during a disaster recovery procedure. Hence if this is the only kind of DRP you will ever make, your organization will still be a lot more prepared to deal with a disaster situation than without it. (Wallace & Webber, 2011:85-86)

Point 1 – Contact Information
One of the most important things a DRP should contain is contact information for all key personnel that might be needed in a disaster situation. Within the organization that means all department heads, their second-in-command and maybe even their assistants. All in order to make sure that there is always someone to contact that is knowledgeable of the area in which the disaster has occurred, in case the others cannot be reached. Only a list of cellphone numbers, home number, addresses etc. is not enough, now we know how to contact the person we are looking for, but whom are we actually supposed to call? Hence an organization chart should always be included and an easy description of whom to contact under special circumstances such as a fire, water-leakage, power outage or when in doubt. (Wallace & Webber, 2011:87-88)

Point 2 – Facility Access
Having full access to the organization’s facilities during a disaster is essential but achieving it can be a bit tricky, since access can be a double-edged sword. Everyone cannot have keys to every physical door in the whole facility, neither is that desirable due to internal control and the general security risk that represents. Ordinary physical
keys in general can pose a threat to the organization’s security since they can be easily copied, misplaced or stolen and the only way to protect oneself from such an event would be to change the lock on the specific door. An electronic key-system (e.g. used on modern hotels) on the other hand allows you to remotely control and if necessary cancel a particular keycards authority. Another good quality electronic keys or codes possesses is that the person that accesses a specific door can be identified through the system. Still someone needs to access the keycard-system and grant extra access to the person(s) who needs it during a disaster and what if that person is not there at the time, then you will need to get access to this system yourself and this in turn requires a password/code. Meaning no matter what kind of arrangement that is in place there will always be a need for keys and/or passwords to be stored for possible emergencies. The trick is how to store these keys in order to have them accessible in an emergency but not treated as spares were people can borrow them however they want and forget to return them, tamper with them etc. Hence some type of key locker is to be preferred, where necessary keys and passwords can be stored in for example a sealed envelope which should be updated and inspected routinely. While planning how to deal with the matter of access in case of an emergency it could be wise to consult with the organization’s auditors how to best handle the situation. (Wallace & Webber, 2011:88-91)

Point 3 – Outsourced Maintenance Contracts
A typical example for this topic would be a small organization that does not have their own IT-division and instead contracts the service from the supplier of their business software, and the system crashes due to a power surge. Just as the information about the organization’s other suppliers (Point 4) should be stored, contact information and specific equipment information needs to be written down here in order to quickly get hold of the relevant person and order emergency service or repair of for instance the only forklift that can offload incoming shipments on delivery-day. (Wallace & Webber, 2011:91-92)

Point 4 – List of Suppliers
In case of a disaster there is a high possibility that the organization will need to quickly get in touch with their suppliers for a number of reasons such as; to get
replacements for lost supplies, reroute incoming shipments or just to inform them of the fact that there has been an incident which may require larger/smaller orders once the situation has stabilized. Suppliers of specialized and custom made equipment will be especially important since an order of replacement parts etc. might take days/weeks to manufacture and deliver. Hence an order should be called in as quickly as possible to minimize downtime. It is also important to include the suppliers of public utilities such as electricity, internet, water etc. in case of a disruption that might totally cripple the organization’s normal practice or the recovery process. Just as for the organization’s own personnel (Point 1) there should be contact information of all kinds; alternative contact persons, after-hours and weekends included. It should also be specified what kind of supplies the organization normally order from each supplier, in case someone who is not specialized in the field needs to make a quick order to facilitate the recover procedure. (Wallace & Webber, 2011:94-95)

Point 5 – List of Assets
Here we are not looking for a complete list of inventory, instead it should be a list of all primary physical assets and all information related to keeping them going. Meaning if the asset is expensive, difficult to replace or critical for the organization’s practice it should be on the list. While constructing this list it is recommended to take a closer look at all the assets and the areas around them in order to make the information as detailed as possible, writing down where they are located, their model and serial numbers but also how they are connected to overall business practice, in other words what makes this asset more important than others. Talking to the people who is actually using the assets during day to day practice is a good way of finding out if there are spare parts available and where they are located, this might also lead to finding new critical assets which few others has considered since they might be tiny custom made tools laying around in a drawer or similar. When all this has been written down it is recommended to collect and store all spare parts and relevant documentation (e.g. manuals) in one location, by doing this you will know where to find them in an emergency but also avoid unnecessary and costly duplicates being spread out. (Wallace & Webber, 2011:95-96)
Point 6 – List of Software
Pretty much all machines uses software of some kind to operate, most notably are computers and servers but manufacturing machines also requires software to function. Repairing a critical machine and replacing the mechanical parts quickly might still render it useless for hours if someone has neglected to write down the right software version or where to find it. All settings and their values could be just as crucial to back-up in order to avoid long sessions of trial and error in adjusting delicate processes back to the way they were before. This means that having back-ups for data and software goes way beyond the office computers. (Wallace & Webber, 2011:96-97)

Point 7 – Critical Functions
This point describes the organization’s most important functions, meaning those which it needs to keep business going and foremost need to protect. The list of critical functions could potentially be miles long and that would diminish its purpose since it’s the foundation for which function gets the priority of being recovered first (Point 8). Hence one would like to keep the list as short as possible, preferably 10 functions or less to establish a clear frame for the extent of the recovery procedure. Identifying these functions is just as much about figuring out what the organization could do without at the moment and usually falls on the top management to determine. (Wallace & Webber, 2011:97)

Point 8 – Recovery Priority
If a fire breaks out, the building is evacuated and the fire department eventually puts out the fire, but now you have extensive fire/smoke/water damage to the facility – where do you start? Since we now know which our critical functions are (Point 7) we know what to recover but some functions are still more important than others (even if both of them are critical), hence one has to prioritize what problem to deal with first. (Wallace & Webber, 2011:97-98)

Communication (internally and externally) is often regarded as having very high priority and being one of the functions that should be recovered or reestablished as quickly as possible. The efficiency of the recovery procedure depends on how successful one is at minimizing chaos and confusion. Creating a temporary communication central that handle communication with personnel (Point 1) both off
and on site is very helpful in this regard, in the same way someone will need to communicate with customers and suppliers (Point 4) as well as authorities and media. (Sandhu, 2002:148-149)

**Point 9 – Hazardous Material**
In case the organization have dangerous or toxic material within the facility which the DRP concerns it is extremely important to record this with as much details as possible. Everyone involved in the recovery procedure should be aware of the specific material, where it is located, why it is toxic (explosive/flammable etc.), how to check for leakage and what to do in case there is one. Since toxic material often has the potential to endanger people and the area beyond the bounds of the organization it is also essential to be able to communicate the specifics of the toxic material to the relevant authorities in case for example a rescue party need to enter the facility during a fire. (Wallace & Webber, 2011:98)

**Point 10 – List of Emergency Equipment**
There should be a detailed list describing where necessary emergency equipment such as fire extinguishers for special materials/fires, flashlights, water pumps, first aid kits etc. are located. There should also be information regarding where different systems for fans, utilities, sprinklers etc. can be controlled or shut off. Meaning with the exception of spare parts this is an inventory list of everything physical the recovery team (Point 11) might need during a disaster and where to find it. (Wallace & Webber, 2011:98)

**Point 11 – The Recovery Team**
The recovery team is primarily meant to be the first responders to a disaster, technically though they are more like the second responders, meaning someone encounters a potentially disastrous situation and immediately contact the recovery team. The team consists of volunteers within the organization, preferably with some experience or at least training in dealing with situations such as a fire, dangerous leakage, serious injuries and so forth. There is pretty much always someone who has relevant experience from e.g. The National Guard, First Aid-courses or previous occupations. These people are not meant to handle the disaster alone, rather being the ones assessing the situation and determine if it is necessary to activate the DRP as well as taking the first steps. (Wallace & Webber, 2011:98-99)
Sandhu (2002:143-145) discusses similar content described in the 11 point DRP but also adds several topics. The author emphasizes security, both of the facility during a disaster and the importance of having documented procedures in case sensitive and critical information needs to be moved to another location. Further there should be a clear description of who has the authority to activate the DRP, how it should be done and when. Sandhu (2002) also recommend that roles and responsibilities should be assigned and described to the personnel and that the DRP is tested as well as that the personnel are trained in dealing with a disaster situation.

**What else the DRP should contain**

There are a few extra things that need to be considered regarding the DRP, since when a disaster is realized and the DRP is activated normal policies will no longer be in effect. In order to keep track of everything that usually been handled by different departments and the business software new records need to be kept in as great extent as possible. Tracking costs and expenditures for everything recovery related can be tricky since restricting policies such as executive signatures on new orders might have been lifted in order to shorten delay. At the same time as records are important for the auditors and potential legal/insurance issues after the disaster the recovery procedure should still be able to function with as little hindrance as possible, which makes it a stroll along a tightrope. One way of dealing with this is to have preprinted forms and checklists as supporting documents to the DRP to be filled out by the administrative function throughout the recovery procedure. By keeping careful track of the progress and reporting when specific recovery goals have been met will also help motivate the rest of the effort. Other supporting documents to the DRP could include building blueprints, maps of the surrounding area and inventory lists discussed in the 11 point DRP. (Sandhu, 2002:147-148, 151-152)

***

Now when we have familiarized ourselves with Disaster Management and the business contingency a Disaster Recovery Plan can contribute with let us continue with taking a closer look at the human side of disasters in the next part about Crisis Management.
2.3 PART III – CRISIS MANAGEMENT

Let us start with examining the difference between Disaster Management and Crisis Management. Disaster Management as we now know focuses on resolving and recovering from some kind of disaster (e.g. natural disaster, fire, power outage). More or less all disasters with few exceptions cause a crisis situation of some kind eventually, either directly or indirectly. Hence there is obviously a close connection between Disaster Management and Crisis Management. Still not all crises is the result of a so called ‘disaster’ in the sense as mentioned in the previous statement, instead it could be a crisis of the public image of the organization and a drop of perceived credibility or a liquidity crisis due to bad investments and unpaid customer bills. Still in this thesis I examine Crisis Management solely in the context of disasters which leave us with the two words ‘crisis’ and ‘disaster’ more or less becoming synonyms. Hence in order to avoid any misunderstanding I have chosen to focus on the human side of a disaster under this topic of Crisis Management. This corresponds to the potential affects a crisis situation could have on the people involved and will primary focus on elements such as stress and confusion which might prevent a recovery plan from being executed safely and efficiently.

Furthermore this part has two broad topics; the first one is Internal Crisis Management and focus on the organization’s employees. The second topic centers on the organization’s relation to its stakeholders, media and the general public, meaning everyone else surrounding the organization, hence the topic is called External Crisis Management.

2.3.1 Internal Crisis Management
Let us begin with splitting up the crisis situation into three parts, the first one being the initial warning or the detection of a potentially disastrous situation. This could be anything from smelling smoke from a nearby fire to watching the weather report stating there will be a major storm or tornado in the area in the next couple of days. Hence the timespan of the first part can vary from being instantaneous (e.g. power outage) to going on for months (e.g. pending suspected volcano eruption). The second part is the organization’s response to the now realized disaster and the third
part is the transition back to business as usual. All of these parts have their own way of affecting the personnel involved in a stressful manner. (Paton, 2003:203-205)

*Stress before a crisis situation*

Paton (2003:203-204) discusses how stress can affect the performance of the people involved in a crisis situation and primary focuses on how managers may be affected. The author means that the transition from ordinary work tasks to heighten alert and preparations for dealing with a potential disaster can disturb the capability of perceiving information correctly and hence leading to questionable decision-making. The risk of this occurring is related to the length of the warning-period, meaning a prolonged state of heighten alert before a disaster will have a higher probability of leading to inefficiency, loss of motivation and anxiety. Paton (2003:205) means that the reasoning behind this is a steadily growing uncertainty regarding the expected disaster’s specifics, such as its scale and what it might lead to, while at the same time trying to remain alert for sudden changes, which in the end can turn out to be false alarm. Furthermore the author discusses how the organization’s proactive measures and its general organizational culture could help with mitigating this uncertainty by extensive training in dealing with stressful situations and efforts towards minimizing ‘ordinary’ stress in daily activities. These proactive measures correspond to preparations regarding everything from emergency equipment being in place to clear roles and responsibilities being prescribed (such as the content of a DRP).

*Stress during a crisis situation*

Now when the disaster is realized the role and responsibility of the manager shift yet again, towards responding to the crisis situation at hand. In the case of natural catastrophes one disaster is unfortunately often followed by another, creating new uncertainty of additional threats arising such as; after-chocks, fires, power outage or the risk of collapsing buildings. Here Paton (2003:205-206) emphasizes the importance of evident communication in all areas. The author means that if the managers or the individuals involved in the recovery procedure do not have the correct understanding of what is demanded of them, their roles and tasks they are expected to perform, there is a high probability that stress of obtaining unrealistic targets will lead to a state of hopelessness. Putting additional pressure on the
situation and the people involved is also the expected media coverage which might or might not have the correct information regarding the situation. Inadequate communication with media may lead to guesswork and speculations which will only feed rumors and the potential illusion of what the expectations on the recovery workers really are. (Paton, 2003:205-206)

Paton (2003:205-206) further discusses how communication and reporting horizontally among the recovery workers themselves is just as important. The author means that well-organized teams that have gone through extensive training together will more easily relate to similar experiences of scenarios and proposed countermeasures. This in turn will lead to a higher level of relevant information sharing, better teamwork and enhance the ability to quickly reach agreement of what needs to be done. Training of this sort can include scenarios and simulations of dealing with a realistic crisis situation, which will help the team to get a better grasp of what is to be expected of them and highlight how stress might affect them, making it easier to interpret symptoms, dealing with it and how to avoid it all together by helping each other out from the start. (Paton, 2003:205-206)

Teamwork and communication is extra essential during the crisis situation since managers will be forced to take uncomfortable decisions based on limited and uncertain information, often under time pressure which may lead to that the situation deteriorating if the person is misinformation or stressed out. Paton (2003:206) proposes the use of a temporal communication central in charge of gathering and sorting out the vital information. Further the author means that some people that have extensive training will rise to the occasion and cause of the high alert situation thrive at making qualified decisions quickly. Paton (2003:206) continues with discussing Raphael (1986) that raises a warning that if the person is exposed to this kind of pressure for a long period of time without breaks, there is a risk of bringing about counter disaster syndrome, which implies that the person regard themselves as the only one capable of solving the situation and instead hinders the progress by attracting tunnel vision and failing in making sense of priorities. Paton (2003:206) means that this can be avoided by circling the person in charge in order to allow them to get breaks.
Paton (2003:206-207) discusses further regarding decision-making and claims that there are two major approaches towards reaching decisions during disasters. The first one being the *analytical* way, consisting of analyzing the situation either alone or together with others and discussing different solutions in order to reach the most appropriate decision. The alternative approach is the *naturalistic* way; here the decision-making is connected to previous experience of similar situations either encountered in real life or through scenarios and basing the decision upon these experiences. The author means that the naturalistic way offers the minimum amount of stress among the two of them, since the analytical way demands more fantasy and creative thinking. Though the author also states that the usefulness of the naturalistic method is based on the amount of experience the person/team in question possess, and their ability to relate to these situations. The support of top management and their understanding of the situation are also necessary in order to avoid restrictions caused by standing by normal practices and not being flexible enough in their acceptance of methods used for sorting out the situation. (Paton, 2003:206-207)

*Stress after the crisis situation*

Just because the disaster is over and the recovery work is completed does not mean that the situation is stress-free. This transition from being involved in a potentially traumatic experience with a high amount of pressure and all of a sudden going back to normal practices can be just as stressful as the event in itself. False expectations due to insufficient communication plays a part even here and questions like ‘did I do anything wrong?’ might surface and together with potential legal issues involved in the disaster may lead to unrightfully accepting responsibility for something outside one’s ability to affect. The support of co-workers and an organizational culture focusing on positive procedures and outcomes during the recovery work is most important for enabling a successful transition. The organization must also show concern for the individuals involved and their emotional state of mind; hence not pressuring people to make up for lost time by setting unrealistic deadlines and demanding excessive backlogging, not to mention looking for scapegoats and assigning blame. The best way of dealing with any unfortunate events or errors made during the recovery procedure is to learn from them and integrate them in to future training-sessions or simulations. (Paton, 2003:207-208)
Training/Scenarios/Drills
Faced with a realized disaster, people will react in a wide range of different ways. While some will step up and take command, others will be paralyzed by fear, or “run” away. In the off chance of being blamed for any mistakes made in handling the situation some will just sit around and wait for “experts” to deal with the problem. (Wallace & Webber, 2011:101)

Disasters are stressful situations to say the least and without any preparation or training the manner people will react in when they are in the middle of it can be just as dangerous as the disaster in itself. Sandhu (2002:154) discusses how the primary goal of conducting training and drills is to create awareness within the organization. This will help the employees to get a better understanding of what to do in a disaster, how to act and how to use any equipment such as fire extinguishers. The author means that organizational wide training sessions will necessarily not need to be overwhelming in order to create this awareness, instead fundamental exercises such as evacuation drills or walkthrough drills is sufficient for reducing the stress factor considerably. Sandhu (2002:149) continues with emphasizing the importance of having assigned people with the authority to order an evacuation and having additional personnel with the authority to do so if this person is not present at the time. This will help with minimizing confusion regarding if there is to be an evacuation or not. Wallace & Webber (2011:135-136) also discusses the subject and states that having a carefully chosen location of where to gather after an evacuation or if the facility is unavailable due to other reasons (e.g. fire during off-hours) is a good way to avoiding confusion and lessen stress due to uncertainty. The authors continues with mentioning different possible location for this kind of assembly point which could include everything from a parking lot (at secure distance from the facility) to a gas station or similar which is open both day and night. Hamilton (1996:45) also contemplates the matter of being prepared for possible disasters happening at inconvenient hours and mean that conducting drills at night (or during night-like conditions) could be a good way to prepare for disasters happening during nightshifts, the darker period of the year or simple power outages causing similar conditions.
2.3.2 External Crisis Management
Now when we know a little bit more about how crisis situations and stress can affect the individuals within organizations we have arrived at the astonishing revelation that stress and crisis situations also affect the rest of the organization’s surrounding environment, hence let us explore how to deal with it under this topic of External Crisis Management.

We have already begun discussing the role of media and how reports can affect the organization during disaster recovery procedures, but the worst consequences from handling the communication with media poorly will not surface until long after the actual crisis situation is over. Turpin (2006:51-52) mean that the reputation and the image the organization have built up for years could crumble to bits by mismanaging the correspondence with media. The author claims that during the first few hours of a crisis situation it is crucial to communicate with media and inform stakeholders by staying on top of the situation. Because there is not a matter of if media will show up, only about when. Furthermore the author continues with emphasizing the importance of this seen to todays high-speed distribution of news and information through internet and mean that crisis events are more or less ‘live’ with the general public already from the beginning. Turpin (2006:51-52) also refers to a study conducted by the advertising firm DDB Needham which lists the regard for the organization’s crisis handling as the third largest factor impacting the customer’s decision to consume or not, only preceded by the quality of the product and the managing of complaints from customers. The author means that by being prepared, acting quickly, being honest and transparent in the description of the situation and accepting responsibility could in the end even lead to the transformation of the worst cases of disasters into a competitive advantage. With this said, the author also underlines that being honest is not the same thing as telling the public how you personally feel about the situation, since the cause of the crisis might not have been the direct fault of the organization in itself and the unfairness experienced by being dragged into a disastrous situation might lead to the assigning of blame onto others, a common recipe for catastrophe. (Turpin, 2006:51-52)
One should try to remember that we are all human beings, thinking and voting with our feet. We all have our own perception of any given situation, a perception influenced by our sources, their quality and “correctness” which in turn is influenced by their own sources and their credibility. Controlling or censuring the grapevine is more or less impossible in this day and age; the only way of increasing the odds for a successful communication is to be as prepared as possible. Turpin (2006:53-55) mean that one of the most common reasons for failed crisis communication is when top management lack an understanding of how their primary audience perceive the situation, namely their stakeholders. By this the author means that concerned customers and suppliers will notice if the organization’s representative is well-informed of the situation or instead acting stunned, protective and in the worst cases denies responsibility when confronted with uncomfortable questions by media. Countering this could be done by going through media training and analyzing customer’s sensitivity towards media reports and what kind of information they are really looking for. Turpin (2006:53-55) continues with discussing how there needs to be consensus regarding who the primary spokesperson is and what employees should say if confronted by questions, since the organization need to speak with one voice. Here the author emphasizes the communication within as just as important as the external communication and mean that the employees should be well-informed with transparent information, otherwise an uncertainty among the employees will also fester and making the situation even worse.

“In planning every new Olympic Games, the international Olympic Committee (IOC) has identified more than 2,300 worst-case scenarios that range from bacteriological terrorism and hostage crises to power-supply blackouts and even taxi strikes.”

(Turpin, 2006:52)

Turpin (2006:52-54) mean that the best way of preparing the organization for this kind of crisis situation is to always plan for the worst possible situations and trying to deal with any potential problems before they become realized crisis situations. One way of doing this is to use benchmarking but also learn from others mistakes and being prepared by training executives to handle crisis communication during high pressure situations. Furthermore the authors means that it is not only the own organization that needs to be analyzed in preparation of a crisis, the organization also
needs to have an understanding of how the media world functions and how the general public perceive it.

Turpin (2006:53-55) discusses how the organization might have preferred journalists which they regard as the right person to tell the public about ‘their’ view of the situation, this someone might be regarded in an entirely different manner by fellow journalists and more seen as having the credibility of a lobbyist. This might create undeserved suspicion and speculation among other journalists and bureaus which are having a higher regard in public opinion. Turpin (2006:55) continues to discuss how reporters can go to extreme lengths in order to fill the empty information space a “no comment” statement generates by looking for answers elsewhere such as calling ill-informed employees at lower level or even trespassing in the organization’s facilities. The author means that the best way of handling the situation is to always be transparent and honest from the beginning, which makes it possible to sticking to the same story throughout the process. Furthermore to always act quickly and accept full responsibility even though it might not be clear where the real blame is due, this could only be decided by the general public opinion in its own time.

***

We have now reached the end of the theoretical frame and will now continue towards exploring how this study has been conducted and what kinds of perspectives that has been applied which will be discussed in the next chapter – 3 Method.
3 METHOD

This chapter is about how the process of completing this thesis has been done, what kind of research methods which have been used as well as why these methods were chosen. The chapter acts as the link between studied theory, empirical data and the analysis. The chapter also describes the perspectives and the scientific aspects the author has chosen to base the research upon, which we will start this chapter with.

3.1 Scientific Aspects & Perspectives
I have chosen to conduct my research in the field of Risk Management by making a case study at Höganäs Japan K.K. The focus has been resting upon the complex situation of dealing with aftermaths from earthquakes that can cause disruptions and complications for the organization, as well as how to create contingency plans and prepare the organization for these kinds of situations. The main objective has been to create a model for how the traditional Risk Management framework can be complemented with thoughts from Disaster- and Crisis Management in order to make a more complete strategy for Risk Management in areas with unstable environmental situations. Before I discuss and explain the scientific perspectives used in this thesis I will in short present the most common perspectives and what they stand for. Without making this into a thesis about methodology this is still necessary for understanding the approach I have used in this study based on the complexity of the case at hand.

3.1.1 Ontology
According to Bryman & Bell (2005) is ontology about how we perceive the world around us. How we regard the nature of things as well as how to interact with them and the possibility of affecting them. There are two major points of views when it comes to ontology; namely Objectivism and Constructionism.

Bryman & Bell (2005) means that objectivism takes the stand of regarding the social nature of things as out of our control and making it unable to affecting them. An organization for instance is viewed as its own force which is acting on its own accord and forcing the employees to adapt to prescribed rules and restrictions. Unable to affect their surroundings the employees face a situation with suppression and limitation of their actions. Though constructionism on the other hand advocate that it is actually individuals themselves and their interactions with each other that make up the organization. This of course means that judging by people’s action the
organization is fully open to affection, since without the people in the organization there would be no organization at all. Further going as people change, so does the organization and leading to a constant process of change.

3.1.2 Epistemology
The subject of what knowledge is, how it is created and by which means it is generated goes under the doctrine of epistemology (Nationalencyklopedin, 2015). According to Bryman & Bell (2005) one can identify two key perspectives for epistemology in the context of business research; Positivism and the Interpretivism.

Bryman & Bell (2005) means that positivism advocates the practice of research methods used in the field of natural science and making use of these methods in order to study the social reality. Positivism focus on maintaining a strictly objective standpoint with no influence from personal interpretations and advocates that true knowledge is only facts that can be proven by testing a hypothesis and confirmation directly by the senses. According to Bryman & Bell (2005) is interpretivism an alternative viewpoint that focuses on understanding the social reality and its inhibitors on a deeper level by making interpretations of actions and behavior. In order to try and find out the meaning behind taken actions this perspective emphasizes the importance of making interpretations of observed situations. Interpretivism gives individuals a bigger role in the research process and gives their subjective actions more attention than the positivistic perspective.

3.1.3 Quantitative & Qualitative Research
According to Bryman & Bell (2005) each of the perspectives described in the two topics above is divided into the two dominating approaches used by researchers, namely quantitative and qualitative research.

Quantitative
Bryman & Bell (2005) means that the ontological standpoint of objectivism and the epistemological view of positivism falls under the field of quantitative research. Quantitative studies commonly use a deductive approach meaning that the research starts off in theory and seek to verify or modify theories by testing hypothesis against the empirical data. Bryman & Bell (2005) mean that the quantitative field strives to uphold an objective view by being informative and descriptive in their research to enhance the theoretical field rather than being normative and prescriptive which the
quantitative approach regard as not being possible to prove seen to the scientific methods advocated. The authors discuss how the methods commonly used in the quantitative field is structured interviews and survey studies which is presented by using statistics, hence the typical reference to quantitative studies as being focused on numbers. Furthermore the quantitative field strives to make their results generalizable in great extent and advocate that this is possible seen to the reliable data (e.g. statistics) used where they seek to study behavior as it is rather than the meaning behind these actions.

**Qualitative**
According to Bryman & Bell (2005) the qualitative field of research primary uses a constructionist view as their ontological standpoint and an interpretive approach as their epistemological view. The authors mean that the qualitative approach mainly seek to be inductive, indicating to generate theory by studying and explaining the meaning of the actions the researchers has observed in their empirical studies. Hence the qualitative approach starts in ‘the real world’ and works towards explaining their findings through theory and ultimately creates new theory that usually prescribes how praxis could be improved. Bryman & Bell (2005) discusses how qualitative research is focused on gaining insight through observations at close range of the empirical phenomena and prefers to conduct their studies in the natural environment of the studied object. Hence non-structured or semi-structured interviews together with observations are among their preferred methods for collecting data. Since emphasis is put on the context and the environment where the observations have been conducted the result of qualitative research has less focus on making their results generalizable in other situations. Furthermore seen to the methods used and the goal of seeking to understand the observed situation tend to make qualitative studies filled with explanatory vocabulary which have led to qualitative research being synonymous with words, rather than numbers.

**Incompatibility vs Multi-strategy**
According to Bryman & Bell (2005) the two fields of quantitative and qualitative research is often regarded as difficult to combine and some researches even see them as incompatible seen to the underlying assumptions of how we perceive the world (ontology) and what knowledge is as well as how it is created (epistemology). Still
Bryman (2006) means that the combination between the two approaches has in recent years become a lot more popular. Bryman & Bell (2005:500-501) refers to this combination as *multi-strategy* where methods from one perspective is combined with methods or approaches from the other, e.g. using both a survey and observations or making a qualitative analysis by using quantitative data. Even though many researchers are sceptic to this approach Bryman & Bell (2005:500-503) still mean that the arguments against is highly subjective and is founded on the unproven assumption that certain methods is strictly connected to specific views of epistemology, hence the claim that the two approaches is incompatible is somewhat exaggerated. The authors instead mean that the two approaches have much more in common than there are differences. Bryman & Bell (2005:310, 500-503) continues to motivate this by explaining how a new type of *triangulation* can be used. Traditionally the term is connected to quantitative research and advocates that different methods and sources should be applied when measuring certain indicators in the gathered data to ensure a higher reliability. The use of triangulation in qualitative research is nowadays more or less common practice as well and is usually made by for instance verifying data from observation by also having interviews regarding the subject. Though this new type of triangulation allows a combination of for instance interviews (qualitative) and survey results (quantitative) which Bryman & Bell (2005:503) while discussing a study conducted by Zamanou & Glaser (1994) mean will make it possible to combine the precise nature of quantitative data with insight into the complex circumstances gained through the interpretive methods deployed.

Still Bryman & Bell (2005) mean that the usage of a multi-strategic approach should not be made without consideration to ontological perspectives. Bryman (2007:17-18) discusses how this fact is often neglected among researchers applying a multi-strategic approach and few who primary values the potential usage of the outcome of the study do acknowledge the standpoint of a pragmatist.

*Pragmatic Research*

Onwuegbuzie & Leech (2005) are advocators of the *Pragmatic* approach to research and discusses how there are three major types of views when it comes to combining the quantitative and qualitative approach in research. The first one is the *purists*, who believe that there are such major differences regarding ontology and epistemology in
the two approaches that either you believe in one of them or in the other, meaning this is how you regard the world and what knowledge is, hence you are ‘always’ a quantitative researcher or a qualitative researcher. The second view is that of the *situationalists*, who regard both approaches as having merit and being suitable in different situations, meaning that some research questions should be explored using a certain approach while other subjects can be investigated using the other approach. Though they acknowledge the value of both approaches the situationalists still regard them as being separate from each other, meaning you do not mix them in the same research. The third view is that of the *pragmatists* who believe that there is a false barrier between the two approaches and that the methods used by e.g. quantitative researches do not necessarily correspond to the view of positivists and the other way around regarding qualitative researches and an interpretive view. Instead the pragmatists support the usage of methods from both the approaches by claiming that they both have strengths that could and should be utilized while the weaknesses of both approaches also can be avoided. Onwuegbuzie & Leech (2005) mean that by doing this one will better be able to understand the researched situation, hence they advocate that the research question is meant to determine which method or methods that should be applied. Furthermore the authors mean that the methods used for conducting the research is simply tools meant to help us understand the world better by enhancing our knowledge and the toolbox should not be restricted by philosophical conflict.

Onwuegbuzie & Leech (2005) continues to discuss how this false barrier between quantitative and qualitative research really is nonexistent since most studies that claim to be one or the other almost always also contain elements of the other approach. Furthermore the authors mean that there are no such thing as objective research (quantitative) in social science since the formulation of the research question, the survey questions and validation through the use of indicators which have been subjectively constructed will still led to a certain amount of subjective influence. Hence the train of thoughts is; objective + subjective = subjective. The authors also criticizes the qualitative approach for having too little emphasis on validation and not explaining what interpretations really have been based on, which
have led to much raw data has been kept under lock and key, hence unavailable for verification. Onwuegbuzie & Leech (2005:378) mean that this has in turn fostered a mentality of ‘anything goes’.

According to Onwuegbuzie & Leech (2005) the whole ‘battle’ of which approach is the best is ridiculous since both perspectives have more in common than they have differences. The authors explain how the quantitative approach primary seek to test theories while the qualitative approach aim to create new theories which makes both approaches just as important. Furthermore the authors mean that if one does not make use of both of them one will lack the complete understanding that is needed to investigate a certain phenomenon. The authors conclude that no matter what type of perspective used all research within social science still aim to enhance the understanding of human beings and the environment that surrounds them which is the important thing, not in which way it is done. Finally the authors mean that students should be encouraged to make use of all the methods prescribed by both approaches and lessen the emphasis on the differences in an attempt to unite the research field, since they mean that if researchers keep on battling over which approach is the right one, there is a risk that eventually no stakeholder will ever take them seriously.

3.1.4 The Scientific Approach of this Thesis
After this short but rather lengthy presentation of the most common approaches and perspectives used while conducting research within social science we have now reached the presentation of what kind of approach I have taken in this thesis. To begin with we can conclude that I have made use of a multi-strategic approach since I have used both the methods of semi-constructed interviews (qualitative) and a smaller survey (quantitative) which is further explained later in this chapter. It should be noted that the interviews are the main source of data which in turn led to certain questions and points of interest arising that I wanted to explore further and confirm to a greater extent, hence I made use of the smaller survey which functions as a complement to the main source of empirical data. Furthermore this part of my method could be said to share some similarities with the study by Zamanou & Glaser (1994) which Bryman & Bell (2005) discussed and could be regarded as functioning as a form of triangulation, as mentioned earlier in this chapter.
Quantitative Approach
If we take a couple of steps back and start from the beginning and ask ourselves what is this research really about? It is about Risk Management and how to make it work in an environment with a greater than average amount of external risks. Hence to begin with; does RM work as it is or not? The basis that traditional RM is not adequate in this environment is a non-proven fact, even though the foundation of this statement is based on RM’s inherent weaknesses discussed by e.g. Andersen & Schröder (2010), it is still a simply theory of mine yet to be tested. Hence making the initial approach of this study a deductive one, which in turn corresponds to the field of quantitative research. The matter of external risks in the form of natural disasters or risks sequentially caused by natural disasters is to me a part of the environment which human beings have no control over, with the train of thought that you cannot stop or change an earthquake or a typhoon. This could be linked to the perspective of positivism which argues the point that the surrounding environment cannot be affected by the individuals who inhabits it, even though the perspective primary aims at the more internal ‘social environment’, I still believe this external risk phenomena brings unavoidable consequences upon the individuals lives and social environment as well. This together with my method of a survey (even though as a secondary source) would make my approach in this thesis highly quantitative.

Qualitative Method
Though that is not entirely true, because what then, if RM does not work here, how can I possibly contribute with anything to the field of research by only concluding that and there is still another part of the equation which have been left out in this reasoning; is RM even necessary in this environment to begin with? Organizations in Japan like Höganäs Japan K.K. seem to have been doing fine for 25+ years without it, but how is that possible and would it not be a giant waste of potential knowledge to neglect the fact that the research field, RM and potential global organizations looking to establish here in the future could learn something from this experience?

Identifying this knowledge and experience would be extremely difficult by using only quantitative methods such as a survey. Furthermore, by being only informative of the ‘Japanese approach’ to deal with these types of external risks would leave out much of the foundation in these practices just in the same way as stating that; being a
A firefighter is about driving special trucks and spraying water on fire. It would be true enough but the necessary mindset, teamwork and mentality would be neglected. In other words the underlying meaning behind the actions taken would not be explored or understood. This is also why the positivistic view of not being able to affect once surrounding environment is not a 100 percent appropriate here. Meaning that the simple fact that organizations in Japan such as HJKK has been able to prevail against the environmental difficulties and pretty much all odds given the positivistic view I regard it as proof enough that there is an underlying mindset and mentality which this climate has fostered in order to cope with this ‘hopeless’ situation. This has in turn led to a change and adaption of the social environment forced by its inhibitors not giving up on the situation and moving on elsewhere.

**Multi-Strategic Execution**
This means that one part of my study is highly quantitative, even still when I bring in the related theoretic field of Disaster Management to search for a possible integration and modification of RM to function properly under these circumstances it still somewhat pleads to the deductive reasoning of quantitative research with hypotheses and theory testing. Yet the importance of the empirical data’s contribution to this modification should not be underestimated either. In this sense the mindset, philosophy and practices from HJKK outweighs Disaster Management’s influence since their strategy have been proven to work (based on the fact that HJKK is still going strong) while DM still represents theories to be tested. Hence, can the knowledge and practices from HJKK which share similarities with the theories from DM be integrated into the RM foundation in order to make a more adaptable RM framework suited even for this harsh and uncertain environment? This kind of perspective brings the thoughts towards an inductive approach, where a phenomenon observed and studied in the real world helps generate new theory. It might be to take it a bit far, the approach of a modification or an adaption of an existing basis in the form of traditional RM is more appropriate while I still maintain the significance of the empirical data in creating such a modification. The prime reason for this is the hypothesis that the necessary mindset to work and perform under these circumstances represents the missing component of flexibility and adaptability that the RM framework need.
This makes the whole situation rather complex since this mindset more or less only can be explored and observed through qualitative methods which in turn results in the majority of the empirical data being of a qualitative kind. Hence we have an initial deductive and quantitative approach testing a theory which in order to be completely understood needs the usage of qualitative methods and its approach in order to analyze and make sense of the data. The approach of finding a solution for how RM could be modified also takes us further away from the positivistic and quantitative approach since the mission of building a new model or ‘fixing’ RM turns towards a normative quest, which is in strict contradiction with the positivistic view. Though why do this, why adjust and change the approach from the initial deductive and hypothesis testing of if RM works under these circumstances? This brings us back to the beginning and the potential outcomes of such an approach; either traditional RM works against all odds seen to the theoretical foundation in probability which TRM rests upon, rendering this whole study more or less useless, a risk I am willing to take or TRM does not work and I could only speculate aimlessly about how to fix it and not contributing with any sort of solution seen to a solely deductive and quantitative method, also rendering this approach more or less useless.

Pragmatic Standpoint
This reasoning led me to adjust the approach and the research question along with it in order to find out how to adapt the RM strategy, which in my opinion is the only real interesting point in this situation. In allowing the research question to guide my approach and drive which type of methods I would need to deploy this study has been required to take a pragmatics point of view. This means that the ontological and epistemological standpoints have been referred to the backseat in preference for exploring and understanding the complexity of this situation to its greatest possible extent by making use of all the necessary methods at my disposal given my timeframe and available resources.

Still, after having made mincemeat of any clear understanding regarding my philosophical approach in this thesis through the above discussion I would like to attempt to clarify my standpoints as much as possible. Hence I have made use of a concept for this very purpose regarding multi-strategy described by Bryman & Bell

*Morgan’s Classification for Multi-Strategic Research*

Bryman & Bell (2005:503) explains while discussing Morgan (1998) that the concept has four possible approaches towards classifying studies with a multi-strategic method. This classification in turn is made by two criteria; *Priority* – aiming at which of the two approaches of quantitative and qualitative research and their methods has the largest focus in the study. Secondly there is; *Sequence* – determining which approach or methods the study initially begins with.

<table>
<thead>
<tr>
<th>PRIORITY</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEQUENCE</td>
<td>First</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Second</td>
<td>X</td>
</tr>
</tbody>
</table>

*Figure V – An illustration of a concept regarding the classification of multi-strategic research by Morgan (1998) described by Bryman & Bell (2005:503)[author’s transl.]*

I have determined (the X-mark) that my study starts off with a quantitative and deductive approach by testing RM against an environment filled with external risk elements but does this primary by making use of qualitative research methods and then evolve towards finding a solution for modifying traditional RM into a model that can be more flexible and adaptable during these type of circumstances which organizations like HJKK operates under.

After this philosophical discussion of what kind of approach this study has used we will now continue towards a more concrete description of the actual methods that has been deployed, followed by the structure of the thesis and how quality of the material has been upheld.
3.2 Case Study
I have chosen to conduct a case study at Höganäs Japan K.K., basing my choice on the thoughts and advantages concerning case studies described by Bryman & Bell (2005) and Yin (2007). The authors discuss how a case study can be suitable if one seeks to gain a deeper contact with a single research object and create a greater understanding of how this organization deals with the topic being researched. I regard the research topic as being on such a complex level that the closest possible contact with an organization’s employees is necessary as well as the access to a large amount of information which is only possible in the circumstance of a case study. Without having a close contact with the organization where the research is being done I see it as difficult to get to the bottom of why the people within the organization regard the researched matter as they do. Other methods which could have been used could for instance have been cross-sectional design or a longitudinal design. Concerning the cross-sectional design the gathered information from each object would be more limited and make it more difficult to find applicable conclusions cause of the lacking understanding of underlying reasons of the organizations actions. Neither would a longitudinal study be suitable seen to the limited amount of time of the project.

3.3 Sampling
My initial contact with Höganäs Japan K.K came through a common acquaintance between me and my contact person and he have throughout the research project helped me with arranging interviews with people of interest for the study. This kind of process is usually known as “snowball sampling” or “chain sampling” according to Bryman & Bell (2005:595). This simply means that you start with interviewing one person that then recommends the next person to be interviewed and so on. This kind of method can be a good alternative if one seeks to come in contact with interview subjects who otherwise are difficult to come in contact with. (Bryman & Bell, 2005:378-379)

The main location for where the empirical data has been collected has been Höganäs Japan K.K. (HJKK) which is a subsidiary of Höganäs AB with headquarters in Höganäs, Sweden. From now onwards when Höganäs is mentioned or the acronym HJKK is used this corresponds to Höganäs Japan K.K. if nothing else is stated.
Höganäs Japan K.K.’s business primary functions from two places in Japan; their factory in Saitama which is about 72 km outside of Tokyo and their office in Akasaka, central Tokyo. The office in Akasaka has been the main location of gathering empirical data for this study. The prime reason for this has been available access and that all employees speak English fluently. A couple of interviews have also been carried out at the factory in Saitama in order to get the production managements perspective on the work with Risk Management. The main objective has been to research the planning function for Risk Management at Höganäs Japan K.K. which has made the office the most suitable location as well as those responsible for production at the factory.

3.4 Gathering of Empirical Data

3.4.1 Interviews
The primary mean of collecting empirical data has been through semi-structured interviews. Bryman & Bell (2005) means that the semi-structured interview technique to a higher grade guarantees the respondent to provide answers to the questions one seeks to explore, than for instance non-structured interviews. Still at the same time the semi-structured method allows the respondent to come up with their own ideas and providing input on the subject more freely than fully structured interview techniques. (Bryman & Bell, 2005)

Beginning at the office I started with interviewing the CEO which has provided me with an overview of how HJKK work with Risk Management. Continuing on I have interviewed people from all different departments at the Akasaka office. Totally 16 interviews with 12 different people have been carried out. Most interviews have been about 45-60 minutes long, though exceeding that length in some cases with exceptions up to three hours. During all interviews has recordings for transcription purpose been made in order to ensure that no errors is being made during for instance quotation. Templates for interview questions from different occasions can be found as attached documents in the appendix (See Appendix C).

Those functions I regarded as main responsible for Risk Management after an initial interview has been interviewed at least twice and have therefore been categories as
“Group A”-interviews in the table below. These interviews together with the overview perspective by the CEO have become the main frame for the description of how HJKK work with Risk Management in the empirical data chapter. The secondary focus has become how the employees generally regard the work with Risk Management and how they would want to improve it. These interviews include the departments which are not included in the previously mentioned Group A. Together with the result from a smaller survey (discussed further on) these interviews make up what is classified as “Group B” in the below table.

Two kinds of complementary perspectives on the subject have been provided and have been classified as “Group C” in the table below. First one of the globally responsible for Risk Management at Höganäs AB, stationed at the Swedish headquarters. Data from this interview functions as an overview to describe how Höganäs AB as a group work with Risk Management on a global level. Secondly the Director of the Japanese Institute of Sweden Studies has been interviewed and make up the second half of the complementary perspectives part in the empirical chapter. Data from this interview provide an insight into how the Japanese society works and thinks about Risk Management on a more general level as well as what kind of difficulties international companies can face on the Japanese market.

### Table I – Interviewed Departments

<table>
<thead>
<tr>
<th>Classification</th>
<th>Department/Function</th>
<th>Location</th>
<th>Number of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>CEO (1 person)</td>
<td>Akasaka Office (JP)</td>
<td>3 (á 120 min)</td>
</tr>
<tr>
<td>Group A</td>
<td>Finance/Admin (1 person)</td>
<td>Akasaka Office (JP)</td>
<td>2 (á 60 min)</td>
</tr>
<tr>
<td></td>
<td>TSD-Management (1 person)</td>
<td>Akasaka Office (JP)</td>
<td>2 (á 60 min)</td>
</tr>
<tr>
<td></td>
<td>Production Management (2 persons)</td>
<td>Saitama Factory (JP)</td>
<td>2 (á 180 min)</td>
</tr>
<tr>
<td>Group B</td>
<td>Sales Management (2 persons)</td>
<td>Akasaka Office (JP)</td>
<td>2 (á 45 min)</td>
</tr>
<tr>
<td></td>
<td>Sales – Customer Service (1 persons)</td>
<td>Akasaka Office (JP)</td>
<td>1 (á 45 min)</td>
</tr>
<tr>
<td></td>
<td>Logistics &amp; IT (2 person)</td>
<td>Akasaka Office (JP)</td>
<td>2 (á 45 min)</td>
</tr>
<tr>
<td>Group C</td>
<td>Corporate Environment &amp; Safety (1 person)</td>
<td>HQ – Höganäs AB (SE)</td>
<td>1 (á 210 min)</td>
</tr>
<tr>
<td></td>
<td>Director – JISS (1 person)</td>
<td>JISS – Tokyo (JP)</td>
<td>1 (á 180 min)</td>
</tr>
</tbody>
</table>

By recommendation concerning benchmarking work in the field of Risk Management during the earthquake in Japan (March, 2011), I have also been in contact with
Disneyland Resort in Tokyo. Unfortunately they did not approve of having an interview. Furthermore I have also been in contact with Keidanren (Japan Business Federation) which during 2012 have published a report concerning Risk Management (in Japanese). Unfortunately neither did they approve of setting up an interview. Still both organizations will be mentioned and briefly discussed in the complementary perspectives part of the empirical chapter.

3.4.2 Survey
The secondary source of empirical data comes from the survey that was conducted during the later part for of the process of gathering empirical data. One of the things that have come to be of interest is how the employees at HJKK regard the work with Risk Management and contingency planning, for instance if they associate Risk Management as being their own or somebody else’s responsibility. The questions have been based on subjects that have been reoccurring during the interviews and which in turn have created a special interest. Hence because of this the main reason behind the survey has been of complementary and statistically supporting nature. A copy of the distributed survey can be found as an attached document in the appendix, so can also the summarized result from the survey and constructed graphs from the data (See Appendix B).

The survey has been distributed directly to all employees at the Akasaka office with a total population of 17 people. The survey has been available for three weeks and all employees has been informed as well as encouraged to participate in the survey. Unfortunately cause of random unavailability due to business trips, vacation and holiday season not all have been able to participate in the survey. The total participation has been 10 people with the participation rate of 59 percent.

According to Bryman & Bell (2005:111) a probability sample is possible when all units have a known chance of being included in the sample and in most cases this kind of sampling is also assumed to be representative for the total population. I regard the sampling of this survey as being a probability sample seen to that the whole population has had the same chance of participating. Furthermore seen to the relatively high participation rate and that the sampling error has been due to random
reasons as described above. Hence I regard the sampling of the survey as being representative of the population at the Akasaka office.

3.4.3 Documents, Observation & Participation
Documents have been a complementary source of information for this study with the main purpose of creating a further depth in the description of the planning function behind Risk Management at HJKK. Several documents connected to Risk Management and contingency planning has been studied and will be discussed in the empirical data chapter. Most notably is the global policy document for Risk Management and Loss Prevention. It should be noted that it is mainly the use of these documents that will be focused upon and not the details they contain. Furthermore could documents for evacuation drills and planning be mentioned as well as table and charts for contingency planning.

Spending about two month at the HJKK office I have also participated in and observed the daily work of the organization, both in the factory and in the office. During this time I have for instance observed an evacuation drill at the office as well as maintenance and cleaning for safety reasons at the factory. These observations will functions as yet another complementary source of information for the empirical data chapter, though will not be focused upon to any greater extent.

3.5 Theoretical Frame
Risk Management is a huge subject and contains everything from financial risk to the risk of natural disasters. The studied theory I have chosen for this thesis has been a selection from the field of Risk Management with a special focus on Strategic Risk Management and how to plan for disruptions in a proactive manner, more commonly referred to as contingencies planning. I have in order to avoid confusion and to make the theory description easier to follow classified the theories in Part I as “Traditional Risk Management”. This topic is meant to describe the framework for what Risk Management is and how it can be used in the context of this thesis purpose. This topic will be one of three parts of the theory chapter’s structure (which will be further described below).

The second part of the theory chapter is concerning Disaster Management which in many ways is closely related to Risk Management, especially when treating subjects
such the threat of natural disasters. Still there is one major difference between RM and DM, namely that RM strives to prevent disasters by acting proactively, while DM deals with realized disasters by acting reactively. Hence this topic is focused on business contingency and will discuss theories and concepts that I have regarded as a complement to the theories discussed under Traditional Risk Management. The combination of the two mentioned parts is meant to provide a more complete and more adapted theoretical framework of Risk Management for organizations active in areas with an unstable environmental situation.

The third and last part of the theoretical frame concerns Crisis Management and is focused on the human side of disasters, discussing subjects like how to deal with stress and how crisis situation can affect the people within the organization both during and after a disaster. An organization faced with a disaster also tends to get attention from the external environment, hence crisis communication (e.g. with press/media) will be discussed briefly. In all three cases does the gathered material consist of primary literature and scientific articles.

3.6 Structure of the thesis
The overall structure of the thesis is based on three parts. This means that the chapters about theory, empirical data and analysis all have three parts each which corresponds to each other. Before summarizing the parts in a table the contents of the empirical data and analysis chapter will be briefly explained.

All three parts of all chapters are somewhat based on a timeline perspective, most clear in the empirical data chapter with the following three parts; Part I which will describe how the work with Risk Management has been done up until today at Höganäs Japan K.K. but also how Höganäs AB deals with RM globally. Part II will continue with discussing how business contingency and Disaster Management became a reality during the earthquake in Japan March 2011. Part III will discuss the special situation organizations (and their employees) operating in a region with a large amount of natural disasters face almost daily. The topic will have a distinctive focus on the future and primarily how improvements can be achieved. On top of the timeline perspective each part in each chapter corresponds to the respective part in
the other two chapters, forming the three major perspectives that are discussed and used to construct this thesis (which can be seen in the table below).

The first part of the analysis chapter will concentrate on how RM deals with external risks and uncertainty of the caliber that HJKK is encountering. Part II will then continue with discussing how the present work can be organized and how to more specifically adapt the RM strategy with the help of DM for the situation that HJKK is confronted with. Part III will discuss how the RM work can be further developed by combining thoughts from the theory chapter and ideas discussed during interviews, as well as how to spread the awareness about Risk Management in the organization.

**Table II – Structure of the Thesis**

<table>
<thead>
<tr>
<th>PART I</th>
<th>PART II</th>
<th>PART III</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEORY</td>
<td>Disaster Management</td>
<td>Crisis Management</td>
</tr>
<tr>
<td>The Risk Management work at HJKK and Höganäs AB.</td>
<td>Disaster Management &amp; Business Contingency at HJKK during the earthquake 2011.</td>
<td>The Japan situation, the mindset needed when operating in a region with a large amount of natural disasters.</td>
</tr>
<tr>
<td>[Focus – Proactive]</td>
<td>[Focus – Reactive]</td>
<td>[Focus – Improvement]</td>
</tr>
<tr>
<td>ANALYSIS</td>
<td>Can the Risk Management strategy become whole with the help of Disaster Management?</td>
<td>Is it a practically viable solution? How to work with it? How to communicate it? Applicable elsewhere?</td>
</tr>
<tr>
<td>How does Risk Management deal with uncertainty and external risks? Why is traditional RM not enough here?</td>
<td>[Focus – A solution?]</td>
<td>[Focus – Implementing]</td>
</tr>
<tr>
<td>[Focus – The problem]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The External Risk Side</td>
<td>The Contingency Side</td>
<td>The Human Side</td>
</tr>
</tbody>
</table>

3.7 Measures of Quality  
Bryman & Bell (2005) discusses the importance of insuring the quality of the research by the use of different measures for quality which they have categorized under the topics *Trustworthiness* and *Authenticity*. The both topics have several criteria to fulfill and will now be discussed from the perspective of this study. (Bryman & Bell, 2005:306-309)
3.7.1 Trustworthiness

Credibility
According to Bryman & Bell (2005) does ensuring credibility mean that the description of the studied social reality corresponds correctly to the actual social reality and is not biased by personal values. It is also important to follow recognized rules for how research is conducted. (Bryman & Bell, 2005:307)

My way of ensuring this criterion has been to throughout the study confirming and reconfirming the explanations of complex processes and statements which have been contradictory or in any other way seemed doubtful. The complete thesis will also be made available to the management of HJKK in order to confirm the content with the opportunity of pointing out any errors in the material. Recognized research rules have been upheld by using literature by Bryman & Bell (2005) as guidance.

Transferability
This criterion concerns if the research findings and conclusions are valid and transferable even in other cases (Bryman & Bell, 2005:307). One of the goals with this study is to find out how to create a more adapted Risk Management strategy for a company active in areas with an unstable environmental situation. This kind of adaption of the Risk Management strategy I regard as relevant for any international manufacturing company active in areas with this kind of situation. This would not only include Japan but also for instance areas in the U.S. with frequent earthquakes and other natural disasters.

Dependability
According to Bryman & Bell (2005:307) this criterion is ensured by carefully documenting how the research has been conducted and by archiving for instance empirical data from surveys and interviews. During this research project all interviews has been recorded in order to ensure that no errors for instance is made during citation. Furthermore filled out survey forms and other document are also archived. Attached to this thesis one can also find the interview questions used during different occasions.
Confirmability
Bryman & Bell (2005:307-308) means that in order to ensure that the author’s personal values do not affect and make the research result bias it is recommended to have a third person examine the result. During this study I have made my best efforts to uphold this criterion. Furthermore by listening to advice and input from my supervisor, examiner and contact person at HJKK as well as my fellow students who have examined my thesis during this project; I rest assured that this criteria is ensured to the furthest possible extent.

3.7.2 Authenticity

Fairness
According to Bryman & Bell (2005:309) this criterion highlights if the research data reflects a fair picture of the opinions in a studied group of individuals, so for instance that not only the opinions of managers are discussed in matters concerning the whole organization. I have tried to live up to this criterion by including all departments and levels of authority where I have conducted my research, hence both the opinions of regular employees and managers are taken into account. Furthermore I have added complementary perspectives to the situation by discussing the opinions of a global responsible manager at Höganäs AB and a third party’s view on Risk Management.

Ontological Authenticity
Bryman & Bell (2005:309) means that this criterion posts the question of to what level the research has enhanced the studied individuals understanding of their surrounding social reality. One of the goals with this research has been to increase the awareness for what it means to work with Risk Management and hopefully to contribute with ways of improving the situation for the involved individuals.

Educative Authenticity
In similarity with the above criterion Bryman & Bell (2005:309) means that one should strive to enhance the studied individuals understanding of how other involved individuals regard the situation. I hope to do this by for instance sharing the content of this thesis as well as the result from the survey with all concerned at the Akasaka office at HJKK where the research mainly has been conducted.
Catalytic & Tactical Authenticity

Bryman & Bell (2005:309) advocates that these two criterions are meant to ensure that the participants of the research get the possibility of improving their situation and that their means to do this has also been further developed. I regard this as the single most important goal of my research and sincerely hope that this study will contribute to giving both a better picture of the situation as well as provide ideas for improvement to HJKK.

3.7.3 The description of the Empirical Data

I have been inspired by what Bryman & Bell (2005:462-465) refers to as narrative analysis and have hence chosen to make use of a storytelling-like technique for describing my gathered empirical data from interviews and observations. This is my way of bringing primary observations and their meaning to greater light by trying to paint a picture of how the surrounding environment and interpreted emotional expressions comes into play in the context of describing the interviewed individuals thoughts and experiences as well as my own. Please note that narrative analysis has only been a source of inspiration and any standards it may include is not taken into account and hence this approach I have chosen should only be regarded as way of complementing a standard approach of describing empirical data.
4 EMPIRICAL DATA

This chapter describes the gathered empirical data for the thesis, primary consisting of interviews and observations, secondly the usage of organizational documents and a minor survey will also be discussed. There will be a storytelling-like approach used for describing the content of this chapter as mentioned and explained in the Method chapter. The chapter is divided into following three parts:

Part I – Risk Management at HJKK & Höganäs AB: This part has the primary focus of describing how Höganäs Japan K.K. and Höganäs AB work with Risk Management and will especially emphasize the scenario of natural disasters.

Part II – DM & BCP at HJKK during the earthquake: This part concentrates on how HJKK practiced Disaster Management and handled Business Contingency during and after the major earthquake in March 2011.

Part III – The Japan Situation: This part puts special attention on the human side of disasters and what kind of mindset that is needed for operating in a region with a large amount of natural disasters.

Fourteen days into February, less than a year since a major earthquake shook the harmonic and stoic foundation of every Japanese citizen into a rough awakening in March 2011, I am standing on the streets of Akasaka, Tokyo… No, wait, I am running. It is my first day at Höganäs Japan K.K., I am on my way to the first interview and I am late… and I am lost.

‘Precisely by the subway station, just take a left, and then left again, it will be on the left side.’ (Directions provided by Anonymous)

I could have used a map, if I understood the address, which I did not since the Japanese society primary uses districts and blocks rather than street names and numbers. Still the instructions were clear enough and I had arrived 30 minutes before the appointment just in case. The only problem was that the subway station had three different exits in different directions and when you think about it; left, left and then keeping to the left, if you do that in quick order you will pretty much be back where you started.

After a rather humiliating phone call, further instructions and some newfound local knowledge of the whole business district called Akasaka I arrive at the office building where HJKK’s main office is located. I am greeted at the reception by the CEO Carl-Gustav Eklund and he guides me towards his office where we are supposed to have
the interview. The office area is not particularly large, but neither is the personnel force, instead it’s just big enough as much things are in Japan. It is an open office space and we pass among mostly occupied cubicles, the floor is covered in Höganäs-blue broadloom carpet and everyone seems to have their own matching company backpack resting at the wall of the cubical. I see a helmet or two laying around at some of the unoccupied booths, I know they have a factory outside of Tokyo hence I guess they are personal helmets or something like that. It is pretty warm in the building, probably because I have been running, though it is rather dusky or unlit as well, everywhere except the work areas. We arrive at the designated room, sit down and I start to explain how I could not find the way. Eklund listens and answers that he likes to always be prepared from the beginning, especially in unfamiliar territories, in case the worst happens. I am about to answer that I had prepared myself with both extra time and maps but that it was not enough, I stop myself by realizing that it does not matter now anyway. Instead we start the interview about; Risk Management, uncertainty, how to deal with the unexpected, when the worst-case scenario is realized and how HJKK surrounded by natural disasters is supposed to navigate through the unfamiliar territory called – the future.

4.1 PART I – RISK MANAGEMENT AT HJKK & HÖGANÄS AB

4.1.1 What is HJKK?
Eklund begins by describing how Höganäs Japan K.K. (HJKK) is a manufacturer of metal powder for a wide range of industries with customers within the automotive industry as one of their largest segments. The usage of the product could be described to a layman as instead of melting pure steel into shapes of gearwheels etc., extremely fine and specialized mixtures of metal powder is pressured into the intended shape of the component. The process which Höganäs AB been part of introducing to the market creates more or less infinite possibilities, quicker processes and higher durability among its many advantages. Eklund continues with explaining how The Höganäs Group has operations all over the globe but emphasizes that the base material or base powder is only manufactured in the U.S. and at the headquarter in Höganäs, Sweden. The factory in Saitama, outside of Tokyo is what he refers to as a mixing station, meaning a facility where a wide range of base powder is mixed
according to highly specific recipes from the organization’s different customers. Eklund means that the process is specialized to the degree were the customer would have to make adjustments even if the batch was mixed according to the same recipe at one of The Höganäs Groups other plants, even though the adjustments could be considered as minor in this regard.

HJKK is Höganäs AB’s (henceforth referred to as ‘HSAB’) Asian headquarter and except from the office and mixing plant in Japan there is also a similar mixing plant in China and one under development in South Korea. Together they ship and handle the whole Asian market. Eklund explains how HJKK is the largest supplier of this kind of metal powder on the Japanese market and states that there would be severe consequences for their customers if they could not fulfill their obligations and deliver material on time. Seen to their market share Eklund mean that their Japanese competitors would not be able to handle the volumes demanded with their facilities in their absence for a longer period of time.

4.1.2 RM at HJKK an Overview
Hence when we start discussing RM in general terms it is not particularly surprising that what Eklund regards as the number one priority is to keep the Saitama plant up and running at all costs. He mean that the mentality among Japanese organizations, implying their customers, has extremely high expectations on their suppliers and do not tolerate any delay. Eklund also mentions that some of their customers have their own safety stock of HJKK’s unmixed raw material in case HJKK’s shipments from Sweden were to be delayed. This is also Eklunds second point of priority; their own dependence on their supply chain. Shipments of raw material or base powder from Sweden arrive every week by containerships, the transfer length consisting of weeks mean that the flow of raw material is constantly ongoing and when one ship has arrived, another one has already set off. Eklund seem a bit irritated when he states that it is not all that uncommon for ships to be delayed up to a week. When he explains the reason for this on the other hand he gives the impression of a since long acceptance of Mother Nature’s effects on the business climate in the region, with tropical storms and typhoons. He quickly mentions though that the longest delay they have had of shipments from Sweden as of yet is two weeks. Eklund further explains
that for this very reason and the uncertainty of what might happen to their shipments in the future, they need to keep several safety stocks of raw material. Their dependency on ports being fully functional for receiving shipments have also made them use four different ports with their own mini-stock at all locations except from Tokyo port (since the factory is close) in rented facilities in close connection to the harbor. Eklund continues with discussing how the usage of ships and ports also creates a dependency on transportation on land in the form of trucks, yet another potential risk for delays if the routes used were to be inaccessible. Hence means Eklund that seen to the potentially amount of event which could go wrong during the supply chain which is out of their control demand that the events they actually can affect should be closely examined. By this he means that there have been extensive evaluations of their suppliers and their ability to deal with different scenarios.

Eklund continues with explaining how they always assume that there could be delays and uses worst-case scenarios, while still working under the premise that they should still be able to deliver their product to the client. According to Eklund they have been able to manage that kind of minor disruption, though the real problem and what they need to work more with is how to deal with potentially major disruptions, such as earthquakes and other natural disasters can lead to. Mitigating the risks of foreseeable disruptions such as the delayed shipments is something Eklund finds that their Risk Management and Loss Prevention Manual (which they have received from the headquarters in Sweden) have handled well and it does its job in that regard. Though he finds that it needs to be complemented with processes for handling the type of threats that earthquakes and other major natural disasters (which is uncommon in Sweden) may pose to HJKK due to the regions unstable natural environment. Eklund means that it is something they have discussed but not put in writing as of yet.

At the same time, 8646 kilometers away (give or take), in the little municipality of Höganäs in southern Sweden is Anders Bergman probably contemplating how Japans grinding continental plates is making his job all that more complex. Since he is one of the people responsible for the creation of the Risk Management and Loss Prevention Manual.
4.1.3 RM at Höganäs AB (HSAB)
I meet up with Anders Bergman at Höganäs AB’s headquarter in Höganäs, Sweden. If the Tokyo office to a beginning was problematic to locate at my first visit, then HSAB’s headquarters is the straight opposite and instead difficult to miss, even though the risk of getting lost is the same since the factory and office areas is gigantic, containing five factories and housing more than 700 employees.

The Risk of Being Human
Bergman who works with Corporate Environment and Safety is to say the least passionate about analyzing risk. He lives and breathes Risk Management and starts right off the bat with explaining human beings relation towards danger and our process of handling risk. He states that risk is something we all live with, every day and every moment. Bergman means that risks are something that surrounds us, hence we will always take minor risks. He uses the example of how I stepped in to his office and how I judged the floor safe enough to walk on and the chair as stable enough to sit on. Bergman continues by explaining how we constantly and subconsciously are calculating risks and performing our own mental risk analysis.

“99.99 percent of all risks do you avoid without even thinking about them.”
(Anders Bergman)

Bergman discusses how our endless use of risk analysis is due to our evolution and survival instinct. He means that if you pass by a tree with a horizontal branch which has an unnatural outgrowth on its top side, the human mind will register this much quicker than if the branch would have been vertical. According to Bergman this type of reaction is because of our continuous lookout for predators deriving from our past. He further explains how we have honed this ability through time and by getting to know our surrounding environment and its potential dangers and risks. Bergman means that when the modern human being then steps into a complex and ‘new’ environment such as a factory full of potential dangers which we do not register subconsciously in the same way since there are no warning signs, we need to start observing risks actively. Searching for risks systematically is something we must train ourselves to be able to do according to Bergman. He states that ‘putting safety first’ is something that everyone who works at Höganäs is supposed to do, he means that this is the most important part of The Höganäs Group’s corporate environment.
policy. This is something which everyone needs to be reminded of and thinking in terms of safety should always be encouraged, in the same way as questionable and dangerous behavior should be corrected. Still Bergman means that this should not be done in a hostile manner, since this will only foster cover-ups of any mistakes. Bergman continues by explaining his belief that machines rarely cause accidents by themselves, it is rather the combination of man plus machine or the human factor that causes these situations due to reasons such as careless behavior or lack of attention. Instead of hammering in the message by the threatening resignation, the goal should be to strive towards nurturing an organizational culture of risk awareness and on the constant outlook for anomalies and safety issues according to Bergman.

Bergman discusses how this type of policy and goal needs to be continuously entertained by taking all reported situations seriously and to thoroughly evaluate them as well as follow-up with the person who reported the issue. He means that this have been a problem earlier since the process of reporting this type of observed risks were too complicated and often it took too long time for the right department/person to receive the report which lead to insufficient reconnection with the reporter. Bergman finds that if the person who observes potentially dangerous irregularities and then report them do not get any feedback of what actions has been taken to correct it, he or she will eventually stop reporting anomalies and stop paying attention to risks. Lack of attention is a danger in itself even without encourage it through insufficient follow-up. Bergman refers to the concept of complacency, when people get used to their environment to the extent that they experience a sense of false security and stops paying attention to the most fundamental risks lurking close by. Still Bergman continues to hail HSAB’s new system for reporting incidents, risks or so called near misses. This system makes it possible to in a simple manner quickly report any incident by just having access to a computer at the organization’s facilities (instead of using paper forms as before). Bergman means that another advantage of this system is that the incident reporter can check back on their report and see live-updates of how the issue is being investigated and what possible actions is being considered or taken.
4.1.4 Awareness & Kick-Off
Bergman continues to discuss feedback and debriefing when we touch the subject of the RM Kick-Off they arrange only a month ago. At the Kick-Off representatives from all factory sites were present to discuss the new edition of the RM-manual, including the Japanese Plant Manager Ryoichi Harada.

Bergman thinks the Kick-Off was more or less a success and if put in other words, highly necessary. He acknowledges the fact that they are in the starting phase of the global RM-project and the Kick-Off together with the manual represents the first step. Bergman means that they have sent out the manual by e-mail to all managers within The Höganäs Group worldwide, though they still know that not everyone will read it. He means that it is supposed to be a so called ‘living document’ and the basis for a future RM-culture but that destination have crooked road and getting there will not be easy. Bergman means that ultimately RM is everyone’s affair, not only the job of mangers but also operators are supposed to consider RM in their daily routines in matters such as maintenance and working with concepts such as 5S which is part of LEAN. (5S in short: all equipment has their own place, systematically maintained workspace, proper maintenance and everything is supposes to be nice and tidy in general).

I ask Bergman if he thinks the people on different plants worldwide see the situation in the same way, if they consider RM to be their business. Bergman quickly says ‘No’ and states yet again that they are only in the beginning of their RM endeavor and add that writing policy and looking at technical necessities is the easy part, creating culture is something else entirely.

Kick-Off Scenario
Something else entirely might be what the Kick-Off attendants had expected after studying the information heavy RM-manual when they all of a sudden got thrown into a scenario of a major fire at a Höganäs Plant and asked how they would handle it. Bergman explains how he was the ‘Scenario Leader’ tasked with describing the development of the fictive fire and the actions taken/not taken by the people involved. Bergman calls it “Emergency Preparedness” and likes the idea of not briefing the attendants beforehand and regards it as a good way of creating a discussion and starting the generation of different ideas. He means that he only stated
‘It is evening and now the fire alarm start’ and then started going through the different routine process that are supposed to happen, such as evacuation (Who sounds the evacuation alarm?), closing fire-doors, shutting of gas and power supply etc. and at the same time stating questions to the scenario participants.

“Somehow you will have to determine who is responsible for what in beforehand, because when it all happens it is too late” (Anders Bergman) [authors tranl.]

Bergman explains how the scenario develops; the firefighters arrives, there is a search and rescue party for two missing operators, the police arrive shortly afterwards wanting to secure evidence in the event of the fire being intentional, media arrives etc. Bergman means that it all happens so fast that if you do not know exactly what to do in beforehand there is not time to handle all these different stakeholders and their questions. Bergman continues; Media does not get their questions asked so they go to a third party and rumors about fatalities and toxic smoke reaches the public ear, soon families and relatives starts calling and searching for their loved ones. All these questions need to be addressed but by whom? Bergman discusses how the crisis communication needs to be efficient and concrete enough that rumors do not fester. On top of it all is of course the actual fire and the whole rescue operation. Bergman means that this all occurs the first hour and before the trained first response team arrives, hence ordinary employees will also have to know what to do before the first response team can take over. When the team arrives Berman advocates a system consisting of checklists describing everything to be checked and done. He also means that every member of the team should be able to do all parts, meaning the first person (within the team) to arrive just grabs a stack of checklists and start at the top as quickly as possible and do not have to wait for the ‘right person’ to do that part.

Debriefing & Documenting
Furthermore Bergman discusses how it is crucial that everybody involved is gathered together and taken care of, in order to avoid people driving home only to collapse a few hours later due to smoke in their lungs or a state of chock that has been delayed due to adrenaline etc. Hence Bergman means that everybody should get cleared by a doctor and they should also get debriefed of the situation as quickly as possible. Here Bergman advocates a procedure used during an earlier disaster, where the people
involved were divided into small group. The group then sits down with a person not involved in the event who act as a moderator, then each person describes the event in turn as they perceived it while no other person intervenes and the moderator take notes on a laptop or similar. I ask Bergman if there is not a risk of the people involved in the incident will influence each other’s stories when they have their debriefing in groups instead of individually, in a way that the last person will have heard everyone else’s description and then altered his or her own accordingly. Bergman means that there is a small risk of such a thing happening but that is a risk they will have to take since it is incredibly important that this happens quickly since the human mind has its own defense mechanism for dealing with traumatic experiences such as a disaster event. Meaning memories and details of what happened in what order often get mixed up only after a few hours and debriefing everyone individually would take probably half a day. Bergman gives the example of when the fire department had sent an investigator a week later and the statements from the personnel involved had been different in several aspects, especially seen to the order of events. When the personnel then were shown both statements all of them re-remembered that the initial statement was the correct one.

Furthermore Bergman continues to emphasize the importance of starting to document everything as quickly as possible. He means that this is not only important seen to insurance purposes but also to figure out what really happened and why certain decisions were taken at the time and what kind of information they were based on. He adds that taking pictures and recording video is also a great way of documenting the situation and to learn from it in the future.

4.1.5 Methods and Systems
In comparison to the scenario described above and the Kick-Off discussion I felt that the RM-manual mainly focused on proactive measures and I therefore asked Bergman his opinion on unforeseen events or situations that are difficult to plan for such as earthquakes. Bergman starts off by agreeing on the complexity of such risks and means this is a side of their RM project they have yet to explore further on a companywide level. At the moment he means that each site has their own contingency plans and the work of linking them together properly is ahead of them.
Though he still mentions that they have some joint understanding regarding which kind of equipment that could be shipped to another site in case of an emergency breakdown etc. though that kind of knowledge is primarily in the hands of their plant managers and not put in writing as of yet.

We continue our discussion about unforeseen events such as warehouse fires and lost deliveries. Here Bergman advocates the usage of techniques such as ‘What if?’ and means that only one’s imagination is the boundary for what could happen and how such a situation would be handled. He also argues his preference for generic scenario planning, meaning preparedness for several types of events with one plan, which he regards as the best starting point. Then one could go deeper towards scenario based solutions that solely focus on a particular event such as an earthquake and how to handle it. Bergman also mentions the situation at one of their plants in Johnstown, Pennsylvania where the factory is located close to the riverbank, unfortunately the river has throughout history been prone to generate a major flooding each 50 years or so. Bergman means that this situation only the ones working there has any real understanding of and hence have taken their own precautions.

I bring up the question regarding safety stock and solutions such as Vendor Managed Inventory (VMI) a concept which consists of the supplier having part of their storage at their customer, where either the customer or the supplier owns the material and the customer manages it seen to their need. Bergman means that there are both positive and negative aspects concerning VMI. When it comes to positive side the supplier can more easily plan their production efficiently, running longer series which provides a better usage of material and energy as well as generates less spill and waste. Bergman means that running small batches and changing settings too often is undesirable. Though on the other hand when the supplier owns part of the storage at their customer’s facility they are susceptible to changes in the current value of the product. Hence Bergman means that if the price of nickel drops they will have a loss of value at their hand, especially since the raw material often is the basis for price setting in their industry. This have led to an approach of having as little stock as possible at each time is desirable, Bergman means that this is also in line with LEAN Production. Bergman continues by stating that by using Just-in-time (LEAN) and
minimizing stock they can be more efficient by approaching the situation from the reversed angle. Furthermore Bergman means that the LEAN concept and its qualities are strongly favored by the board as well which will probably mean that an increased safety stock never will be a viable contingency plan for potential disruptions.

4.1.6 Getting Started
Bergman continues his description of the global RM initiative and explains how the project started a couple of years ago, in 2010 and how the first draft of the manual was sent out mid-2011. I ask him what made them start with RM at that specific time and Bergman simply concludes that a co-worker retired then. Bergman develops his explanation by describing how this person was their Mr. Contingency Plan, simply a person who knew pretty much everything about what was going on in different Höganäs plants around the globe. By constantly traveling, making assessments and constructing contingency plans he handled everything. According to Bergman it was very practical because you could just give him a call and ask for the situation in for instance India at any time. Though he also admits the system was not very efficient seen to creating a culture since none of the other managers felt like they had to do anything, now instead the responsibility is shared and the RM work has a whole new dimension both planning and culture wise.

David vs Goliath
We continue our discussion regarding implementation problems now in the upstart phase and I ask Bergman about his view on the RM work at HJKK and how they are supposed to implement it. Bergman answers that HJKK has it easy in comparison to HSAB since their site in Sweden is so much bigger than the one in Japan. I counter with advocating that also means that HJKK have limited resources and personnel to work with RM in the same sense that you and your colleges do here at HSAB. Bergman acknowledge this but still means that the main approach should be to create a team in charge of RM and start with the fundamentals and if it should be necessary bring in external consultants to enhance the knowledge generation. Bergman seems to both like the idea of external consultation seen to newly gained knowledge but also advocates against it by meaning that the best way would be to handle it internally to get everyone onboard. Getting temporary help from Sweden should not be a problem either, Bergman concludes.
Insurance Company
I ask Bergman if they have received any help in the startup process of their RM-initiative and you can see the relief in Bergman’s body language when he states that their new insurance company has been a tremendous help, without them we probably never would have been able to do it he adds. Bergman explains how the insurance company been a driving force or rather how HSAB has used them as a driving force in beginning of their RM initiative. We sent them out to all our sites to conduct investigations and assessments of the current situation and determining what needs to be done in order to better protect them from future risks. Bergman means that this first initial assessment has been of great help and it has included somewhere around 12 to 15 points for each site to take care of, as in must take care of. The assessments have also included propositions for best practices which they according to Bergman have regarded as recommendations. When we touch on the subject of recommendations Bergman recalls that there was some discussion about adding sprinklers at the Japanese site that there were some disagreement upon.

Well, let us head back to Japan and hear what the Plant Manager has to say about the situation.

4.1.7 The Saitama Factory
After about 45 minutes by train from the Akasaka office in Tokyo, the society called Saitama emerges, Saitama is part of Tokyo’s Greater Area and even if I would not describe it as particularly great or large it still provides a small hint towards how enormous the Tokyo area really is. Here there seem to be mainly industries located and in comparison to central Tokyo the area seems almost rural when we travel along the highway towards HJKK’s factory or their mixing station as they usual call it. Here I meet with two smiling and welcoming gentleman in the form of the Plant Manager Ryoichi Harada and the Deputy Plant Manager Atsushi Katsumata.

The meeting is informal and we get started right away with discussing their current work with Risk Management. Harada begins by describing how he just recently got back from their RM Kick-Off and his posture somehow pulls off the trick of indicate that he is balancing a sack of iron powder on top of his head at the same time as he remains cheerful and positive while he simply concludes there is a lot to be done
within RM. While Harada does most of the talking Katsumata mainly provide additional explanations to certain processes and takes over when the subject touches what happened during the earthquake, which will be more closely described in Part II.

I start asking about the scenario of a fire erupting and potentially destroying their warehouse. My follow-up question asks if they have any sprinklers and all of a sudden I have awakened a sleeping beast within Harada without the least bit of idea why since my interview with Bergman took place much later.

|“No, no, no, doesn’t work!”| (Ryoichi Harada) |

It turns out, as we already know, that the sprinkler discussion has been a hot potato at the plant the last few weeks. Harada quickly settles down and explains his point of view, he means that iron powder alloyed in certain ways combined with extreme heat (as in fire) and then water can be dangerous in certain situations, something also later confirmed by Bergman. Hence by installing an expensive sprinkler system that on top of perhaps being dangerous also could risk malfunctioning and destroying all the content of warehouse due to shakings from earthquakes etc. is nothing Harada is a fan of. His logic seems reasonable enough to me and we continue by discussing alternatives. This turns Harada back into his usual positive and easygoing nature when he starts explaining their extensive cooperation with the local fire department. He means that they have yearly visits from the fire department to whom they describe how they work at the plant and the firefighters in turn explain their usual proceedings. Furthermore Harada explains that they shared their blueprints for the factory with the fire department and that twice a year there are inspections of the available firefighting equipment at the factory.

Localization
This kind of local cooperation is something Harada values to great extent and believe routinely communication is among the most important things. Harada continues by explaining his own approach to Risk Management which he feels might not be the most academic of concepts but I would not be so sure. He begins by explaining that the factory has been around for 25 years and much of the equipment has been imported from Sweden and the U.S. Harada regards the situation as having two main
problems; first of all the equipment will eventually get old and when spare parts are needed the delivery time from overseas is long and the parts are extra expensive. Secondly updates and finding people for maintenance is difficult since the components are originally foreign, such as control panels etc. Making the situation more complicated than it needs to be. Hence Harada have since a couple of years back started what he call ‘Localization’ meaning the systematical replacement of older imported parts and instead installing Japanese-made counterparts that is more up to date and the supplier is easily accessible for spare parts and maintenance if something unexpected were to happen. Harada seems proud of his initiative and means that his is also a type of Risk Management and I could only agree.

**Cleaning & Maintenance**

Harada continues with discussing how they have started using concepts such as 5S and emphasizes how important proper cleaning and maintenance is in the powder industry. On my second visit I am also shown proof of this commitment when the whole factory seem to be having some kind of cleaning day. Harada & Katsumata is rather busy but they both take the time to describe how no production is taking place today since it is ‘cleaning day’ which they have a few times every year. This is no ordinary broom and bucket cleaning, instead gigantic vacuum hoses are stretched all over the building and you have to wait for guidance of how to step through the door (great timing for an interview indeed). Harada further explains that large amount of residue dust should never be left unattended because in worst case scenarios there could be a dust explosion. This is why they have the extensive cleaning, not to gather large amounts of dust, rather to make sure that dust never is collected in places that are hard to get to and being built up over time. Harada continues by describing how there a while back occurred a dust explosion at one of their competitor’s factory in the U.S. and since then there has been an increased focus on examining residue dust by collecting it and sending it for analysis for determining the potential risk of a dust explosion to occur etc. He also means that they have been having extensive information exchanges with other Höganäs plants and studied different videos as part of their dust related RM. This type of practice Harada finds rewarding and means that sharing of incidents and information between Höganäs plants is very useful.
South Korea & The Back-up Situation
We start talking about what kind of contingency plans they have considered and quickly return to the scenario discussed at the Kick-Off. Somehow Harada yet again manages to show off the conflicting positive attitude towards dealing with difficult situations when he quite cheerfully describes his current headaches consisting of helping out with the establishing of a brand new plant in South Korea, demands from the insurance company and the matter of considering what proactive measures he should take for another one of those 9.0 earthquakes. He finds that the Korean factory will be of considerable help in the future as back-up but also acknowledge that there is much work to be done both in Korea and at the Saitama factory. Harada continues with describing how they have had some exchanges of workers between the Japanese factory and the Chinese factory in Shanghai and finds the system quite rewarding in sharing knowledge. The exchange also makes it possible for operators to step in quickly at each location if there would be an emergency. We continue with discussing safety stock and Harada seem to find their current solution with constant deliveries from the ships overseas and their safety stock at the warehouse sufficient and means that they apply Just-in-Time and refers to the Toyota Policy. Katsumata on the other hand regards to safety stock as being too large while reasoning that if something were to happen to them it would most likely also affect their customers production and demand. Still Harada means that there is an increasingly insecurity surfacing after the earthquake and even customers applying LEAN have asked them to keep a reasonable amount of extra safety stock.

We return to speaking about Risk Management in more general terms and Harada explains how they since the earthquake have installed a battery in the factory office intended for running the computers and the server in case of an power outage. Katsumata also explains that if certain machines would break they could still use their smaller and older back-up machines. In certain cases if lifting/transportation equipment would breakdown otherwise crucial functions could for a time being be made manually through the usage of other cranes etc. even though it would take more time. Furthermore they have regular drills and meetings with the operators as well as brainstorming sessions of how to improve the production and increase the safety for everyone. The train of thought goes that since the operators work directly with the
machines they know the best way of improving them and the process as a whole. The
most recent development Harada explains is made upon request from the operators
and consists of additional emergency-stop buttons being installed on different
locations in the factory and close at hand also outside the control room where the
previous main switch was.

**FMEA & The RM-manual**

Harada continues with explaining how their most recent addition to their contingency
planning consists of beginning use the concept of Failure Mode and Effect Analysis
(FMEA). The project has just started but the process of determining critical
equipment has already begun and is in line with what the RM-manual also advocate.
Harada seem to enjoy this new focus towards RM but he admits that it is quite
difficult since the manual is not very specific and somewhere one should find the
extra time as well. In this regard Harada finds that since they are such a small
organization with 12 employees at the factory and 17 employees at the Akasaka
office their means and resources is much more limited than at the HSAB
headquarters.

After this short stop at the Saitama factory let us head back to central Tokyo and see
what Harada and Katsumata’s colleagues at the Akasaka office think about RM.

4.1.8 Business as Usual

Thoughtless, naïve and too confident. Sometimes you can meet people who think
they know it all, have everything under control and believe the world around them
will adapt to their convenience. They tend not to listen to advise from people with
actual experience or at least only partially. Unfortunately to say, today it seems like I
unconsciously stumbled into these characteristics and now I stand here soaked down
to atomic level after a couple of hours of tread-milling along the streets of Shibuya.

```
“Today everyone is supposed to leave the office before four o’clock”
(Toshiro Minami)
```

Several hours earlier I meet with Toshiro Minami, HJKK’s ranking Sales Manager to
discuss RM and the work with customer relations. He begins by controlling that I
have received the memo of the day, stating that the office will close down early today
since there is an expected typhoon progressing towards the Tokyo area. He means
this is just precautionary since there might be problems with public transportation and
since most of the staff lives one hour or more outside of central Tokyo it is advised to catch an early train.

Fortunately, as a short-term resident I live pretty close to the office, at least by Tokyo standards, which means about 30 minutes by subway and 15-20 minutes walking totally. Hence I leave rather late, around 3:30 pm, it has been decent weather all day, why rush? I had experienced a typhoon a few months back when I was an exchange student in the Kyoto area, it was unintentionally since I along with a few other exchange students had missed the internal memo (in Japanese) that morning and walked to school as usual only to find it closed for the day. It was just a bit extra windy and since it was open and almost rural landscape where we walked it could not possibly be worse in the middle of Tokyo with skyscrapers all around. Hence I got the brilliant idea that it could be smart to grab something to eat when I swap subway trains in Shibuya before continuing home. 30 minutes later I stand there stranded in the middle of Shibuya because all the trains have stopped, all the subway stations are packed beyond belief with what must be thousands of people waiting for the trains to eventually restart. I have no rain gear, fortunately it is not raining, it is more like I stepped into a vertically flowing river. Still, I had brought an umbrella, though it has passed away in every sense of the phrasing since it got ripped out of my hands to eventually get stuck behind a garbage container, joining the 20-30 umbrellas which had already decided to take up residence there. After more than an hour waiting and no change to the subway situation I decided to walk the rest of the way since apparently I had not patented my back-up plan consisting of grabbing a taxi. A normal day it might take 35 minutes, it took three times that this evening. At least I learned something, better to be safe than sorry, much like the main philosophy of RM and perhaps that I should listen to Minami a bit more carefully next time as well.

Ironically, Toshiro Minami told me when we discussed the matter of the most important component or process in RM that he believed that creating awareness and continuously reminding people of the effort and the potential risks is critical, otherwise people will eventually forget. He continues with concluding that the focus and interest in RM have spiked noticeably since the earthquake and that they have received a lot more requests from concerned customers. Though he believes that this renewed interest in RM will eventually fade if the people are not reminded, hence he
believe in having documents prepared that can be used to remind and train the staff in how to become more aware of risks.

4.1.9 Customers Concern
Minami discusses how HJKK have received numerous of forms filled with questions regarding RM and contingency planning from their customers after the earthquake in 2011. He means that the nature of the questions is usually scenario based such as ‘If this happens, what do you do?’ and ‘How quickly can you return to business?’. The questions also tend to focus on safety stock and assurances regarding the continued capacity to deliver even if the Saitama factory would be temporary stopped. Furthermore Minami explains how customers with only one supplier for a certain product have become increasingly uneasy and have started to take measures towards establishing at least two suppliers for each component. Minami means that this also continues to feed the endlessly discussion of safety stock versus cost-efficiency which also Harada mentions. Minami continues with describing how they also been asked to sign certain agreements that guarantee ongoing deliveries no matter what, agreements of the kind that they cannot possibly sign since no organization in the world can rightfully guarantee such a thing. He means that this is also something that the customers understand and accept, probably since they cannot make those kinds of guarantees themselves, though they will still ask.

Another recent matter Minami have observed is customer’s reaction to the power shortage due to the situation at the nuclear plant in Fukushima. Minami means that customers have increased their current production in order to stack up on finished goods since everyone know there will be a power shortage primarily during the summer (with tropical heat and air condition units turning up the consumption).

Still Minami feels satisfied with their current solution of back-up stock, he means that they receive constant shipments from Sweden which means that they always have up to a month of safety stock being transported on different ships. This is both the great advantage of their product and the curse, since most of the mixtures they deliver to their customers can be mixed at the Saitama factory using different sorts of raw powder, hence the same raw material can be used to mix different batches for different customers according to their specific recipe. Minami means that if something were to happen to one of their customers warehouse or similar that
required them to get large amounts of mixed powder quickly this would be no problem seen to that they already have a safety stock and the large amounts of the necessary ingredients. Still some customers have extremely specific recipes with different kinds of alloy for purposes such as making the powder more resistant to certain affects or more receptive in areas such as magnetizing. This means that some customers have very unique forms of raw powder and some even have to be premixed at the powder-making factory in Höganäs, Sweden where they also have special factories/facilities for the purpose of applying the special kind of alloy that could be used. Minami means that this requires them to keep a larger safety stock of these specific mixtures and their ingredients and constantly monitor and use prognoses for when they need to increase or lower their shipments from Sweden seen to the current demand in order to be cost-efficient. A process which is more easily said than done since the shipments is always flowing with a transfer time of several weeks.

Minami continues with praising the development of their new factory site in South Korea which he feels will provide a new kind of dimension to their RM-work in several aspects. He means that if something were to happen to the Saitama factory today, rendering it useless, they would have to get shipments of mixed powder from the factory in Shanghai which technically would not be a problem. Though the delay seen to shipping routes (Sweden-China-Japan) would be a bit tricky and they might need to use flight transport on short-term, which obviously is very expensive and they would not be able to transport as much product either. Furthermore there are certain import issues between Japan and China that would be costly. Hence receiving powder from the U.S. factory or the Swedish factory would probably be preferred if the disruption would be long lasting, though the availability for free capacity at these plants will always be a concern and is very situational. Something that Bergman at HSAB also confirms, even though he do not think it would be unmanageable. Minami continues by meaning that the new Korean site, which will be similar to the one in Japan, will make it possible to both share deliveries and help each other out during high demand periods or in crisis situations, both practically and knowledge wise.
4.2 PART II – DM & BCP AT HJKK DURING THE EARTHQUAKE

About 20 minutes by train in a northeast direction from central Tokyo there is the Katsushika Ward, I am here visiting the home of Akihiro Sunaga, the Director of the Japanese Institute of Sweden Studies (JISS) for an interview regarding Risk Management from a more general perspective and some additional insight into the Japanese society. We have just concluded our interview and Sunaga and his wife has prepared a small gathering of Japanese students and workers with ties to Sweden in one way or another for an informal dinner. We sit down and enjoy both the food and the lively discussion circling around all the differences and similarities between Swedish and Japanese culture. The dinner is over but people are still sitting by the dinner table and talking cheerfully when the floor and walls suddenly starts shaking due to the most intense earthquake I have felt during my stay in Japan.

The conversation naturally goes quiet and the atmosphere grows serious. Sunaga’s wife quietly stands up and goes over towards the closed door leading out to the hall and opens it, then passes by the TV in the corner of the room and switches it on and grabs the remote before returning to her seat at the table. At the same time Sunaga states that if the shaking intensified we should seek cover under the table, though he does not think this will be necessary. The shaking continues for what feels like minutes but most definitely must have been less than 30 seconds totally. During this time one of the other guests inquires if they should not take down the vase from the bureau behind Sunaga but he only shakes his head while stating that it has a special round foundation preventing it from tipping over no matter what. We all turn towards the TV which reports that the current earthquake had an epicenter quite far away though it was a medium sized earthquake with a magnitude around 5 on the Richter scale. The situation settles down to normal again, people begin talking and I ask Sunaga’s wife why she opened the door. She kindly explains that it is a precaution if the shaking were to intensify the door’s hinges could get stuck and the door in itself could get jammed if the frame were to be deformed due to the shaking, hence preventing escape.
The procedures described above, including seeking cover under tables or in doorframes in load-bearing walls are common practice during earthquakes in Japan, Yoshimasa Takabatake tells me during our interview.

4.2.1 Consequences of the Earthquake

From Yoshimasa Takabatake who is the Accounting Manager at HJKK I finally received an explanation for the dusky office lightning and warm temperature within the office space described in the beginning of this chapter. Due to the shortage of electricity since the Fukushima meltdown the government has issued a request for saving electricity to the greatest possible extent. Takabatake describes how one strip in each pair of the fluorescent lamp modules hanging from the roof have been taken down in order to conserve energy within the whole office building, meaning everywhere except at workstations. For the same reason the air-condition unit has also been lowered to minimum supply, though apparently it not the least warm now during the spring in comparison to the Japanese summer climate with extreme tropical humidity according to Takabatake.

Takabatake who is also responsible for overseeing the evacuation preparations for the Akasaka office is also kind enough to explain the strange company backpacks I noticed when I first arrived. These backpacks consist of emergency provisions, containing some portions of food, water, flashlight and first aid kit etc. The helmets is neither them intended for the factory as I suspected, instead they are a kit together with the backpack, meant for usage during earthquakes in order to protect oneself from falling objects. Takabatake seem to take great pride in being in charge of the emergency/evacuation planning and it does not take long until he hands me my own temporary backpack and helmet.

Takabatake have a great interest in earthquakes and continues with explaining how history have told us that it is not the earthquake in itself that is the most dangerous, instead it is the fires getting started afterwards due to broken gas pipes, failure in electrical equipment etc. that creates the most fatalities. Hence Takabatake means that one should be very careful of walking home from an earthquake situation, especially when such a walk would take 4-5 hours without proper transportation, one never knows what could happen along the road. This is also why they have created the
backpacks but Takabatake has not stopped there. He has also made an analysis of the situation around their office building and has determined that the risk of being exposed to a major fire from other building close by is quite small in comparison to many other locations in Tokyo, hence staying at the office during a disaster should not be a problem. Takabatake also advocates that there should be essential provisions stored at the office in case the personnel needs to stay for several days. Takabatake has done some calculations on the potential number of people and the worst case scenarios of how long they might have to stay and means that they already have enough water seen to the water tanks they use in daily life and the next step is to store food and other essentials such as blankets etc.

There has also been an increased focus towards conducting evacuation drills Takabatake tells me. True enough a couple of weeks later I witness the evacuation drill conducted by HJKK. The process of the drill is carefully documented by Takabatake and begins by him yelling ‘Earthquake, take cover!’ then everybody grab their backpack and helmet and take cover beneath their desks in order to avoid falling objects. When the situation is clear enough the decision to evacuate or not is taken and all employees grab their jacket and calmly walk towards the intended staircase and exit of the building (of which there are two). The group is then gathered at a preselected location at a safe distance from the building and managers are in charge of making sure that everyone is accounted for. Takabatake acknowledges the fact that the procedure might be problematic during a real situation, with people maybe panicking but he finds that if it is rehearsed enough people will approach the real deal in the same manner as the drill. Takabatake continues by proudly stating the fact that HJKK’s drills have inspired the rest of the organizations in the building (7 other floors) to conduct drill. He means that they had to ask approval for conducting the drill by the organization that owns the building and they wanted more details after observing it. The next drill was conducted over the whole building, a quite clear hint towards the increased interest in both RM and DM among organizations in Japan.

Sales Manager Minami stated in the previous part how customers also have increased their interest in RM and have started to bunker up on finished goods and increased their production seen to the expected power shortage come summertime. The Plant
Manager Harada also describes a similar situation where they had to install an alarm system at the factory last summer that kept track of peak consumption periods and let out a warning if the level of electricity consumed were too high. Harada means that if one does not lower the consumption after this type of warning the organization can risk getting limitations to their power supply. Hence during the summer we try to conserve as much energy as we can in other areas by for instance turning off air condition units at the factory office, Harada continues and while chuckling he adds that the operators have priority when it comes to air condition, not the white collars.

4.2.2 Business Contingency Planning at HJKK
Yoshinobu Takeda, Manager at HJKK’s Technical Support Division (TSD) also discusses how the power shortage can become a problem in the future. Customers demand will decrease during that time and he means that they of course have to adapt to that but there is also the matter of their own production. Takeda contemplates the solution of switching to night shifts during the summer in such a situation, mostly because the power supply will be less restricted then but also since the climate is cooler. Hence there is not the same need for air condition etc.

Takeda might be the person most involved in the subject of Risk Management and contingency planning at HJKK. I almost have not been able to arrange my notepad and preprinted questions before an enthusiastic Takeda starts off to explain his view of RM. He describes how he several years ago while working with different ISO classifications found it necessary to create some kind of business contingency plan. Takeda continues by explaining how he started thinking of ‘what could happen?’ and then borrowed a simple concept he had found in some material from the headquarters.

Three Steps Process
These three steps as he calls them consist of Analysis – Evaluation – Countermeasures. He begun by listing all the departments (e.g. Production, Sales), their activities and their processes. Takeda then continued by categorizing what kind of resources these departments depended upon (e.g. hardware/machines, personnel). With this table he had created he started off to ask each department manager to classify from a scale ranging from once a week to 100 years what level of probability
they regarded that each resource could experience problems. For instance if the manager of sales regarded the situation of his staff to become affected by influenza for a considerable length of time once every five years he would indicate this with the letter ‘D’ (corresponding to once every 5 years) in the column for Sales and Personnel.

Takeda explains the next step as Evaluation and here each department head were expected to judge what kind of back-up or solution they had for the situation and how long time it would take to fix. Meaning in our example of a large amount of the sales personnel getting influenza, given that there is no one available at the office, they might have to request some assistance from Sweden etc. and that would perhaps take 1-3 days. Here the scale ranged from less than 2 hours up to 180 days+.

The final step Takeda describes as Countermeasures and here each department head were asked to determine the best way of mitigating the risk by applying measures such as regular maintenance, back-up, job sharing, extra stock etc. Obviously the focus is mainly towards technical issues though in our example the sales personnel might be recommended to take an influenza vaccine or applying a policy of never going to work with influenza like symptoms as a viable countermeasure.

*Why be negative?*

We continue to discuss how he experienced the work with this type of contingency plan and who the other managers perceived it. When I ask Takeda the question he just laughs and says ‘well earthquake happened’ indicating that the Disaster column had a probability of 5–10 years. He explains how he revised the plan after the earthquake to among other things add the factor of electricity shortage. Takeda continues by explaining how it is not easy, a lot can happen and it is difficult to be reasonable when stuff like major earthquakes happen. He uses the example of the failing nuclear power plant and how some countries have started scanning Japanese products for radiation and simply stats ‘who would have thought about that?’ Still he believes that the contingency plan is a necessity and refers to that their customers in the automotive industry are extremely concerned about such matters. Takeda gives the example of how they were asked by a customer some years back when the war in Afghanistan was at high activity if they could guarantee their shipping routes and in
turn their deliveries to the customer. He even more emphasizes the customers concern for contingency plans and proper quality control when he explains how every sack of iron powder delivered to their customer has a current batch number. He means that if the customer receives one batch with a certain number and then they get an earlier batch number on their next shipment the day after they will refuse to handle it, since such mismatching indicates bad quality control. Hence Takeda conclude that the pressure from their customers is tough and it is difficult to find the right balance for how much contingencies it is financially motivated to have seen to HJKK’s relatively small size as an organization.

When we touch the subject of other managers interest in RM Takeda goes quiet and turns a bit sour only to start laughing again and stating that ‘well they are not so interested’. He means that when he came to them several years back with the first edition of the contingency plan they asked him how he could expect them to consider these kinds of farfetched things. Takeda means that people do not want to think about such potential dangers and being pessimistic, he means it is only human nature. Though since the earthquake there has been a certain spike in interest according to Takeda. Still it is not a very popular concept if the safety aspect is excluded and if HJKK is supposed to work with RM and contingency planning for real Takeda feels that an increased awareness needs to be created and an interest similar to that received by concepts such as Kaizen (continues improvement) . Though Takeda finds the problem to be that concepts such as Kaizen results in rewards or accomplishments, visible to the participants, while RM when it works shows nothing. The solution to get around this Takeda feels is to create some kind of contest, motivate people towards thinking about RM and perhaps give the winner whom has provided for instance a way of mitigating a certain risk a diploma or even a small gift.

4.2.3 What happened at the Saitama Factory?
Harada begins by explaining how he was on his way home from the factory when the earthquake struck during Friday afternoon the 11th of March 2011 and how he had to turn around and get back as quickly as possible. Katsumata whom were present at the time takes over the explanation and states that they first thought it was a smaller ‘normal’ earthquake but then quickly understood how that was not the case. He issued the emergency stop procedure and then the order of evacuation and since the
plant is relatively small there should normally not be any problem of being heard by everyone. Still Katsumata thought the evacuation could have gone quicker since everyone did not evacuate immediately and he means that it is good that they have started using drills more frequently in this regard to avoid future confusion. Katsumata then describes how everyone was accounted for and he shortly after tried to call the Akasaka office a couple of times but the landlines and cellphones were not work at the time or heavily overcharged. Hence he turned to e-mail and quickly sent a report describing the situation in short to Eklund. Katsumata continues by describing how they refrained from returning inside for a period of time since it could be dangerous and when Harada came back they made a quick check and determined that the building was secure to enter. Harada explains how he then issued the order for everyone to return home and see to their families, something most employees of course were eager to do as quickly as possible. This was possible since everyone at the factory have their own car, except from one person that travels by train. This would turn out to be a long evening for this employee since all the train had stopped and Harada describes how he went home a couple of hours in order to check that everything was fine and then returned to the plant were the stranded employee were waiting for the trains to start moving again. Though that did not happen until Saturday morning and Harada explains how the employee spent the night at the factory office and Harada kept him company until midnight. Fortunately enough they had been able to contact his family and inform them of the situation and according to Harada everyone escaped the situation in good condition and without injuries. Though it should be noted that the earthquake was not as sever in Saitama as in central Tokyo which still was quite calm in comparison with closer to the epicenter further north.

Harada continues to explain how he and Katsumata returned to the factory on Saturday morning to help the stranded employee to the train station. They then made a more thorough initial assessment of the damage caused by the earthquake. Remarkable enough they could only find that two incidents had occurred, the first one being a sack of raw powder that had tipped from its compartment and jammed against the shelf wall, the second one was also caused to the shelf system where a
lower compartment had marginally been bent due to the continues vibration. Hence Harada contacted their maintenance contact for their automatic shelf system and asked for a checkup, though since the problem was relatively small they answered that they had to focus on the more extensively damaged systems on other locations. Hence Harada called in a local operator that was familiar with the system and together they used a manual crane in order to shift the heavy sack of raw powder pack in its compartment during the Sunday. This meant that when Monday morning arrived and all the employees had returned to work they could start a step by step maintenance checkup. Katsumata explains how they used their normal procedures for a thorough maintenance and started by checking on the building yet again if they had missed something minor the first time and then continued with controlling their actual equipment, starting with all the moving parts and then continuing with switches etc. Harada also adds that he had early during Saturday morning seen to their supply of gasoline for transportation and he had urged the employees to do the same with their personal cars and as a consequences they successfully avoided the endless lines that built up later during the day when gasoline became a scarce resource.

4.2.4 What happened at the Akasaka Office?
The fact that people started rushing towards gas stations is not that difficult to imagine since all the trains to and from Tokyo had stopped and were slowly getting back on track during the Saturday. The crowds on the first trains must have been unimaginable seen to the fact that most trains usually are under normal circumstances. Still a lot of people that were inside central Tokyo at the time of the earthquake decided to walk back home which in most cases would be a journey that took hours. Sunaga whom were at his own office in Tokyo describes how he have never seen so much people walking on the streets (note this is Tokyo we are talking about here) when he decided to go back to Katsushika Ward by foot, only to arrive safely six hours later. The same procedure was used by some of the people present at Akasaka office when the earthquake struck. Michiko Uchibori from the logistics division whom were present in the office at the time describes how they first regarded it as a ‘normal’ minor earthquake but then all of a sudden it intensifed and cabinets on the walls started rattling and people got scared and dived under their desk. Saito,
also from the logistics department confirms the experience told by Uchibori and states that people got afraid, dived under their desk and got out 10 minutes later. Uchibori describes how they were 7-8 people at the office and when the shaking had settled down a bit they started contemplating evacuation, though there were two different opinions regarding the matter that divided them into two groups. While some preferred to evacuate, other like Uchibori and Takeda felt more secure inside. Takeda describes how new larger buildings are often considered as the safest place to be during an earthquake situation, especially compared to ground level. Hence some of the employees decided to exit the building, this was followed of other organizations present in the building also started evacuating and Uchibori explains how she also felt obliged to exit the building.

Once outside some of the employees were afraid for their families and decided to as quickly as possible get some kind of transportation towards their home. Uchibori notes that at this time they believed that the earthquake had an epicenter close to or centered on Tokyo and that is was mainly the neighboring area that was affected. Uchibori continues to describe how they perceived the situation of being outside, in the range of potentially falling and breaking glass from windows as distressing, hence the remaining personnel decided to return to the office. Takeda describes how they quickly secured two hotel rooms close by for the remaining four people in anticipation of the increasing demand when people realized there were no trains running and decided to stay put at the office. Uchibori describes how in the middle of all of this there were a lot of work to be done business wise and most of them decided to spend their time at the office by working. Eventually the train Uchibori was waiting for started running again and she describes how she could return home somewhere after 23:00.

Uchibori continues to note how this earthquake must have been the most sever one most people in Tokyo have ever experienced. This also showed in people’s reaction when many started half in panic to stack up on food and water. Uchibori decided to do the same while reasoning that it could not hurt to be a bit extra prepared.

4.2.5 Chain of Command
In case of impeccable bad timing seen to the main managers being out of office in the same way as during the earthquake in 2011 HJKK has now taken precautions for any
future disasters in the regard of creating a clear chain of command. Eklund means that this was highly necessary and even though there was an unwritten understanding about these things since they have such small personnel force it is still best to create some extra awareness by putting it in writing.

Uchibori explains how they are three people working in the logistics department and they all share their work among themselves. This way they all know what the others are doing and can pick up the slack in case one of them gets sick with influenza or is unavailable due to other reasons. Saito whom works with both logistics and IT confirms the situation and feels that it is a good way of working and sharing knowledge as well as helping each other out. The IT part of Saito’s job description also has its backup at the Saitama plant, where Katsumata is in charge of the IT related issues. Though Katsumata’s main occupation is that of being the deputy plant manager to Harada and if they both were to be indisposed there is a third person in charge of the warehouse whom will assume command over the factory. In the sales division Takeda describes how each employee has their own major clients, a situation the managers (Minami and Takeda) are involved in to a certain extent as well, meaning if someone at the sales division would be unable to perform his or her duties one of the managers can assist in the process. The smaller clients are often shared among the sales staff and if that is not the case the learning curve is not that steep if one of the other employees would have to handle the matter. Minami takes over and describes the more general chain of command behind Eklund as being a shared responsibility among the three head departments and their managers seen to the matter of the issue at hand, meaning Minami, Takeda and Takabatake. Since travels are common the practice of the ranking manager present at the office being in charge is usually applied.

4.2.6 Crisis Communication at HJKK

Eklund, Takabatake, Takeda, Harada and Katsumata all discuss the subject of how the crisis was handled communication wise during the earthquake and all seem to agree on that the communication was well managed. Katsumata describes how he first tried cellphones to contact the Akasaka office and then turned to e-mail when the phones were not working. This procedure and way of reasoning seem to be
unanimous among the HJKK employees and Eklund thinks it is only natural to try the different means available. Katsumata then through e-mail got in contact with Eklund, whom at the time was in Hokkaido (Northern Japan). The same procedure was used by the only manager present at the Akasaka office at the time, Takeda, which also contacted Eklund and reported on the situation at the office. Eklund started sending out requests for the confirmation of the safety of their traveling employees, which at the time was the majority of the office employees (Minami, Kondo, Takabatake etc.). Fortunately everyone was okay and most of which quickly sent confirmations by e-mail. Being the natural spider in the middle of the web Eklund was the one to be contacted by everyone and it seemed only appropriate that he continued to act as the communication central throughout the event and the following aftermaths. Soon enough Akasaka received a status report from the Saitama plant and vice versa.

Harada continues to explain how this system of communication continued long after the earthquake was over. He means that every day after the earthquake for a month he sent status reports regarding the production status etc. to Eklund whom then divided the information and sent it to each department head. Harada means that information in the interest of customers was sent to Minami whom then contacted the specific customer and so forth. This was a good procedure according to Harada which prevented mismatching information being given to customers directly from the factory. Hence if a customer called and inquired into the situation at the plant and wanted detailed information about shipments we referred them to Minami and could focus on getting back to normal Harada says. Takeda also mentions the usage of video conversations by such means as Skype when talking to their employees whom were traveling both within Japan and abroad since the cellphone communication still were unreliable. Takabatake also think the applied system worked well and have taken it upon him to create a standard template for e-mails/text messages (there is a special type of cellphone mail used in Japan). The template is a confirmation form to be filled in that explains ones current situation and the e-mail should be sent by everyone upon hearing about or being directly involved in a major disaster.

4.2.7 Disaster Management in general at HJKK
Takabatake continues with explaining how they also have other types of communication regarding natural disaster such as typhoons. Issuing warnings of
expected typhoons is something Takabatake is very proud of and he means that they always keep a look out for such warnings from meteorological agencies themselves and if they receive any indication of such matters occurring the company policy is often to end the workday early. This of course depends on the situation but Takabatake means that it is often necessary since most of the employees live far from central Tokyo and usually transportations such as trains are interrupted without any clear information regarding when they will be up and running again (note that trains and subways rarely operates after 00.00 at night in Tokyo) and in worst case they might have to spend the night at the office. Takabatake describes such a situation occurring in 2011, when there was a typhoon warning and HJKK sent all their employees home safely in time, though more than 100,000 other Tokyo residents got stuck in large train hubs such as Shibuya and Shinjuku and had to spend the night there.

Satoshi Kondo from the sales division also contemplates the need for flexibility and regards it as one of the key factors in a successful RM approach. He means that getting stuck with only one solution is not desirable, instead one should try to adapt to the situation. Especially regarding procedures such as evacuations he feels there should be an integrated flexibility for contingencies built into the plan. Uchibori regards the situations similarly and advocates the usage of several back-up options, she tells me about their most recent development where she and Takabatake has received a back-up PC each in order to continue their work with deliveries and customer accounts from home if their access to the Akasaka office should be restricted in any way.

4.3 PART III – THE JAPAN SITUATION

It is late afternoon and I am occupying one of the free cubicles at the Akasaka office after one of my interviews. I am sitting there enclosed in my own thought process while contemplating my approach to Risk Management. There are not that many employees left since the hour is getting late, basically it is me, perhaps Eklund, the receptionist and some people from the logistics department which I have not interview yet. One of the logistics people sits diagonally to the left from me and I can vaguely see the shape of an e-mail quickly being typed as if the intended subway
departure where only a couple of minute away. All of a sudden the floor starts shaking, nothing major, though still highly noticeable and then it quickly settles down to normal again a second or two later. My fascination is complete; I had been laidback in the office chair like a real productive westerner and pretty much not changed my position within those few seconds that passed while the person from the logistics department on the other hand had grabbed the backpack, put on the helmet and literally dived under the desk within the matter of what must have been 1-2 seconds. I look around dumbfounded, adjust my position to a more normal posture and recalls how that was what I were supposed to do during an earthquake, the logistics person smoothly jumps out from under desk, puts away the backpack and helmet, then continues to type that pending e-mail.

4.3.1 Mindset & Japanese Society
The situation described above pretty much describes a unique mindset probably only found in regions affected by such a large amount of natural disasters as Japan is. Somehow it seems to be an acceptance of the situation but here is still a fighting force within seeking to prevail over the unreasonable. During my interview with Kondo from the sales division he tells me that he has just recently moved from his previous house to a new location due to the earthquake. I ask if his house was damaged or even destroyed. He states that no he moved because after the earthquake the transportation (by train) was unreliable and there were several complications that made him miss out on a couple of days when he could not get to work, hence he decided to move.

Takeda whom also experienced the major earthquake in Kobe in 1995 while working at another organization describes how he woke up at 06.00 in the morning by the earthquake, he immediately saw to his family while things such as bookshelves and vases around the apartment were falling down and messing up the whole apartment, still he went to work at 08.00. When he got there he describes how the second floor of the building had fallen down and crushed the first floor. He means that it was a troubling situation later on since also this time there was an electricity shortage and they had only power enough to run the factory and the computers, not the heating system, in January. Hence he means that it was quite cold and I can understand him since I know that January in Japan is not much better than in southern Sweden and to
add to that Japan mainly uses single glass windows which practically provides zero isolation. Still I got stuck on the situation of Takeda going to work two hours after his apartment has been pretty much been shaken about like a maracas and being a total mess. Takeda answers by stating that ‘well, my family was safe’ and mean that is normally how Japanese people reason. To further strengthen his argument he describes how apparently the worker in the factory had managed to manually turn off the gas supply, a process which takes a couple of minutes, nothing strange with that. Though they did this during a major earthquake, in pitch dark blackness since the power had immediately went out and then they evacuated. By doing this they prevented a large explosion and what would have been a major fire. Takeda mean that this is a type of Japanese loyalty to their organizations and to the society as a whole.

The Japanese situation is in many ways quite unique, both Uchibori and Sunaga explain how they have gotten reports of an oncoming major earthquake that will happen sometime in the future in the Tokyo area for as long as they can remember. Uchibori describes how since childhood she has been told that within three years there will be a major earthquake and due to that the procedures of diving under desks and tables have become a habit more or less. Accepting the circumstances and somehow mustering strength to keep on fighting for survival in daily life is something that is difficult for us fortunate ones that have been spared from such elements as nonstop natural disasters.

Sunaga & The DM-work by The Government
In the same way the senior Akihiro Sunaga decided to walk home from the earthquake for six hours, he knew the government had recommended people to stay put and wait for transportation to get back up and running, which it eventually did. Though Sunaga states that he wanted to go home and he do not think anybody will care what the government thinks in such a situation.

Sunaga continues to describe how the government has handled what might be considered to be among the largest projects of Disaster Management due to a natural catastrophe undertaken in modern history. Sunaga is not particularly impressed by their actions, he means that in the beginning everybody cared but now, a year later, everyone seem to have forgotten. The government and especially media Sunaga feels
have let them down by only focusing on the positive aspect such as rebuilding, when it is such a little part of what needs to be done. He means that it is the matter of disposing and handling the debris what is the main concern. Sunaga finds that all the different ministries involved in the process, such as constructing roads, establishing new water supply and food as well as agricultural aspects is handled by different ministries, whom are unwilling of cooperating with each other. Sunaga indicates that they reason in such terms that cooperation will mean a loss of power and a loss of prestige. Instead it is everyone for themselves, endless discussions about taxes for handling the debris and the whole process is too slow according to Sunaga. He continues by meaning that it is probably one of the reasons for why the political awareness and the voting attendance level are so low (30-40 percent), since there are too many elections and everything happens so slowly.

*Individuals & Best Practices*

Still Sunaga feels relatively positive, he means that normal people have started to noticing the need for RM in another way than before. He means that department stores providing equipment meant to for instance secure bookshelves and other kinds of mundane RM have increased their sales by several hundred percent. Sunaga reaches towards his own bookshelf and points out his own new purchases. Still Sunaga means that everything the government has done is not bad and he describes how they issued the plea to all convenient stores open 24 hours a day in the Tokyo area to assist all wanderers coming from the earthquake. Here they could stay and rest as well as use the bathroom. Sunaga continues with describing who perhaps it is mostly private organization that has made the best effort in preparing for such a disaster as this earthquake. He gives the example of how The Disney Land in Tokyo had been having drills for 10-15 years in expectance of this kind of earthquake and when it struck the personnel quickly protected all visitors and provided them with blankets and whatever was close by, such as Mickey Mouse hats for keeping the cold March wind out.

Let us continue with taking a closer look at the differences between RM in Japan and the rest of the world.
4.3.2 Risk Management in Japan
Sales Manager Toshiro Minami provides some interesting insight into what he believes is the reason behind certain differences between RM in Japan and the rest of the world. Minami means that Japan have their own kind of RM that is not as much a plan or a strategy as it is in for instance Sweden. Minami seem to indicate that it is more of a culture, something they work with unconsciously to certain extent. Natural disasters such as earthquakes, typhoons and tsunamis causing disruptions and threatening both people’s lives and the survivability of organizations is by no means something new, it is a factor that has always been there. Minami means that natural disasters and earthquakes are not mentioned in the RM-manual provided by HSAB which is called the Loss Prevention Manual (LPM) which he thinks is much due to the fact that it is quite new but also that people in areas spared from large amounts of natural disasters has a limited understand of earthquakes and what it means to operate in such a region as Japan.

“Swedish people have no idea about earthquakes”
(Toshiro Minami)

While chuckling Minami describes how people outside of Japan often do not fully grasp what it means to live with earthquakes daily. What he drives at is probably the gap between knowing about something through news reports, theory etc. and really experience it in real life, a considerable difference which I could only agree with. Ironically enough it does not take long for him to prove his point.

Theory vs Reality
During an afternoon at the office Minami and Eklund is receiving a couple of Swedish colleagues in the conference room whom has just arrived from the airport. At the moment I am working on my thesis in the cubical next to the conference room and cannot help to notice their reaction when the floor starts vibrating. There is a subtle vibration, barely noticeable if you do not have your feet firmly placed on the floor. I see that Eklund, Minami and the person next to me has noticed it and seem to tens up for a split second. I am quite impressed by myself for perceiving what is going on. The vibration increase in the slightest directly afterwards and then calmly settles down, like the first vibration from your cellphone in silent-mode, when it goes from being completely still to vibrating once, if set to the lowest such level of
vibration and in a scaling fashion. Even that might be too harsh of a description; more like treading along the roaring and rumbling stomach of a giant turtle that has missed his breakfast would be more adequate. A typical form of a minor earthquake, you would not have noticed it at all if you were running, riding a bike or hard asleep in your bed. The reaction from the Swedish representatives is quite similar to my own first earthquake around 6 month earlier. They notice it first after the moment has already passed and everyone has determined that it was only a minor tremor, they go quiet, start look around on the spot to see if someone in the office dropped something heavy, then turn to Eklund and ask in Swedish ‘Was that…?’ after getting confirmation they let out a short nervous laughter and try to pull themselves together.

The reaction is quite different to the one described earlier in this chapter when an office worker dived under the desk. I know, because I experience it pretty much the same way the first time, it just happened, you could not react and it was already over when you figured out what had happened even though you knew what you were supposed to have done. It is a matter of seconds before the whole event has passed, though when you do not expect it, do not know how it feels it is like your brain freeze to contemplate what is going on and during those extra few seconds it takes you to grasp the situation others would already have taken cover. A weird sensation; an initial feeling of excitement and fascination that quickly turns to a state of high alert in search for additional danger, when no such thing can be found the realization strikes of how small you really are in comparison to the wrath of nature.

*Domestic Focus*

Still when Minami continues his discussion regarding differences between RM in Japan and the rest of the world he seems to indicate that Japanese organizations lack a bit of the overall perspective used by international companies. He means that while Japanese organizations are well prepared for natural disasters and risks on their home court, they are not as familiar with ‘normal’ business risks, political risks and other external risks often synonymous with international business. This is also something Takeda suspects. Minami contemplates how this most probably is due to the fact that most Japanese organizations are focused mainly on the domestic market. He even goes as far as to say that 98 percent of Japanese organizations only operate on the
domestic market and have no real experience or understanding of what kind of risks trading overseas involve. Minami continues by giving the example of what he regards as the most international Japanese company, Sony, which he means still has 30 percent of their business on the domestic market. Compared to for instance Swedish companies such as Höganäs they are much more used to operating internationally and is almost the opposite to Japanese organizations with a rather small focus on the domestic market in general terms according to Minami. He means that this has forced international companies to consider RM more generally and all aspects of it, something Minami means that Japanese companies have only started with recently, especially after the awakening in March, 2011.

4.3.3 Improvements & Solutions
Takeda whom have been the driving force behind the creation of the contingency plan at HJKK has as previously mentioned started noticing that people have become more and more interested in RM after the earthquake. I asked most of my interview objects for their thoughts on the situation of what could be improved and what should be regarded as the next step. The answers differed in a great many ways mostly seen to what they related to when they thought about RM. Takeda himself thought awareness was the most important point and advocated the usage of brainstorming sessions where concepts such as ‘What if?’ was applied. He thought that having a RM-day perhaps twice a year with different activities would do the trick of creating a more risk aware culture. Also Bergman at HSAB though culture was the next step, he means that it is first when you understand why you should do something that you can really start utilizing the technical methods for mitigating risks.

Saito and Kondo on the other hand related to the security of the firm, especially in preventing leakage of classified documents and company secrets. They regarded security of the firm as being only second to the safety of the personnel and also advocated that drills are necessary. Though Saito and Takeda also considers the aspect of what could happen if there was an influenza outbreak among the staff and acknowledges the fact that it would be very troubling, hence the usage of vaccines with the support from the organization could be a solution. Harada and Katsumata was at the moment highly occupied with the process of FMEA and Harada’s initiative
of localization and regarded the securing of company equipment for the future as the main target for improvement. Takabatake was contemplating additional resources for the office in case of a major disaster and focused primarily on shelter and evacuation aspects as important to improve as much as possible. Minami was worried that if they did not keep on having regular staff meetings concerning RM and talk about the procedures they have he felt that eventually people would forget. Hence he thought making use of the procedures they had and creating awareness around them was important, not to add additional procedures that would only make it more complicated.

***

Now we have reached the end of the empirical data description and before we head into the analysis chapter you could take a closer look at the minor survey conducted at HJKK and its result to the 13 questions which is shown in the table on the next page.
### Part I - Statement Questions

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>I do not agree</th>
<th>I mostly agree</th>
<th>I agree</th>
<th>(Blank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If an earthquake would occur while I am in the office building, I know how to evacuate in the best way.</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>10%</td>
<td>90%</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>There is enough training and information about how to act during a crisis situation, in order to evacuate safely.</td>
<td>0</td>
<td>4</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>After an earthquake, given that me and my family is safe, I know exactly what to do in order to continue the business and in what sequence. (E.g. whom to contact, how to do it, what to check, what to do)</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>40%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>4</td>
<td>Risk Management is part of my work and I feel involved in the work being done.</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>30%</td>
<td>50%</td>
<td>20%</td>
</tr>
<tr>
<td>5</td>
<td>Risk Management is very important and we should work more with it.</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>10%</td>
<td>90%</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>I do not need any more training or information concerning Risk Management. I know enough already.</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60%</td>
<td>30%</td>
<td>0%</td>
<td>10%</td>
</tr>
</tbody>
</table>

### Part II - Multiple Choice Questions

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Admin</th>
<th>CEO</th>
<th>TSD</th>
<th>Finance</th>
<th>Logistics</th>
<th>Sales</th>
<th>(Blank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Who is responsible for Risk Management? (you can choose more than one)</td>
<td>9</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28%</td>
<td>25%</td>
<td>13%</td>
<td>6%</td>
<td>13%</td>
<td>16%</td>
<td>0%</td>
</tr>
<tr>
<td>8</td>
<td>Who is responsible for Contingency planning?</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(you can choose more than one)</td>
<td>31%</td>
<td>21%</td>
<td>14%</td>
<td>7%</td>
<td>10%</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>9</td>
<td>Who is responsible for coming up with new ideas for improving the work with Risk Management? (you can choose more than one)</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24%</td>
<td>20%</td>
<td>15%</td>
<td>12%</td>
<td>15%</td>
<td>15%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Written Material</th>
<th>Meetings</th>
<th>RM-Meetings</th>
<th>Practical/Scenario Training</th>
<th>(Blank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>What is the best way of communicating Risk Management? (you can choose more than one)</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9%</td>
<td>0%</td>
<td>18%</td>
<td>73%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Part III - Questions Concerning Probability

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Non-existing</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Very Large</th>
<th>(Blank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>How big probability do you think it is that a major earthquake/natural disaster will occur in the Tokyo area in the next 5 years?</td>
<td>0%</td>
<td>30%</td>
<td>30%</td>
<td>20%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>12</td>
<td>How big probability do you think it is that this disaster will create problems for Höganäs business? (e.g. for the factory, shipments)</td>
<td>0%</td>
<td>30%</td>
<td>20%</td>
<td>40%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>13</td>
<td>How big probability do you think it is that the work with Risk Management and contingency planning will be able to handle this kind of situation?</td>
<td>0%</td>
<td>20%</td>
<td>30%</td>
<td>30%</td>
<td>20%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Summary

- **Total Population**: 17
- **Total Participants/Respondants**: 10
- **Participation Rate**: 59%
5 ANALYSIS

This chapter compares and discusses what we previously has learnt about RM & DM from the theoretical frame and relates this to the work being done by HJKK & HSAB which was covered in the empirical data chapter. This discussion will guide us towards the conclusion of this thesis which is the next chapter. In similarity with the earlier chapters this one is also divided into three parts:

**Part I – Traditional RM & External Risks:** This initial part investigates how traditional RM handles the situation experienced by HJKK with a large influence of uncertainty and the presence of external risk factors such as natural disasters.

**Part II – Adapting the RM strategy:** This part discusses if there is a possibility of combining the strategies of RM and DM as well as if the current practices at HJKK can teach us something about how to handle uncertainty more efficiently. Furthermore we seek towards adapting the RM strategy pursued by HJKK towards a better integration in their region.

**Part III – The Future:** This chapter focuses on the future and discusses how such a combination of RM & DM could be integrated with the regard towards creating awareness and conducting training.

The research question for this thesis has been to investigate;

> ‘How can a transnational corporation adapt their Risk Management strategy and plan for contingencies in a country with an unstable natural environment?’

Though who says it needs adapting? Traditional Risk Management might work just fine under these circumstances. Still if it does not, what is really the problem? Let us find out by taking a closer look at how TRM handles external risks.

**5.1 PART I – TRADITIONAL RM & EXTERNAL RISKS**

We have learnt how RM usually is described as a process including four basic steps as discussed by e.g. Andersen & Schrøder (2010) and Hamilton (1996). The first step of identifying risks is pretty straightforward and as we have discusses throughout this thesis only ones imagination sets the boundaries for what kind of risks there are out there that needs consideration. Still the different kinds of risks are usually divided into two large categories depending on their nature, namely *Internal* and *External* risks. The number of internal risks and their specifics depends on the specific organization in question, though they are usually the kind of risks that can be clearly observed and then mitigated or even eliminated. For instance a manufacturing
company with a large number of machines could carefully maintain their equipment and make sure they have all relevant spare parts stored as backup in case something would break or start malfunctioning. Though as Bergman at HSAB discusses there is still the element of human interaction with the specific machine that is the most problematic issue. This part is trickier, proper training and a culture that advocates safety and an attention towards finding anomalies is one way to go and would probably help a great deal in mitigating also the human factor in the risk equation for a specific machine. The same goes for risks of the personnel getting injured during production, training, flashing signs and a ‘safety first’-culture will help in this regard. Hence risks directly related to machines/equipment/resources or the behavior of the staff within the organization could be regarded as the two main categories within internal risks. Risks of this kind are something there are tons of systems for mitigating (e.g. LEAN, TQM) and as discussed they are quite simple to grasp and construct relevant countermeasures for.

If a machine breaks few organizations are clueless regarding what to do, either you repair it or you replace it. In a crude way almost the same goes for personnel. If someone needs to stay in bed for a week due to influenza, his or her responsibilities either have to be put on hold for the time being or someone else has to do the job. If the machine is crucial for your operation you will have sufficient spare parts ready, if the job done by the specific person need to be constantly continued (e.g. an operator), the organization will have someone else at least partially ready to pick up the slack. These kinds of risks are clearly visible and I dare say that all organizations are aware of the fact that they can occur and it is only rational to have taken precautions in order to avoid that everything stops if they were to happen.

Basic RM Process (Andersen & Schrøder, 2010:13)
Hence when it comes to the next three steps of the RM process the approach is quite simple for these clearly visible internal risks, it is rather the extent of preparations that is the difficult part. Determining if a machine is essential is usually more complicated then answering ‘Yes’ or ‘No’, since any reasonable organization would not have the equipment to begin with if it was not necessary. Hence usually a mathematical approach is taken when a scale is created for determining how important each machine really is in relation to each other. If the organization has a large number of machines this becomes even more important since they might not be able to secure them all with spare parts or backup machines. That would most probably be too expensive, hence only the continuous operation of the most important equipment is secured. Though the essential machines might cost millions of dollars and that large custom-made important components costs several hundred thousand dollars is not uncommon. Do you really want equipment of that kind of value just collecting dust in the storage room? Managements reasoning is quite clear on this point. No you do not. Though what if something were to happen and everything stops, then the organization might lose even more, might even go under. That could happen, at the same time nothing at all might happen and then millions have gone to waste. How should you decide? All of a sudden the basic four steps are not that simple anymore.

Of course there is a solution to the problem, the solution is actually the very foundation of RM, the concept of probability.

5.1.1 Probability
A large organization with a yearly turnover consisting of billions might deem it necessary to protect all their important equipment with backups, it would be expensive but they could probably handle it seen to the potential consequences the opposite might result in. Though any other type of organization would not be able to do this and hence RM’s four basic steps would be useless to them and RM would probably not be particularly popular at all. Though luckily that is not the case, instead the concept of probability is in the middle of the whole equation. By estimating how likely it is for different risks to be realized appropriate countermeasures can be taken towards mitigating the risks with the largest likelihood. Probability also means that these risks and the considered countermeasures have some real tangible basis that
could be put in numbers and compared to their financial impact as theories and
concepts discussed in this thesis witness to (e.g. Likelihood & Impact Chart discussed
by Andersen & Schrøder, 2010). Hence an investment in backup equipment or
similar could be motivated financially and easily explained to top management or the
organizations stakeholders. Now yet again the RM process becomes clear, even
though it might not be easy since there are a lot to consider as both Bergman at
HSAB and the employees at HJKK witness to. Small organizations (such as HJKK)
means scares resources and less means for stocking up on backups and taking
practical countermeasures towards mitigating risks otherwise easily managed by
larger organization. Hence smaller organizations are obliged to further rely upon
probability calculations in order to find the truly necessary risk responses. This is a
process much determined on the extent of the data used for such analysis which in
turn means extensive monitoring and groundwork. This is something especially
Harada at the Saitama plant has also concluded and wondered how on earth they
should find time for conducting such an operation, a process he meant would take
years to be truly thorough with.

Still with the help of probability most risks faced by any organization can be
estimated and calculated. Systems and concepts often linked to RM such as FMEA
pretty much revolve around probability. Hence with the help of RM and probability
most organizations can dramatically lower their risk exposure, primarily towards
internal risks if they thoroughly conduct their RM strategy. The approach is logical
and in a rational way seeks to be proactive and to secure the organization’s long term
survivability in a cost-efficient manner. In this regard it could be advocated that RM
has much in common with the Classical approach to strategy as described by

*Probability & External Risks*

Though what about external risks, are they not important? Of course they are but they
are a bit trickier. Internal risks in different organizations are often of the same nature
(e.g. equipment, personnel) while they at the same time are unique to that particular
organization, they are internal. Hence by changing the internal processes or adding
countermeasures the situation can most often be controlled to a certain extent, since
the risk environment is limited to the organization’s own facilities more or less.
Furthermore the organization has the ability to affect their own internal risks and take the necessary precautions, meaning the exposure is totally up to the organization in itself when it concerns internal risks. That is not true when it comes to external risks. The concept of the risk circle by Hamilton (1996) tells us that external risks include such things as; market risks (exchange rates, customers, competitors), political risks (laws, restrictions, terrorism) etc. simply put everything that happens outside of the organization’s facilities and all dealings the organization has with the surrounding world. A truck loaded with supplies might be in a traffic incident and destroyed or the price of raw material that drives the price of the finished product might suddenly change as Bergman mentions while discussing safety stock versus Just-in-Time.

A lot of external risks are shared by the whole industry or even the society as a whole. For instance if there were to be a strike in the Tokyo port neither the specific organization or its competitors would be able to deliver products by using this specific port. If ships sink due to terrorism or trucks end up in traffic incidents the organization in itself can do little to avoid it from happening in the first place in comparison to the internal risk situation. Hence the emergence of insurance companies has dealt with much of what unforeseeable external risks have meant for organizations. Even though if the financial loss due to a sunken ship can be regained there is still the matter of obligations towards customers still in need of the intended supply to consider. Hence monitoring and probability calculations starts playing a part in external risks as well. If a certain highway is often inflicted by traffic jams the organization might choose to use other routes or if the price of raw material is constantly changing the organization might choose to apply a concept such as Just-in-Time to avoid unnecessary loss of value as Bergman mentioned. Hence most is covered, either by the organization in itself, by the industry or in the regard of ‘freak accidents’ through the insurance company. If the organization does its job RM-wise even the external risk exposure can be reduced to a minimum of that small percentage of risks that is due to the uncontrollable such as natural disasters.

*Probability & Natural Disasters*

Furthermore in most regions even natural disasters effect on the organization can be anticipated through monitoring and probability calculations, hence reduced. Höganäs AB in Sweden for instance know that each winter brings the possibility of a
snowstorm and can prepare their trucks well ahead with easily applicable snow chains or control the weather prognoses daily. Same goes for other kinds of storms or floods, they do not appear out of nowhere, if you are looking you will see them coming. Perhaps the only natural disaster the organization cannot protect themselves from on any larger scale is earthquakes. Though that is not entirely true either, since if there is any area in particular where probability calculations come into play it is in regions with a history of earthquakes. Such calculations are of course important for businesses operating in the area and the people living there. Still the main factor is probably that earthquakes in general are rare and businesses operating in areas where they have or could occur still appear as beneficial for insurance companies to insure their clients against such occurrences. The focus on RM in general by insurance companies also plays its part, by mitigating as many risk factors as possible at their client’s facilities and in their external operation they can minimize their own exposure to the rarely occurrence of earthquakes. Hence it is not particularly hard to believe what Bergman describes as their insurance company having been a driving force in their RM-initiative. Neither Harada’s disagreement about sprinklers is difficult to understand since the insurance company probably reasons that the more protection they have the better. This is probably also true in general since few organizations know so much about risk as insurance companies does, I bet they have heard about probability calculations too.

Hence we have now been able to conclude that Risk Management work more or less, at least that it is beneficial for most organizations to utilize it for mitigating their exposure to internal and external risks. Especially seen to the fundamental building stone of probability, which while used correctly can provide accurate estimations to build the RM-initiative around. So what is the problem?

5.1.2 What if probability does not work?
Here comes the problem; probability calculations do not always work. Well, the calculations as such do of course work as any other mathematical equation that is done correctly, it is rather that the probability calculations cannot provide any distinguishable or logical pattern to base any RM decisions upon. It could also be the other way around, that they show a pattern that cannot possibly be taken into consideration since the frequency is unreasonably high. This is the situation in Japan,
not the least in the Tokyo area where HJKK have their factory and operates. What is so special with Japan then? As we know by now it is the unusually high amount of earthquakes taking place. The Japanese Meteorological Agency even reports in their publication *Earthquakes and Tsunami – Disaster prevention and mitigation efforts* from 2013 that there is an average of 4,860 earthquakes in Japan every year, representing ten percent of the average of the world. Most of these earthquakes are of course minor ones, still on average 20 of them have a magnitude of between 6.0 and 8.0 on the Richter scale, where everything above 7.0 usually is considered as a major or greater (above 8.0) earthquake.

Though as I explained in the above discussion natural disasters effect can usually be mitigated in their own way and major earthquakes causing mass devastation is rare even in Tokyo and the rest of Japan. Furthermore as mentioned earlier earthquakes are only a very small part on the external risk side in comparison to all the other risks which the RM initiative is meant to protect the organization from. Can it not just be ignored and accepted as an risk the organization have to live with and then use the other parts of RM? Yes it can is the simple answer and that seems also to be the common practice among Japanese organizations. Both Takeda and Minami at HJKK describe how their customers are extremely concerned with matter such as quality issues, proper maintenance, shipping routes for their suppliers and contingency plans in general. All of the interviewed people in Japan such as Uchibori also expresses an acceptance towards the earthquake situation and have lived with it and experienced it on regular basis in some form since childhood.

*Earthquake Domino*

Though the earthquake in itself and the direct damage it causes is not the risk that is the main problem here. It is rather the indirect affect any earthquake (or any other natural disaster for that matter) which occurs in Japan could have which is the real problem. We concluded that the very foundation of RM rest upon the concept of probability. These probability calculations decide which equipment, what functions and what processes that should have protection in regard to their likelihood and tendency of experiencing problems. All equipment is of course necessary in some regard as discussed earlier but the small organization must still pick and choose
between what to protect and what to leave to fate (based on probability) seen to financial restrictions. Then the indirect affect that this frequency of earthquakes causes is that no matter where the epicenter of an earthquake is while on land there will most definitely be houses and organizations affected in these areas. Those organizations might be customers, suppliers or utility supplier of electricity or water. Hence the indirect shockwave of potential consequences is pretty much endless and then any probability calculations regarding the likelihood of power shortages, secure transport routes or supplier’s reliability is pretty much meaningless because it still happened, even though it was not supposed to. This in turn makes any detailed estimations through probability and RM on the external risk side unreliable. Probability and unreliability are since long each other’s archenemy and who can blame them, no one wants to base their decisions upon unreliable information. When the factor of probability disappears; the clear-cut RM process becomes a lot more problematic as the discussion above told us, how do you then decide what to protect and not?

Takeda describes how they had never considered that there might be an electricity restriction in their plans before the earthquake. He means that a temporary power outage which is not uncommon in case of earthquakes would be no problem but the triple disaster of earthquake and tsunami which caused the nuclear power plant to have a meltdown and in turn resulting in power shortage was nothing they even could have imagined. Hence the RM function at HJKK would not have protected their power supply through an expensive backup generator or similar solutions since there were no basis for such a precaution to be taken financially seen to probability. Luckily HJKK is not dependent on such amount of power that they have suffered due to the restriction, even though they consider changing to nightshifts. Though I cannot imagine that is the case for all the organizations in the Tokyo area. Minami witnesses to the fact that there has been an increased worry among their customers whom have started stacking up on finished goods, very unlike any efficiency concept such as Just-in-Time and LEAN which is so often practiced among Japanese organizations. Harada also describes how they have gotten requests of increasing their safety stock in an acceptable fashion by customers whom uses LEAN.
5.1.3 Both External & Internal affects

The domino continues since even though earthquakes usually are considered an external risk the indirect risks that follow can also be of an internal character. We discusses above how there could be both a direct power outage due to an earthquake in another region as well as a long lasting power restriction later on. Such direct disruptions are always dangerous for manufacturing organizations with machines and processes dependent on power supply. The risk is usually not when the power disappears, rather when it abruptly comes back which could cause unprepared operators to get injured. Traveling staff such as sales personnel are also in a constant state of being exposed to a major earthquake somewhere in the country, even though stationary personnel is also exposed to such pressure. The biggest difference is probably that they are familiar with their surroundings and the local emergency procedures and have the support of their colleagues as well as their family while being stationary. Paton (2003) discusses how such exposure of increased pressure in the anticipation of a crisis situation could lead to inefficiency, loss of motivation and anxiety. This is particularly relevant for HJKK which had more than half their personnel force from the office on business trips during the earthquake. This kind of anticipation of a crisis situation in the regard of earthquakes might not normally apply to the strong-minded and experienced Japanese workers whom have lived with this kind of situation most of their lives.

Still Takeda for instance mentions how there has been an increased interest in RM due to the earthquake and especially safety concerns. Uchibori and Sunaga also mention the anticipation of a major earthquake to happen in the near future in the Tokyo area and would affect them directly. I also posed the question to the rest of the Akasaka office in my survey and got the following response regarding how likely they though it would be that such earthquake occurred within the next five years. The answers indicated that 60 percent thought there was at least a level of medium probability that such an earthquake would occur. Living and working with that kind of thought hanging over one’s head is difficult even for the positive employees at HJKK. The risk of it affecting their everyday life and others while on the job as Paton (2003) discusses would probably be larger at the factory where safety measures might be neglected etc. which could result in injuries. This is also a subject discussed by
Bergman whom considers complacency; when one stops observing risks in the surrounding area due to familiarity.

Hence the increasing amount of external risks that probability and RM cannot handle anymore also transfers over to the side of internal risks. Not only seen to the stress level of the personnel but also the matter of the potentially outsourced functions having problems which results in increased risks in-house. Harada for instance reports how their usual maintenance contact had more sever situations than their automatic shelf system to take care of and their checkup got delayed which forced Harada to contacted another person familiar with the system for the immediate checkup. Communication is also such an aspect that when such a suppliers for internet or phone communication gets problems externally it also affects the internal business of each of their clients in the same manner as other suppliers for e.g. electricity or water.

Eventually the disability of being unable to use probability calculations in the way RM intended for determining what to mitigate or not becomes overwhelming and renders both estimations of external and internal risks unreliable. This in turn creates a situation of too many risk factors appearing that have to be considered relevant and somehow mitigated, making the RM-process incredibly difficult. The Japan situation with such a high amount of earthquakes creates a domino effect that in turn adds an additional risk dimension to each risk area both externally and internally (which can be seen in Figure VII). This eventually creates a situation where anything could
happen and the concept of RM which rests upon the now useless concept of probability becomes severely crippled.

Figure VII – The Japan Extended Risk Circle (based on a concept by Hamilton, 1996:16)

Overwhelming Task
This feeling of being confronted with an impossible task is also fueled by the way the RM concept has developed in recent years from being more simplistic and focused on production as Hamilton (1996) discusses towards covering the whole organization with concepts such as ERM and SRM that authors like Frigo (2009) and Andersen & Schröder (2010) discusses. When then large organizations such as HSAB embarks on such an journey their daughter companies such as HJKK faces an enormous
challenge in how to deal with it by their available means. Harada describes how he does not know how to find the time and feels there is a lot of studying into the different concepts that needs to be done. Takeda expresses a similar feeling towards contingency planning by stating that there is so much to consider that one has to find a balance somewhere and make compromises, even though he means that RM is a process that never ends. Eklund also witnesses to the fact that the subject of RM is so huge that it is difficult to know where to begin. Minami feels that the only reasonable thing to do is to begin with the procedures they have at the moment and slowly but surely build around them, not to include more procedures. Still when I ask the question to the staff at the Akasaka office if they believe that their work with RM and BCP will help protect the organization against the consequences of a major earthquake they are surprisingly positive and 80 percent believe that there is at least a medium chance that their RM-work will handle it. At the same time there is clear agreement (90 percent) upon the statement that RM is important and that they should work more with it.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{Thoughts on RM}
\end{figure}

Hence there is no problem of attitude towards RM at HJKK. Though how are they supposed to work with it if there is no probability building stone to spring from. Such a long-term focused concept as RM seems to be functioning poorly if the chain is broken.

5.1.4 Flexibility of Strategy & Opportunities
The long-term focus which RM applies is also the problem seen to the situation faced by HJKK. RM shares a lot of features with what Whittington (2001) describes as the Classical approach towards strategy as previously mentioned. Among the key
concepts is the notion that there is an unlimited amount of accurate information available for the person who looks in the right place and this person could then use and analyze this information in order to take rational and solid decision with a long-term perspective towards maximizing profit. This reminds us of the way RM takes probability and its essential information for granted and seeks to protect the relevant equipment etc. in order to securing the long-term survivability of the organization and in turn its profitability. Unfortunately for the classical approach and RM does not the situation of frequent earthquakes allow any such long-term planning and the necessary information needed for accurate probability calculations is nowhere to be found. The approach used by RM and the classical perspective could be argued to be a simplification of the world and its many uncertainties, especially clear in Japan seen to the earthquake situation. The RM approach has been proven to work in many situations, just as the classical approach, though in those cases there has been available information for probability calculations and adequate decision-making as well as no presence of large amounts of domino creating earthquakes. The RM-manual provided to HJKK by HSAB is in the same way as RM in itself not adapted to the local situation in Japan and could rather be regarded as the incorrect map used by the soldiers whom had gotten lost during an exercise described by Whittington (2001). It functions as a comfort blanket to managers when the wind starts picking up in a too complex and uncertain environment as Japan seems to be for organizations. Though it is important to remember that the soldiers found their way back to base safely because they acted with confidence and in that regard does the RM-manual also have a purpose.

The classical approach also advocates logical decision making by insisting on peoples rational characteristics. Though Paton (2003) discusses how stress both before and during crisis situations can make people think irrationally and neglect logical procedures and as we now know are such situations far more common in Japan than in many other places where RM usually is used. The classical approach furthermore regards the strategy creation as something being done by a single individual or a smaller committee which then the workers carries out. In a similar fashion does Bergman refer to the RM-initiative as being initiated and controlled by their RM-committee and how each site is in charge of implementing its strategy. Still Bergman
acknowledges that this is not a clear-cut procedure and that conducting such implementation is not that easy. Paton (2003) discusses in a similar way how trained individuals can function as excellent decision-makers in disaster situations, which speaks for the appointment of a RM-manager at HJKK in order to provide strategy directions for them and manage the RM-initiative. Though Paton (2003) does also mean that if this continues for a long period of time the effects can be the opposite, in cause so called counter disaster syndrome where the person regards his direct influence as being crucial for the whole project. Bergman can also relate to this kind of situation when they utilized a single person as being Mr. Contingency Plan which led to a situation where no one else cared about RM. Alexander (1992) among other authors discussed in this thesis also advocate that RM is not the responsibility of a single person, instead it should be regarded as everyone’s business.

This kind of perspective is shared by those who believe in the Processual approach to strategy also discussed by Whittington (2001). The perspective emphasizes flexibility and the adaptability of the organization to any sudden changes in its environment. The Processual approach further regards the environment to be highly complex and filled with elements of uncertainty that make any long-term planning futile since the necessary amount of information needed for such plans is not available and even if it was the perspective do not believe in the ability of the single individual to perform such accurate analysis that would be necessary for such an endeavor. It is quite clear that the way the Processual approach advocates that the surrounding environment functions corresponds pretty well with the situation experienced by HJKK. In the same way as RM lacks the necessary flexibility for adapting to this situation does the Processual approach advocate the flexible standpoint.

Hence RM instead of prescribing to the classical way of thinking needs to adopt a perspective more closely mirrored that of the Processual approach if it is to function also in Japan. The Processual perspective also relies on the organization’s core-capabilities and the strength of people in numbers rather than the rationality of a single person. The perspective has a down to earth approach and constantly adapts their ongoing strategy step-by-step rather than creating a long-term lasting plan. Emphasizing core-capabilities and a constant adaption corresponds well to the
flexibility shown by organizations using an observant HRO-mindset for dealing with risks as described by Andersen & Schrøder (2010). By being better than other organizations at RM and adapting to the situation more quickly a clear advantage can also be gained, not at least by being the organization that survives while others perish. Waters (2011) and Frigo (2009) discuss the case of Nokia vs. Ericsson (see Appendix A) where Nokia prevailed through a flexible approach and quick actions while Ericsson eventually had to exit the market by not being able to correctly identify the extent of the disaster situation. The Processual approach as a whole also seems to have more in common with DM rather than RM, since DM also advocates actions rather than careful analysis and expresses the confidence in the organization’s ability of being flexible and adapt to any type of disaster.

Furthermore seen to core-capabilities of adapting to the uncertainty of the environment, HJKK is already halfway there seen to their procedures during the earthquake in 2011. In this sense their practices could be argued to be highly related to the same worldview as the Processual approach. Kondo for instance argues that one has to be flexible and not to get stuck with only one solution to the problem at hand. For HJKK to go back towards the current edition of traditional RM advocated by HSAB with a clear influence of the classical approach to strategy would be to take a step back in their development. Instead it only stands to reason that the concepts that seem to work in their current environment should be preferred over such static approaches as traditional RM. Though the purpose of HJKK’s practices and those of RM’s is not the same, neither are those of RM and DM. Instead HJKK’s practices would rather be argued to correspond to DM, while both uses a Processual approach to dealing with surrounding uncertainty. If these two components (DM & HJKK practices) could be integrated into the strategy of RM as a replacement for the failing concept of probability then HSAB’s RM-strategy could be adapted enough to also function properly in regions affected with a large number of natural disasters such as Japan.

Let us take a closer look at how the process of transforming RM from Classical to Processual could be done in the next part.
5.2 PART II – ADAPTING THE RM STRATEGY

Thoughts regarding the combination of approaches are nothing new. Andersen & Schröder (2010) for instance describes how environments filled with unpredictability and unknown risks might deem it necessary to combine different RM approaches. Even though they advocate the usage of different so called RM approaches and not two separate approaches as RM and DM as I have done earlier in this chapter, their statement still acknowledges that there is a problem with RM in general when confronted with unpredictability. Still the process of combining two concepts such as RM and DM that has two different focuses, namely proactive (RM) and reactive (DM) is easier said than done, not at least when considering that they have two different worldviews (Classical vs Processual) as discussed previously under strategy. Theoretically one concept should continue where the other one ends and there would be an easy matchmaking, though the actual gap between the two concepts as we have seen throughout the discussion in the previous part is much larger than it seems at first, which makes it a whole lot more difficult. Still I am a bit skeptical to how large these differences really should be, in the same regard as Quantitative and Qualitative research have more similarities than differences I believe it to be possible to combine also RM and DM. The fact that they do not overlap seen to when they are applied witnesses towards the practical usage of both concepts but can one organization really work with two such large concepts at once?

5.2.1 The Japanese Mindset

An important point to consider is that Japanese organizations have managed to handle their environmental situation in an exceptional manner so far seen to the fact that they are still standing and operating successfully after all these years of being constantly exposed both directly and indirectly to natural disasters such as earthquakes on regular basis. HJKK might not be a Japanese organization to begin with, though they have still operated there for more than 25 years and managed to stay afloat and more. Though without traditional RM how have they been able to manage such situation, do they have their own kind of Risk Management with built in DM or their own kind of Disaster Management with RM features?
Both Takeda and Minami witnesses to the fact that RM at Japanese organizations differs from the rest of the world in that regard that they are more focused on Disaster Management and contingency planning seen to natural disasters than other international organizations. Minami further figures that the domestic focus has turned their RM-operations towards pretty much only natural disasters and turned it into a culture rather than an all covering RM-strategy as pursued by global companies active worldwide. Though I would argue the point of Japanese organizations conducting their own kind of flexible RM more or less unconsciously, an adaption developed over time much due to the same necessity as this thesis investigates. This adaption has become natural to the extent where what otherwise could be considered as RM has become a normal mindset or even common sense among Japanese employees.

The best example of this adaption is perhaps shown in the example where I describe how Sunaga’s wife opens the door from the dinner room during an earthquake in order to prevent it from jamming. This procedure is an obvious reaction to the fact that the initial symptoms of a potentially major earthquake have shown its tendencies. Hence making her swift and adaptable approach towards responding to the situation a process of reactive and observant behavior with much similarity to what we have learnt about the procedures in Disaster Management. Still the process is also strongly influenced by proactive elements which are usually synonymous with RM; to begin with she was situated in relative closeness to both the door and the TV which was already tuned to the specific channel that provided earthquake-related information and all she had to do was to switch it on. In the same way was the vase behind Sunaga also chosen for its features consisting of a round bottom that prevented it from tipping over during the shaking. The procedure of opening the door and turning on the TV was obviously the responsibility of Sunaga’s wife while he made sure that everyone else remained calm and were alright and did not try to intervene in the other person’s activity. Remember that we are talking about a sequence consisting of mere seconds totally and the fact that there was no hesitation what so ever witnesses to the fact that it had been determined in beforehand who does what if an earthquake strikes.
This combination of both being proactive and reactive corresponds well to what we have previously discussed as the HRO-mindset, an approach by applying strong countermeasures to weak signals of potential danger by being observant and flexible. The procedure described by Takeda where the workers at the factory in Kobe during the earthquake in 1995 managed to turn off the gas supply in the darkness before evacuating shows similar preparedness. They obviously knew how to do it manually even though it usually was an automatized procedure, furthermore they knew it well enough to do it quickly in the darkness, witnessing to extensive preparedness in the sense of RM. They also had clarity of mind to realize in the middle of an earthquake that if we do not turn off the gas supply we will still endanger ourselves and others once outside the factory, hence turning off the gas got priority over evacuating at once, which could be considered as a really brave version of DM.

5.2.2 Unconscious RM – A Development over Time
The way of thinking and acting as described above is highly impressive, though I do not believe this mindset has sprung to existence from nowhere and become common sense society-wide without any common source. When I first started looking into RM in Japan my first approach was to consider for instance the potential loss of shipments, either by inaccessible roads or closed ports since I knew how much emphasize the Japanese organizations put on non-stop deliveries. My logical approach to this was to have large safety stocks or other kinds of physical backups in case a shipment would be delayed or even destroyed in an earthquake or similar. Of course I was aware of the concepts of Just-in-Time and LEAN and how they advocated little to no actual safety stock seen to cost-efficiency etc. Though I still felt it seemed reasonable to have a certain amount of safety stock seen to situation at hand with unpredictability due to natural disasters domino effect. Though throughout my interviews everyone referred to the concept of Toyota Policy (Harada) or Just-in-Time (Takeda) and LEAN (Bergman). Then after checking my notes and listening yet another time to my interviews with the Sales Manager Minami and Uchibori whom is one of the main responsible for logistics and how they said that their main safety stock was on the ocean, a continuous process of being shipped from Sweden to Japan, it finally struck me. At first I thought that it is pretty smart to have a moving safety stock, why do not others apply the same system? Then I realized how blind I had
really been. In my initial assessment I regarded the concept of Just-in-Time with no actual safety stock of any particular size at the factory as being the complete opposite of what I regarded as RM. Though when you think about it; by having a large safety stock you will enjoy the benefit of always having immediate access to more material and you could schedule shipments once every month instead of every day, but what if something were to happen to the location where your large safety stock was stored? It basically meant you had all the eggs in the same basket and nothing seemed to be more counterproductive than applying that concept in such an exposed environment as we now know that Japanese organizations operate in. By instead having constant deliveries, sure enough you exposed one or two trucks daily to such risks but it would always be small portions of goods in immediate danger and there would always be a new truck ready the next day. All of a sudden Just-in-Time seems like a really good RM solution. Still something could happen to your supplier but that would also be the case even if you had a large safety stock and it also explains the enormous interest among HJKK’s customers to make sure they have properly secured their own supply chain and have reliable contingency plans as Eklund, Takeda and Minami discusses. By also applying two or more suppliers for each product as Minami describes as having become more common they further secure the continuous flow of deliveries in a RM manner.

Total Quality Management
Interestingly enough if you consider other concepts often practiced by international companies that have their foundation in Japanese business practices such as *Total Quality Management (TQM)* or *Quality Control* one could also here argue the ingredients of RM elements. Takeda for instance describes how incredibly thorough their customers are in their quality checkups and even refuses shipments which does not follow the correct batch-number order by referring to bad quality control. Though if the organization would face a real disaster situation or perhaps the opposite, an sudden increase in demand, it is only natural to wanting to make sure that the components and material you actually have in stock can be used to every single bit instead of risking and accepting a certain amount drop off due to faulty or defective material. The same is expected by their customers and faulty supply will also have its consequences on the production meant for their customers which could result in
expensive express deliveries etc. Though concepts such as TQM which mainly focuses on quality also insures that the machines and equipment used are carefully maintained in order to ensure the quality of their own product but as a consequence the quality of the production equipment is kept at topnotch level. Hence mitigating the risks of malfunctioning machines that could cause disruptions, which are in total agreement with the concept of RM.

**LEAN Production**

Just-in-Time as discussed above is also part of the production system called *LEAN Production* as we learnt from Bergman. In the same way as Just-in-Time deliveries and TQM maintenance and quality control could be seen as RM it could also be argued that LEAN include elements similar to what we would usually regard as being an RM approach. By making use of every bit of material and advocating the usage of as little resources as possible the concept of LEAN can be said to have made their own adjustment to a potential shortage of material, either due to the simple unavailability of enough material or the potential loss of intended deliveries. Furthermore by applying the concept of an assembly line each job is simplified and employees often rotate between stations, making them flexible and in case of sickness or shortage of personnel the available staff can be rearranged to help each other out and filling the gap on the assembly line. Much like the way Uchibori and Saito operates in the logistics department at HJKK, as a way of working with the RM concept. Furthermore if a problem occurs along the assembly line, the concept of LEAN preaches that the line should immediately be stopped and people close by should help out with solving the problem directly before restarting the conveyor belt. By doing this there are no unfinished or lasting problems to handle that could make the process of securing equipment after for instance an earthquake much more difficult and dangerous.

**Kaizen**

Finally the concept of *Kaizen*, continuous improvement as Takeda explains, advocates the same kind of commitment towards observing and seeking improvements in processes as RM does and what is usually described as a functioning RM culture. By never considering any type of process as perfect one fosters a culture of idea generation and motivating personnel to always be on the
lookout for processes and situations that can be improved, especially seen to safety issues.

Hence when Minami means that Japanese organizations work more with RM as a culture than a strategy I believe he is completely right. It should also be noted that all these concepts above have additional positive aspects as well and those are usually given much more attention, especially seen to cost-efficiency. Though this only means that the concepts are multi-purposed and do not only strive towards maximizing profit even though that might have been the driving force from the beginning. Such an approach of additional advantages being seized correspond well with the Processual approach to strategy just as DM, hence a combination of RM and DM might not be so difficult after all, at least not practically. This could be regarded as a backwards way of looking at the problem with RM and the probability issue, by finding out what works. Though that might be precisely what HJKK and other international organizations that are looking towards establishing their own sites in areas with a heavy load of uncertainty needs.

5.2.3 The Backwards Solution
What are we really looking for here (if we temporarily disregard the research question)? We are looking for a way that an organization without the usage of probability calculation can secure their future (RM) and protect themselves from the large amount of external risks (RM) that could causing disasters situations (DM) due to their unpredictable nature (in Japan). If we approach the problem through this perspective, the concept of Risk Management becomes very complicated. The probability element is central within RM to such an extent that it is like trying to drive your car without a steering wheel. The car might be in top condition otherwise, with a V6 500hk motor and all the new features such as GPS etc. might even be a Ferrari, imagine that. Though you will still not be able to go where you want or in the direction the GPS is pointing because you can literally not control where the car is going. Okay, sure you could push the car in front of yourself and somehow adjust the pushes for it to go in the right direction. Still, you do not want to be pushing a Ferrari, what is the point?
Though if we look at the above description of the problem from a DM perspective everything seems to fit. The situation described screams the need for flexibility and quick adaptations, DM thrives under circumstances such as uncertainty. That is what it is for to begin with. Then can we perhaps apply the combination backwards, by adapting DM towards including the elements we seek to include from RM? Let us try and see if that can solve HJKK’s problem.

5.2.4 The Extended 11-point DRP
Wallace & Webber (2011) argues the point of having a Disaster Recovery Plan (DRP) prepared and mean that by using a basic one consisting of 11 different points the organization can in a rather simple and quick fashion create an initial layer of protection against any type of realized risks that can turn into a disastrous situation. In accordance with the objectives of DM as described below HJKK has systematically begun preparations towards creating their own DRP. The content of the 11 point DRP as summarized below will be explained in the context of these measures that has been taken by HJKK due to the otherwise monotonous description of data specific only to the organization of HJKK and of no value to this thesis.

### Table VII – The content of the 11-point DRP (Wallace & Webber, 2011)

<table>
<thead>
<tr>
<th>1 Contact Information</th>
<th>7 Critical Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Facility Access</td>
<td>8 Recovery Priority</td>
</tr>
<tr>
<td>3 Outsourced Maintenance Contracts</td>
<td>9 Hazardous Material</td>
</tr>
<tr>
<td>4 List of Suppliers</td>
<td>10 Emergency Equipment</td>
</tr>
<tr>
<td>5 List of Assets</td>
<td>11 The Recovery Team</td>
</tr>
<tr>
<td>6 List of Software</td>
<td></td>
</tr>
</tbody>
</table>

The objectives of the DRP as described by Sandhu (2002) can be divided into three categories; 1) **Safety of Humans** – Evacuating personnel and preventing injuries/fatalities 2) **Safety of Assets** – Stopping damage from spreading 3) **Safety of the future** – Contingency for continuing business operations.

If we begin with 1) Safety of Humans: Takabatake has carefully described their increased focus towards conducting evacuation drills that even have become benchmarking within the building. Furthermore HJKK have since the earthquake
created special backpacks containing food, water and other necessities for handling a disaster situation, including a helmet. Takabatake has also taken measures towards creating the possibility of holding out at the office during a disaster by stacking up with food and water supply. Same procedure has been taking place at the Saitama factory as Harada explains and adds that they have upon request installed additional emergency buttons for operators. HJKK have based their procedures on the actions taken during the earthquake and adjusting unclear situations such as the chain of command to become well planned instead of confusing. (Corresponds to Emergency Equipment & Facility Access)

In my survey I asked the personnel at the Akasaka office if they found that they now knew how to evacuate in the best manner and got the result that 90 percent fully agreed with the statement.

![Figure IX - Evacuation](image)

The next objective of securing assets and stopping damage from spreading is something primary Harada discusses when he describes their extensive cleaning processes and systematically performed maintenance. These processes together with their regular drills for handling minor interruptions or even potential fires are their basis for handling the safety of their assets. During a disaster situation such as the earthquake in 2011 active equipment is stopped through an emergency controller and then evacuation is ordered as described by Katsumata. Once the safety of the building has been confirmed a systematical checkup of all equipment is performed in accordance with their normal procedures for maintenance. Adding to these in-house proceedings they also have a close cooperation with the local fire department which
annually is shown how HJKK work at the Saitama plant and have all necessary material in case of a fire or there should be need for a rescue operation due to other factors. Furthermore Harada explains how the personnel stay up to date with recent observed risks from other factories through information sharing including videos. Furthermore when it comes to securing assets Eklund describes how they use several different ports for their shipments and at each port there is a storage facility, together with the main warehouse at the Saitama Plant and their constantly flowing supply chain across the ocean they could handle disruptions to their supply up to a month without any problem. (Corresponds to List of Assets)

When it comes to securing the future the coordinator of the Business Contingency Plan is Takeda whom on his own initiative started with the process several years ago and have at least annually revised and updated the BCP. By asking for information and estimates regarding the current exposure from all department heads he has constructed a plan containing the three steps of Analysis – Evaluation – Countermeasures. Among the precautions taken since the activation of the plan there are the backup computers for accounting and logistics in order to secure the continued handling of finance and deliveries even though the Akasaka office might be put out of play, while other functions already have been taken care of in similar fashion. Furthermore since the electricity restrictions and the unreliable supply of power they have installed a backup battery at the Saitama factory for running their computers and their server, hence ensuring their communication. The application of a FMEA system at the Saitama plant has furthermore been recently started with the objective of identifying their critical functions and handling the potential disruptions they might be affected by. (Corresponds to Critical Functions, Recovery Priority)

This is how HJKK has handled the main objectives of Disaster Management as described by Sandhu (2002). By also adding an 11 point DRP as an action plan to these surrounding activities the protection for HJKK when it comes to handling the unexpected will be more complete on a first level basis. Much of the content needed for creating such a plan has HJKK already considered such as the protection for critical functions and business contingency as described above. Contact information for employees, customers, suppliers and outsourced maintenance is also secured.
Furthermore Harada’s initiative of Localization can have a large influence regarding the flexibility of the plan.

5.2.5 Localization
Harada discusses how he have started a systematical renewal of components and software systems in order to avoid future deterioration and the risk of long delivery times for spare parts imported from e.g. Sweden. Instead the components are adapted towards local supplier which provides swifter maintenance and in order to always having relevant components within reach in case of a disaster situation. (Corresponds to Lists of Software & Outsourced Maintenance Contracts)

5.2.6 Crisis Communication
An essential part of the DRP is the way communication is maintained during a disaster situation as explained by Sandhu (2002). Harada describes how Eklund acted as the communication central during both the earthquake and a transition period afterwards. The main mean for internal communication was e-mail and skype which both functioned as adequate replacements for usual phone communication as confirmed by Takeda, Takabatake and Harada. Harada also describes how the external communication also went through Eklund in that manner that he distributed the relevant information to each department head which then took over their own communication in each area. For instance Minami was the main source for communication with customers which led to the organization speaking with one voice and not leaving mismatching information, an important point emphasized by Turpin (2006). Furthermore Takabatake has constructed a text based template to be sent through e-mail during an emergency in order to inform about one’s safety. (Corresponds to Recovery Priority)

5.2.7 Working towards RM
The business contingency plan that has been constructed by Takeda is in many ways similar to such models found within RM. The complexity regarding the usefulness of this kind of methods seen to the element of probability inherent in the model is still questionable as a tool for deciding countermeasures and basing financial investments upon seen to the situation face by HJKK. Though seen to the main purpose in the way Takeda has been using the BCP, namely to create awareness among the department managers it is of great importance. Another similar concept is the Interdependency
Matrix described by Andersen & Schrøder (2010) and shown below. The Matrix is a good way to observe the relation between different functions within the organization and determine how different risks are interrelated and create awareness concerning these issues among the staff. This is also a matter discussed by Beasley & Frigo (2007) which advocates the importance of creating a culture where risks are observed even though they might not directly relate to the person who observes the anomaly, though by doing this and having the presence of mind to relate this kind of information to the relevant person disastrous situations can be avoided if done quickly. A typical example of this kind of practice is the HRO-mindset which has been previously described. Seen to real cases the Nokia vs. Ericson case (Appendix A) as discussed by Frigo (2009) and Waters (2011) is also an adequate example of when there exists a companywide understanding regarding risks.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Earthquake</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Server Breakdown</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Laptop Breakdown</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Critical Machine Stop</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Normal Machine Stop</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Work/Production Stop</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Influenza Outbreak</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Personnel - High Stress Level</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Personnel - Low Motivation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Medium Earthquake</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Minor Earthquake</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>13</td>
<td>12</td>
<td>19</td>
<td>2</td>
<td>18</td>
<td>18</td>
<td>0</td>
<td>90</td>
</tr>
</tbody>
</table>

**Level of Impact:**
- No Impact = 0
- Some Impact = 1
- High Impact = 2
- Critical Impact = 3

Example Matrix: Interdependency (based on Andersen & Schrøder, 2010:157-159)
5.3 PART III – THE FUTURE

5.3.1 Creating Awareness
Alexander (1992), Burnaby & Hass (2009) and Andersen & Schrøder (2010) they all advocate that RM is the responsibility of everyone within the organization, hence there is an substantial need for creating awareness around this kind of extensive approach. In order to achieve this Burnaby & Hass (2009) for instance advocates the appointment of a RM-manager that has the main responsibility of driving the work forward. Hamilton (1996) discusses a similar solution and regards that in the cases of smaller organizations the most common procedure is to hand over the responsibility to the CEO.

Hamilton (1996) further advocates that brainstorming sessions is a good way of creating awareness and generate ideas. The author also mentions ‘What if?’ scenarios as having similar qualities. Takeda likes both of these ideas and also purposes the idea of having a RM-day twice a year with different activities regarding RM. Takeda also figures that creating a contest of coming up with new ideas and solutions for RM can be a good method though he believes there needs to be a small incentive such as a gift or diploma for the winner. Bergman also discusses that achievements needs to be highlighted and this corresponds to what Burnaby & Hass (2009) thinks about the matter and claims that RM achievements should have a clear connection to the possibility of promotion. Andersen & Schrøder (2010) are not as generous in their proposition as Burnaby & Hass (2009) though they agree with Takeda regarding some kind of smaller award. Furthermore Frigo & Anderson (2011) notes that in order to achieve the proper motivation among employees it is especially important that managers are interested and have a clear understanding of the initiative in order to be able to answer any specific questions from employees. The risk is otherwise that the employees will feel that the RM-initiative is not taken seriously and hence becomes demotivated.

In my survey at the Akasaka office I asked whom they thought should come up with new ideas for RM and the result was widespread which points towards a common responsibility with perhaps a certain emphasize on the Administrative department and
the CEO to lead by good example. Another question I asked was what was considered the best way to communicate RM and there was an overwhelmingly 73 percent of the staff that thought practical training sessions such as scenarios was the best way.

Furthermore Hamilton (1996) points towards the discussion of safety issues as being a good motivator, something Bergman also advocates. Froot, Scharfstein & Stein (1994) mean that RM means different things to different people and further emphasizes the importance of clear communication. Both Sunaga and Minami are concerned with the fact that people will eventually forget the importance of the RM-work if they are not reminded and Minami further advocates that one uses written material in order to have some kind of basis. Frigo (2009) also discusses the risk of this happening and further adds to the discussion concerning clear communication that one should create one’s own simple material that everybody can relate to.

5.3.2 Working Backwards
The concept of DM has many advantages, especially seen to the situation faced by HJKK. At the moment HJKK is working with their own kind of DM and DRP as described above more or less on the feeling of necessity rather than applying the theories of DM. Though at the same time they are considering the RM-manual provided by HSAB and how to approach the subject of RM more clearly. Still as we have seen in the description of the DRP there are a lot of similarities between RM
and DM when it comes to key elements such as Critical Equipment. It is primary these functions, the central practices that RM advocates that one wishes to utilize at HJKK. By starting to apply RM techniques such as FMEA gradually HJKK will in time add to their existing practices of DM and RM. Hence by starting with the DRP and building on step-by-step they will enjoy the benefits of such a simplistic approach in the beginning of their journey towards reaching a fully developed RM concept. I do believe this to be the best approach for HJKK seen to the extensiveness of the RM-program at HSAB as described in the LPM-manual where much of the content is irrelevant seen to the unique situation faced by HJKK in comparison to HSAB’s other sites around the world. Most of the employees at HJKK also have previous experience of working for Japanese organizations and are well familiar with the systems such as LEAN, TQM and Kaizen which in many ways achieves similar results as RM does in other parts of the world, though by using another approach more adapted to the region of Japan and the unique environmental situation. These practices has been advocated throughout Japanese organizations to such extent that they have become more or less a culture even outside the boundaries the organization, they have become a way of acting and thinking, more or less creating a society wide mindset when it comes to adaptability and creative thinking in the regard of unexpected problems. Such mindset I have witnessed over and over again throughout my stay in Japan and of course it is highly relevant for handling situations such as earthquakes in an efficient manner.

Applying this mindset that has sprung from systems such as LEAN, TQM and Kaizen in combination with the environmental situation faced by the residents of Japan day in and day out, the lack of tangible probability calculations which would otherwise render RM useless have been overcome through flexibility. There have been no need for estimations regarding which machines to secure with backups or not, instead all machines have been protected through such approaches as endless maintenance and quality control as well as immediate problem-solving. In this regard there has been an understanding, an acceptance towards the inevitable that if a major earthquake strikes there will be consequences, the precise nature of the consequences in such regard that this or that machine could break has never been important, instead it has always been
a question of securing ongoing deliveries both from suppliers but most notably towards customers. The perspective is different in this regard, the specific factory and its content is disposable if necessary, while fulfilling obligations towards customers is not, which is all that matters and needs to be taken care of some other way. It is the same philosophy as Just-in-Time by spreading out ones interest. If one supplier cannot deliver we have another one, if one port is closed due to strike we have three other ports to use, if one warehouse is destroyed by a typhoon we still have four other minor storages, if the factory gets destroyed we have another one in another city. Hence the only thing that is left is the safety of human beings that needs to be addressed and in Japan that is a collective effort. If people find it important to know how to evacuate then we should all learn how to evacuate, if one person needs to go to work two hours after an earthquake then we should all be there and if you have to sell your house to ensure it then it should be done, if one person needs to take a break at a convenient store along a several hours long walk after an earthquake then everyone should be able to take a break at a convenient store, can one person not get home from the factory due to an earthquake then we will stay as well, does one person need to catch an early train to avoid a typhoon then everyone catches an early train… well almost everyone anyway.
6 CONCLUSIONS

This chapter presents the conclusion of this study and focuses on describing ‘How a transnational corporation can adapt their Risk Management strategy and plan for contingencies in a country with an unstable natural environment?’ Though we will begin this chapter by taking a step back and zoom out in order to discuss the ability of making use of this approach in other regions and situations.

HJKK faces a situation filled with natural disasters and the failing concept of probability due to the domino effect caused by these natural disasters that in turn either directly or indirectly create a shockwave of risk exposure to both external and internal risk areas which results in an additional dimension of risk exposure being added to the already existing estimates, which in turn cannot be handled by traditional Risk Management.

Even though Japan is unique seen to the high frequency of earthquakes in the same relatively small region there are still other regions around the world that faces similar situations. In Japan ‘only’ 10 percent of the world’s average number of earthquakes per year occurs. Other locations that share the threat of earthquake even though not to the same extent is for instance the U.S. where primarily the state of California and the San Andreas Fault can be mentioned to share similar characteristics concerning uncertainty that HJKK experiences in Japan. Seen to other natural disasters Australia with its large amounts of forest fires can be argued as being exposed to the lack of flexibility in the RM approach while contemplating probability calculations. The risk of a large flooding occurring in Bangladesh is neither that very unlikely and traditional RM alone have no clear-cut solution for dealing with this situation either. Though by joining RM with local practices of DM as in the case at HJKK these extreme situations of uncertainty due to the unstable environment can be circumvented and allow for international organizations to conduct business in these locations in an acceptable manner. Though the process of achieving this is not without its concerns, something that HJKK have had to experience throughout 2011 and now they continue their journey towards further integrating the concepts of DM and RM in a local fashion.
The most important thing for HJKK now is to not overcomplicate their work with either RM or DM. Much of RM’s underlying concepts HJKK is already working with in one regard or another though under another name. Even FMEA which they are working toward implementing at the moment has its counterpart in Harada’s own initiative in Localization. It might not be as academic of an approach as he himself formulates it, though it is still one kind of RM and focuses towards securing the critical functions they know exist even though they might not be classified in those exact terms. In the same way Just-in-Time is another one, meant to guarantee shipments to customers rather than expose them to further risks. Perhaps the easiest way of focusing ones RM-effort would be to create a SWOT-analysis as described by Andersen & Schrøder (2010) to determine the organizations core-capabilities and build the RM-program around them much as the Processual approach preaches. The Processual perspective also emphasizes actions with confidence and that is something that HJKK is particularly good at; just see to Takeda whom without previous experience in BCP’s decided to make one because he felt the organization needed one, Harada in the same way took it upon himself to localize the factory to a greater extent in case equipment eventually would become too old, Takabatake felt people should be able to sustain themselves if the case became necessary due to an earthquake with long lasting effects so he created the backpack. Hence HJKK’s way of thinking and operating in daily activities correspond well to the Processual approach and as we have determined also the concept of DM as we now know functions better in Japan than traditional RM does.

Fundamentally though are both DM and RM simple concepts which only tend to become unmanageable if one begins in the wrong part of the equation. Bergman means that policy and technical integrations as well as methods are easy in comparison to culture and that is usually the case. Though Japan and HJKK that already have a culture with their own risk awareness that has gradually been fostered due to the climate they operate in cannot all of a sudden change it towards learning techniques and methods eventually meant for another RM-culture with no basis in or with no regard to the circumstances under which HJKK operates. While HJKK focuses on being flexible and adaptable for the near future in their own kind of
DM+RM solution while HSAB’s classical approach is focused on long-term sustainability on the global market and concerns everyone a little bit but no one fully. Neither is the LPM a solution to be implemented, it is rather a question, in the spirit of ‘have you considered this?’.

If the imaginable bar of what can be achieved is constantly raised by someone with little insight into the local situation there will be no real development of the RM-effort on local level at all, since then no one can relate to it and neither is it really addressed to them either. Rather it is a statement of what RM is somewhere else, in the view of someone else.

Hence the main issue for HJKK is to create their own RM-initiative and it can of course be based on the LPM from HSAB but it needs to be addressed and focused towards their unique situation. Furthermore there is no need for doing things twice, the practices in Japan is already strongly influenced by the local RM and DM-culture that resides there. Everyone regards it as everybody’s job to come up with ideas of improvement in the spirit of Kaizen, though when one starts talking about it in terms of RM being the responsibility of everyone there is not the same connection since it has never been considered in those kinds of terms. It is an unconscious process, it is natural to strive towards improving the organization and protect everyone from potential dangers spotted in the production. Though when you tell someone that they have to start working in a new way and consider such things called risk and how such determination of these so called risks should be made the new approach rather creates a hindrance for the already functioning one. If the locally existing approach instead should be developed there needs to be an emphasis towards identifying and determining the already existing strengths and weaknesses, hence in turn build around the strengths.

Henceforth follows the advocated solution for adjusting the RM strategy purposed by HSAB towards a more adapted and locally relevant strategy for dealing with contingencies required of and organization such as HJKK which operates under the circumstances of an unstable environment. This could be done by making use of the
already existing basis in the form of DM and RM for dealing with the situation of earthquakes and other natural disasters. This basis consists of Disaster Management applied in a Japanese way and goes hand in hand with the special Japanese mindset which has much similarity with the HRO-mindset which is constantly observing sudden changes and promotes swift decisive actions. The DM-work can be enhanced by adding an action plan in the form of a DRP with its basis in 11 fundamental points which later can be expanded towards including more data and analysis related to concepts wished to be explored such as critical functions.

Furthermore the DM-work pursued by HJKK can be further developed and step-by-step taken to the next level when the maturity of the concept has festered and there is a common understanding towards what it means for HJKK to work with DM and in turn RM. By emphasizing the core-capabilities possessed by HJKK their strengths can be utilized in order to further develop their existing framework for Risk Management. This existing framework consists of a flexibly and observant approach towards detecting risks with great emphasis on customer obligations and the reliability of the supply chain through differentiation and an almost endless choice of alternatives of how to continue operations in the case of unexpected disruptions. These solutions rather focus towards maintaining and fulfilling their obligation towards their customers rather than securing their own long term survivability. Though by emphasizing on their relation to the customer and their obligations they have done just that; practiced RM without any particular regard to probability and hence secured their long-term survivability as a respected actor on the Japanese market. Instead of using the concept of probability which only would have been considered rational outside of Japan’s domino earthquakes they have applied what most plainly can be called commonsense in all aspect of their operations and never carried all the eggs in the same basket.
REFERENCES

Literature


Scientific Articles


**Verbal Sources**

Interview, Bergman Anders, Corporate Environment & Safety, Höganäs AB, Höganäs, 24 Apr 2012

Interview, Eklund Carl-Gustav, CEO, Höganäs Japan K.K., Tokyo, 14 Feb 2012

Interview, Eklund Carl-Gustav, CEO, Höganäs Japan K.K., Tokyo, 19 Mar 2012

Interview, Eklund Carl-Gustav, CEO, Höganäs Japan K.K., Tokyo, 6 Apr 2012

Interview, Harada Ryoichi & Katsumata Atsushi, Plant Manager & Deputy Plant Manager, Höganäs Japan K.K., Saitama, 27 Mar 2012
Interview, Harada Ryoichi & Katsumata Atsushi, Plant Manager & Deputy Plant Manager, Höganäs Japan K.K., Saitama, 30 Mar 2012

Interview, Kondo Satoshi, Sales, Höganäs Japan K.K., Tokyo, 13 Apr 2012

Interview, Minami Toshiro, Sales Manager, Höganäs Japan K.K., Tokyo, 3 Apr 2012

Interview, Saito Yumiko, IT & Logistic, Höganäs Japan K.K., Tokyo, 6 Apr 2012

Interview, Sunaga Akihiro, Director, Japanese Institute of Sweden Studies (JISS), Tokyo, 14 Mar 2012

Interview, Takabatake Yoshimasa, Accounting Manager, Höganäs Japan K.K., Tokyo, 3 Apr 2012

Interview, Takabatake Yoshimasa, Accounting Manager, Höganäs Japan K.K., Tokyo, 13 Apr 2012

Interview, Takeda Yoshinobu, TSD Manager, Höganäs Japan K.K., Tokyo, 3 Apr 2012

Interview, Takeda Yoshinobu, TSD Manager, Höganäs Japan K.K., Tokyo, 12 Apr 2012

Interview, Uchibori Michiko, Logistics, Höganäs Japan K.K., Tokyo, 5 Apr 2012

Electronic Sources


8 APPENDIX A – THEORETICAL FRAME

Table of contents
8.1 Nokia vs Ericsson Example
8.2 Disaster Recovery Objectives by Sandhu (2002)
8.3 References

8.1 Nokia vs Ericsson Example
During a thunderstorm in Albuquerque, New Mexico a lightning bolt led to the start of a fire at one of Philips manufacturing facilities on the 17th of March 2000. This semiconductor facility, used for manufacturing microchips for the cellphone industry was at the time the primary supplier for both Nokia as well as their market rival Ericsson. (Frigo, 2009:9)
The fire got started when the lightning bolt caused a power surge by hitting an electric power line. The fire in itself caused relatively minor damage and was quickly contained and put out in 10 minutes. Still thousands of partially finished chips were destroyed. The major problem on the other hand was that the automatic sprinkler system which had put out the fire had caused severe water damage to the whole factory, including its finished goods stock containing millions of (now useless) chips. More still, smoke particles had contaminated sterile areas of the facility. (Waters, 2011:2-3)

“Said one Ericsson manager, ‘We did not have a Plan B’”
(Frigo, 2009:9)

The real extent of the damage this minor fire actually had caused was not known at the time, hence when Philips informed Ericsson of the fire they did not think twice about it since Philips said they would be back to normal in a week. That was not the case; instead the whole factory was closed for three weeks and manufacturing only got back to half the normal level first after six months. Even a year after the incident some equipment had not been replaced. Ericsson which had this manufacturer as their sole supplier in order to cut costs of course got hit extremely hard by this fact. The timing was terrible since there was a boom at the time and the following year Ericsson stated that their production had lost over $400 million because of the fire. This was not very appreciated by the stockholders and during the span of a few hours the stock price went down 14%, this in combination with other problems (such as
component supply, marketing & redesign) which all arise due to the delay of the production caused by the fire in the end resulted in a $1.7 billion loss for Ericsson’s cellphone division. (Waters, 2011:2-3)

Nokia which also had the factory in Albuquerque as their supplier reacted differently and much quicker than Ericsson, even before they would have been notified about the fire they recognized there was a problem at hand and contacted Philips themselves (Frigo, 2009:9). Nokia were able to detect that something was not quite right since they had experienced problems with the supply of components during the 1990’s and taken measures to avoid this problem in the future, one of those countermeasures were their ‘events management system’ which noticed the discrepancy. Nokia immediately put pressure on Philips to free up capacity at their other plants around the world in order to continue their supply. Furthermore they started doing simpler redesigns which allowed somewhat different but similar microchips from other suppliers to be used and then started to negotiate manufacturing with other suppliers around the world. This lead to that within five days new suppliers from the US and Japan started delivering replacement chips, they also got totally 10 million chips from Philips other factories in China and the Netherlands. In the end Nokia’s production was pretty much left unaffected by the thunderstorm in Albuquerque. (Waters, 2011:3-4)

8.2 Disaster Recovery Objectives by Sandhu (2002)

- “Safety and welfare of the people on the premises at the time of the disaster
- Protection of critical information and records
- Protection of business sites and facilities
- Protection and availability of materials, supplies, and equipment for the safety and recovery of vital records
- Minimization of the occurrence and duration of disasters
- Reduction of the immediate damage and loss
- Preparation in advance for recovery from a major natural catastrophe
- Business continuity in the event of a disaster
- Recovery of damaged and lost records or information after a disaster
- Reduction of the complexity of the recovery effort
- Coordination of recovery tasks.” (Sandhu, 2002:130-131)
8.3 Appendix A – References


<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>I do not agree</th>
<th>I mostly agree</th>
<th>I agree</th>
<th>(Blank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Already, concerning Risk Management</td>
<td>0%</td>
<td>3%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>2</td>
<td>I do not need any more training or information on how to act in order to evacuate safely</td>
<td>0%</td>
<td>5%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>After an earthquake, I feel that my job is important and we should do more with it</td>
<td>0%</td>
<td>4%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
<td>Risk Management is part of my work and I feel involved in the work being done</td>
<td>0%</td>
<td>4%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>Risk Management is very important and we should work more with it</td>
<td>0%</td>
<td>6%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>I do not need any more training or information regarding Risk Management. I know enough already</td>
<td>0%</td>
<td>4%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Answer Options**

<table>
<thead>
<tr>
<th>Part I - Statement Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: Höganäs Japan K.K. (Akasaka Office)</td>
</tr>
<tr>
<td>Date: From 2012-04-20 to 2012-05-07</td>
</tr>
</tbody>
</table>
### Part II - Multiple Choice Questions

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Admin</th>
<th>CEO</th>
<th>TSD</th>
<th>Finance</th>
<th>Logistics</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Who is responsible for risk management? (you can choose more than one)</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Who is responsible for contingency planning? (you can choose more than one)</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Who is responsible for coming up with new ideas for improving the work with risk management? (you can choose more than one)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>How big probability do you think it is that a major earthquake/natural disaster will occur in the Tokyo area in the next 5 years?</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>How big probability do you think it is that this disaster will create problems for Höganäs business? (e.g. for the factory, shipments)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>How big probability do you think it is that this disaster will create problems for Höganäs management (you can choose one)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>How big probability do you think it is that the work with risk management and contingency planning will be able to handle this kind of situation?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Part III - Questions Concerning Probability

<table>
<thead>
<tr>
<th>Part III - Questions Concerning Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Material</td>
</tr>
<tr>
<td>Non-existing</td>
</tr>
<tr>
<td>Small</td>
</tr>
<tr>
<td>Medium</td>
</tr>
<tr>
<td>Large</td>
</tr>
<tr>
<td>Very Large</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Admin</th>
<th>CEO</th>
<th>TSD</th>
<th>Finance</th>
<th>Logistics</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>How big probability do you think it is that the work with risk management and contingency planning will be able to handle this kind of situation?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
SURVEY - RISK MANAGEMENT - GRAPHS

Part I - Statement Questions - To what level do you agree with the statements below?

#1 - If an earthquake would occur while I am in the office building, I know how to evacuate in the best way.

- I do not agree: 10%
- I mostly agree: 20%
- I agree: 90%
- (Blank)

#2 - There is enough training and information about how to act during a crises situation, in order to evacuate safely.

- I do not agree: 40%
- I mostly agree: 60%
- I agree: 0%
- (Blank)

#3 - After an earthquake, given that me and my family is safe; I know exactly what to do in order to continue the business and in what sequence. (E.g. whom to contact, how to do it, what to check, what to do)

- I do not agree: 50%
- I mostly agree: 20%
- I agree: 30%
- (Blank)

#4 - Risk Management is part of my work and I feel involved in the work being done.

- I do not agree: 20%
- I mostly agree: 30%
- I agree: 50%
- (Blank)

#5 - Risk Management is very important and we should work more with it.

- I do not agree: 10%
- I mostly agree: 50%
- I agree: 40%
- (Blank)

#6 - I do not need any more training or information concerning Risk Management. I know enough already.

- I do not agree: 10%
- I mostly agree: 60%
- I agree: 30%
- (Blank)

Part II - Multiple Choice Questions - Which one(s) of the alternatives do you think best match the question?

#7 - Who is responsible for Risk Management? (you can choose more than one)

- Admin: 25%
- CEO: 24%
- TSD: 15%
- Finance: 12%
- Logistics: 19%
- Sales: 15%
- (Blank): 0%

#8 - Who is responsible for Contingency planning? (you can choose more than one)

- Admin: 9%
- CEO: 21%
- TSD: 18%
- Finance: 7%
- Logistics: 15%
- Sales: 12%
- (Blank): 0%

#9 - Who is responsible for coming up with new ideas for improving the work with Risk Management? (you can choose more than one)

- Admin: 16%
- CEO: 15%
- TSD: 15%
- Finance: 19%
- Logistics: 12%
- Sales: 15%
- (Blank): 0%

#10 - What is the best way of communicating Risk Management? (you can choose more than one)

- Written Material: 9%
- Meetings: 18%
- RM-Meetings: 73%
- Practical/Scenario Training: 0%
- (Blank): 0%
#11 - How big probability do you think it is that a major earthquake/natural disaster will occur in the Tokyo area in the next 5 years?

- Non-existing: 10%
- Small: 10%
- Medium: 30%
- Large: 30%
- Very Large: 20%
- (Blank): 10%

#12 - How big probability do you think it is that this disaster will create problems for Höganäs business? (e.g. for the factory, shipments)

- Non-existing: 10%
- Small: 20%
- Medium: 30%
- Large: 30%
- Very Large: 20%
- (Blank): 10%

#13 - How big probability do you think it is that the work with Risk Management and contingency planning will be able to handle this kind of situation?

- Non-existing: 20%
- Small: 20%
- Medium: 30%
- Large: 30%
- Very Large: 20%
- (Blank): 10%
APPENDIX C – INTERVIEW TEMPLATES

QUESTIONS – TEMPLATE I

Main Question:
The overall main question is concerning the process; how you plan for, prepare for, work with and finally use Risk Management in order to deal with the threat of disruptions caused by earthquakes?

Part 1: How you worked with Risk Management before the earthquake last year?

1. How come you had the plans that you had? Did you think Risk Management was important before the earthquake as well?

2. How did the plans work out during the earthquake? Did it work as it was supposed to?

3. How did you coordinate with the factory and the rest of Höganäs, customers and so on during the catastrophe?

4. Do you have business contingency schedules with responsibilities – is all staff aware of this?

5. Have you had similar situations happening because of earthquakes or any other unforeseen reasons?

6. Do you think other companies in general focused much on Risk Management before the earthquake?

Part 2: How you work with Risk Management today? (The process)

7. Please explain the process (as précis as possible) of how you work with Risk Management today and why you are working like this?

8. Have you done any changes since the earthquake last year? Why or why not?

9. Do you think other companies in the same branch (or closely related ones) work more with it today, done more changes?

10. Do you think Höganäs as an international company works more or less with Risk Management than Japanese companies, or just as much? Who takes it the most seriously?

11. Do you feel there is support, enough regulations and benefits with incentives from the government in order to promote the work with Risk Management?
and making it a bigger focus in the company? Do you have knowledge of any supporting and guiding organizations?

Part 3: How one can make it better in the future, what have to be improved?

12. How do you plan in order to be prepared when it all happens and how do you keep on developing the work with Risk Management?

13. Do you feel that everybody in the organization know their own part in taking responsibility for what needs to be done in order for preparing for these types of situations?

14. Do you think everybody in the organization have gotten enough education and training in how to practically deal with the kind of situation an earthquake can cause?

15. What kind of training have you done in the organization? / What kind of education have you had in the organization concerning this kind of Risk Management?

16. How do you train for something you do not know if it will occur or how it will present itself if it does?

17. Do you think the employees appreciate the work with Risk Management?

18. Are there any limitations or restrictions that make the work with Risk Management tough? What could be done in order to avoid these types of situations?

19. What do you personally think is the most important function of Risk Management and how do you think it can be improved?
Main Question:
The overall main question is concerning the process; how you plan for, prepare for, work with and finally use Risk Management in order to deal with the threat of disruptions caused by earthquakes? With a focus on contingency planning.

1. What would you say is the most problematic thing with Risk Management / Contingency planning from your perspective?

2. What do you regard as the weakest link in the chain of creating a functional Risk Management-strategy for Höganäs overall business?

3. Who is responsible for Risk Management / Contingency planning?

4. Who should take the initiative to develop the work with Risk Management and contingency planning?

5. How does one know when it is enough? When are we safe enough?

6. What do you think is the best way of communicating Risk Management / Contingency planning in the organization? (E.g. through; written material, meetings, training and so on.)

7. How does one create awareness around the overall contingency plan?

8. Do you think there is an interest in learning more about/working with contingency planning among the staff? Why / Why not?

9. There is an increased interest for earthquake related work such as evacuation planning, but what about the more general contingency planning work?

10. How should one promote working with contingency planning without becoming inhuman and sounding like the continuation of the business is more important than safety/human life? (In case of an earthquake-situation)

11. How can one train and educate people to think about and in terms of Risk Management / Contingency planning?

12. How do one come up with new ideas concerning Risk Management and develop existing plans?

13. How can one involve as much people as possible and get as much input as thinkable as well as keep the process manageable in a smaller company as HJKK (without Risk Mgmt department)?
14. Is there a method for doing this and are you practicing anything like that at the moment?

15. How often should one update or revise existing plans?

16. How would the best way of making these kinds of updates be performed?

17. Do you think having a plan or a manual of how to deal with certain situations/scenarios could be hindering for coming up with new ideas? Making it harder to think outside the box?

18. Is there some way to motivate the creation of new ideas for improving the work with Risk Management / contingency planning?

19. In case of an emergency situation with a large earthquake, do you think people will act according to previously trained evacuation proceedings or will panic occur?

20. Can one train so that panic does not occur, or is it impossible?

21. How much can one train in order to be “prepared” for an unknown large earthquake and how much have to be left for destiny?

22. Do you think everybody in the organization agrees about how much work needs to be done concerning preparation for earthquakes?

23. Do you think everybody in the organization agrees about how much work needs to be done concerning other kinds of Risk Management and contingency planning? (Such as; transportation trouble, risk of fire, risk of electricity shortage)

24. How does one evaluate which kind of countermeasures should be taken in certain scenarios? How does one know that this is the best solution?

25. What do you think HJKK has learnt since the earthquake last year?

26. What have you learnt from the earthquake last year? Have it changed you in anyway?