A Study of How Companies Enhance Their Strategies through Foresight Procedures to Anticipate and More Appropriately Prepare for Change
Abstract

Background: The traditional approach of strategy emphasizes the role of planning as a main driver for success. Thus, in an environment with a low propensity for change, managers are able to predict the market evolution and therefore allocate wisely their resources in order to optimize the company's actions. However, markets are substantially more dynamic and managers are faced with higher and more complex level of uncertainty. In such climates, anticipating and understanding change is becoming increasingly relevant and top companies are not just competing in the present, but also into the future.

Purpose: To uncover and discuss how companies can enhance their strategies through procedures for anticipating and more appropriately preparing for change. This will consist of understanding how companies gain foresight and relevant types of information about potential future changes, how companies understand what these changes mean in terms of their context and their future, and, finally, how they respond once they have gained an understanding.

Methodology: The research has a qualitative approach and is based four case studies. Both secondary and primary data were used. The primary data collection was conducted through structured interviews.

Conclusions: Managers need not resort to costly or time consuming tools for enhancing their foresight insight and their strategies. Instead, they should constantly be aware of inherent biases, use counterfactual thinking and challenge their own mental models as well as the resulting views and understandings. Without doubting the mental models first and foremost, companies can innovate only incrementally. Furthermore, managers need to understand the potential of open foresight and the power within the company’s networks. In this way, they can distance themselves from the trend-impact-reaction cycle. Finally, companies should adopt a more anticipatory approach, rather than one which sustains the industry on order to better shield their strategies from disruptive change.

Keywords: Strategy, Foresight, Change, Uncertainty, Coping with Change, Biases, Open Foresight, Future Studies, Networked Foresight
Acknowledgement

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Furthermore, we would like to thank all our classmates for support, source of inspiration and critical mind set. And in conclusion we want to thank our families and friends for their support throughout all the journeys we have undertaken.

Kalmar, 1st of June 2014

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Andreea Greenstine                         Alyona Sazonova
## Table of Contents

1. **INTRODUCTION** .................................................................................................................. 1

   1.1 **BACKGROUND** ............................................................................................................. 1

   1.2. **PROBLEM DISCUSSION** .............................................................................................. 3

   1.3. **RESEARCH QUESTIONS** ............................................................................................... 6

   1.4 **PURPOSE** ...................................................................................................................... 6

   1.5. **DELIMITATIONS** .......................................................................................................... 7

   1.6. **THESIS OUTLINE** ........................................................................................................ 8

2. **METHOD** .............................................................................................................................. 9

   2.1. **RESEARCH APPROACH** .............................................................................................. 9

   2.2. **RESEARCH STRATEGY** ............................................................................................... 10

   2.3. **RESEARCH DESIGN** .................................................................................................... 11

   2.3.1. Case Studies Selection .................................................................................................. 12

   2.4. **DATA COLLECTION** .................................................................................................... 13

   2.4.1. Secondary data ............................................................................................................. 14

   2.4.2. Primary data .................................................................................................................. 14

   2.4.2.1. **Interview** .............................................................................................................. 14

   2.5. **DATA ANALYSIS** ........................................................................................................ 16

   2.6. **VALIDITY AND RELIABILITY** ..................................................................................... 16

   2.6.1. Internal Validity ............................................................................................................. 17

   2.6.2. External Validity ............................................................................................................. 17

   2.6.3. Reliability ..................................................................................................................... 18

3. **THEORY** ................................................................................................................................ 19

   3.1. **THEORETICAL BACKGROUND** .................................................................................. 19

   3.1.1. Strategy ........................................................................................................................ 19

   3.1.1.1. **Strategy under uncertainty** .................................................................................. 20

   3.1.2. Foresight ....................................................................................................................... 20

   3.1.2.1. **Knowledge based definition of Foresight** ............................................................. 21

   3.2. **CONCEPTUAL FRAMEWORK** .................................................................................... 22

   3.2.1. Change Identification and Anticipation ....................................................................... 22

   3.2.1.1. **When companies engage in foresight** ................................................................. 23

   3.2.1.2. **How foresight is carried out** ................................................................................. 24
1. INTRODUCTION

In the first chapter the thesis the concepts of strategy under uncertainty and foresight are introduced. There will also be background discussion to set the stage for the thesis, followed by a problem discussion which will outline the practical issues managers are faced with and the situations which drive the main research question. Further, three sub-questions are pin-pointed: when and how managers anticipate changes, how they try to reach an understanding or draw implications from insights acquired in the previous phase, and finally how this understanding relates to the strategy formulation process.

1.1 Background

The traditional approach of strategy emphasizes the role of planning as a main driver for success (Grant, 2010). Thus, in an environment with a low propensity for change, managers are able to predict the market evolution and therefore allocate wisely their resources in order to optimize the company's actions. However, according to Mintzberg et al. (1998), as markets tend to evolve faster it appeared that planning could not be seen as a source of efficiency for the company anymore. A fast changing environment raised major issues regarding the planned approach: firms have to identify its customers today and in the future, they should know their competitors today and in the future, and distinguish the capabilities which will make them unique today and in future (Hamel & Prahalad, 2003). According to Hamel (2003), if the way a company sees its present is similar to the way it sees its future, then firm cannot expect to remain a market leader.

While markets are getting more and more dynamic, the level of uncertainty rises and predictions about future trends become increasingly relevant. To face a dynamic market, internal changes seem to be the only way to success for companies:

“The key driver of superior performance is the ability to change. Success is measured by the ability to survive, to change and ultimately reinvent the firm constantly over time.” Brown and Eisenhardt (1998, p4)

In consequence, changes inside of the company must be seen as the keystone for sustainable business performance. Competitive strategy must therefore be continuously adapted to its environment, rather than be fixed in rigid routines (Fiksel, 2013). Indeed, this thesis will try to demonstrate that the management of future studies might be seen
as the fundamental basis for companies elaborating their competitive strategy, ensuring performance, providing opportunities for growth and building sustainability.

The development of the subject of future studies led to the development of the term “Foresight”, which became commonly used to encompass the wide range of approaches and activities which aim at helping managers to handle uncertainty (Vecchiato, 2012). There is a common misunderstanding that foresight is the act of predicting the future. Most writers on foresight today draw a distinction between forecasting as a way to predict the future and foresight as exploring alternative futures within a specific policy context including relevant stakeholders and interest groups (Berkhoutet et al., 2002). However this might be seen as a simplification and generalization of the concept. Foresight is rather about looking at possible future outcomes in a range of areas and deciding what actions the organization can take today, to create the best possible future (Horton, 1999).

In 1994 Prahalad and Hamel, both acclaimed strategy experts, wrote a book entitled “Competing for the Future” because they realized a static understanding of cost structures, resource constellations or skills was not enough to explain how some companies were able to keep re-inventing themselves and outperforming others despite seeming insurmountable disparities, and how differences in resource effectiveness could be accounted for (Prahalad and Hamel, 1995). When seeing that some managers could invest in building skills for markets or products that had not even come into being yet, and that companies were rushing to disband strategy departments and downsize instead of focusing on building the products and markets of tomorrow, Prahalad and Hamel (1994) realized that there is an aspect of strategy and competence building that theories were not accounting for, that there was a gap between theory and observation, and that strategy was in crisis. As a result, they re-examined strategy and their revitalized view of it was developed on the premises that “it is not enough to optimally position a company within existing markets; the challenge is to pierce the fog of uncertainty and develop great foresight into the whereabouts of tomorrow’s markets;...companies not only compete within the boundaries of existing industries, they compete to shape the structure of future industries” (ibid, p.23).

Foresight is a key business skill and, as part of the “knowledge economy”, has links with other “knowledge” business areas such as innovation (Horton, 1999). Foresightedness is a combination of developing an understanding of possible futures for an organization
and acting upon that understanding in a way which brings benefit to the organization. Foresight is linked to the field of strategy is very often practice oriented: it is seen as an operation able to produce a collective strategy for change at the scale of firms, other organisations, or a whole national innovation system (Treyer, 2009). However, investigations about the process design and degree of application of strategic foresight methods in companies are rarely conducted and discussed in the literature. According to Vecchiato (2012), in the recent research scholars have documented that many large firms in such diverse sectors as energy, automotive, telecommunications, and information technology were regularly applying future-oriented techniques. Nevertheless, Hamel and Prahalad (1994) explain that the inability of many managers to look ahead for ways to reinvent their industries has led to both costly blunders and monumental catch-up costs. The authors blame executives for being overly insular as well as for adhering to conventions of corporate strategy. For example AT&T, they point out, had to bid $12.6 billion to buy at a substantial premium McCaw Cellular Communications Inc. because it missed the opportunity to enter the cellular-telephone business in the early 1980s (Hamel and Prahalad, 1994).

The 21st century is characterized by fast changes in market evolution that raises the level of uncertainty for companies. Therefore we wish to study how companies can be better prepared for the inevitable rapid changes. Companies which carve out time to explore uncertainty by integrating futures approaches into their strategy development processes will build a more robust strategy (Conway, 2012). These firms will be better prepared to deal with any challenges they might face. After all, the aim is not to predict the future, but to avoid getting it wrong.

1.2. Problem discussion

As part of a McKinsey Quarterly study, Bradley, Bryan and Smit (2012) surveyed more than 2000 executives, subjecting their strategies to 10 strategy tests, only to realize that only 35% passed more than three of these tests. One of the factors behind this: the way companies plan (ibid). This survey has an alarm raising result, as it brings to light the difficulties strategic thinking faces today in companies. Battling turbulent environments, managers are too quick to resort to cost cutting, which is reactive and oftentimes ineffective in the long run (Bradley, Bryan and Smit, 2013). Instead, managers need to re-focus on strategy and strive to anticipate rather than to react (ibid).
One of the central questions in theories of competitive advantage is how firms can acquire or create strategic resources for a value smaller than their value in use (Ahuja et al, 2005). The authors further point out that managers are generally understood to be the ones that have an impact on capability development, and that the creation or development of resources, capabilities, and ultimately competitive advantage, hinges on the manager’s ability to identify and develop them in time (ibid). In other words, competitive advantage depends on whether managers have the foresight to know in advance and understand what actions are likely to lead to a competitive advantage (ibid).

Unfortunately, as can be seen from the many bankruptcies and closures, managers are fallible (Horton, 1999). Generally, companies are aware of industry trends, developments and signals coming from the exterior. They also try to monitor and adjust the coherence between that and the internal direction of the company. Nevertheless, they oftentimes fail at doing so successfully. Polaroid for example, a company much beloved before the age of digital cameras, had difficulties coping with digital imaging because of inappropriate managerial beliefs and cognition (Tripsas and Gavetti, 2000). Reid and Zyglidopoulos (2004) dedicate their article to consequences of foresight failure for companies internationalizing in China and pin-point two pivots at the core of foresight which translated into strategic failure: understanding and anticipation.

The above-illustrated words of Prahalad and Hamel are even more relevant in current times, when markets are increasingly volatile, uncertainty is high and competition is getting stronger. Foresight, as they also point out, can be an effective tool for companies, especially multinationals, to help them peer into potential futures so they can better develop their strategy. Its purpose is to give a more focused vision of the future, but also to help companies keep a clear demarcation of past, present and future in order for them not to get drawn back into the past. Nevertheless, it is not sufficient to just gauge the future, or to merely form an idea of what might happen. Many companies dedicate a degree of effort to researching trends and potential developments, or use foresight techniques such as forecasting, environmental scanning and scenario planning to help them in strategy formulation (Rohbeck and Schwartz, 2013; Vecchiato and Roveda, 2010). Numerous larger companies and even countries have their own foresight units established (Vecchiato and Roveda, 2010; Rongping et al, 2008). Even so, as Vecchiato (2012) points out, the importance does not necessarily lie in predicting the
future but in preparing the company to handle that future. When discussing their marketing error in China, a senior marketing executive from Unilever, a company with ample reputation and rigor, is quoted in Reid and Zyglidopoulos (2004) to say that even though they had performed a lot of research in ice-cream, they still did not spend enough time really understanding what it meant for their company. Furthermore, Amsteus (2014) echoes Prahalad and Hamel when he shows that, much like they were pointing out in 1994, managers start thinking seriously about the future only when they perceive that the company is not performing well. From the above cases, we can identify several topics:

1) **The importance of when and how often managers (or the company) start exhibiting foresight.** Amsteus (2014) illustrates a potentially vicious cycle in which managers start exhibiting foresight only when subjectively perceived performance is low. Performance starts increasing in response, only for the managers to stop exhibiting foresight when the company has reached a better position (Amsteus, 2014). Anticipating change and competing for the future should not be an afterthought, something to be done only when the company has grown too large, too slow or unmanageable. The timing and frequency with which a company attempts to predict developments are important factors which can affect strategy, competitive advantage and ultimately performance.

2) **The significance of preparing the company for the foreseen future(s).** In other words, how can strategists better understand what the foreseen changes or trends mean for their company? How can they understand how upcoming trends will affect industry forces or their competitive position? Understanding, or interpreting, the results of foresight can make the difference between being prepared appropriately and being improperly prepared. Plainly, not understanding the insights of foresight research can put a company in the proverbial situation of having brought a knife to a gunfight. In line with this, Horton (1999) says that the interpreting step in foresight is where most of the value is created.

3) **The relevance of what way and to what extent foresight is coordinated and integrated into strategy making (strategic planning, decision-making, etc.).** The other observation Horton (1999) makes is that without putting the wisdom which
results from foresight into action, the company gains little to no value from foresight.

Heraclitus, as quoted by Plato, says that “everything changes and nothing stays the same” (Plato, *Cratylus* 401d); indeed, change is one of the only constants in our world. So how can companies anticipate what the change will be in a timely manner? How can companies understand what will drive these changes? Also, possibly even more importantly, how can companies understand what effect these drivers will have on their environment and how can companies prepare early to best take advantage? As Prahalad and Hamel suggest, winners do not just compete in the present, they have to compete in the future. And, surely in the age of big data the winners cannot be those who possess more information, but rather those with the capacity to make sense and draw appropriate implications from the abundance of information.

1.3. Research Questions

**Main Research Question:** How do companies enhance their strategies through foresight procedures to anticipate and more appropriately prepare for change?

**Sub Research Questions:**
1) How do companies employ foresight to identify and anticipate drivers of change?
2) How do companies understand the effect of these drivers on the industry the firm is active in and its competitive position within it?
3) How are the results of foresight integrated in the formulation of strategy?

1.4 Purpose

To uncover and discuss how companies can enhance their strategies through procedures for anticipating and more appropriately preparing for change. This will consist of understanding how companies gain foresight and relevant types of information about potential future changes, how companies understand what these changes mean in terms of their context and their future, and, finally, how they respond once they have gained an understanding.
1.5. Delimitations

Due to the scope of the thesis and the boundaries of available resources, the following delimitations have been made:

The study is limited to companies in Europe, as it would be counter-productive to invest time and energy into recruiting companies from continents to which the authors have no connections, or of which they do not have a cultural understanding. Given the scope of this thesis, it will be important to recruit companies of different sizes and in different industries in order to obtain a cross-sectional view of the way in which foresight is used and produced. The thesis will not focus on international aspects of companies, as this aspect is not necessary in order to answer the research questions or the purpose. Furthermore, the interviews will have to be carried out with managers, as high up as possible in the hierarchy of the company, and therefore it is anticipated that the interviews cannot occupy a lot of their time with lengthy interviews.

Possible problems: The scope of this thesis is centred on strategic issues and strategy development. These are highly sensitive issues for a company and therefore we anticipate that we might encounter difficulties getting the manager to disclose very sensitive information. There may be a need to keep the names of the companies undisclosed. Furthermore, alternative companies may have to be found.
1.6. Thesis outline

INTRODUCTION
- In the first chapter the thesis the concepts of strategy under uncertainty and foresight are introduced. There will also be background discussion to set the stage for the thesis, followed by a problem discussion which will outline the practical issues managers are faced with and the situations which drive the main research question. Further, three sub-questions are pin-pointed: when and how managers anticipate changes, how they try to reach an understanding or draw implications from insights acquired in the previous phase, and finally how this understanding relates to the strategy formulation process.

METHOD
- In this chapter the methodology of the thesis will be discussed in order to give an overview of research conduction. The chapter starts with a presentation of the research approach, followed by the research strategy and design approach. Further, the process of data collection and analyze of four case companies will be described. The chapter will end with a discussion on research quality validity and reliability.

THEORY
- The third chapter establishes the theoretical basis for the thesis. It is divided into two sections:
  - a) Theoretical Background in which the main concepts at the basis of the thesis are established. These are the concepts which support the theoretical framework.
  - b) Theoretical Framework. This part establishes will serve to theoretically frame the analysis. It is structured based on the 3 sub-questions in order to establish a theoretical support for the answering of all these questions.

EMPRICAL DATA
- The fourth chapter is the empirical chapter where all the data which will serve as material for the analysis will be presented. This will include secondary as well as primary data. Each company will be presented individually. The structure of the presentation will be in terms of brief background information on the company and the industry, and the interview findings based on the 3 sub-questions.

ANALYSIS
- The fifth chapter is the analysis, where the theory and the empirical data are combined in an analysis. The analysis will also be structured in terms of the research questions. The first part will be establishing the types of industries and environmental complexity. Then each company will be analyzed separately.

CONCLUSION
- In the last chapter of this thesis, the research questions will be answered based on the empirical findings and analysis. They will be presented starting with the three sub-questions which will lead up to the answer for the main research question.
2. METHOD

In this chapter the methodology of the thesis will be discussed in order to give an overview of research conduction. The chapter starts with a presentation of the research approach, followed by the research strategy and design approach. Further, the process of data collection and analyze of four case companies will be described. The chapter will end with a discussion on research quality validity and reliability.

2.1. Research approach

The different research approaches are to be discussed and compared, in order to choose suitable research approach for the thesis. According to Pierce (1974), research approach is described as the scientific method used, which incorporates three different types of methodologies of science: abduction, deduction and induction. Merriam (2005) states that inductive research begins with gathering of data and continues with empiric observations, so that the researcher uses theories depending on the information that is found. Opposed to this, deductive research explains an alternative relationship between theory and practice in the social sciences. The researcher deduces hypotheses based on the knowledge and theory of particular field, which are subsequently be tested in an empirical study (Bryman & Bell, 2005).

The method selected for this thesis is the deductive approach. The deductive method begins from a general rule, which consists of the theory from which the scientists proceed, and proves it through a consideration of the empirical data (Alvesson and Sköldberg, 2009). Alvesson and Sköldberg argue that this strengthens the research question and makes it valid. According to Cohen (2013), the deductive approach consists of using quantitative data given the fact that the researcher has a solid theoretically anchored as a starting-point; such a theoretical basis makes it easier to collect the empirical data. Moreover, Bryman (2005) states that through the deductive approach one may have a purpose of investigating different interpretations from a society.

According to Yin (2009), deductive approach is one’s research must be founded on existing theories. Therefore, the theoretical framework will function as a guide that will determine which data is required and how to examine it. The background of foresight and strategy are described in theoretical terms, so that they might serve as a guidance
tool for determining what data to collect in order to conduct this study. Furthermore, the
type of environment, drivers of change, and methods for understanding which are
mentioned in the theory are used when analysing the foresight procedures of a firm and
to support the formulation of the research question posed. Thus the theoretical
conceptualization has significant importance for this thesis.

This thesis is thus deductive, because theory is used in order to research existing
literature and develop theoretical knowledge and insights that are then applied to the
empirical research. Dubois and Gadde (2002) explain this process as a “learning loop”,
a continuous process of direction and redirection between theory and empirical data.
The first step of this process is the foundation of the research problem, which helps to
identify relevant theories to include in the framework. Furthermore, the interview guide
is developed based on theoretical framework and research questions, so that pertinent
and relevant empirical data could be collected. However, the focus of the thesis
(enhancement of the strategies through foresight procedures) does not fit with the
complete definition of this “learning loop”, because the “learning loop” is a continuous
process of adapting the theoretical framework in accordance to the empirical findings
(Dubois and Gadde, 2002). Therefore the abductive approach, in its fullest extent, is not
applied in this thesis.

2.2. Research strategy

According to Graziano and Raulin (1993), there are various research designs to
consider, including naturalistic observation, case study observation, correlation
research, differential research, and experimental research. Merriam (1998) states, that
the decision on the strategy model is related to the research problem. Yin (2003)
suggests that the decision on the research strategy is based on the types of research
questions, the degree of control over actual events, and the focus on contemporary or
historical events. Therefore, Yin (2003) defines five main research strategies: experiment, survey, archival analysis, history and case study, which are explained in the

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

Source: Yin (2003)

Figure 1: Relevant situations for different research strategies (Source: Yin, 2003)
Figure 1.

However it is impossible to collect all available data, to interview everyone and to observe everything, and because of this some kind of method of selection needs to be chosen (Merriam, 1998). Further, according to Yin (2003), more than one research strategy might be relevant for the specific research problem. In some cases it is possible to use two strategies. Although to decide which strategy is the most appropriate one, the research question is the most important variable Yin (2003).

At the inception point of this thesis, a review of the field revealed empirical research that has been limited to case studies. A case study method is used when there is a desire to understand a real-life phenomenon in depth. Furthermore, it is an appropriate method to use when answering “How?” and “Why?” questions (Yin 2003; Saunders et al., 2009). A case study is also preferred when analyzing contemporary events and it has the ability to deal with a full variety of evidence (Yin, 2009). For instance through interviews, questionnaires, observations, documents or databases (Fisher, 2007). The reason for that is because one of the sources could be biased. The sources in this thesis are interviews, observations and documents which will be described more in detail later in this chapter. Also the case study designs represent the lowest levels of constraints, thus the observations are flexible in such a way to allow for making use of unexpected circumstances and ideas developed during the observations (Fisher, 2007).

Thus, this strategy has been preferred to answer our main Research Question:

*How do companies enhance their strategies through foresight procedures to anticipate and more appropriately prepare for change?*

Moreover, sub-research questions were devised in order to successfully answer overall research question. The research process of the thesis could be described in three steps, corresponding to the three sub-research questions. In the next section the research design of the thesis will be presented more in depth.

### 2.3. Research design

Yin (2003) has designed a method which distinguishes the case study by two different features. The first characteristic raised is the number of unit of analysis. A case study can either have a single unit of analysis or a multiple units of analysis which can be seen as embedded. An example of embedded case study design is when various subunits are
involved in the research. The second characteristic concerns the number of cases used. According to Yin (2003), the differentiation is made in the amount of case studies used and can thus be either a single case study or a multiple case study.

Indeed, in order to have a more accurate overview of the thesis’ problematic several case studies have been taken into consideration. Thus the research design is seen as a multiple case study. The main advantage of multiple case study design is that the evidence found during it is often considered as more compelling (Berg, 2009). Yin (2009) explains that the multiple designs mean that the researcher studies several cases, which result in more support for the result found. Also Herriott & Firestone (1983) argues that the general study in itself offers a more solid grounding when it is based on more than one source. In the same way, a multi case study might be holistic or have several analysing units. Yin (2009) says, that within the holistic multi case study, several cases are studied but with only one analysing unit in each. In multi case studies with several analysing units, several cases are studied with additional analysing units.

During this case study, a holistic formation with one analyzing unit in each company has been used. Furthermore, the four interviews are conducted with top managers who have knowledge regarding foresight and companies’ strategy. Through these persons different levels within the companies are reached and insight both into strategic and operational level is received. The practice of multi case study has been crucial because it gives a possibility to answer the research question in a convincing way. Furthermore, collaboration with the case companies has been positive, with open communication from the informants. This has also makes it possible to return to the case companies through telephone and email if further explanation needed.

2.3.1. Case Studies Selection

According to Yin (2003), the selection of case study companies is an important part of the data collection since the suitability of the findings will be directly related to this choice. Thus in order to select the right case the researcher has to prepare a list of criteria that the case has to fulfil (Merriam, 1998). Different views of the criteria which can be used when selecting the case companies have been suggested by Yin (2003), Merriam (1998), etc. Hence, Merriam (1998) states that the criteria have to define the unit of analysis and fit the purpose of the study.
In order to fit the aim of the thesis and go in accordance with the delimitations, the chosen companies are the multinational companies (MNC) present globally and one SME. MNCs have been in the focus in the empirical research on the use of foresight to enhance strategy. Foresight strongly relates to problems of environment changes, which aim at increasing the capability of MNCs to successfully compete against smaller competitors, which are faster and more flexible. In comporting to MNCs, the SME company has been investigated in this study in order to discover its primary business drivers, which could be technology or market (Rohrbeck, 2011). Thus in this thesis the companies differ from each other by size, industry and positions in the value chain have been used. In this concept foresight tools in MNCs and SME contribute to ability by gathering information, directly triggering new business creation and facilitating corporate and business strategy. Table 1 provides key information about the case companies, person which have been interviewed within the company, position and date of interview.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Tata Consultancy Services</th>
<th>Ericsson</th>
<th>Albemarle Corporation</th>
<th>Bungalow.Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>IT services, IT consulting</td>
<td>Telecommunications equipment</td>
<td>Chemical</td>
<td>Leisure, Travel &amp; Tourism</td>
</tr>
<tr>
<td>Number of Employees</td>
<td>300,464</td>
<td>113,989</td>
<td>4,260</td>
<td>200</td>
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<tr>
<td>Revenue</td>
<td>US$ 13.44 billion</td>
<td>SEK 227.8 billion</td>
<td>US$ 2.869 billion</td>
<td>US$118,041</td>
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<td>Headquarters</td>
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<td>Stockholm, Sweden</td>
<td>Baton Rouge, Louisiana, USA</td>
<td>Willemstad, Netherlands Antilles</td>
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<td>Country of Representation</td>
<td>118</td>
<td>100</td>
<td>18</td>
<td>5</td>
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<td>Interview Person</td>
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<td>Sales Service Representative</td>
<td>Marketing Manager</td>
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<td>Budapest</td>
<td>Budapest</td>
<td>On-line</td>
</tr>
<tr>
<td>Date of Interview</td>
<td>13.05.2014</td>
<td>15.05.2014</td>
<td>20.05.2014</td>
<td>20.05.2014</td>
</tr>
</tbody>
</table>

Table 1: Case companies description.

2.4. Data collection

The data collection can be divided into two types: secondary data or already existing information, and primary data - new knowledge created for the purpose of the study (Dubois et al., 2002). According to Yin (2003) there are six different sources of evidence where the data can be found: documentation, archival records, interviews, direct observations, participant-observation and physical artifacts. The two first sources of evidence are often used as a secondary data due to their nature while the last four are
likely to be used as a primary data. In this study both primary and secondary data have been employed.

2.4.1. Secondary data

Secondary data is based on information which has not been collected directly for the specific purpose of the study Dubois et al., 2002; Merriam, 2009). One of the advantages of using this types of data that “they exist independent of a research agenda, they are nonreactive, and unaffected by the research process” (Merriam, 2009, page 156). The use of secondary data is in many cases good since it is not that time-consuming and expensive as primary data. In this thesis secondary data has been used to make a thorough theoretical framework and to broaden the understanding of the authors of this study. The material from the case companies, such as annual reports, brochures and company presentations, have been collected through company web pages, in order to analyze the company context and environment in which this company operates. Overall, the researchers gained a profound insight in contemporary trends within corporate strategy, foresight, business environment, strategic and corporate foresight. Merriam (1998) states that since the secondary data has been collected by different authors, the reliability of the sources can be arguable. Therefore the researcher has to be really careful when selecting them. Hence, the reliable sources (mentioned before) have been used for the study, in order to overcome this risk.

2.4.2. Primary data

The primary data, according to Merriam (1998), is to find relevant information to answer the research question of the study. It consists of data which is collected for the first time directly from the source of information, and can include communication from an individual person or groups of people (Dubois et al., 2002). According to Dubois et al. (2002), primary data can be collected through interviews, observations or questionnaires. The primary data that will be used in this thesis are interviews which have been conducted with people at the selected case companies, who are in the position where they have valuable insights useful for our study.

2.4.2.1. Interview

Yin (2003) says that interviews are an important source of information when doing case study research. Also interviews sometimes are the only way to collect information about
behavior, experiences, motives, beliefs, values, and attitudes of people (Foddy, 1993). According to Yin (2003), the strengths of doing interviews are that they are targeted and insightful, but the weakness is the risk of both researcher and respondent being biased if the questions are constructed poorly. This might lead to the respondent answering what she or he thinks the interviewer wants to hear. However, interviews are important tools to collect data when doing qualitative research, so researchers must try to minimize the weaknesses as much as possible, as we try in this study. Saunders et al., (2009) says that there are different kinds of interviews, including structured interviews, unstructured or in-depth interviews, and semi-structured interviews. These can further be differentiated into standardized and non-standardized interviews (Saunders et al., 2009). The one-to-one semi-structured interviews have been chosen for the study, which are non-standardized and often are referred to qualitative research, which seeks to understand the “what”, “how” and “why”. Semi-structured interviews are those where the researcher has a list of questions, which vary from interview to interview. This may include questions which are left out or added during an interview due to the content of the conversation or because additional questions are needed to further explore the topic (Saunders et al., 2009).

The interview guide containing themes and supporting questions based on theoretical framework has been constructed before interviews. According to Kvale (2009), the quality of the knowledge produced during the interview depends on the quality of the researcher’s skills as well as knowledge about the research area and conversation topic. The scientific journals were chosen from the OneSearch and LNU library, as well as Martin Amsteus’ (2011) dissertation, all relevant articles with the key words foresight, strategic foresight, business and corporate strategy which were published during the last fifteen years were selected. By studying the thesis proposal and scheduled supervision, the relevance of the articles was determined which was supported by the researcher thesis supervisor. Thus the sufficient knowledge about foresight and strategy has been obtained, in order to create relevant questions to ask during interview. Moreover, the interview guide is provided as an appendix in the thesis. The interviews with TCS, Ericsson and Albemarle Corporation were conducted face-to-face at the office of each company and took approximately 40 minutes. The interview with Bungalow.Net has been conducted through the Skype, which did not make any difference for the quality of the interview. The length of the interview was approximately 60 min. Each interview has been recorded and can be transcribed upon request, in order that the researchers do
not to miss out on any important vital information. All the interviews were conducted in English. According to Kvale (1996), the debriefing ends the interview, by explaining how the answers will be used and how they, if needed, will handle follow-up questions. Therefore, each interviews ended with the debriefing by explaining what the next step of the thesis, with the analysis, would be. Additionally business cards have been received if some follow-up questions would be needed.

2.5. Data analysis

According to Yin (2009) four different general strategies exist to analyze the data collected during a qualitative study: relying on theoretical propositions, developing a case description, using both qualitative and quantitative data, and examining rival explanations. Indeed, the thesis is based on theoretical grounding from which the research questions have been formulated, thus theoretical propositions have been chosen as general strategy for data analyze. Yin (2003) states, that by using this method the researcher can emphasize the importance of certain data and reduce the extent of secondary information. This helps the researchers have a clear and consistent focus during data analyze. Furthermore, the data analyzed by theoretical propositions method provides the findings and conclusion with theoretical implication rather than managerial ones. The proposition also helps to organize the entire case study and to define alternative explanations to be examined Yin (2009). For this thesis data analysis is a deductive approach where empirical data have been applied to theoretical framework and synthesis. In the synthesis model, sources of knowledge and information are outlines, as well as biases which are prevalent at each step of the process of foresight within the company and strategy formulation.

2.6. Validity and Reliability

“Reliability and validity are tools of an essentially positivist epistemology.”

--Watling, as cited in Winter, 200, p. 7

According to Yin (1990) a researcher has different variables that are useable to test the quality of a research project when a qualitative case study is performed. In this chapter, the relevant steps and measures taken to assess reliability and validity are discussed. Reliability and validity are conceptualized as trustworthiness, rigor and quality in qualitative research.
2.6.1. Internal Validity

Yin (2009) claims that the internal validity of research is achieved through the establishment of a relevant causal effect within the study. According to Merriam (2009), internal validity handles the problems of how the empirical data is collected and also certifies if the empirical findings could be valid for the research question. Internal validity is a typical issue for case studies where investigator will infer that causal relationship can be established between an event and its outcome without further questioning about which other factors may have had some influence in the outcome (Yin, 2009). Internal validity can be improved by using multiple sources. For instance, Merriam (1998) suggests using collaborative modes to conduct research and researches biases, in order to gather other researcher's assumptions. Yin (2003) provide four tactics for ensuring internal validity which are pattern-matching, explanation-building, address rival explanations and use of logic models.

In this thesis multiple sources of information have been used in order to achieve an adequate level of internal validity. Both documentation and semi-directive interviews were used to collect information, which enable to get a deep understanding of causal relationships. During the interview the tape recorder has been used in order to insure that any comments and answers were not missed or misunderstood.

2.6.2. External Validity

According to Yin (2009), the external validity concerns the generalizable nature of the results of the thesis, beyond the immediate case study. Moreover, Yin (1990) argues that a researcher must be careful with generalizations when a qualitative research is conducted. Indeed, it is impossible to not be critical against generalizations made upon the research focused on a single case, when it comes to case studies. According to Yin (2009), a high external validity could be reached only with high internal validity. In this thesis the procedures that are followed to conduct the analysis have been developed theoretically and based on four case study companies, and therefore results are generalized. Of course, it is hard to do make careful generalizations, but within reasonable limits it will be possible to draw conclusions and to give further recommendations.
2.6.3. Reliability

Reliability can be described to what extent certain results can be achieved again by conducting the same procedures in another case (Merriam, 2009; Yin, 2009). According to Yin (2009), the aim of reliability is to minimize the errors and bias induced within a study. A case study may be considered as reliable if a same study conducted by another investigator in exactly the same way any number of times would generate the same results (Yin 2009). According to Ying (2009), to ensure reliability is to provide to further researchers by means of a wide documentation on the procedures followed in order to build the case study. The methodology chapter of this thesis completed with questionnaires and tools used to conduct the data collection and analysis, which will allow another investigator to do the case study exactly the same way.

As mentioned before, the study has the semi structured nature of the interviews. This gave the opportunity to the respondents to ask for clarifications if questions or expressions were not clear. The capabilities identified from the literature have been formulated and slightly adapted to fit the language of the case company. Furthermore the interview guide that has been used during case companies’ interviews is available as an appendix in the thesis. The conducted interviews have been recorded and will be transcribed upon request. Moreover, the case study database has been established in order to ensure the reliability of data collection process. The case study database mainly contains full records of the four case company’s interviews, observations, questionnaire results and case study documents which are available on request.
3. THEORY

The third chapter establishes the theoretical basis for the thesis. It is divided into two sections: a) Theoretical Background in which the main concepts at the basis of the thesis are established. These are the concepts which support the theoretical framework. b) Conceptual Framework. This part establishes will serve to theoretically frame the analysis. It is structured based on the three sub-questions in order to establish a theoretical support for the answering of all these questions.

3.1. Theoretical Background

“Strategy is the creation of a unique and valuable position, involving a different set of activities…. different from rivals”

-- Michael Porter, What is strategy?, 1996, p.68

3.1.1. Strategy

According to Porter (1996) strategy involves defining a company’s long-term position in the market place, making the hard trade-offs about what the company will and won’t do in order to provide value to customers, and forging hard-to-replicate fit among parts of the “activity system” the firm constructs to deliver value to customers, all with a view to making a superior return on investment.

For Lowth et al. (2010) and Mintzberg (1987 there are several ways in which strategy is developed. The deliberate strategy, according to Lowth et al. (2010), is a process based on acting intentionally. It is important to plan and think before acting. The strategy must be clear, explicit and executed by the company. The emergent strategy originates from the interaction of the organization with its environment and that it is an ongoing process of constant learning, experimentation and risk taking. Also Lowth et al. (2010) argue that strategy is combination of these two views and contingent on a range of factors such as: environment, culture, location and etc. However the argument posed by Mintzberg et al. (2005) is whether strategy is deliberately, rationally planned or emergent, based in creative responses to changing stimuli Moreover there is agreement that strategy is about change, due to more volatility and competition (Kotter 2001), to best deliver a positive organizational future.
3.1.1.1. Strategy under uncertainty

Strategic orientation is closely linked to environmental uncertainty. Walker et al. (2003) says that uncertainty is an inherent factor to take into consideration while establishing business strategy. Indeed, business strategy is about creating the basis and direction for future success of a business (Grant 2010). Though markets changes companies face unpredictable emerging trends, but the business environment provides information to a manager that allows them to establish a strategic direction for their company (Courtney et al., 1997). Environmental uncertainty must then be seen as part of strategy formulation, for it affects not only the availability of resources to the firm and the value of its competencies and capabilities, but also customer needs and requirements, as well as the competition (Jabnoun et al., 2003).

The relationship between companies and its environment, in the strategy-making context, has two major dimensions (Rumelt, 1996). On the one hand, company’s basic mission or scope should match its environment. On the other hand, Rumelt (1996) says, that company should aim at having a competitive edge with other firms which are also trying to get that match. Indeed, Johnson et al. (2008) staid, that the competitive advantage of organizations of today is less likely to come from physical resources and more likely to come from the way things are done within the organization and from the experience that it has accumulated. Thus the organizational knowledge could be the basis of a firm’s strategic capability.

3.1.2. Foresight

One important issues in foresight research is that oftentimes, foresight is attributed with a narrow, static definition (Rohrbeck, 2010). For this thesis, foresight will be understood in a much more broad way, as illustrated in a number of definitions which show the many facets and values of foresight.

There are several different definitions of what foresight is and the definition depends on what context it is taken from. Foresight in a strategic context is described as a process that designates the activities that decision makers takes in the task of deciding the company’s future course of actions (Vecchiato 2012). According to Nugroho et al. 2009, foresight brings together key agents of change and various sources of knowledge in order to develop strategic visions and anticipatory intelligence. Foresight examines long-term futures with more of a holistic analysis than is typical in conventional
forecasting activities, and with greater links to action and wider participation (Nugroho et al. 2009). Habegger (2010) defines foresight as a deliberate attempt to broaden the boundaries of perception and to expand the awareness of emerging issues and situations.

Amsteus (2011) signals this eclecticism of understandings of foresight and, in an attempt to define what foresight is, synthesizes them into a measurable concept. Foresight is then defined as a behavior with three dimensions:

1) Degree of analyzing present contingencies and degree of moving the analysis of present contingencies across time.

2) Degree of analyzing a desired future state or states a degree ahead in time with regard to contingencies under control.

3) Degree of analyzing courses of action a degree ahead in time to arrive at the desired future state” (Amsteus, 2011).

3.1.2.1. Knowledge based definition of Foresight

Foresight is a knowledge dependent process. Foresight can be seen as a knowledge creation process, which produces solutions to both known and unknown problems as well as new knowledge (Amsteus, 2011).

Furthermore, Foresight is tightly connected with knowledge and bears resemblance with knowledge acquisition processes. Horton (1999) is one of the first to define foresight and develop a process which can create value for companies. According to Horton (1999), foresight consists of three usually consecutive phases: 1) collection, collation and summarization, 2) translation and interpretation and 3) assimilation and commitment. The first phase in the model consists, loosely speaking, of knowledge acquisition. It includes activities such as collection, collation and summarization of available information from experts, networks, literature, brainstorming sessions, etc. The second phase comprises the translation and interpretation of this knowledge to produce an understanding of its implications for the future, from the specific point of view of a particular organization. And the third phase encompasses the assimilation and evaluation of this understanding to produce a commitment to action in an organization (Horton, 1999).
Horton (1999) defines this process as one in which “each phase creates a greater value than the previous one as the outputs move up the information value chain from information through knowledge to understanding”. There is an information value chain between these phases, which creates a greater value for the outputs in each phase.

3.2. Conceptual Framework

3.2.1. Change Identification and Anticipation

A positive relationship between foresight and performance has been shown to exist in recent research, which showed that firms that exhibit foresight are also better performers (Amsteus, 2011). Rohrbeck and Schwarz (2013) conducted a study in 77 large multinational firms and found that top performers draw more value out of foresight than medium or low performers. More and more companies are putting emphasis on foresight as a decision making tool in strategic planning as the amount of knowledge generated internally is becoming more complex, and the environment more dynamic and uncertain (Bezold, 2006 as cited in Daheim and Uerz, 2008). A McKinsey Quarterly article writes about a financial enterprise they surveyed: “Like many banks, the institution had responded by writing off most of its bad assets, raising capital, shrinking its balance sheet, and slashing expenses. Sometime in 2010, in the midst of the annual long-range financial-planning processes, the CEO and the board realized that while the institution was recovering from its financial losses, it didn’t know where its future growth would come from. Nor was it clear what would be reasonable growth aspirations in an era of regulatory constraints on the bank’s balance sheet” (Bradley, Bryan and Smit, 2012, p.3). The same article mentions that in the experience of the authors, it takes 18 months or longer for an idea to go from simple thought to an item on the budget (ibid). It is important then to consider how and when companies begin looking ahead.

Given the link between foresight, strategy and competitive advantage, it is easy to understand why companies are not too happy to give away information on their insights regarding the results or methodologies used in foresight. Nevertheless, some studies have been carried out in order to assess how foresight is conducted and applied in companies (Schwarz, 2006; Daheim and Uerz 2008; Becker 2002; Jannek and Burmeister, 2008). In addition to these studies, one can find information in smaller sets in case studies that have been conducted by researchers either on company level, or on a
group of companies (Vecchiato and Roveda, 2010; Battistella, 2013; Rohrbeck and Schwartz, 2013, Reger, 2001 etc). The findings from these studies will be presented in two distinct sub-chapters, based on when companies engage in foresight and how companies engage in foresight.

3.2.1.1. When companies engage in foresight

Grant (2003) discussed the shifts in strategic planning based on his study of the oil industry in 2003. Already, he was noting that the foundations of strategic planning were changing and some companies were starting off not with just one plan, but multiple scenarios of potential futures (Grant, 2003). Shell was a major proponent of this type of planning, as they had been employing foresight heavily since the 1970s which helped them prepare for the oil crisis (Bodwell and Chermack, 2010). Grant (2003) also mentions that Shell was the only company to base its entire strategic planning process upon multiple scenario analysis. Shell was therefore starting their entire strategic planning process with a foresight-based approach, as scenario analysis is one of the many foresight tools (Mendonca et al, 2004).

Companies have been engaging in foresight for a long time, and as described by Cuhls and Johnston (2008), there exists a long tradition of forecasting in companies which then later on became foresight, as the emphasis switched to participation. Rorhbeck and Gemünden found with their study that a lot of companies performed foresight in an issue-driven manner, or otherwise, only when asked to do so by top management. Furthermore, they also mention that the decision regarding the method to be used in the foresight exercise (modelling, scanning, scenarios, roadmapping, etc) is oftentimes made at a previous time, when the company was in another context and facing a different issue (ibid). Amsteus (2014) discusses that foresight and subjective performance have a negative correlation. This means that foresight oftentimes is the after-thought of low subjective performance, instead of being the front runner, the continuous support and guide for strategic decision making and formulation processes.

The companies interviewed by Reger (2001) had been performing what can be loosely defined as foresight (and what the author calls technology monitoring) for 10 to 20 years. In the survey presented by Daheim and Uerz (2008), more than half the companies had been carrying out foresight for many years (median of 10) and around 8% of them had been engaged in foresight for 30 years. In a study on foresight among
SMEs, it was revealed that 85% monitor their environment regularly, whereas 14% do it sometimes; additionally, 29% frequently scan outside of the environment they are competing in for developments (Jannek and Burmeister, 2008).

Rohrbeck (2010) identifies a series of best practice situations, based on energy sector case studies. They serve as good examples of when foresight can and should be integrated in the strategy process. They are classified based on the three different strategic planning ranges: short, medium and long term; naturally, foresight will have different implications based on the time span that the information is required for. His case studies show that many companies, carry out foresight exercises either as an after-thought of decreased performance, with a serious delay between the moment they are requested to the moment they are actually implemented, and they employ only a limited amount of exercises regularly (Daheim and Uerz, 2008).

3.2.1.2. How foresight is carried out

“in high-velocity markets, a strategic plan is an emotional rallying point and a resource roadmap. It is not anything more, and certainly it does not provide insight about the future.”

(Eisenhardt et al., as quoted in Bodwell and Chermack, 2010, p.194)

“In a world in which many new opportunities are opening to the left and right of the beaten paths, we need to recognise the limitations of the dominant logic and look for ways to apply different logics to value creation and the organisation of our companies.”


“The real purpose of foresight is not to predict how a driver of change will evolve, but to change the mental models that decision makers carry in their heads”.

(Vecchiato and Roveda, 2010, p1532)

There are many reasons why companies carry out foresight activities (Daheim and Uerz, 2008; Rohrbeck, 2012; Cuhls and Johnston, 2008; Becker, 2002), the triggering factors depending on the different needs, circumstances or characteristics of each company. Daheim and Uerz (2008) were observing that corporate foresight practices were heterogeneous across interviewed companies and that even though most managers said that the relevance of foresight had increased, a lot less said that foresight is becoming
more appreciated in their companies or in general, and only 36.8% of them sought to improve their foresight techniques and processes. Naturally, the notion of foresight, or futures research, leads one to believe the reason behind carrying out such research must be to attempt to find out what will happen next, hopefully before others. And indeed, as Rohrbeck (2012) mentions in the introduction of his article, the guiding question in this field is “Have the predictions been accurate?. Unfortunately, the future is not something anybody can just predict. Therefore, focusing on trying to get future predictions right obscures an entirely relevant aspect of this exercise: the value created through a participatory exercise of insight exchange, envisioning, debating and analyzing; the contribution of foresight to organizational learning, to questioning and breaking the dominant logic; the contribution of foresight to creating consensus, to setting a direction to understanding the implications of trends or future changes, and to bridging gaps (Rohrbeck, 2012; Vecchiato, 2010; Horton, 1999).

Vecchiato (2012) states that various foresight tools and practices can be categorized in two dimensions based on their task: the first is environmental scanning (or otherwise, the information gathering aspect), whereas the other concerns the assessment of drivers of change and their evolution, potential impacts on the company and the most appropriate responses. Furthermore, some of the most widely used techniques for the latter task are: roadmaps, scenarios, real options, simulation modeling and the Delphi method (Daheim and Uerz, 2008; Vecchiato, 2012).

Vecchiato and Roveda (2010) classify foresight activities based on a three coordinate axis. According to their research, strategic foresight activities can be classified according to three criteria: the major focus (field), the level of analysis (mainly who in the organization is interested in the results of the exercise), and the time horizon. Technology monitoring, trend analysis and such techniques focus on the industry that the company is active in, as the forces originate from within the company’s immediate environment (Vecchiato and Roveda, 2010; Cuhls and Johnston, 2008; Rohrbeck, 2010). Depending on their industry, size or type of company, some companies also analyze macro factors such as economic trends, gross domestic product (GDP), etc. (Vecchiato and Roveda, 2010). These are usually referred to as PEEST (Political, Economic, Environmental, Social and Technological factors, or PESTEL framework (Jansson, 2007). As strategy can be divided into corporate, business and functional (or operational) strategy (Grant, 2010; Timlon, 2014), so too foresight activities can be
divided according to the purpose they serve. For example, many companies conduct foresight activities in order to support corporate endeavors such as exploring new markets, assessing the potential success of a new business field and so on; foresight could also be carried out in order to evaluate which competitive advantage should be pursued in the long run (business strategy) and so on (Vecchiato and Roveda, 2010). Additionally, as described above, foresight exercises can have a short term (1 year) or a longer term scope (Rohrbeck, 2010; Vecchiato and Roveda, 2010).

More relevantly, Vecchiato (2012) developed a framework of foresight application in coordination with the type of environmental change. The framework is illustrated to the right. Vecchiato and Roveda (2010) identify that the level of uncertainty in an environment is mainly generated by two factors: the complexity and rate of change. Complexity is given by the number and heterogeneity of factors and changes in the environment which are relevant to the organization; the rate of change refers to the frequency with which changes occur in the environment (Vecchiato and Roveda, 2010).

Vecchiato (2012) then came up with a classification of the different characteristics of environment uncertainty, so that industries can be better compared based on them. These are related to levels of complexity, speed, and heterogeneity of drivers of change. The ways and reasons companies have to carry out foresight exercises are correlated with the type of environment the company is in (ibid). According to Vecchiato’s (2012) research, the main difference lies within the control function of foresight: in environments with high complexity, where the heterogeneous factors are exogenous to the company, the foresight exercises have an explorative aim and seek to allow the firm to position itself well in an environment that is outside of its efforts; on the other hand, in dynamic industries, disruptive factors tend to be fewer, further between, and

![Figure 5: Prediction vs. Control Foresight Framework (Source: Vecchiato and Roveda, 2010)]
endogenous - arising from factors from within the industry such as technologies or customer needs, which the company can try to influence (Vecchiato, 2012). The aim of foresight exercises in dynamic environments then is not just positioning the company, but instead, some companies might want to act early and influence emerging trends, or changes, and pro-actively engage in the shaping of the industry (ibid). Scenarios are a widely used, very valuable tool for complex environments, whereas the firms in dynamic environments oftentimes employ roadmaps (ibid).

Regardless of how they undertake foresight exercises, the value that companies get from them is oftentimes associated not so much with prediction, but with learning (Vecchiato, 2012; Constanzo, 2004; Rohrbeck, 2010). Indeed, foresight is oftentimes linked with the concept of dynamic capabilities (Constanzo, 2004; Major and Cordey-Hayes, 2000; Rohrbeck, 2010); Major et al (2001) make a case for foresight as a core competence even. Daheim and Uerz (2008) and Reger (2001) account for different historical phases of foresight and technological foresight respectively. Both articles note the transition of foresight from a data gathering, forecasting focused exercise, to a more network-centered foresight, where the aim is focused on understanding, translating the knowledge in an interactive, participative process. Daheim and Uerz (2008) conclude from their research that the current dominant logic in foresight is trend-centered, meaning that the focus is on monitoring and anticipating the impact of trends. Their criticism of this is very much in line with Rohrbeck’s (2012) article: when focusing too much on predicting the future, the company risks being stuck in a reactive mode, and the success of foresight is being endangered by suppressing the key strategic direction-setting issues. Therefore, almost as a response to this, Daheim and Uerz (2008) note an emerging trend in foresight which they term “open foresight”. Its characteristics are transparency, an orientation toward context, and participation with a focus on communication and discussion of strategic implications rather than methodological approaches (ibid). They argue that such an application of foresight, that places contextual thinking first, and is connected to strategic planning and decision making, will resolve some of the difficulties that currently affect corporate foresight practices and will help companies get themselves out of the reactive loop into a more pro-active one; or as they put it, “In helping decision makers to shape the future by better anticipating future changes, open foresight’s contextual logic-oriented approach replaces the ‘trend – impact – reaction’ chain with ‘trend – context – strategy’” (Daheim and Uerz, 2008, p. 335).
3.2.1.3. **Tools and Methods for identification and anticipation of drivers of change**

Scenarios and roadmaps are just two of the many foresight tools. Schwarz’s (2006) study of German companies and institutions revealed that some of the most popular foresight tools are environmental scanning, trend monitoring and research and strategic early warning. Jannek and Burmeister’s (2008) study on foresight in SMEs confirmed that some of the most widely employed methods amongst SMEs are brainstorming, interviews with experts, and naturally, desktop research. Most SMEs regularly scanned their environments and used foresight early warning systems (ibid). There are various tools available to identify trends, wild cards and drivers of change (Rorhbeck, 2011; Amsteus, 2011). However, for the purpose outlined in this work, the focus will be on only a few, identified as either established or best practices, or proposed by researchers as solutions to identified obstacles.

As previously mentioned, approaches to foresight have become increasingly about communication and participation. Therefore, it is no surprise that for data gathering, Rohrbeck (2010) identifies the use of networks and scouts as a best practice in the telecommunication industry. The importance of networks for foresight has not only been acknowledged before, but it is also increasing (Daheim and Uerz, 2008; Reger, 2001; Major and Cordey-Hayes, 2000). As no business is an island (Håkansson and Snehota, 1989), staying connected and developing a network of informants is just as important as establishing a network of business contacts. Important knowledge can only be transferred through people and social interactions (Nonaka and Konno, 1998; Huber, 1991). Rohrbeck (2010, p.125) cites one of his informants saying that “80% of all information is channeled through people”. As described above, one of the some of the most widely used foresight methodologies include expert interviews and workshops with various groups of stakeholders. Furthermore, part of the reason why people are important in the information gathering step of foresight is because they can absorb much more contextual information and therefore also help understand phenomena or events better, and they can perform better than automated search engines in environments with uncertain terminology (Rohrbeck, 2010).

3.2.2. **Understanding of Foresight Results**

One of the key aspects of analyzing trends or making predictions about what the future might bring about is making sense of these predictions and understanding what they
mean for the company and the context in which it is active. Vecchiato (2010), based on previous research, distinguishes between two different types of uncertainty: state uncertainty and effect uncertainty. State uncertainty refers to the difficulty in predicting what drivers of change will develop next, which events might occur or how aspects of the environment might change, whereas effect uncertainty refers to the difficulties in predicting the impact that these changes will have on the organization (ibid). The second type of uncertainty in particular leads to response uncertainty, or otherwise faces managers with the challenge of preparing and responding to these possible changes (Vecchiato, 2012). To illustrate, state uncertainty is related to questions like: “What will be possible with 3D printing in the future? Will people be able to print food? Or houses?”. Effect uncertainty refers to managers trying to peer into what the potential changes may mean for their company and therefore, for a construction company for example, managers might face questions like: “What will this mean for our industry? Will our competitors start printing 3D houses? Will these bring the demand for our product down?” and as for response uncertainty, it is reflected in questions like: “Should we invest in large-scale printing technologies? Should we try and lower our costs? Should we invest more in marketing?”.

In the McKinsey study, the authors discussed the situation of the large financial institution which served as a case study in the following manner: “One thing we’ve seen is that the bank’s ability to manage uncertainty, which cuts across at least four of the seven modes highlighted in Exhibit 2 7 (forecasting, searching, choosing, and evolving), is a work in progress, as is the case at many firms. As a result, there is a tendency to leap from diagnosis to commitment without doing enough work on forecasting, exploring alternatives, and constructing packages of choices—or, for that matter, thinking about how a strategy should evolve as the passage of time resolves uncertainties embedded in the assumptions underlying it. At the global bank, developing these uncertainty-management skills is part of the journey that is still under way.” (Bradley, Bryan, and Smit, 2012: p.6). This company is not the only one to spend little time on understanding what the insights of foresight mean for them and their industry. Reid and Zyglidopoulos (2004) also discuss the implications of lack of understanding in the failure of companies, even large ones such as Unilever. The question then is how do companies make sense of foresight insights, or how should they make sense of it?
As pointed out above, there are several tools which managers use in order to “marry” the insights of foresight with context and strategy. In this sense, it is important to understand that there are several factors which contribute to how the insights of foresight are understood or applied. First of all, translating the results of foresight and contextualizing them for the company may not be easily done by managers alone. In this sense, Horton (1999) describes interpretation as a participative step, or a step in which third parties should be invited in order to help managers tease out the implications of foresight. In this respect, the concept of open foresight or networked foresight will be discussed (Daheim and Uerz, 2008; Heger and Boman, 2014). Secondly, based on Alsan (2003) and McKay and McKiernan (2004) a framework will be developed for the integration of bias awareness in foresight and strategy. This will lead to the final step: the integration of foresight with strategy.

3.2.2.1. Interpretation and Open Foresight

Horton (1999), which is one of the most widely cited frameworks of foresight, mentioned that the interpretation phase in foresight is the one that adds the most value. It is important though to ensure that the right interpretation is drawn, or at least an interpretation that is as accurate or appropriate as possible (ibid). In order to introduce the idea behind this section, consideration should be given to the following statement: consensus on an issue may not indicate certainty; consensus does not indicate that the appropriate understanding has been reached, but rather that a shared understanding has been reached.

As strategic management is very much concerned with the future, and managing for it (Prahalad and Hamel, 1995), a lot rides on the image that the companies hold of that future. Horton (1999) argued for the importance of third parties for the process of interpreting, or otherwise drawing meaning from the information a company gathers. As she puts it: ”It is always assumed that managers somehow automatically realize what a change in the future external environment means for the future of their organizations. They do not.” (Horton, 1999, p 007). Almost as an answer to these challenges, Daheim and Uerz (2008) identify a fourth emerging wave of foresight: open foresight. Open foresight addresses the paradigm shift, to a society with increased socio-cultural dynamism where everything is inter-connected and is built around the idea that companies can shape this environment through anticipation via an open, networked dialogue (Daheim and Uerz, 2008). In short, this wave of foresight calls of the
integration and participation of several parties from within and outside of the organization. Based on the term *open innovation*, the term draws in concepts such as network competences, which describe the use of innovative networks by focal firms (Gemunden *et al.*, 1996), and collaborative innovation (Rohrbeck, 2010). Part of the purpose of open foresight is to offer diverse inputs into the process of foresight, to challenge dominant perspectives and to also provide a contextual logic (Daheim and Uerz, 2008). Thus, the participation of third parties and the inclusion of a business’s network in the foresight process have gained more importance as a way to increase foresight value.

**3.2.2.2. Interpretation and Inherent Biases**

Another reason for including third parties is not just to help managers think inclusively, outside-the-box or laterally, but to help challenge inherent biases, company culture, institutionalized modes of thinking (Daheim and Uerz, 2008). Vecchiato and Roveda (2010) use examples from the Pharma industry in order to point out that depending on held up assumptions, or managerial mental models, different companies react in different ways to the same set of events, or the same information. Furthermore, as in the case of Polaroid, and examples of similar companies abound, not realizing the limitations of the dominant logic can lead companies into disaster (Tripsas and Gavetti, 2000). Therefore, another important aspect of getting the picture of the future right, and of appropriately preparing for future changes, is challenging these mental models and the currently held up assumptions (Vecchiato and Roveda, 2010).

The works of McKay and McKiernan (2004) and Blackman and Henderson (2004) complement each other quite well and build towards a frame for better understanding of information and foresight. They both critically touch on the issues of biases, entrenched mental models and perceptions of the future.

Firstly, McKay and McKiernan (2004) argue for the importance of hindsight in foresight, as the future flows from the past to the present and into the future. They describe foresight as the product of a constant back-and-forth between a present analysis of the past and then an estimation of the future (ibid). The authors underline several biases that lead to misconceptions and affect our understanding of drivers which stem from the past, are active in the present and become uncertainties in the future. Counterfactual analysis is presented as a way to counteract these biases and fortify
foresight techniques (McKay and McKiernan, 2004). The authors also identify sets of biases which affect the way managers look at different timelines. These biases are further presented based on the timeline section the affect. Furthermore, they are also presented in terms of the type of knowledge needed by managers, as discussed by Alsan (2003).

Foresight bias happens at the conjunction hindsight bias with creeping determinism - a term used to describe the phenomenon of reflecting on the past and concluding that things could not have happened otherwise (McKay and McKiernan, 2004). This can also be seen in people taking their perceptions and assumptions for granted, which ultimately leads to over-confidence (we are sure we know what we know) or over-pessimism, faulty reasoning or logical path-dependencies (McKay and McKiernan, 2004).

Memories of the future is a concept which describes the cognitive tendency to create a certain set of templates for the future, based on our past experiences, and then mainly register information which fits or re-enforces one of our *inner futures* (McKay and McKiernan, 2004). Lastly, counterfactual analysis describes the “what if” mode of thinking, which can be very useful in challenging current understandings of the past and thereby also the memories of the future (McKay and McKiernan, 2004). Thinking in terms of alternatives, which is the mark of counterfactual analysis, has the characteristic of keeping the thinker from settling, or becoming too sure of one option. “*So ‘if/then’ is a warning sign, and all presumptions phrased in the contingent form become prime targets for testing*” (McKay and McKiernan, 2004, p. 175).

Counterfactuals are not the only way of re-enforcing foresight processes a company’s vision of the future. Blackman and Henderson (2004) discuss the importance of doubting for a company’s learning process, meaning for that company’s ability to
synthesize information into understanding. They distinguish between two types of doubting: single loop doubting and double loop doubting. Single loop doubting refers to a process which is most commonly encountered in companies: when a new stimuli is recognized as different from what might have been expected and as a result explanations for this are generated; people then tend to take the explanations which are congruent with existing mental models and therefore, the result of this process is the re-affirmation of the accuracy of existing model (Blackman and Henderson, 2004). The other type of single loop doubting allows for the possibility that the new difference may be itself doubted (through doubting the source, or relevancy of the stimulus) or, the mental model may be expanded to account for the new stimuli, both of these concluding in a re-affirmation of existing mental model (ibid). The problem arising from this is that in this way, the company only opens itself to incremental modifications and that single loop doubting is self-referential and may not lead to genuine foresight (Blackman and Henderson, 2004). The authors then propose a process of double-loop doubting, which is not based on finding information in order to support current views or explanations, but starts by doubting the mental model itself (ibid). The principles underlying the proposed doubting process are based on Karl Popper who understood that knowledge is fallible and are as follows:

- “It is easy to obtain confirmations for every idea if they are looked for. The volume of supporting evidence is related to a mental model’s lack of content, plasticity and imprecision, rather than its veracity.

- Confirmations only count if they are the result of risky predictions; that is the testing could have shown the mental model to be false. [...]

- A mental model that would allow foresight is one that rules out many future states, not one that is consistent with many.

- A theory which cannot be refuted is a poorly constructed theory as errors cannot be detected.

- Supporting evidence can only be derived from genuine but failed, attempts to show the mental model to be wrong.” (Blackman and Henderson, 2004, p 263)
3.2.3. Strategy Formulation

The last part of this chapter tackles what Vecchiato and Roveda (2010) term response uncertainty, meaning the uncertainty managers face in responding to acquired understandings of the future. The following quote aptly illustrates the disconnect between knowledge and action which managers face:

“On the one hand in the majority of cases non-operationised trend information provided to corporations often leads to ‘trend stand-alones’, e.g. trend reports, with very limited connection to core strategic processes. [...] On the other hand, trends have not only become overstretched owing to trend overdoses and trend hypes in the 1990s, but trend information is increasingly becoming a commodity” (Daheim and Uerz, 2008, p. 333).

This statement refers to a particular tool, or type of knowledge. However the same statement can be expand to encompass most of the knowledge gained on foresight in order to bring to light an essential dilemma that is also at the core of this thesis: how can companies gain the most returns from their acquired wisdom, or otherwise, how can the results of foresight be best integrated into strategy and thereby into action.

Vecchiato and Roveda (2010) argue for the importance of developing strategy in a way which doesn’t sustain the industry but anticipates the change by putting the identified driver (or future) first. As they identified, many companies fail because they didn’t start the process of formulating their strategy with the driver of change (Vecchiato and Roveda, 2010). One of their examples is of Kodak, a company which saw the shift towards the digital and yet did not manage to appropriately respond to it basically because they asked themselves how they could adapt their value chain to accommodate this shift instead of asking what new needs are created by this shift and what is the best configuration to address these needs (ibid). Another illustration can be found in Grant (2003), as only few of the oil industries started their strategy formulation with the identified potential change. There is a deeply meaningful difference between thinking in terms of “How to adapt current business models?” and thinking in terms of “What are the best models to cater to the identified emerging trend?”. As Vecchiato and Roveda(2010) conclude, when faced with disruptive change, the traditional ways of analysis are not enough; instead, companies need to put the driver first when thinking about strategy, in order to fully understand the meaning and consequences.
3.3. Synthesis

As extrapolated from Horton’s (1999) framework, the theoretical ground for analysis consist of three stages: 1) collection, collation and summarization, 2) translation and interpretation and 3) assimilation and commitment. This is because in order for companies to better prepare for the future, they need to better understand what future they are facing (Vecchiato and Roveda, 2010). Therefore, foresight results need to be more accurate. The theoretical framework then addresses this by structuring the analysis in these 3 phases:

1) The information acquisition phase of foresight. Improvements are addressed by looking at:
   a. When is foresight acquired
   b. How is foresight carried out

2) The interpretation phase. Improvements regarding how to reach a more accurate and wholesome understanding of the information acquired in the previous phase are addressed

3) The response phase. The analysis seeks to uncover ways of improving the way companies respond to the understanding gained in the previous phase.

These 3 phases correspond directly to the three research questions:

1) How do companies employ foresight to identify and anticipate drivers of change?
2) How do companies understand the effect of these drivers on the industry the firm is active in and its competitive position within it?
3) How are the results of foresight integrated in the formulation of strategy?

Furthermore, they are integrated in the model shown in figure 6 in the following way: how companies employ foresight becomes evident when looking at the sources and the timeline. How the information is interpreted is strictly linked to the biases column of the model, and the steps taken to challenge the current picture. Lastly, the response, or how all of these are integrated into strategy, becomes evident at the end.

Phase two will be analyzed and illustrated based on the model in Figure 6. The model incorporates the different content, or knowledge which managers need on one level,
based on Alsan (2003) and Grant (2008), the different sources from which this knowledge is obtained are exemplified, as well as the biases which are inherent when understanding the data generated from the knowledge. Lastly, the model illustrates the need for challenging the existing model, or the dominant logic. In order to reach genuine foresight, or an understanding that is as close or as appropriate as possible, the techniques described above are recommended: open foresight, counterfactual analysis and/or double loop doubting.

The synthesis is illustrated in the model below. The right side of the model contains the incremental phases which ultimately result in insight for strategy formulation. These are, as explained above, extrapolated mainly from Horton (1999). On the left side, the sources of the knowledge which goes into these phases are outlined. Finally, biases are exemplified on the far left side for each of these sources and stages. The model is divided into time frames, not only to emphasize the flowing temporal nature of foresight, but also the fact that hindsight knowledge is needed to generate foresight. The

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**Figure 8**: Framework of strategy generation (Source: own)
time frames are arranged in a top-to-bottom order, as the model is meant to be read from
the top down. Going through the model simulates going through the different stages for
strategy formulation, and the “Challenge current picture” barriers are there to suggest
points in the formulation process where the participants should try to challenge their
understanding.

The Collection phase is where all the information needed for the process is collected
through various sources. The information is analysed in order to gain understanding in
the following phase, Analysis. Divergence is a phase in which different or contradictory
views and opinions are sought out. Foresight is the phase in which foresight knowledge
is generated, and Convergence is the phase or step in which the discussions and
collected knowledge are brought together and converge towards a common
understanding or insight.
4. EMPIRICAL STUDY

The fourth chapter is the empirical chapter where all the data which will serve as material for the analysis will be presented. This will include secondary as well as primary data. Each company will be presented individually. The structure of the presentation will be in terms of brief background information on the company and the industry, and the interview findings based on the three sub-questions.

4.1. Tata Consultancy Services

4.1.1. Background

Tata Consultancy Services, part of the Tata Group, is one of the largest business conglomerates in India with a presence in over 118 countries and a workforce of around 300,464 people (Tata Group, 2013). TCS was established in 1968 as a division of Tata Sons Limited. TCS Ltd. got incorporated as a separate entity on January 19, 1995. Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global businesses by ensuring a level of certainty (TCS, 2014). The TCS revenue in USD in fiscal 2013 was 11.57 billion. The following industries contributing to revenue of the Company: (1) banking, financial services and insurance; (2) manufacturing; (3) retail and consumer packaged goods; (4) telecom, media and entertainment and (5) others (TCS, 2013). The main TCS capabilities are strong domain expertise in banking, financial services & insurance, retail and consumer packaged goods, telecom, media and entertainment, manufacturing and other verticals which include hi-tech, life sciences & healthcare, energy resources & utilities and travel transportation & hospitality (TCS, 2014).

The TCS’s strategy for long-term profitable growth is based on continuously scaling its core IT services business, while investing in new customers, services, markets and industries (TCS, 2014). According to TCS annual report (2013) the company’s strategy of strengthening the current business and investing in the future revolves around customer centricity, full services portfolio, global network delivery model and non-linear business models. The mission of the company is “to help customers achieve their business objectives by providing innovative, best-in-class consulting, IT solutions and services” (TCS, 2014).
4.1.2. Business environment

The uncertain economic environment of TCS, increasing competition, stricter regulatory and compliance framework, changing consumer behavior are forcing businesses to adapt to change and continuously look for ways to stay relevant to the market and customers (TCS, 2014). The technology is the main driving force for the dynamic industry of TCS; the businesses have to find ways to keep re-inventing themselves for the future and invest in building capabilities to predict market dynamics and consumer behaviors (TCS, 2013). According to the annual report of TCS (2013) technology and innovation are being seen as growth drivers across all markets. The worldwide spending on technology and related services in 2012 was USD 1.9 trillion (NASSCOM, 2013), a growth of 4.8% over 2011. Spend on IT, BPO and software products, continued to have the majority share of 58% of total IT spend (NASSCOM, 2013).

The global sourcing market was twice the growth rate of the global IT spends in 2013 in compare with 2012 (IMF, 2014). Furthermore banking, financial services & insurance and manufacturing remained the largest verticals in terms of total share in IT spending, emerging verticals such as healthcare, retail, government and utilities were the drivers of incremental growth in 2012 (TCS, 2013). According to NASSCOM (2013), the large North American IT market continues to expand at a faster pace of 5% than the economy. Investments by American corporations in innovation and digital technologies is driving the growth in technology spend.

Despite the changing and volatile economic environment, the global market offers substantial opportunities, thus not only new sources of competition came to the fore, but the key activities of the value chain and components of the industry radically changed. TCS is fully geared to navigate through the changing technology demands and customer expectations. Company is working with its clients in a ‘co-creation model’ and helping them to innovate new business models, products & services in order to protect and grow their market base (TCS, 2013).

4.1.3. Foresight

4.1.3.1. Change identification and anticipation

The interview with Mr. Jithesh Jayaraj the Pre-Sales Head - Hungary GDC at TCS Hungary have been conducted 13th of May 2014 in TCS Budapest office. Mr. Jayraj
initially said he was not familiar with the concept of foresight and at the same time company employs many foresight tools and process. TCS They support a broad type of industries and their business growth is directly related to their customer’s growth. Therefore, TCS understands that the foresight of their customers has a direct impact on their business, as it dictates what services and what support will be needed form TCS in the future. According to the interviewee, where they can be relevant for their customer’s future decides their foresight, as being relevant is the fundamental principle driving their foresight. TCS has a Corporate Intel department which is responsible for foresight for the entire organization. Also, all regions and business units are involved in strategy and therefore also foresight. In Hungary, their strategy is handled by the Pre-Sales Team, and they are the ones who also carry out foresight.

In order to peer into the future, TCS engages experts, consultants industry analysts and they also do their own research to understand the possibilities. Mr. Jayrej added that TCS disruptively innovates their models. They have an emphasis on innovation and toward this they employ different foresight tools at different levels.

TCS continuously engages in foresight because their business environment is ever-changing and therefore they need to keep innovating and their strategy needs to be constantly evolving. In Hungary, foresight seems to be also triggered by new events or new requirements and Mr. Jayrej said that if he had to put a frequency on it, it would be approximately six months.

In terms of using their network for foresight, Mr. Jayresj mentioned TCS had Business Intelligence Systems and they also additionally use their customers and partners. For example, they get information from customers about their plans and understandings of the future and then they use it to identify opportunities and develop strategic implications about their business. Mr. Jayrej also explains that TCS taps into its 300.000 strong network of “brains”, who also have their networks, in order to source information through innovation collaboration tools for example. They have a continuous idea generation exercise – Forecasting, Innovation, Transformation.

4.1.3.2. Understanding of Foresight

As Mr. Jayrej described, at the end of the day, it is people who are involved in these activities and these people will have their own cognitive biases. He said that the way these biases are mitigated is through validating them against relevant data. Mr. Jayrej
considered it very important to find the data to substantiate your innovation, idea, understanding, etc. He also adds that it is important for companies to have a professional foresight exercise, and so it does not make sense to bias this exercise, because then it is no longer relevant. They are aware that having biases will not help them stay relevant for their customer’s business, which they consider a key aspect of remaining competitive in today’s industry. People will have biases, which is why it is important in Mr. Jayrej’s opinion to validate arguments with data, because if there isn’t a lot of data he believes the bias will influence the information.

Mr Jayresj said that most of the information of future trends and future growth comes from analyses from sources such as PWC, KPM, etc. But for him, that is the first phase, which is followed by research to “find the truth”.

4.1.3.3. Strategy Formulation

“I don’t believe in taking right decisions. I take decisions that make them right”. Mr. Jayresj said that he thinks this is part of TCS culture sometimes. He said they set a vision, then they try to understand how they can achieve it and they achieve it. Mr. Jayrej says strategy is holistic thinking and a company needs to look at the industry of their customers, as well as at the resources they needs. TCS has half-yearly formal strategy planning meetings, but informally, people at executive management level “think strategy” everyday.

4.2. Ericsson

4.2.1. Background

Ericsson is a Swedish world-leading provider of communications networks, telecom services and support solutions. Ericsson has been founded by Lars Magnus Ericsson in 1876 (Ericsson, 2014). The company offer comprises services, software and infrastructure within Information and Communications Technology for telecom operators and other industries, including telecommunications and IP networking equipment, mobile and fixed broadband, operations and business support solutions, cable TV, IPTV, video systems, and an extensive services operation (Wikipedia, 2014). Ericsson is the world leader in the 2G/3G/4G mobile network infrastructure markets in 2012 (Ericsson, 2013).
According to the annual report (Ericsson, 2013) the company’s long-term strategy framework, determined to become the industry leader in the Networked Society and consist of three components:

- “Excel in core business – radio, core and transmission, and telecom services;
- Establish leadership in targeted areas – modems, cloud, IP networks, TV and media, as well as OSS and BSS;
- Expand business in new areas” (Ericsson, 2013, page 8)

The vision of the company: “To be the Prime Driver in an all-communicating world” (Ericsson, 2014).

4.2.2. Business Environment

There are three factors which driving the evolution of the Networked Society greater mobility, better broadband and more access to cloud-based services in the world (Ericsson, 2013). According to KPMG Technology Innovation Survey (2012), there are approximately 6.7 billion mobile subscriptions around the world and the proportion is constantly increasing due to the deploying new radio base stations around the world.

Ericsson ConsumerLab (2014), state that different generations of mobile technology are reaching out to more and more people every year. GSM/EDGE covering more than 85% of global population technology and has widest reach today (Ericsson, 2013). The increase users of internet access, the growing affordability of smartphones and regulatory requirements to connect the unconnected, will drive to expanse new technology like WCDMA/HSPA (Ericsson, 2013). According to LTE (2012), it was estimated that the technology covered 10% of the world’s population. Moreover Ericsson ConsumerLab (2014) predicts that this will increase to more than 65%.

The continued growth of smartphones are changing consumer behavior and creating new lifestyles around the world (Ericsson ConsumerLab, 2014). Another factor of drivers of changes is the accelerating usage of tablets of which only around 25% are currently connected to mobile networks (Ericsson, 2013). The opportunities that these drivers of changes represent will increase demand for networks, drive the expansion of mobile broadband and pave the way for growth in new information services and data business (Ericsson, 2013).
4.2.3. Foresight

4.2.3.1. Change identification and anticipation

The interview with Mr. Arslan Ali the Project Leader Solution Architect at Ericsson Hungary have been conducted 15th of May 2014 in Ericsson Budapest office. Mr. Ali was familiar with the concept of foresight and understood it as “something related to strategy” and he confirmed that Ericsson does indeed carry out foresight exercises. He mentioned that the most important aspect was the R&D aspect, especially since Ericsson is a technology leader in mobile communication, and therefore they also invest a lot in R&D foresight to stay ahead. For example, there is a department in Ericsson, called Consumer Lab, which gathers data from different countries and they use this data for themselves but also for their customers.

For foresight they have a separate department, called Group Function Strategy, which is global. Every region is in charge of developing their own strategy, but the Group Function Strategy department is in charge of foresight for the corporation and uses tools such as data mining. Ericsson also purchases studies from KPMG and Deloitte for example, hey gather data by themselves as described above, they use information gathered from their network which is present in more than 180 countries and then they store it digitally and make it available for the entire company, they also employ consultants regularly from different backgrounds And they have collaborations with different partners. For example, Ericsson, along with Samsung and Facebook among others, are involved in an initiative called internet.org which is a manifestation of their shared vision that every person on the planet should have internet. Ericsson predicts that by 2050, there will be 50 billion connections, and they are preparing for that (by for example researching machine-to-machine communication).

Mr. Ali noted that in order to survive in a fast changing business, they need to do foresight constantly. As he said: “in this field, if you are not ahead of the competition, you die very quickly”. Ericsson uses their competitors to gain more certainty about future changes, for example if competitors also agree that a certain technology will be the future.
4.2.3.2. Understanding of Foresight

Ericsson said strives to be no. 1 in everything they do, and part of their company culture is about persistency. Mr. Ali said that they are aware that they can be biased sometimes. However, he mentioned the diversity of the Ericsson workforce, and that they have well established processes which they follow. He added that they try their best to keep them in mind. Furthermore, Mr. Ali mentions that Ericsson is set up so that there is room for understanding to be challenged from the inside and that employees can challenge leaders and their vision of the future and of strategy. Mr. Ali articulated that they also hire external companies for this purpose and that they consult consultants. In the end, he concludes by confirming that Ericsson does indeed challenge their understanding and the implications in these ways, from within and without.

4.1.3.3. Strategy Formulation

Ericsson meets for strategy every year and they set their goals according to foresight insights. The goals are reviewed every year, and then they set parameters to indicate to what extent the goals have been achieved. When they identify new areas, or identify areas for improvement, they call them “strategy focus areas” and then they assess if they need more resources, more research or different competencies in these areas, and then they invest in them.

Mr. Ali described that the strategy formulation process for Ericsson goes approximately like this: business intelligence, scanning, strategy forecasting, then strategy development (at a global level and regional level), then they carry out portfolio management accordingly (they perform acquisitions, or divestments or develop partnerships, depending on the identified necessities), then they set targets and after the process ends with strategy execution and strategic program managements.

Mr. Ali described that the company knows their strengths and weaknesses very well and they know which business areas are emerging for them. He said that the quickest way of developing a solution is buying that solution. Mr. Ali called changes “opportunities” and said that if the opportunity lies in an area that is strength, they do not need to do something new and instead they use their experience and resources. If the opportunity is in a new area, they acquire companies which can help. Mr. Ali says they think in terms of exploiting drivers to improve their current products.
4.3. Albemarle Corporation

4.3.1. Background

Albemarle Corporation was incorporated in Virginia in 1993. The company is a leading global developer, manufacturer and marketer of highly-engineered specialty chemicals that meet customer needs across an exceptionally diverse range of end markets including the petroleum refining, consumer electronics, plastics/packaging, construction, automotive, lubricants, pharmaceuticals, crop protection, food safety and custom chemistry services markets (Albemarle, 2013). Albemarle employs more than 3,900 people worldwide and serves customers in approximately 100 countries through two recently aligned global business units: Performance Chemicals and Catalyst Solutions (Albemarle, 2014). According to annual report (2013) Albemarle’s growth strategy focuses on its core bromine and catalysts businesses, with emphasis on maximizing the profitability of its existing bromine and high-value bromine derivative products, more rapidly developing and commercializing new applications for bromine, strengthening and growing its catalyst franchise and achieving operational excellence through its One Albemarle initiative.

4.3.2. Business Environment

The business environment of Albemarle Corporation characterizes by complexity, due to the fact that trajectories of technologies and customer needs are well-established, and thus company compete for market share at the international level. In the chemical industry, the main drivers of change for Albemarle Corporation have been: the growing concerns about climate change and the related imposition by governments of more stringent regulations (Albemarle, 2013). The industry has also been exposed to rising raw material prices; steep rises in energy costs; growing ecological concerns, such as the REACH (Registration, Evaluation and Authorization of Chemicals) regulations impose significant additional burdens on chemical producers, importers, downstream users of chemical substances and preparations, and the entire supply chain. This will result in increases in the costs of raw materials which company purchase, as well as sell (Albemarle, 2013). According to Albemarle press release (2014) increases in the costs of chemical products could result in a decrease in their overall demand; additionally, customers may seek products that are not regulated by REACH, which could also result
in a decrease in the demand of certain of Albemarle’s products subject to the REACH regulations.

Moreover, the rapid development of ICT tools has made the chemical market far more transparent, increasing the pressure to optimize commodity production (Vecchiato, 2012). Also it gives opportunity for the company to capitalize on the “green revolution” by providing solutions to companies pursuing alternative fuel products and technologies (such as renewable fuels, gas-to-liquids and others), emission control technologies and other similar solutions (Albemarle, 2013).

4.3.3. Foresight

4.3.3.1. Change identification and anticipation

The business people are the ones responsible for foresight. The company has three main divisions: Chemicals, Polymers, and Catalysts. Mr. Svitych belonged to the Catalysts department, which is strictly related to the oil industry, as the catalysts are used in refineries. He was familiar with the concept of foresight, and he confirmed that Albemarle carried out foresight quite regularly and in many forms.

Executive Level:

1) Strategic planning. This is done at executive management level, where the direction is set for the entire company. Once every quarter, the company has a, so called, Virtual Town Hall Meeting in which the goals and directions are communicated to all employees.

Business Level:

2) Forecasting. For example, the company forecasts how many supplies will be needed for the entire year, as they need to know which customers will need supplies and how much. Mr. Svitych mentioned that there are longer term forecasts as well, that happen at larger levels.

3) Scenario Planning, which happens at the business level (meaning a level higher than middle management, but lower than Executive level). As Mr. Svitych mentioned, they take part in seminars and seek to improve their Scenario (and other) foresight skills. He also mentioned Economic Scenario Planning.
4) Performance Prediction Models (e.g.: STAX Model). These are models which predict how much catalysts will be used in the future by the client refineries. These models are developed with the cooperation of the Technical Support Department by, or through Business Level Managers.

All Levels:

5) Business Intelligence or Data Collection from a diverse range of sources from within and without the company (managers inside the company, consultants, special agencies). This Data is used for decision making and focuses on analysis of present situation and inferences about future states.

There is no specific department assigned with foresight responsibilities. These responsibilities are decentralized, and foresight is achieved in a network consisting of executive level managers, business level managers, external companies and consultants, the M&A team, and the Global Experts Team (similar to a global intelligence team). Everything is collected at the Executive Level.

Foresight is carried out quarterly. Forecasting is carried out on a monthly basis and it is usually based on records of demand in previous months (hindsight). In order to create these forecasts, it is possible that modelling is used as well. The company also uses seminars, conferences and workshops as opportunities to network and gather foresight information. Mr. Svitych mentioned that for Albemarle managers, “there is never enough data”. The purpose of foresight: to get as much information as possible, to make the right decision at the right time.

4.3.3.2. Understanding of foresight

The business is organized in segments. At the business level, there is a quarterly meeting in which the data is discussed and implications are drawn. For Mr. Vitych, it is clear that Business Managers are aware of intrinsic biases and that is the reason why external consultants and external agencies are brought in and why the company doesn’t only rely on the business managers, executives, or the M&A team for example. Albemarle holds meetings and workshop and discusses implications.

4.3.3.3. Strategy Formulation

The company develops several products which may fulfil customer’s needs. Mr. Vitych added that the company has a proactive approach. They look at refineries, at their clients
and they try to understand what needs they might have in the future and they create solutions for those needs today, so that they don’t have to waste time in the future to respond to the change. However, Mr. Vitych added that in other aspects (financially for example), the company is reacting to change.

Their R&D unit uses foresight research to develop products which may be used in the future. The R&D unit work closely together with business managers, but the relationship is one way: business managers communicate needs and trends to R&D Unit.

4.4. Bungalow.Net

4.4.1. Background

Bungalow.Net is the online tour operator, which offers holiday homes in Europe. Bungalow.Net founded in 1996, now this web page offer the choice of a wide range of holiday accommodations, there are 30616 unique holiday houses in the data base of the web page. Yearly, the company has 27 451 285 unique visitors (Bungalow.Net, 2014). According to the company web page (2014), Bungalow.Net has cooperation with other tour operators across the world. The heard office of the company situated Willemstad, Netherlands Antilles and also company have offices in 5 European countries (Bungalow.Net, 2014).

4.4.2. Business Environment

The online travel category has continued to experience significant worldwide growth as consumer purchasing shifts from traditional off-line channels to interactive online channels, including mobile, tablets and other network gadgets (Priceline Group, 2014). According to WTTC (2014) tourism is the world's largest civilian industry and accounts for nearly 40 % the world's GDP. Hence, online travel category has emerged to occupy a central place in tourism marketing. According to WTO's Tourism 2020-Vision the international arrivals are expected to increase by 200% to reach over 1.56 billion by the year 2020 (WTTC, 2014). On-line tourism is an intensively competitive market, due to competition with both online and traditional reservation services. Also, based on on-line platform it is easier to launch new services at a relatively low cost (Citrin et. al, 2014).

Greengard (2003), says, that there are few factors could cause consumer to increase shopping behaviour to make a travel purchase. For instance airfares, because traffic
becomes less likely to result in a purchase on website, such traffic is more likely to be obtained through paid online channels. Also trend in consumer adoption and use of mobile devices create new channels for on-line tourism (Priceline Group, 2014).

4.4.3. Foresight

4.4.3.1. Change identification and anticipation

Mrs. Roman was familiar with the concept of foresight and also confirmed that Bungalow.net carries out foresight exercises. They try to predict the changes that will take place in the travel industry and other industries which the company caters to. Twice every year, the board of managers meets (in April and in October approximately) and for a week they discuss what each department has done and where they are going. For this, every manager is expected to make a plan.

For foresight, political and economic changes are taken into consideration, travelling needs; marketing research is done for every department.

Mrs. Roman mentioned a situation in which the company’s projects were negatively affected because the company did not anticipate a change in technological expectations. They realized that people were using mobile device much more intensely than anticipated for looking at and booking holiday homes. This prompted the company to think about what resources they need to cater to this change. Moreover, the realization was based on analysis of past statistics with a widely used Google tool: Google Analytics. As Mrs. Roman said, from this analysis, they could deduct future trends.

Bungalow.net does not have a standing foresight department. Instead, every internal department is responsible for its own foresight research. Mrs. Roman mentioned that managers have to anticipate from Google’s point of view, to try and predict what they will do next. Therefore, every three months they have to research and predict what type of algorithms they are looking for, if there is a shift in travelling trends etc. The information is then compiled in a report and circulated among the managers of the different departments so that the company can react and prepare for the changes. The order in which the report is not fixed, but it depends on the information identified and what changes are needed. The heads of each department is responsible for circulating information among the people in their department. Since timing is set in accordance with the touristic seasons, as the company needs to anticipate and prepare before their coming.
For the purpose of foresight, Bungalow looks at partners and competitors, they rely heavily on Google Analytics tools, use reports from the travel industry (which are produced annually). They do not purchase research and do not rely on consultants. Furthermore, they do gather foresight information from business partners and clients. They provide an analysis of the past six months, in terms of several criteria, and based on these they predict what will happen in the next 6 or so months. They do this using scenarios. Mrs. Roman explained how different scenarios are formulated and strategies are developed to handle each of these scenarios.

Before meetings, all department heads prepare with materials and research. Before the last management meeting, the marketing department provided in-depth research about the a new foreign market in order to provide support for the discussion on whether the company should enter the market or not. The research was to understand how they should go into the market, and whether it is feasible to do so.

The purpose of foresight at Bungalow.net is to ensure that the company is headed in the right direction and that they do not make wrong steps in the future. They sometimes use foresight to influence. For example, if the company is interested in a certain location to become more popular and discovers that the trends are shifting the an opposite direction, they will promote the desired market more heavily to counteract trends and bring it to the forefront. Foresight is used more for planning.

4.4.3.2. Understanding of foresight

As far as Mrs, Roman could tell, there is no set process for understanding foresight results. However, they do meet and discuss their findings. The managers and the CEO of the company are important resources in this sense. Furthermore, whenever a potentially significant or alarming information is uncovered, it is first circulated on an internal server. A decision is then taken on whether the uncovered information requires immediate attention or it can wait until the bi-annual meeting. These meetings were described as a “constant flow of ideas” where participants each add their understanding of the issue. The understandings and ideas are then coagulated or formulated into scenarios.

Mrs. Roman mentioned the language barrier as a potential source of bias. Since none of the managers are native speakers, they might not understand the data fully. In terms of challenging them, members with more experience or seniority are used to validate and
clarify understanding. Once scenarios have been created, or consensus has been reached, there is no process in place to challenge the current view or to doubt that the right understanding has been reached. Furthermore, these discussions are carried out internally and third parties are usually not included.

**4.4.3.3. Strategy Formulation**

After such a management meeting, a summary is compiled and made available on the internal server. Mrs. Roman explained that the company has a corporate, overall strategy, but that also every department is responsible for planning their own strategy in accordance with the corporate strategic direction. Therefore, once the general direction is set in the bi-annual meeting, each department meets to plan their own strategy in response. In turn, the results of department-level strategic planning are uploaded on the server so it is communicated to the rest of the company.

The company seems to have an overall vision which drives strategy, however this vision is more implicit rather than explicit. Also, sometimes this vision needs to be explained and supported with facts. This is particularly important in order to rally employees behind it and to help them understand why certain actions are taken.

When formulating strategy, the vision is articulated first. Afterwards, market data, trends and other research are brought up and scenarios are formulated based on them. Strategies are formulated to cope with the situations of all foreseen scenarios. Foresight is used in order to help the company plan to achieve its vision.

Mrs. Roman indicated that the company thinks about drivers of change more in terms of how the company can accommodate them. She also mentioned that targets are set at the beginning of every year and then re-set or adjusted after every management meeting.
5. ANALYSIS

The fifth chapter is the analysis, where the theory and the empirical data are combined in an analysis. The analysis will also be structured in terms of the research questions. The first part will be establishing the types of industries and environmental complexity. Then each company will be analyzed separately.

5.1. Change identification and anticipation

First of all, it was interesting to notice that most companies were familiar with the concept of foresight and had quite developed tools and processes in place. The managers clearly understood the significance of foresight for strategy and for the firm to be competitive or, as Mr. Jayrej formulated it “to stay relevant to the customer’s business”. The case of Bungalow.net was particularly interesting, as foresight was aptly carried out but it was heavily focused on the short term. As Major and Cordey-Hayes (2000) noted, this is common in smaller companies. Another observation was that, as Daheim and Uerz (2008) were describing, there seems to be a trend towards more networked and more open foresight.

One of the aspects that the interviews were sought to discover was the purpose of the foresight exercise in each company. This was because, as the theoretical insights indicated, companies were observed to develop different foresight systems depending on the environment they were operating in. The various types of environments have been described before by the nature of the drivers of change. Therefore, in the table below the case companies have been grouped into 3 clusters (Table 10) on the basis of the main determinant of their uncertainty, such as complexity or dynamism.

Table 10: Environments and Companies based on drivers of change (source: Vecchiato, 2012)

<table>
<thead>
<tr>
<th></th>
<th>Heterogeneity of drivers of change</th>
<th>No. of relevant drivers</th>
<th>Disruptive power of drivers</th>
<th>Relationships between drivers</th>
<th>Frequency of rise of new drivers</th>
<th>Pace of evolution of drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile communication and consumer electronics (Ericsson)</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Consultancy Services (TCS)</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Chemicals (Albemarle Corporation)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Tourism Services (Bungalow.Net)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>
The table separates the companies based on environment type and illustrates the types of drivers and uncertainty each of them faces. TCS and Ericsson both operate in a fast changing environment, with homogenous drivers of change which, on the other hand have a high power of disruption and arise quite fast. According to Vecchiato (2012), drivers can cause deep discontinuities and lead to completely new kinds of products, players and activities in the value chain. On the other hand, the drivers are born, or stem from within the industry forces, which means that the companies can have an impact on them and seek to gain advantage by shaping future changes (Vecchiato, 2012). Dynamism is the prevalent feature of this environment and both TCS and Ericsson described actions and behavior which were consistent with expectations. First of all, both interviewees remarked on the fast pace of their environments. Secondly, for TCS for example, the aim was to “disruptively innovate”, which refers to a kind of innovation which changes the way business is done in that industry. TCS has a visionary approach (they set a vision and then achieve it, they take decisions that make them right) and is more transformative rather than adaptive with their foresight and strategy. Ericsson was similar in their approach, and an illustration of this is the fact that they share a vision of the future with partners and competitors (internet.org) and they strive to create that future.

Opposite these is the case of Abelmarle Corporation, which is in the Chemical Industry where drivers are quite heterogeneous, they are numerous and also inter-connected with each other and the macro and micro environment (Vecchiato, 2012). Their disruptive power is quite low however because there are very few drivers which could completely change the chemical and oil industries. According to Vecchiato (2012), this makes the environment complex rather than dynamic. The character of foresight at Albemarle seems indeed more explorative, with a purpose of either better positioning the company or anticipating clients’ needs. For example, the emphasis was on data collection: “there is never enough data”, which illustrates a more explorative function. Furthermore, the R&D unit followed the directions of business managers, not the other way around, and there seemed to be less focus on innovation overall and more focus on planning.

Lastly, Bungalow.net is in a special branch of the tourism industry: online tourism. This industry exhibits a combination of characteristics, including a high heterogeneity and high number of drivers, but low disruptive power like in the oil and chemical industry.
On the other hand, drivers of change rise more often and they have a higher pace of evolution, making the industry more similar to the communication and consumer electronic industry. This is reflected in the fact that the company has generally an adaptive, more planning related scope to foresight and yet also uses it to change or influence. For example, if a trend indicates that travelling destinations will favor one country, and yet Bungalow.net has interests in another country, they will then modify their marketing efforts to counter-act the trend.

In three out of the four companies foresight was tightly correlated with strategic planning meetings. The same pattern has been also observed by Rohrbeck (2010). TCS though had a more organic, continuous mode of carrying out foresight informally and adjusting strategy throughout the year. There was no indication that the other companies ceased foresight activities altogether outside of the times required for strategic planning, however none of them emphasized the need for continuous foresight and adjustments to strategy as much as TCS. Also, Ericsson mentioned they met for strategic planning once per year. The question here, as in the case presented by Bradley, Bryan and Smit (2012), is how well can Ericsson prepare for change if strategic issues and decisions, or relevant foresight intelligence waits to be discussed for almost a year in-between strategic planning sessions. Also, given the fast nature of the environment Ericsson is in, it is difficult to assess how many opportunities are lost or do not come to fruition because of this lengthy gap between strategic planning sessions (Bradley, Bryan and Smit, 2012). The other interesting observation was that Bungalow.net meets only twice every year. The small size of the company and the fact that it operates based on seasonal changes would suggest a strategic planning system more similar to that of Abelmarle, which meets quarterly.

In terms of tools and processes used, the interviewed companies used a combination of both simple as well as relatively more advanced tools. Bungalow.net used the least amount of foresight tools, which makes sense as it is the smallest company and it can adapt faster than the other ones. Daheim and Uerz (2008) mentioned that there is a trend towards a more open, collaborative use of foresight. They describe this trend as one which “pays tribute to the increased socio-cultural and socio-technical dynamic resulting from the emergence of the networked society, where almost everything is interconnected” (Daheim and Uerz, 2008 p 332). All of the companies used their
network to at least some extent. The most explicit case was TCS, where Mr. Jayrej mentioned the company is a “300,000 strong network of brains”. The company also seems to use open innovation tools, which they call collaborative innovation. Daheim and Uerz (2008) as well as Rohrbeck (2010) discuss the connection between open innovation and open foresight and state that the concept of open foresight has its roots in open innovation. Most companies interviewed used consultants and/or industry experts. In this sense open foresight, as described by Daheim and Uerz (2008), with a marked tendency to include a series of participants, exercise transparency, and focus on communication, was also observed in practice. Bungalow.net in particular could benefit from this, since in this way they could gather foresight intelligence without investing in costly foresight research. They already use their business network, however they could use it more intensely, invite third parties to their foresight analysis, or they could also tap into the personal networks for example. For example, Mr. Svitych from Albemarle mentioned conferences and seminars which the company employees attend in order to network, but also in order to gather information about trends, upcoming changes or technological updates. Staying connected in this way would allow companies to gain better foresight and also stay informed (Rohrbeck, 2010).

Furthermore, all companies use industry trends or analyses and they purchase reports published by established consultancy firms such as the big four (KPMG, PWC, E&Y and Deloitte). This is what Daheim and Uerz (2008) were drawing attention to: information on industry and trends is either already a commodity or becoming one. These companies are not in the same industry however, if they had been, given that they use similar tools and research sources, it is not that far-fetched to presume that they would also possess similar amounts and types of information. Also, all of the three larger companies have a data collection, or business intelligence unit, which also gathers information on foresight. Out of the various tools, the two which stood out the most because of their slightly higher degree of technological complexity were data mining and modelling. Both of these were to be expected though as Ericsson and Albemarle are larger in size, operating in technical fields where such tools are needed and they are also top competitors in their segments (Vecchiato and Roveda, 2011; Rohebeck, 2010). Albemarle is also the only company which mentioned they took part in trainings in foresight added that not
In terms of who is responsible for foresight, two of the companies have a relatively separate foresight division (relatively because the divisions are primarily responsible for strategy) and the other two companies carry out foresight in a de-centralized way. TCS and Ericsson have Corporate Intelligence and respectively Group Function Strategy which are responsible for strategy at the global level. Ericsson also has an R&D department which is concerns itself with technological foresight. The R&D department of Albemarle appeared to have a rather reactive and not so much proactive scope. These observations are in line with those of Rohrbeck and Gemunden (2008), who found in their study that foresight exercise in corporate departments are a reaction triggered by events or directions given by management. The larger companies have standing units which preoccupy themselves with foresight for the entire group, whereas in the smaller companies it was a more decentralized activity. In Albemarle and bungalow.net, foresight results instead from a collaboration of various teams and departments. In all the observed cases, foresight is organized around strategy. With the exception of Ericsson, which also tries to probe into the future for technological developments, foresight was carried out mostly for the purpose of strategy and organized as such. The foresight departments for TCS and Ericsson also served as foresight departments, and Albemarle and Bungalow.net carried out foresight research at business strategy level and then at corporate strategy level.

Additionally, there were indications that in three of the four case companies, foresight was undertaken at different levels but also with different scopes. Vecchiato and Roveda’s (2010) created a three-dimensional axis with the different scopes, macro, meso and micro levels, as well as various targets (industry, market, niche etc.) of foresight in an organization. According to their observations, foresight exercises in companies take place in various combinations along these axes and don’t just happen with one scope, or at one level (Vecchiato and Roveda, 2010). Long term foresight at Albemarle was undertaken at the corporate level. Likewise, at Ericsson the global unit also has a more long-term scope. It was unclear in the case of TCS whether their global division which is in charge of foresight was also looking at the long term. Most of the companies mentioned that they looked at the industry and at competitors. However, Albemarle had a broader range in their long term foresight exercise, which is understandable given their industry and in line with the framework of Vecchiato (2012).
5.2. Understanding of Foresight

Once the companies have performed their set of analyses, or data collection operations, the next process begins: that of understanding. In the framework of this thesis, the first step towards an understanding has been termed divergence in this thesis, in order to suggest the phase in which different opinions are sought out. In Horton’s (1999) framework, it is mentioned that an important part of the interpretation process is seeking out a third party to help managers draw our implications. This phase takes place perhaps more often informally. Nevertheless, in a formal way, most interviewed companies mentioned the major meetings which take place in correlation with or for strategic planning.

Researchers like Horton (1999) or Major and Cordey-Hayes (2000) had long since emphasized the importance of third parties, facilitators and intermediaries in the foresight process. Discussion with individuals from various backgrounds can help managers realize implications which they might not have been aware of otherwise (Horton, 1999). As discussed in the previous sections, most companies exhibited at least some elements of open or networked foresight. The companies employed various consultancy companies, used partners to drive future changes like Ericsson, collaborated with partners or clients to understand future trends, like TCS and Bungalow or, like in the case of Albemarle, the foresight results are discussed among a team made up of M&A experts, a “Global Experts” team, external parties, consultants and so on. Therefore, understanding in all the analyzed companies had distinctly participative aspect to them.

Another aspect which the interviews sought to discuss and uncover was the presence of biases. Vecchiato and Roveda (2010) emphasized that one of the most important steps towards preparing for future changes is questioning the current mental model. Therefore, when analyzing how the interview companies draw understanding about the future, inherent biases play a central role. Biases, such as memories of the future, foresight bias, individual experiences, culture, ideologies and so on, as outlined and explained by McKay and McKiernan (2004) can skew understanding and impede managers from reaching deep insights about potential future changes. Most of the respondents confirmed that the companies are aware of inherent biases which may skew the manager’s vision and taint the understanding process. Blackman and Henderson
(2004) discuss how, in order to safeguard from misunderstanding, or from only being able to make only incremental innovations, companies need to challenge these biases and mental models at a profound level by doubting the mental model itself. When asked how these biases are challenged, the interviewees offered quite dissimilar responses. They shall be treated individually for a better understanding of both pros and cons of each way of challenging biases:

**TCS** – opinions and arguments must be validated against relevant data. On the one side, this approach safeguards against unfounded, unproductive or unsubstantiated discussions which may lead the company astray. It also can be useful in avoiding conflicts, tensions or misunderstandings. Nevertheless, as explained in the previous chapter, if one searches for it, one can find evidence for almost any argument, especially since we live in a world where information is abundant. The company also exposes itself to the peril of mistaking the amount of evidence for proof of the argument’s truth, instead of possibly “mental model’s lack of content, plasticity and imprecision” (Blackman and Henderson, 2004, p.263). Furthermore, this type of challenging or doubting is an apparent example of single loop doubting, where TCS risks re-enforcing the same mental models instead of stepping out of them and reaching a more accurate understanding.

**Ericsson** – the interviewee mentioned that the company has processes in place which are there to ward against biases, and that the diversity of the company’s body is also in itself a challenging mechanism. It is not certain to what extent Ericsson doubts more in a single or a double loop. Nevertheless, a diverse employee body may help counter biases as each individual mental model, hindsight bias or set of memories of the future are met with a distinctly different set because the employees have various backgrounds. All of them though are Ericsson employees and therefore a part of Ericsson culture and tempted to see some things at least the same way. Furthermore, relying on processes tends to breed institutionalization.

**Albermarle** – the participation of external parties to the creation and understanding of foresight was mentioned as a way of minimizing the biases inherent in this process. And indeed, the inclusion of external bodies, from outside of the company and perhaps outside of the field, is what makes this process more appropriate in terms of
successfully challenging biases. This is because people from outside of the company are more likely to challenge the mental models of the participants from inside the company. However, this is not fully double loop doubting either, as it does not keep the necessity of challenging the mental models itself as top priority (Blackman and Henderson, 2004). Therefore, Albemarle too runs the risk of entering single loop doubting because the third parties may only get the inside managers to adjust their models.

**Bungalow.net** – The interviewee mentioned that one way of challenging or managing biases was to check with managers who have seniority in the company or the industry. It seems to be a case where consensus should not be confounded for truth. Challenging biases this way does not lead to a less biased conclusion, or a more appropriate foresight vision. Instead, it is conducive of a situation in which the company becomes vulnerable to being blindsided by change, even gradual one. This is an example of single-loop doubting and its consequences are the re-enforcement of existing mental models, which may not be accurate (Blackman and Henderson, 2004).

### 5.3. Strategy Formulation

In terms of strategy, foresight is deeply connected to strategy formulation, strategic planning and thinking (Vecchiato and Roveda, 2010; Rohrbeck, 2010). Foresight is used not just to plan or to “stay relevant”, meaning to remain competitive, but also to drive future changes or to anticipate customer needs in order to spend less time adjusting (Vecchiato, 2012). Strategy was not the job of one man in any of the cases. Instead, it was a participative, networked effort.

From the notes in this research, foresight seems to be used to deliver inputs and parameters for future strategic goals and direction. The strategy was formulated in light for foresight insights. These insights took the form of a vision in most cases. Albemarle uses scenarios and there was no indication that they use visions in this way. Bungalow. Net used scenarios, but also has a vision. Going back to Vecchiato’s (2012) framework, working with visions the way TCS and Ericsson do is typical of a dynamic environment, as this is more normative behavior.
Vecchiato and Roveda’s (2010) research concludes that, in order for a company to appropriately prepare for change, and especially disruptive change, it needs to understand the deep meanings of the driver of change and start the formulation of strategy from these drivers. Otherwise, the company risks not preparing appropriately or, put differently, it risks preparing for a different type of effect instead of the one which is likely to take place (Vecchiato and Roveda, 2010). Overall, from the observations in this research, drivers are usually not put first in the formulation of strategy. The mentality in the analyzed firms was more about adapting or maintaining current industry structure, rather than putting the drivers of change first. Ericsson for example mentioned that they think of changes as opportunities, and they look at drivers of change in terms of taking advantage of them in order to improve their products and services. In itself, this is a praiseworthy and understandable approach, However, Vecchiato and Roveda (2010) warn against practicing such strategic thinking because this leaves the company exposed to disruptive change. On the other hand, Ericsson seems to be fully aware of its strengths and, when identifying what need a driver may create, they have a tendency to buy the solution.

Likewise, TATA thinks holistically about strategy, and does not seem to fundamentally question the needs and outcomes of the identified drivers of change. It cannot be established with absolute certainty that TCS doesn’t put the drivers first, however they seem to think of strategy more in terms of how to make their vision possible once they have set one. This frame of thinking, as commendable as it may be, is more industry-sustaining in nature and does leave the company at least mildly exposed to disruptive change (Vecchiato and Roveda, 2010). It is clear though that TCS has their customers and the business of their customers in mind when formulating strategy.

Albemarle is a bit more proactive, as described by Mr. Svitych. They try to think and probe what needs their customers may have in the future and they develop solutions for those needs now in order to “save time adapting to change in the future”. Even though Ericsson may do this too in a sense, Albemarle was the only one where this type of mentality and purpose for foresight, and the desired proactive nature of strategy was made explicit. This type of mentality, or approach to strategy, encourages a culture or habit of thinking about what will be the needs in the future and therefore what type of needs will be created by identified drivers of change. Also, the company meets formally
for strategic planning more often than the other three companies, which gives it the possibility to act on identified opportunities or threats. There are the reasons why Albemarle is perhaps less vulnerable to disruptive change than the other ones, despite being in the industry where the change drivers have the lowest disruptive power.

Bungalow.net tries to accommodate change. Given the fact that the scope of their planning and foresight activities is more short term, and that their year revolves around touristic seasons which change every three months, their strategy is more about keeping up and getting ready for these changes. One of the disruptive drivers in their case is Google, as their Search Optimization (SEO) algorithms can completely change the online landscape. In this sense, their strategy is more reactive, as they wait for the update from Google and then they react. An approach such as this is less risky for a company the size of Bungalow, because it is small and can adapt. It would be counterproductive for them to invest large amounts of resources into foreseeing change the way Ericsson does. However, unlike Ericsson which needs time to steer, Bungalow. Net can accommodate changes much faster. Despite this, by not looking into the longer term future, the company exposes itself to disruptive innovation risk. Vecchiato and Roveda (2010) state that thinking in terms of how the industry will change, or thinking in terms of current industry structure is an industry sustaining approach. Therefore, Bungalow.Net’s way denotes an industry sustaining mentality rather than an anticipatory one.

Figure 7 summarizes the findings of the analysis and illustrates them in a framework which follows the theoretical model. The table indicates through either a cross sign, an exclamation mark or a check mark where each company is undertaking either a faulty practice, a potentially faulty practice or a good practice. The table follows each of the phases in the model presented in Figure 6 and is meant to have a descriptive role, as it sums-up and shows how each company engages in the different phases, as well as a prescriptive role because, through comparing the four companies, best practices and faulty practices become apparent.
**Figure 7:** Framework of strategy formulation through foresight procedures (Source: own)
6. CONCLUSIONS

In the last chapter of this thesis, the research questions will be answered based on the empirical findings and analysis. They will be presented starting with the three sub-questions which will lead up to the answer for the main research question.

6.1. Answering the Research Questions and Purpose

This thesis set out to uncover and discuss how companies can enhance their strategies through procedures for anticipating and more appropriately preparing for change. This was attempted through understanding how companies gain foresight and relevant types of information about potential future changes. Furthermore, the research also sought to bring clarity to how companies understand what the identified changes mean in terms of their context and their future, and, finally, how they respond once they have gained an understanding. Therefore, these questions will be discussed further.

1) How do companies employ foresight to identify and anticipate drivers of change?

Throughout this thesis, this question has been treated in terms of when and how companies engages in foresight and therefore, it shall be answered in this manner here as well.

a) When companies engage in foresight?

In terms of when, or of timing, foresight was carried out formally in connection with strategic planning cycles, which take place twice, four time or once yearly. One of the companies though engages in foresight, in some form or other, constantly.

b) How do companies engage in foresight?

First of all, from the interview and discussion with the case companies, it was evident that foresight is highly important, especially for companies in dynamic uncertainty environments. Companies need foresight to stay relevant, but it is also used to shape the industry and thereby gain competitive advantage. The way foresight is employed depends on the type of environment the company is in, which was consistent with previous research. This study also revealed that for companies which are not in an environment with pure dynamism uncertainty and neither in an environment with purely complex uncertainty, but in an environment which exhibits a mixture of these feature,
the character of the foresight exercises is also a mixture between normative and exploratory.

Companies which operate in a dynamic uncertainty environment, where upcoming changes can be influenced, engage in foresight also to disruptively innovate or to drive and shape the future. In the complex uncertainty environment, foresight had a more exploratory nature and the company sought more to position itself better in terms of upcoming trends and changes, rather than to shape the faces of these changes.

Furthermore, in terms of tools and processes, a range of tools was observed, from simple desktop research to more technically complex data mining systems. The nature and range of these tools was correlated with the size and needs of the company, as the larger companies employed more diverse and complex foresight tools. Given the similarity which was observed in sources and tools between the companies, it should be pointed out that foresight information as such, the raw data, is increasingly a commodity.

Moreover, third parties are very important, and there is a tendency towards foresight with a more open character. Companies try to understand and even create the future with partners and competitors. Also, all four of them employed networks to at least some extent. This comes perhaps as a result of the situation explained above, where information and trend reports as such are more easily available as such. The importance of networks differed from company to company, however in TCS it was directly emphasized. Likewise, the open-ness of the foresight exercise differed, however Albemarle seemed to have the most open foresight process.

2) **How do companies understand the effect of these drivers on the industry the firm is active in and its competitive position within it?**

The tendency is for foresight results and implications to be debated and discussed. Companies did mention engaging consultants and third parties for this purpose. Again, the tendency for a more open, more networked character to foresight has been observed. This is useful in order to bring together a diversity of opinions and expertise on the matter at hand, but also in order to help prevent one type of mental model from becoming too institutionalized.
In that sense, mostly single loop doubting has been observed. Also, companies do not use counterfactual analyses, nor do they seem to understand that they have hindsight or foresight bias. The biases mentioned were seen more in terms of strategic or innovation input (expressed more in terms of ideas or arguments). Therefore, companies often expose themselves to situations where they only reach consensus, and not genuine certainty. Even more importantly, they do not fully challenge existing mental models, which may mean they can only make incremental changes and incremental innovation. Thus, they may be incurring strategic risks.

3) **How are the results of foresight integrated in the formulation of strategy?**

Visions and scenarios are the observed methods for articulating the results of foresight in a strategy-driving manner. Furthermore, the organizations used a more industry-sustaining approach to strategy in lieu of identified drivers of change. Companies think in terms of how they can reap competitive benefits, or product improvement advantages from changes. The only potential issue with this is that they might become blindsided to the way disruptive innovation changes industrial landscapes.

**Main Research Question: How do companies enhance their strategies through foresight procedures to anticipate and more appropriately prepare for change?**

First of all, depending on the industry, companies use foresight to enhance their strategies by making them more proactive. The character of the environment the company is in, and therefore the nature of the uncertainty it faces, has a distinct impact on the nature of foresight and how it is used for strategy. In complex uncertainty, foresight is used more for planning and better positioning. In dynamic uncertainty, foresight has been observed to serve also a more formative purpose. In this way, foresight allows companies to detach themselves from the cycle of trend-impact-reaction and allows them to anticipate in the present so they can spend less time adjusting in the future on the one hand, and on the other to strive and make their mark on tomorrow.

Secondly, companies enhance their strategies through harnessing the insights as well as the creative powers of their own networks. The inclusion of third parties in the generating and understanding of foresight is also a way of increasing creativity, avoiding rigid strategic thinking and kindling innovation. Lastly, the results of foresight
are used to create visions and thus drive strategy, or they are illustrated in terms of scenarios. The way insights gained from foresight are integrated into strategy is more industry sustaining in nature, and in this way companies formulate strategies which are vulnerable to disruptive change.

6.2. Managerial Implications

One perhaps surprising managerial implication of this research is that, in order to improve the soundness of the foresight exercise and strategy formulation, managers need not be dependent on costly tools or time consuming processes. Instead, they should consider the way they think about things, how often their decisions and views are actually challenged and in what way they doubt or are doubted. Biases are ingrained in an organization’s processes and difficult, if not impossible to eradicate. Therefore, managers need to be constantly aware of these biases and that the future which they may think is a result of objective data may be more the result of their internal pre-conceived patterns than they may imagine.

Furthermore, managers need to be aware of the pitfalls of their own mental models. Managers should be aware of this and keep in mind some of the principles laid out in the theoretical chapter, such as counterfactual thinking and the following guidelines which bear reiterating here.

- “It is easy to obtain confirmations for every idea if they are looked for. The volume of supporting evidence is related to a mental model’s lack of content, plasticity and imprecision, rather than its veracity.

- Confirmations only count if they are the result of risky predictions; that is the testing could have shown the mental model to be false. [...]

- A mental model that would allow foresight is one that rules out many future states, not one that is consistent with many.

- A theory which cannot be refuted is a poorly constructed theory as errors cannot be detected.

- Supporting evidence can only be derived from genuine but failed, attempts to show the mental model to be wrong.”

(Blackman and Henderson, 2004, p 263)
Mental models need to be constantly doubted, not just their result, or held views and assumptions. This will make it possible for companies to gain a deeper understanding of foresight results but also to innovate more freely.

Another implication is the potential power of the internal as well as the external network of a company. Tapping into people and networks as a source of information and a tool for better understanding can be highly rewarding at relatively low costs. As mentioned in the theoretical discussion, people are a rich source of contextual information and creativity. Therefore open, collaborative foresight can help decision makers better understand contextual implications and thus distance themselves from the trend-impact-reaction, and instead approach strategy in one a basis of trend-context-strategy. In the end, people themselves can be an immensely powerful tool for foresight, but only if they take an active role in such practices and work at developing stronger networks but less rooted mental models.

Some of the final implications are the risks which lie in cumbersome strategic planning cycles, which are few and far between. Perhaps companies can develop more informal way of discussing and adjusting strategy outside of the biannual strategic planning session. Also, managers need to consider the weaknesses or risks which they build into their strategies when adopting an industry sustaining approach and not giving deep considerations to the potential needs and changes created by identified divers.

6.3. Theoretical Implications

Most of the observations were in line with extant literature on the subject of foresight. In some cases this meant that the companies behaved according to the frameworks outlined in the works of foresight researchers. This was the case with Vecchiato’s (2012) framework. In other situations, consistent with expectations meant that managerial approaches followed tricky patterns, or the “do not”-s rather than the do’s outlined in theory. Another theoretical aspect is that oftentimes, research focuses on either foresight or strategy. The way they are integrated is much less emphasized and there is a lack of emphasis on a more holistic, but also practical integration of the bodies of research on these two concepts.

One relevant indication was that companies which are environments with neither purely dynamic nor purely complex uncertainty, also exhibit a combination of foresight behaviours – part normative, part explorative.
6.4. Limitations

The findings of this thesis are limited by personal bias and perspective. The situations presented may not fully reflect the situation in these companies, but they reflect the situation as portrayed by individuals from these companies within the limited amount of time allotted to the interview and at a certain point in time.

Secondly, only four companies were used for this investigation and therefore this makes the generalization of the findings less relevant. The other limitation is that only one person was interviewed from each company. The empirical findings would have been stronger if the addition of a second interviewee from the same company could have been possible.

The interviews were carried out in English, and neither the researchers nor the interviewees were native speakers. Given that the nature of this research is more complex and abstract, linguistic barriers or misunderstandings may have leaked in. Also, the topic was very sensitive in nature and there were difficulties broaching some subjects such as internal biases.

6.5. Suggestions for Future Research

In order to confirm and strengthen the findings of this research a similar study should be carried out either with different individuals from these same companies. It would be interesting and highly relevant to go deeper in some of the processes and techniques employed in these companies. For example, it would be very interesting to sit in on strategic planning meetings and being able to add such observation to the empirical material would increase the value of the findings and of the framework.

Naturally, another suggestion is for a number of similar studies to be carried out either more companies from different types of environment in order to better understand how the type of environmental uncertainty affects the application of foresight. A third type of study should be conducted for a deeper understanding of how views and mental models are doubted or challenged in companies, if there are any processes for these which can be observed and what these are.
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Interview:

Alexander Svitych Sales Service Representative at Albemarle Corporation (20-05-2014)
Arslan Ali Project Leader Solution Architect at Ericsson (15-05-2014)
Jithesh Jayaraj Pre-Sales Head - Hungary GDC at TCS Hungary (13-05-2014)
Patricia Roman Marketing Manager at Bungalow.Net (20.05.2014)
## Appendices

### Appendix A: Interview Guide

<table>
<thead>
<tr>
<th>1) How do companies employ foresight to identify and anticipate drivers of change?</th>
<th>Name and Position?</th>
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<tbody>
<tr>
<td>1) Are you familiar with the concept of foresight?</td>
<td></td>
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<tr>
<td>2) Does your company carry our foresight exercises?</td>
<td></td>
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<tr>
<td>3) How does your company use foresight to anticipate future changes?</td>
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**If No to 1 then:**

3) If not, how does your company try to “peer into the future”?/How does your company gather data, identify trends or try to predict future changes?

4) Who/what department is responsible for foresight research?

5) What tools does your company employ for this purpose (purchase studies, desktop research, hire consultants, hire experts, ask business partners)?

6) How often do you carry out foresight exercises? (Or how often does your company do research into future trends and possible changes). Once a year, bi-annually, continuously, only when required by a task or a project?

8) How does your company use its network of partners and contacts to gather information on trends, industry, forecasts, etc.?

9) Which would you say describes the purpose of foresight in your company better: exploration (for better planning and adapting), or normative action (influence or transform)?

| 2) How do companies understand the effect of these drivers on the industry the firm is active in and its competitive position within it? | 10) Once you have identified trends and potential drivers of change, how does your company try to understand what effects they will have on:
|---|---|
| - industry structure?
- the company’s competitive position | |
| 11) When formulating an understanding, are you aware of biases which may affect yours or your company’s interpretation of foresight research? (such as company culture, dominant logic, incomplete information, etc.) | |
| 12) If yes, do you ever try to challenge your understanding of future implications? In what way? (counterfactual information, consultants, third parties etc) | |

13) **(If 9 is not answered satisfactory)** Do you discuss implications in meetings? Do you hold workshops? Do you bring in outside consultants? Do you bring in outside third parties?
| 3) How are the results of foresight integrated in the formulation of strategy? | 14) How are the results of foresight integrated in the formulation of strategy? (example: do you start with different scenarios and formulate strategies in response to each of them? do you create a vision based on foresight results, do you communicate that vision?)

15) When formulating your strategy, do you put the identified driver first and then try to understand how best to fulfill the need it creates? Or do you try to understand how to best adapt your value chain in order to prepare for the potential changes?

Example:
A: How can a firm exploit these drivers to improve our products and services and to enhance the customer needs a firm traditionally served
B: What new configuration of the value chain is suited to exploit (suit) the drivers at best?

16) (If 14 not answered satisfactorily) How often does your company meet for strategic planning? How is foresight connected to strategic planning? |