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How to turn external factors into internal resources

A case on how to gain knowledge and make use of the remote external environment

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Abstract

Purpose: Due to the increase of the volatility and uncertainty of the external environment in the last years, there has been a need for more research on global shipping companies and how they manage resources and develop strategies in relation to these rapid changes in the environment. This considered, this paper seeks to evaluate how the analysis of the remote external environment can benefit a global shipping company in order to gain knowledge and make use of remote external factors.

Methodology/Design: By utilising a qualitative approach on a single case study, with semi-structured interviews as the primary data collection method, the authors have been able to deeply investigate the case company and the processes within external environment analysis.

Theory: The theoretical framework has been built on research on external environment analysis, the three different layers of the external environment, and how companies can create internal processes to make use of the remote external factors.

Empirical Findings: The company has created a new group to analyse the remote external environment and this group uses a three-stage process in the analysis. The remote external factors are also investigated and how the case company explores these factors.

Analysis/Conclusion: There are four remote external factors that are connected, however, the analysis of them is done in two different ways. The addition of resources to external environment analysis can add value to the core business activities. How idea-testing through different tools can ensure a company has analysed the remote external environment correctly.

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List of Abbreviations

CO_2 - Carbon Dioxide

GVC - Global Value Chain

IMO - International Maritime Organisation

KPI - Key Performance Index

LNG - Liquified Natural Gas

PHH - Pollution Haven Hypothesis

POC - Proof Of Concept

TCFD - Task Force on Climate-related Financial Disclosures

1. Introduction

This section is an introduction to the subject developed in this paper, in which a background on the subject leads to a problem discussion where main research gaps are identified. Then, the research question and the purpose of the paper are presented and finally, the delimitations of the study and the outline of the paper will give an end to this chapter.

1.1 Background

In 2009, international trade suffered the most noticeable decrease since the 1930s, ending a three-decade trend of liberalisation in international trade. In fact, in 2007, a year before the crisis, international trade volume was seven times higher than in 1980. Technology and policy liberalisation were the two main driving forces for such a rapid growth on global trade. In addition, between 1980 and 2000, developing countries opened their markets and integrated into the global economy thanks to a favourable geopolitical environment (Erixon & Sally, 2010). In fact, globalisation made it possible for countries to reach national goals through an extensive collaboration network. More and more developing countries have since become powers in the world political and economic contexts. These countries have given the opportunity to enhance international cooperation owing to a better balance of power between the developed and developing world (Castro Pereira, 2015). However, this global political and economic context changed after the crisis exploded in 2008. The crisis originated in the West part of the world, however, in areas of the world like in Asia, countries did not suffer as much from the crisis. This created a shift of economic power from western developed countries to the east, especially to China. In addition to this shift in economic power, new protectionist measures such as tariffs have appeared (Erixon & Sally, 2010).

Shipping is a fundamental contributor to global trade since around 80 % of goods traded worldwide are carried between countries by the shipping industry (European Community Shipowners' Associations, 2017). Shipping consists of a derived demand from international trade and the need of having goods moved between sellers and buyers (Tamvakis, 2011). Many shipping companies are important players at global level, especially in Europe, since 40 % of the world´s merchant fleet that operates services worldwide is owned by European shipowners. However, the trend of protectionism in global trade and the uncertainty on the future market openness is becoming a serious challenge for shipping enterprises (European Community Shipowners' Associations, 2017). Shipping enterprises tend to be highly

dependent on the world trade and economic growth, where the growth of economic development to a high extent determines the profitability of shipping companies. In high growth markets, shipping companies can be successful and highly profitable, however, when the cycle turns and the peak of economic growth and trade is flattening, shipping companies tend to be extremely unprofitable (Lorange, 2005). Due to such extreme cyclical swings, the external uncertainty is something shipping companies always have to consider when analysing the external factors and forecasting future trends. Due to this trend, companies have to deal with strategic uncertainty when performing external analysis of possible opportunities and challenges the world trade evolution offers. Due to the complexity of external factors, it is difficult for companies to manage a strategy that helps to minimise the risks and maximise the opportunities of unpredictable future trends or events. The external environment analysis can be time consuming and will not help companies to reduce the uncertainty. This is why firms have to deal with working with uncertainty and focus on possible scenarios that can have an impact on their businesses and build flexible strategies that can help them to deal with dynamic trends and events (Aaker & McLoughlin, 2007).

1.2 Problem Discussion

The shipping industry is a historic industry, dating back thousands of years (Stopford, 2009). It requires special analysis due to its complexity and dynamic environment, this is why shipping companies must understand the external framework, the characteristics and the uniqueness of the industry before building strategies. In fact, the shipping industry is very globalised, which makes the derived demand to be volatile and unpredictable. For this reason and in order to respond to this complex environment, shipping companies have to coordinate and link the interdependent parts of the firm while communicating and interacting with the environment within which it operates. Due to the fact that the dynamic environment can bring opportunities and/or threats for shipping companies, these might have to adjust their strategy or organisational model so as to maximise the opportunities and minimise the risks derived from external changes (Theotokas, 2018).

However, the research on the shipping industry and shipping companies have been limited in comparison to other industries (Sjöberger, 2014). Sjöberger (2014) investigated product tanker shipping companies operating in a limited geographical region, i.e. Northern Europe. Therefore, the need of research on a larger geographical region is needed to be able to apply

the larger macro environment factors of world trade to a global tanker shipping company. The holistic view by Sjöberger (2014) on strategy building in tanker shipping companies shows that external factors are part of the strategy and one of the strategic components of a tanker shipping company, however, no research has been done on that specific component itself. In line with Sjöberger and his research, the authors of this paper consider the activity of gaining knowledge on external factors within global shipping companies as one important aspect in which more research can be done.

Studies within maritime management and shipping can be divided into three streams of research, where the phases of the research area have been differently developed. Maritime management and maritime strategic management have drawn upon other research areas and the three streams share thoughts with other major streams of research. The most matured stream of maritime management studies is the logistics management stream, the second stream of research is the strategic maritime management (Wang & Mileski, 2018), with mainly research on business models, strategic positioning and competitive advantages (Woo et al., 2011). The third stream, and the most unexplored is the operational management studies concerning how a maritime company can use the resources within the operational part of the business and align this with the overall business strategy (Wang & Mileski, 2018). Considering the lack of research on the third stream, the authors of this paper will focus on adding insights to the maritime management studies on how a shipping company can use internal resources and how these can help in the early stages of aligning the external environment with the overall strategy of the organisation.

Stopford (2009) discusses how shipping forecasting has a poor record in terms of how accurate such forecasts have been in the past, however, continues to argue for the use of as accurate predictions as possible for shipping companies to reduce the uncertainty of unexpected events. This view of continued use of forecasting is shared by Aaker and McLoughlin (2007) in terms of how scenario analysis and forecasting of the future can decrease the uncertainty within companies. Stopford (2009) argues for a continued use of forecasting and market research reports in business decisions and strategies, however, the theory of forecasting is made on how a shipping company can foresee the shipping market. Although, the tools for market research and forecast by Stopford (2009) are well developed, they tend to exclude larger macro external factors considered important by other research (Theotokas, 2018). Lorange (2005) describes how shipping companies can use external

factors from the outside environment of the firm to create strategies in changing and turbulent conditions and gives some examples on shipping companies and their pursuit for profitability. How to work with an ever-changing external environment is extremely important for shipping companies and the strategies constructed by the management. With changes in economic growth and geopolitical issues, the international trade can change and therefore also change the shipping market (Lorange, 2005). Strategies to capture these changes are described and exemplified through successful shipping companies, however, the tools to understand and evaluate the external factors in order to create successful strategies are not very developed. Also, there is a shortcoming in exemplified how shipping companies use market intelligence as input for strategic development. In line with this part of the theory, insights on different tools to strategically capture changes in the external environment in a global shipping company will be provided by the authors of this paper.

All taken into consideration, the authors of this paper see a lack of research on the shipping industry in general and globally operating shipping companies in particular. There is research made on the external environment and how to forecast changes in the external environment, however, as stated above, the tools for forecasting exclude the larger macro external factors, hence missing some of the factors leading to the derived demand for shipping services. By combining the tools for external environment analysis with the larger macro external factors, the authors aim to fill this gap. In addition, the authors see a gap on how a globally operating tanker shipping company can use external environment analysis tools and internal resources in order to support the creation and/or development of the corporate strategy.

1.3 Research Question And Purpose

Considering the background and the problem discussion, the authors have developed the following research question:

How can a shipping company gain knowledge and make use of remote external factors through remote external environment analysis?

Thus, the purpose of this paper is to investigate how a remote external environment analysis can help a shipping company on the activities of gaining knowledge and making use of remote external factors. Gain knowledge and make use of remote external factors refer to

what activities within the process of the remote external environment analysis can be utilised in a company. Remote external factors refer to what factors might be of importance within the remote external environment and how these factors can be analysed through the above-mentioned activities.

1.4 Delimitations

The scope of this study is delimited to investigate the early stages of remote external environment analysis and how such analysis can assist an organisation in the strategy development. Hence, the authors are excluding the final stage of where the output of the remote external environment analysis is implemented as a strategic component. The future research suggestions in Chapter 6.3 will clarify where the authors see further research necessary to grasp the full picture of how a global tanker shipping company can utilise the effects of remote external environment analysis in the strategy development.

1.5 Research Outline

This paper is composed of six sections that will guide the reader throughout the topic selected by the authors. The introduction presents a brief background to the subject as well as the problem discussion in which research gaps in the subject have been analysed and presented. In addition, the introduction describes the research question, purpose of the research and delimitations found by the authors. The next section, methodology, explains the design and the methods chosen in order to gather the relevant information to meet the purpose of this research. After this the theoretical framework includes relevant theories on the subject chosen, which lead the authors to build a theoretical model in the last part of this section that will be used later in the paper as a tool to develop the analysis. The fourth chapter presents the empirical findings on the case study selected by the authors, which includes an introduction to the firm and the considerations of different actors within the company in regard to the subject of this paper. The fifth chapter is the analysis which discusses the theoretical framework and the empirical findings. In the last part of this section the conceptual framework developed in the third chapter is revised. The analysis leads the authors to the last section of the paper, the conclusion, where a summary of the main findings of the paper is presented. This last section also includes main contributions, limitations and suggestions for future research on the field.

2. Methodology

This chapter aims to outline how the research in this paper has been conducted and the reasoning behind the methodological choices made by the authors. The chapter will follow a structured way in the same chronological order as the paper follows. Firstly, the approach and method towards the research will be given to be followed by the discussion on research design and data collection. Following, the data analysis section will be given to showcase how the data collected was analysed, to be concluded with the overall considerations on reliability, validity and ethical considerations of the research paper.

2.1 Research Approach

This study is based on an abductive research approach where the authors have used the concept of systematic combining to move back and forth through theory and empirical data (Dubois & Gadde, 2002). This approach is seen as somewhere in between the more classic approaches of inductive and deductive (Bryman & Bell, 2011), and the authors are allowed to use the empirical data found to shape the theoretical framework during the time of the research (Dubois & Gadde, 2002). The abductive approach has the potential of yielding more results than an inductive approach, due to the possibilities of capturing a systematic combining between empirical data and the theoretical framework. Hence, combining the empirical data with a changing theoretical framework (Dubois & Gadde, 2002). To capture the advantages of an abductive approach and systematic combining, a tight but emerging framework was developed, hence working as a guideline for the empirical research (Dubois & Gadde, 2014).

To be able to go back and forth between theory and the empirical data, the research started by investigating theoretical dimensions relevant to the problem, purpose and research question through a deductive approach. Relevant findings on external factors and analysis of the external environment for strategic development in shipping and trading laid the foundation of the theoretical framework. Such framework was used to create interview guides for empirical data collection. However, when empirical data was gathered and analysed, the authors realised that the theoretical framework needed alterations to be able to highlight the connections between theory and empirical findings. The continous alterations to the theoretical framework to enhance the relationship to the empirical findings is in line with the suggestions of Dubois and Gadde (2002) for an abductive approach. The conceptual

framework was then returned to in the analysis and discussed from the findings in the empirical part, the framework was modified to a more suitable framework for the case.

Furthermore, this study is built upon a single case study, a method sometimes questioned in terms of how multiple cases can offer better explanations and understandings to phenomena than single case studies. However, Dubois and Gadde (2002) argue that a single case study can be more in depth than multiple case studies, therefore create greater understanding of the empirical data gathered. The choice between single case studies and multiple case studies can be traced to the research question and the purpose of the paper, where analysis of a number of relations and interdependent variables in a phenomenon calls for depth instead of width and comparison (Dubois & Gadde, 2002). However, to overcome the disadvantages of shallow descriptive nature of a single case study, investments in theory is of essence. By investing in theory, the explanatory nature of a single case study and an abductive approach will provide answers on the research question and purpose of the study. Therefore, much effort was put on building the theory in order to be able to go deeper into the empirical findings and really find distinguished features of the specific case studied.

Abductive reasoning from an epistemic approach is how the perceived knowledge of an agent (researcher) can be changed by surprising facts and the conclusion by the agent can be changed by new contrasting facts (Velázquez-Quesada, Soler-Toscano & Nepomuceno-Fernández, 2013). This can be applied to this paper, where the theoretical framework, supposed to be true from known research and theoretical ground was consistently revisited in the light of new empirical data.

2.2 Research Method

Two research methods can be utilised when carrying out business studies, either qualitative methods or quantitative methods (Bryman & Bell, 2011). The two methods put emphasis on different aspects of research, where the major emphasis in qualitative studies is put on understanding and interpretation of social processes instead of having emphasis on testing of hypothesis and receive results on the tests (Ghauri & Grønhaug, 2005). This study uses a qualitative method to understand the process of how decisions can be taken and what processes underlie the decisions in a tanker shipping company. This also goes in line with the reasoning that qualitative methods are suitable for studies on organisational behaviour and the

understanding of business processes (ibid.). Exploratory research, based on research questions with the words of *what*, *how* or *why* tend to be better answered by utilising qualitative methods (Ghauri & Grønhaug, 2005; Eriksson & Kovalainen, 2008). Research questions starting with *what* are descriptive and focus on exploring and describing processes, whereas *how* and *why* focuses on causes and consequences (Eriksson & Kovalainen, 2008). The research question of this paper, starting with a *how*, further confirms that a qualitative method is suitable, and the authors believe that the descriptive and understanding nature gained from qualitative research is the best way to answer the research question.

2.3 Research Unit And Design

2.3.1 Data Collection

The majority of the empirical data in this paper consists of primary data, compiled by the authors after conducting semi-structured interviews, and a minority of the empirical data is secondary data, compiled from various sources. As Bryman and Bell (2011) discusses, the use of a combination of primary and secondary sources of the case studied is a benefit in single case studies. By combining interviewee responses with available secondary data in form of internal and external documents communicated by the organisation and other organisations, data can be confirmed and enhanced. This is in line with the sources of evidence discussed by Yin (2014) for case studies. The most used sources were interviews, archival records and physical artefacts. Interviews were used to receive insightful and focused data, archival records could be used to enhance the importance of external factor changes, and physical artefacts in the office of Stena Bulk, e.g. the showcase of the technological platform Orbit, were used to highlight how the company may work with new innovations.

This paper has combined both prolonged case study interviews over multiple sittings and shorter case study interviews (Yin, 2014). The interviewees were able to be interviewed multiple times, which created a possibility to become more of an "informant" than a participant (Yin, 2014) and therefore also highly assist to the success of the case study. Triangulation with the aid of secondary data, mainly to exemplify external factor variables and situations, reduced the uncertainty of the data and any eventual bias in the sources (Merriam, 2009). This type of triangulation was mainly used to highlight how the perceived changes in external factors could be confirmed in actual changes, e.g. how the perceived

change in LNG demand from China was triangulated with trade statistics from secondary external sources which showed an increased import of LNG during the last years.

2.3.2 Sampling

The main type of sampling in qualitative studies is non-probability sampling, where the researcher focuses on finding the answer to *what*, *why* and *how* certain things occur. By using a non-probability, purposeful sampling, the aim for the researcher is not to generalise the answers, but to make them purposeful for the learning of a phenomenon (Merriam, 2009). The purposive sampling is the deliberate choice of a participant due to the qualities the participant possesses. It involves selecting candidates across a broad spectrum relating to the topic of study (Etikan et al., 2016). However, all employees of the case company were not relevant for interviewing, therefore, sampling was made within the case company. Purposeful sampling was used when deciding on whom to interview. Functions with insight in external factor handling and analysis were seen as important to interview, so was higher management, involved in the strategy development of the company, acting on the external factor analysis made. Since the purpose of the study was to investigate how a remote external environment analysis on the activities of gaining knowledge and making use of remote external factors in a global tanker shipping company, this combination of interviewees fulfilled the purpose. However, some theoretical sampling (Merriam, 2009) was also made during the data collection with the interviewees giving suggestions on other people within the organisation who might be able to produce valuable information and data.

2.3.4 Primary Data

As seen above, the primary data was collected through the method of semi-structured interviews. The main advantage of collecting primary data is that the data is specifically collected for the purpose of the researcher (Ghauri & Grønhaug, 2005). Respondents in the interviews were all involved in the external environment analysis or strategic development of the company (See 2.3.2 Sampling). Either through specifically work with the analysis of the external environment or being close to the external environment in terms of working commercially with customers and suppliers around the world. Data collected in this part was considered accurate to investigate how the company explores and analyses the external environment. By combining these two approaches, the authors could receive a complete picture of the processes within the company for dealing with external factor analysis and how these analyses have part in strategy development.

In line with Saunders, Lewis and Thornhill (2007, p.312) the interviews were of a semi-structured nature (See 2.3.6 Interview process) and each interview had different questions within the main question areas due to the position and responsibility within the company of the interviewee. This also enhanced the probability of collecting the most accurate data from each interview (Saunders, Lewis & Thornhill, 2007 p. 317).

Interview session	**Name**	**Position**	**Type of interview**	**Duration**	**Date**
1	Göran Hermansson	General Manager of LNG	Face-to-face	80 min	2019-03-04
2	Jonatan Malka	Business Controller	Face-to-face	65 min	2019-03-04
3	Erik Möller	Business Intelligence Manager	Face-to-face	70 min	2019-03-08
4	Johan Jäwert	Vice President, Commercial Operations	Face-to-face	65 min	2019-03-19
5	Erik Möller	Business Intelligence Manager	Face-to-face	55 min	2019-04-09
6	Johan Jäwert	Vice President, Commercial Operations	Face-to-face	45 min	2019-04-09
7	Therese Jällbrink	Business Interaction Manager	Face-to-face	55 min	2019-04-09
8	Peter Björkborg	Business Transformation Manager	Face-to-face	55 min	2019-04-09

Table 1: Interview Sessions For Data Collection
Source: compiled by authors

The primary data collection took place between the 8th of March and 9th of April, and all interviews were conducted face-to-face at the head office of Stena Bulk in Gothenburg. This paper adds insights to the operational management of shipping companies, however, Table 1 of the interviewees above suggests that only Managers were interviewed for the case study. This is due to the organisational set up of the case company, where the positions are named as managers, however, the work tasks are also on an operational level. In Table 1 above, the

conducted interviews are displayed in terms of number, name, position, interview type, duration and date. All interviews lasted between 45-80 minutes.

2.3.5 Secondary Data

The secondary data was collected throughout the process and consists of documents and books from the case company, but to enhance the impact of the external factors on the environment the company works within, industry reports and consultancy reports on specific factor changes were gathered. By having external sources on exemplified changes, the impact and importance of the perceived changes could be showcased. Also by having secondary data, the primary data could be triangulated and confirmed through the external data.

Secondary data also included research articles and books from the university library and databases.

When secondary sources were used, the suggestions on the four criteria by Scott (1990) were considered:

Authenticity: Is the evidence genuine and of unquestionable origin?

Credibility: Is the evidence free from error and distortion?

Representativeness: Is the evidence typical of its kind, and, if not, is the extent of its untypicality known?

Meaning: Is the evidence clear and comprehensible?

By considering these four criteria for assessment of documents and articles, the usage of such documents could be decided. If the document could sufficiently answer the questions, the usage could be decided.

2.3.6 Interview Process

In accordance to the suggestions given by Bryman and Bell (2011), the interviews for this qualitative study were aimed at giving the interviewees the chance to expand the responses to a great extent, thus enable the researchers to follow the responses in a conversational way. This was enabled by having a semi-structured interview approach, where question areas were thought of and given to the interviewees ahead of the interviews. By utilising the semi-structured approach to the interviews, the authors generated several open-ended questions within each question area (See Appendix for interview guides), however, allowed the interviews to go back and forth between the questions in a conversational matter (Collis &

Hussey, 2014). This goes well in hand with the general research approach utilised for the study, where the authors moved back and forth between theory and empirical facts. When new empirical facts were uncovered due to the open-ended questions of the interviews, the authors were forced to go back and investigate the theoretical framework and make appropriate changes. Several times, the responses on the initial question, lead the way to further questions on the specific subject, increasing the data specificity and accuracy. The continuous questioning to the responses received is a good trait for a case study researcher (Yin, 2014), where the aim is to investigate deeper connections in phenomenons within a single case.

Each interview was conducted by both of the authors and prior to the interviews, different roles were decided. Following the advice by Bechhofer, Elliott and McCrone (1984), where different roles between the interviewers in many occasions can relax the interviewee and create a more conversational environment. One of the authors took an active role, leading the interview and asking the questions, whereas the other took a more passive role. The passive role could assess the overall development of the interview and make extensive notes on surrounding observations, e.g. body language or voice changes. The passive interviewer also included probing questions when necessary to develop the answers.

All interviews were recorded, after permission from the interviewees, and later transcribed. For the transcribing process, a voice recognition software was used, where the interviews were automatically transcribed, however, careful checking was made after each interview to ensure the correctness of the automated transcription, i.e. data cleaning (Saunders, Lewis & Thornhill, 2007). Since the empirical findings will be analysed along the theoretical framework, transcribing the interviews enhanced the possibilities to find similarities and differences between both different interviewees, but also between what the theoretical framework stated. In the transcription work, the interviews were divided between the authors, however, all transcriptions have been double checked against the audio recording for each interview by both authors to enhance the reliability of the results (See 2.5 Reliability and Validity).

2.4 Analytical Process

Throughout the process of research, the authors have moved back and forth between theory and empirical findings, and also moved back and forth between inductive and deductive research approaches, hence creating the systematic combining and abductive approach of the research. Ghauri and Grønhaug (2005) describes the data analysis after the collection of data as the mean to systematically showcase the data and make sense of the amount of collected data. The most important part of the analysis is the systematic nature of the showcasing and that the data generates a complete analysis of the case at hand. The data analysis should then be the vessel where the theoretical ideas and empirical findings of the case are put together in order to strengthen, reduce and interpret the case (Merriam, 2009).

In order to follow a systematic way of analysing the data, the authors followed the advices of Miles and Huberman (1994) and labelled the data according to what part of the external environment process the data referred to. Since the case study investigated the process of external environment analysis and the way such analysis is integrated into the strategy of a global shipping company, the labelling was important to perform to be able to see what data was connected to what part of the process. From the transcribed data, comments were made by the authors in order to ensure that data had been used for display and presented in the empirical findings chapter. The comments also ensured that no data was missed or used in the incorrect part of the process. The use of labelling and commenting also assisted the authors into further data collection and what data was missing to ensure the full process could be covered in the empirical findings.

Through the interviews and data gathering, the theoretical framework was used in order to be able to put the data found into the framework and be able to analyse the data with the theory through the framework. This was executed as an “outside-in” process, where the first stage of the analysis analysed the organisation of the company and the division of external environment analysis into two different departments of the company. The second stage was analysing the factors identified in the theoretical framework, and then turning into the inner processes of the company and the way the analysis goes into the company strategy. Lastly, when the analysis had reached the inner circle of the theoretical framework, a revision of the framework was made in order to fulfil the abductive approach and enhance the analytical findings of the case study.

2.5 Reliability And Validity

When evaluating the quality of this paper, the authors followed the advices of Yin (2014) and used the concepts of reliability and validity. According to Leung (2015), reliability is a synonym of consistency when doing qualitative research. Consistency in terms of that the results must be consistent with the data collected. The discussion of reliability in qualitative research should be more directed towards the question of whether an outsider would get the same results from the data collected than whether the research is fully replicable or not. If the results would be the same with the same data, then the reliability of a study can be regarded as high (Merriam, 2009). In order to achieve this, researchers have to be accurate in terms of form and context constantly doing data comparisons (Leung, 2015). This is a form of triangulation, in which researchers use more than one method or source of information in their studies. Reliability can be differentiated in external and internal. The first one considers the degree to which the study can be replicated. This is normally a difficult task to consider in qualitative research due to the fact that the collected information is part of the social framework and specific circumstances of the first research, therefore difficult to be replicated (LeCompte & Goetz, 1982). The interview guides for each interview in the Appendix can be used when investigating the reliability of the study in terms of what data could be collected from the guides and whether the data presented in Chapter 3 matches the results and conclusions of the paper. The interview guides should therefore not be considered as a tool of replication, but only a guide to what the authors have asked in order to gather the data.

The internal reliability considers whether or not, in a research done by two or more members, the authors agree about the information they have collected (Bryman & Bell, 2011). In order to comply with the questions on whether different perceptions on data collected yield different results, the authors have gone through each of the interviews and transcriptions individually and checked for differences. Such procedure has increased the correctness of the data and made it neutral and objective to the authors. However, considering that two authors have been writing this paper, the mix of backgrounds, knowledge and points of views has helped to achieve richer discussions and therefore, richer results and conclusions.

According to Leung (2015), the concept of validity in a qualitative research considers if the research question is valid or appropriate for the result that researchers want to achieve. This also includes the consideration of a valid choice of methodology, research design, and

samples and data to achieve the required results. Bryman and Bell (2011) make a difference between internal and external validity. Yin (2014) distinguishes between three different types of validity; (i) construct validity, (ii) internal validity, and (iii) external validity.

The construct validity has in this paper been increased by using the technique of triangulation of data and external reviewing by participants of the case study. By having the participants reviewing the data, analysis and conclusions of the case study, the authors have been able to validate the process from an external perspective.

The internal validity refers to whether or not there is a good connection between the conclusions that researchers got and the theoretical framework. There must be a causality between the two parts, for the paper to have internal validity. To ensure that, the authors have discussed the *how* and *why* questions by not excluding any outlying factors. By moving back and forth through the theoretical framework and empirical findings, the authors have ensured that there can be causality between the theory, findings, and conclusions.

In the case of the external validity, it considers the degree to which the outcomes can be generalised through the society. This task can be difficult in a qualitative research due to the fact that this method normally only analyses specific case studies and small samples (Bryman & Bell, 2011). As far as this paper is concerned, the abductive approach the authors decided to have helped to connect more accurate theoretical ideas with the outcomes developed in the end. By describing the context of the case study, the outer limitations and the setting the case is conducted within, the external validity is increased through how the findings can be put into the context and possibly transferred to a case with the same characteristics. However, the authors do not believe that the findings can be generalised and put into other contexts without questioning, thus reducing the issue of limited external validity (Saunders, Lewis & Thornhill, 2007).

2.6 Ethical Considerations

Ethical considerations have been considered throughout the whole research process. The authors have complied to the guidelines and recommendations given by Bryman and Bell (2011) and Yin (2014) in terms of protecting human subjects in the case study. All participants in the study were given an understanding beforehand on how the responses and

viewpoints on the issues asked for would be used and how the responses would fit into the purpose of the study. Hence, informed consent could be given from each respondent to use the answers and responses. Also, how to treat the answers in terms of privacy and confidentiality were discussed. All interviewees were also able to decide whether or not to be recorded and considerations were taken that even though the spoken word has no copyright belonging to the respondent (Van den Eynden, Corti, Wollard, Bishop & Horton, 2011), the empirical findings used from the transcriptions made by the authors have referred to the spoken word by the interviewees. As mentioned in 2.5 Reliability and Validity, a draft of the paper was sent to the respondents for validation before published.

3. Theoretical Framework

This chapter gathers the relevant research done in the field. Firstly, the description of the external environment and the importance of its analysis for a company is described. Secondly, the three phases of the external environment analysis are outlined, which include the analysis of the business environment and 4 main factors to consider, the process of building scenarios and the strategy development. Finally, this chapter is concluded by building a conceptual framework which links all the theoretical findings together.

3.1 External Environment Analysis

The external environment is conformed by all the conditions and forces that affect the firm and define its competitiveness. The external environment can be divided in three different levels: the operational, industry and remote environment (Pearce & Robinson, 1997). The remote environment consists of external factors such as economic, social, political, technological, ecological, and legal (PESTEL) and therefore are beyond a firm's operations (Theotokas, 2018). These factors can give a firm opportunities to improve and develop its business activities but also threats that can hinder its growth (Pearce & Robinson, 1997). This environment layer has also been named as macro environment, which consists of broad factors that affect almost all firms among multiple industries. The PESTEL tool can help organisations to understand which the key actors are and what drivers that are going to push changes in the world within those factors (Johnson, Whittington & Scholes, 2011). Besides the PESTEL tool to analyse the remote environment, in the industry environment level, Michael Porter (1979) defined the framework in order to help managers to connect industry factors and their effects on the firm's operating environment. He defined five forces that affect the competition within a specific industry, which are (i) the threat of new entrants, (ii) the bargaining power of suppliers, (iii) the bargaining power of customers, (iv) the threat of substitute products and (v) the rivalry among existing companies within the industry. Specific industry environment for shipping companies are the supply of vessels, where the numbers of newbuildings and the numbers of scrappings per year are benchmark figures (Stopford, 2009). When it comes to the operating environment, the factors a firm should consider are the competitive position, the characteristics of the customers, the reputation among suppliers and the capability of the employees (Pearce & Robinson, 1997). In a shipping company, the operational environment is considered as the position the company has among other shipping companies competing for the same type of cargoes. Since the shipping industry is very broad

and versatile, the operational environment only constitutes of competitors, suppliers and customers within the same shipping segment (Lorange, 2005). Figure 1 shows the different layers of external environment and how the external environment can be divided into the different types of analysis and use for a company.

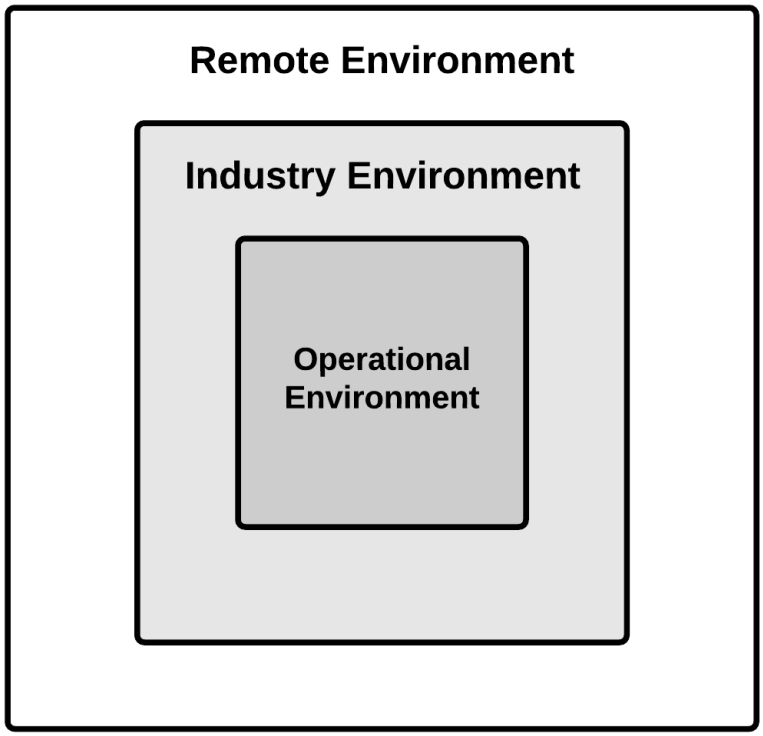

Figure 1: The three levels of external environment
Source: Adapted from Pearce and Robinson (1997)

As commented above, the external environment is divided into different layers and each layer has its components. However, firms need to consider that these factors within the different environments are not easy to identify. In addition, they are not mutually exclusive and are not equally applicable in all situations. Due to the dynamism and interactivity of the external environment, the impact of a single external factor can be associated with the impact of other factors within the external environment. In fact, in most studies of the environment it has been proved that the combination of a number of external factors create specific situations in the environment which have to be studied by firms. This at the same time creates difficulties for firm managers when it comes to attempting to anticipate changes in the external environment. Different external factors can have an impact on the firm at different times and with different strengths (Pearce & Robinson, 1997).

3.1.1 Benefits Of Performing An External Environment Analysis

Companies can benefit from external analysis by acquiring management skills in regard to strategic uncertainties, which can be seen as unpredictable future trends or events. Due to the complexity of the external environment, companies have to deal with different strategic uncertainties which can lead to an extensive process of information analysis. Due to the limited amount of resources in companies, not all strategic uncertainties can be managed, therefore, companies should consider these issues depending on the impact and the immediacy on the organisation. In regard to the impact of a strategic uncertainty, it should be mentioned that it is related to events that will have an impact on existing or potential businesses within the company. The importance of the businesses on which the strategic uncertainty has impact on and the number of involved businesses are also factors to consider when analysing the impact of strategic uncertainties. Besides this, the immediacy of a strategic uncertainty should be considered, which refers to the probability that events will occur. In fact, although events might involve a high impact on companies, there might be a low probability of occurrence, meaning that it would not be worth it for companies to analyse those events and consider them as possible threats. The time frame of these events is also a factor to consider in the immediacy. Finally, the reaction time available from the company in terms of developing and implementing an appropriate strategy is also considered. The less the time reaction availability for a firm, the more it should focus on anticipating emerging external events in order to start the strategies sooner (Aaker & McLoughlin, 2007).

In addition to this, Coulter (2013) also comments on how different external environment analyses can benefit a firm. An organisation can see the external environment as a source of resources, and the ability of acquiring the most resources from the environment will highly depend on the strategies that the company builds. These strategies should help firms to acquire as many resources as possible from the environment, which can be seen as inputs, but also to use the environment as a channel to deliver their outputs. This is why the understanding of the environment can benefit firms and their businesses. Moreover, it has been proved through different research studies that firms who are doing external environment analysis have a higher performance, as in the return on assets or profitability growth. Since doing external environment analysis can make a difference on the performance levels of a firm, it can be considered an important activity within a company and its strategic management process (Coulter, 2013).

3.1.2 Challenges Of Performing An External Environment Analysis

The external environment can change very rapidly, so rapid that firms often can face difficulties on following all the changes happening there. This, together with the fact that doing research on external environment takes time, can be a challenge for companies who want to keep track on the current situation of the environment and also on the future trends and events that can have an impact on the business of the firm. Organisations that consider the external environment analysis as a core activity within their businesses can appreciate how the lack of time negatively affects the possibility to explore and evaluate the environment in a systematic way. For this reason, firms have to develop an efficient and effective external environment analysis process in order to face the continuous changes and the lack of time among strategic decision makers (Coulter, 2013).

Another challenge that Coulter (2013) comments as relevant to consider for firms is related to the phase when forecasts are analysed by decision makers. Due to the rapid changes and lack of time commented above, the forecasts about future trends are imperfect. In other words, they are predictions, but not facts, about what might happen in the future. Due to the uncertainty of these predictions, the flexibility and openness towards changing events among decision makers is of relevance in order to build successful strategies. The accuracy of these predictions about future trends on the external environment might not always be high, and although they will not give a fixed solution to develop or create new strategies within a firm, they can provide decision makers with a direction the firm needs to follow in order to take advantage of the new information.

3.1.3 Analysing The External Environment

Due to the turbulent environment nowadays, firms find it difficult to manage constant changes. This situation is requiring more flexibility from global companies and more discontinuity when dealing with external factors. Managers have to be alert to changes in the environment and take decisions in a reactive or proactive way depending on the situation. This means that managers have to be constantly aware rather than doing occasional analyses using information systems within the firm, sources related to external environment information and the personal ability of managers to evaluate the importance of events that might impact the company. Changes that are difficult to understand make the environment complex. Therefore, leaders of today have to be open and responsive to the need for change and flexible when trying to deal with the complexity in a successful way (Thompson, 2001).

It is important for decision makers to scan the environment and evaluate what is happening in regard to external factors that can have an impact in the company and identify the opportunities and threats for the firm. The combination of the impact and immediacy has to be considered by companies in order to categorise the different strategic uncertainties arising due to the turbulent environment. In a situation in which both factors are high, a deep analysis and the development of reaction strategies would be appropriate (Coulter, 2013; Aaker & McLoughlin, 2007).

The external environment information gathering can be done through informal and non-scientific research or by doing a more formal and systematic research. In certain sectors, decision makers will decide to base their strategic decisions on an informal and unscientific process of obtaining information. This can be done through conversations with customers or suppliers or through magazines or journals which obtain information on general trends related to the external environment. This information, in many occasions, contribute with enough ideas and hints on trends that are going to happen in the future and on which decision makers will decide their strategic decisions. However, a better understanding and a greater knowledge of the external environment requires more systematic and deliberate research. Coulter (2013) considers that this more formal approach is fundamental for companies that in detail want to understand the opportunities and threats that the environment can offer them. Companies can benefit from an external information system that helps the top management team to obtain information about external factors on a regular basis and, in this way, recognise the advantages and threats that the environment can offer to the company and its business activities. The more complex and dynamic the environment, the more often companies will need to analyse it. This is why there is no specific number of analyses that firms have to carry out. For some companies this analysis can be done once a month while for other companies to perform an analysis of the external environment once or twice a year may be sufficient (Coulter, 2013).

One of the problems that managers often find when analysing the external environment is the large amount of information that exists in different sources. In the case in which this activity of external environment analysis is not done in a systematic way, it may happen that the information transferred to the company is not the most relevant for its strategic objectives. This is why it is necessary to find a connection between each external factor and its importance to the company or the industry where the company operates, since each external

factor can have a different impact depending on the industry. In conclusion, the most important information must be transferred and applied in the company (Coulter, 2013).

3.2 Four External Factors To Consider

When investigating the PESTEL analysis model, the main factors are Political, Economic, Societal, Technological, Environmental and Legal. Theotokas (2018) goes through these factors for shipping companies and the most important to consider are how political decisions can affect the trading environment in the world, hence affect the derived demand of shipping services, how economic development in countries and areas in the world contribute to the same type of changes, how environmental regulations affect the production pattern, but also how environmental regulations within shipping affect how shipping companies must work, and how technological innovations on ship design have changed the way shipping companies operate vessels. With the political decisions affecting the derived demand, the political part of the PESTEL analysis must be elaborated to include the geographical aspect of maritime trade.Therefore, geopolitical factors will be more suitable for this paper than pure political decisions. Same reasoning can be applied to the Economic part of the PESTEL, where global economic developments are more decisive factors for a global shipping company, hence, the introduction of geoeconomic factors. Lorange (2005) further emphasises on the importance of analysing the macro environment and how these factors within the macro environment greatly affects a shipping company.

Hereunder, the authors will go deeper through the four factors considered and how each factor affects the international trading environment and shipping companies.

3.2.1 Geopolitical Factors

In order to have a general definition of geopolitics, the online dictionary Merriam-Webster defines it as *"a study of the influence of such factors as geography, economics, and demography on the politics and especially the foreign policy of a state"* (Merriam-Webster, n.d.).

New emerging countries are becoming important in the maritime politics and economics, which are deriving to a transition of the influence and power areas to new geopolitical scenarios. States have become aware of the energy and biogenetic resources that the maritime space can provide. Despite this, the traditional world powers are still strong actors in the

maritime world. This is also leading to disputes on delimiting the maritime territory, which, at the same time, hinders the possibility of having an integrated maritime policy among old and new key actors in the maritime field. Due to the complex situation, the process of building cooperation in maritime issues among countries is a difficult task for actors like the European Union (Suárez-de Vivero & Rodríguez Mateos, 2014).

Economics can in many occasions be a key factor to understand different geopolitical situations around the world as well as conflicts in the international relations between countries (Giblin, 2013). Due to the globalisation process in the last decades, the interaction between countries has changed and increased, e.g. the formation and development of the World Trade Organisation (Van den Bossche & Zdouc, 2017). Despite the fact that many new agreements have arisen, this growth in the interaction has also brought new geopolitical problems. New emerging markets are becoming more and more important in the world´s economy, which is triggering economic rivalries especially with developed countries. On the other hand, thanks to economic globalisation, there has also been strong economic growth among developing countries (Giblin, 2013). The new trend associated with the shifts in the balance of economic and political power among states can bring alterations in current maritime transport routes. In other words, these alterations can affect positively or negatively the volume of traded commodities in current routes, besides giving the possibility to create new routes. These new routes can affect the trade advantage of countries and also the acceleration of technology developments in shipbuilding and navigation. Changes in economic geography will affect the characteristics and evolution of the global supply chain and the countries involved in it. This, consequently, will affect the trade routes and the trade flows. Certainly, maritime transport is very important for the economy of countries and for the companies that are integrated in the global value chain (Blunden, 2012). This is why economic issues should be considered in the geopolitical field, however there is still little research on the combination of these two approaches (Giblin, 2013).

3.2.2 Environmental Factors

In 1991, Michael Porter published a paper with a hypothesis stating that stricter environmental regulations could increase innovation and competitive advantages within companies. Arguments were that well-developed environmental regulation would enhance the way companies produce goods and innovations within environmental protection would result in better products and higher productivity. This was contradicting to the former

thoughts, saying that environmental protection was an additional cost, which took resources from the productivity of the firm, however, the new hypothesis saw pollution as a waste of resources and stated that well-designed regulations could take care of the wasted resources through innovations for better productivity (Ambec, et al., 2016).

The Porter Hypothesis was generated for the productivity and competitiveness of individual firms, however, environmental regulations have no significant influence on trade when it comes to how the regulations affect net exports of pollution-intensive industries, however, the intra- and inter-industry trade patterns were found to be influenced by differentials in domestic environmental regulations, i.e. shares of intra-industry trade are increased with differentials in environmental regulations between two countries (Cole & Elliott, 2003). Cole (2004) further tests the Pollution Haven Hypothesis (PHH) on North-South trade flows, to see whether evidence of the PHH can be found. The PHH is a hypothesis saying that more stringent environmental regulations, and the increased costs to adhere to the regulations, in one country may incentivise companies to relocate production of pollution-heavy industries to countries with less stringent regulations, i.e. the specialisation in production of the pollution-intensive parts of a global value chain is relocated to a country with less stringent environmental regulations than where the rest of the value chain is produced. Some evidence of the hypothesis is found, however, the total effects of the hypothesis are minor compared to the effects of other variables.

As seen in the last paragraph, environmental regulation only plays a minor role in the creation of trade patterns and only affects trade within highly specialised areas of the global value chain (Koźluk & Timiliotis, 2016). However, since trade is taking place between countries and nations, transnational environmental regulations and the governance of those regulations must also be investigated. Vogel (2000) explains how economic interdependence between nations have disproved the fears of the ‘race towards the bottom’, that nations and regions would create less stringent environmental regulations to be awarded with better conditions for trade. In fact, economic interdependence and integration has created stronger environmental regulations in regions. A problem posed by Vogel (2000) is the governance of the regulations between regions. Few environmental regulations are spanning more than a region of countries, mainly due to how different level countries are at, both in terms of development of industries, but also in how the public reacts to regulations not adhering to what the public

considers as good level. Therefore, there are only limited environmental practices and policies that affect the global commons.

The maritime industry is one industry that is partly regulated through global policies and regulations. The International Maritime Organisation (IMO) is the United Nations department responsible for the maritime industry worldwide, and also the regulatory body in environmental issues concerning the maritime trade. IMO constitutes of maritime state members, who meet at the Assembly every two years to discuss and propose new regulations. IMO is responsible for regulations on ship safety, pollution and security in the maritime industry. Regulations are only becoming laws when enacted and implemented into national legislation of each member state. However, some regulations cover the whole globe without implementation by the various members, namely conventions on the law of the seas (UNCLOS), maritime safety (SOLAS), and maritime pollution (MARPOL) (Stopford, 2009). Even though IMO is the governing body for the whole world regarding maritime pollution, the transnational environmental governance of the industry is lagging (Lister, Taudal Poulsen & Ponte, 2015). The IMO put the contribution from shipping on climate change as part of the agenda in 2003, however, multiple stakeholder views created a slow-moving regulatory body with no concrete emission reduction pathway or environmental action plan (Wan, el Makhloufi, Chen & Tang, 2018). Lister, Taudal Poulsen and Ponte (2015) discusses what the potential of IMO is in regards to how the transnational governance can be organised and orchestrated within shipping and the governance landscape of the maritime industry. They conclude that the environmental governance is very complex in the shipping industry and that an increased number of international, national, and regional agreements are taking place due to the slow-moving nature of the IMO, along with green shipping initiatives taken by cargo-owners and other private organisations, creating a regulatory mix of agreements and governing bodies. Lister, Taudal Poulsen and Ponte (2015) further argue that for the IMO to continue to be the transnational governing body of shipping, the organisation has to accept the hybrid nature of the regulatory sphere and address the slow-moving nature of the organisation.

3.2.3 Geoeconomic Factors

States are increasingly using their economic power to achieve their strategic political objectives when having international relations with other countries. This has lead scholars to start using the concept of geoeconomics, which assumes that the power of states does not

only come from physical control of territory, but also from managing the economic ties that connect states together in a borderless transnational relation environment (Wigell & Scholvin, 2018).

International maritime trade reacts to trends of world trade and to changes in any trade direction lead by powerful countries in economic scales. In other words, the demand for shipping services will depend on world trade oscillations (Jugovic, Komadina & Peric Hadzic, 2015). Those trade oscillations are influenced by external and internal factors and create a cyclical pattern of demand for shipping services. External factors can include wars or rapid changes in commodity prices and internal factors refer to specific activities within maritime transport that make the cycles to be dynamic and not to have a linear growth. There are four internal economic changes that can create trade oscillations and that any business should consider when working in international trade: changes in demand for goods, changes in the source of goods, change of location of the facility (which at the same time, can have an influence on the volume and type of ship required) and changes in the transport policy of the shipper. At the same time, the good organisation and cheap transport costs within the maritime industry helps to develop the world economy and world trade, giving to shipping companies a great importance (ibid.). Due to the combination of external and internal factors, each business cycle is different from the rest, although they can have similarities. Moreover, there is not a specific method to predict the timing of a business cycle (ibid.).

International trade has an effect on the countries involved in trade activities around the world and therefore, on the distribution of geo economic power among states. Due to the dynamic evolution of international trade, the geographical distribution of trade flows is constantly evolving, meaning that new actors with new roles in Global Value Chains (GVCs) emerge resulting in an increasing number of trade interdependencies both intra and inter regionally (Baracuhy, 2014). States that are in the early stage of the economic phase tend to import large amount of raw materials and export processed products to other countries, being very dependent on shipping services. However, as the economy of a country develops, the shipping demand becomes less important due to the less need of large amount of raw materials and the increased importance of high value added components and services (Jung & Kim, 2012). In addition, there has been a shift in the traditional balance of economic power and influence, due to which new geo economic powers have arisen and nowadays coexist with traditional geo economic powers. The increase in the number of powerful states is

bringing rivalries and fragmentation instead of cohesion among countries. Moreover, inter-regional trade agreements are increasingly being prioritised rather than multilateral agreements, hindering the trade flows and the cost reductions from global supply chains (Baracuhy, 2014).

3.2.4 Technological Factors

Technological factors appear in the outermost circle of the model of external environment, the remote environment, and plays a significant role in the operating framework of a shipping company. It is forces that may not begin in the market where the company operates, but have high significance on its development (Theotokas, 2018). Companies and their strategies can be affected by technological advancements occurring both inside and outside the industry or market in which those companies operate, therefore, technology is a factor that should be considered when doing external environment analysis. Despite the relevance of this factor and its potential impact on the strategy of a company, it is often difficult to predict the outcome of new technologies (Aaker & McLoughlin, 2007).

The technological factor can create opportunities and threats to the business activity of an organisation. In fact, technological innovations can have a great impact on the product research and development and on the work processes. Computerisation is an example of technological innovation that has had a great impact on these two sectors within the organisation (Coulter, 2013). Being aware of technological changes that occur in the environment helps companies not to become obsolete and to promote innovations within the organisation. All companies in general and companies that are in turbulent industries in particular can benefit from the knowledge and learning of current technological advances as well as future innovations that can affect their products, services and work processes. In recent years, attention has been increased in the prediction of technological innovations in the environment. Due to the greater concern for environmental measures, companies have focused more on investigating how technological advances can affect the environment (Pearce & Robinson, 1997).

Technological advancements in products and services are considered as one of the main elements in the growth of the shipping industry. Shipping is an early adopter of new technology, i.e. much of technology used in shipping was originally intended for other industries, however, the shipping industry applied the new innovations in an early stage. In

that sense, technological changes and innovations for the shipping industry does not only affect the transportation of commodities, but also connecting operations such as loading and discharging (Frankel, 1991). Any company wishing to survive in an uncertain and ever-changing external environment must be aware of technological changes and prepared to apply new innovations in products and services (Theotokas, 2018). According to Porter (1990), a company that early adopts structural and technological changes to the industry have advantages through economies of scale, experience gained, and reputation among customers against firms less willing to adopt new innovations.

3.3 The Process Of Building Scenarios

Due to high levels of uncertainty arising from rapid change and complexity in the business environment, it might be very difficult and even dangerous for companies to develop only one scenario that can influence or impact their strategies. In fact, analysing different scenarios give companies the opportunity to have a view on different possibilities and alternatives. This analysis offer companies the view on different possible future events or situations that might happen in such an uncertain environment. Due to the fact that predicting or forecasting changes in the environment is very complex, scenario analyses have the goal to encourage managers to be alert on different possible futures (Johnson, Whittington & Scholes, 2011).

The identification of the scope is important when building scenarios, meaning that the subject and the time span of the scenario has to be discussed within the company. Once the scope is established, the identification of key drivers for change is important to take in mind. Here, previously mentioned tools like PESTEL analysis can help companies to identify issues that can have an impact in the industry, region or market in which the firm operates. When selecting key drivers, it is important to consider opposing key drivers in order to come up with different or opposing outcomes. Finally, the impact of the scenarios that have been built has to be identified, including the development of contingency plans in case the scenarios happen (Johnson, Whittington & Scholes, 2011). Companies can analyse different future scenarios in order to deal with uncertainty in such complex environments, which involves the creation of a number of scenarios considering the external market in which the companies operate and assess them and the impact on the company and the probability that they can really happen. The scenario analysis can be carried out in two different ways. In the *strategy-*

developing scenarios, the goal is to do research on different future contexts and use this information to evaluate the existing strategies within the company and develop new ones. In the *decision-driven scenarios*, the company comes up with strategies that are tested against different future scenarios in order to challenge them. This help companies to take decisions regarding future events and evaluate the strengths and weaknesses of the strategies. In both types, three steps drive the creation of the analysis: scenario/scenarios creation, connect the scenarios to the current and future strategies and assess the probability of the scenarios (Aaker & McLoughlin, 2007). These two ways of conducting scenario analysis goes hand in hand with how strategy can be seen in a company, i.e. where strategy is either deliberate or emergent (Whittington, 2001). The deliberate strategy is a strategy drawing from the classical school of thought, where the strategy formation is a rational planning process with the sole objective to maximise the profit. The strategy is deliberative in terms that the strategy forms the structure of the company (Chandler, 1962). The emergent strategy comes from the evolutionary school of thought where strategy is emerging as a consequence of the market and external environment, creating an environment where the strongest and best prepared company will survive, i.e. survival of the fittest. Researchers argue that the focus of an emergent strategy should be on how to be efficient in a short term and be able to respond to turbulences and fast paced changes in the external environment, e.g. create a fit between the company and its external environment and have a flexible organisation ready to change in the way the external environment changes (Whittington, 2001).

Despite the fact that scenario building can be a very useful activity for a firm, it is very difficult to anticipate changes in the environment. However, analysing the potential impact of changes in the environment can help managers to focus on more certain options and eliminate the scenarios that are less accurate. Although environment forecasting might not help to come up with the best strategies, it helps to eliminate the options that are not relevant for the company in order to fit with the changes in the environment (Pearce & Robinson, 1997).

3.4 Building The Conceptual Framework

In his dissertation, Sjöberger (2014) builds a model of factors affecting the business strategy of a tanker shipping company. The strategic analysis model consists of both internal and external factors, where the internal factors are factors that a company can influence on their own and the external factors are factors that a company can not affect, but has to deal with

and adjust to. By investigating external factors, such as demand for transport, buyers preferences, threats from substitutes and alternative transportation methods, and remote external factors, the model aims at explaining how all these factors co-creates a business strategy for companies within the tanker shipping industry. Even though the aim and purpose of the creation of the model by Sjöberger (2014) is different from the aim and purpose of this paper, some aspects can be drawn from that model. Evidence is shown that all these factors influence the strategic choices of a company, hence, confirming the arguments of including external factors in the creation of a business strategy. The demand for transport and the external factors mentioned above are of great interest to this paper and will assist in the creation of a conceptual framework for the case study to be applied upon.

To investigate how a shipping company works with external environment factors and how changes in those factors can be integrated and implemented into company operations and strategy, a conceptual framework has been created. This conceptual framework is a three layered theoretical foundation on how the exploration of the factors lead to scenario building of the changes and then finally goes into the company operations and strategy. The conceptual framework was built on the theory of external environment analysis through the use of the four external factors (see 3.2 Four External Factors To Consider) and theory on strategic management when it comes to scenario building, implementation of forecasts and strategic planning. The conceptual framework is presented in Figure 2 below and explained layer by layer in the paragraphs below.

Firstly, the conceptual framework developed is based on the four explained factors from the remote external environment in the shipping industry. The authors see a connection between the factors in terms that each factor is not independent from each other, but must be analysed together with the others. The combination of these factors creates uncertainty when it comes to future trends or events. Companies in general and shipping companies in particular should consider the combination of these external factors and the possible scenarios that might occur in order to modify their current strategies and/or create new ones. Therefore, the framework creates an outer circle where the four factors are connected.

Secondly, the tools for analysing the remote external environment is heavily centered around scenario building and the ability of the management in a company to create scenarios for the factors and see what changes lie ahead in the future. This second step is based on how

scenario building is giving management of a company a way to anticipate changes in the four factors and plan for the changes. Since the theory states that management should focus on the scenarios that have the highest likelihood of entering into force or the scenarios with the highest impact on the business, the conceptual framework creates scenario building for each of the factors, depending on the specific situation for a company.

Thirdly, the scenario building gives advice to the management on how to incorporate changes in the remote external environment factors into the company strategy and how to plan for changes. Due to the scope of this paper and the focus on the first two phases of the process, the last and most internal phase is shown with a lighter colour to emphasize the two outer stages. These advices are highlighted as lines between each scenario into the company strategy. This once again shows how the four factors are connected. Theory also highlights that a fit must occur between the company and the external environment factors, which is pictured through the connecting arrows between the scenario building and the strategic component in the conceptual framework hereunder.

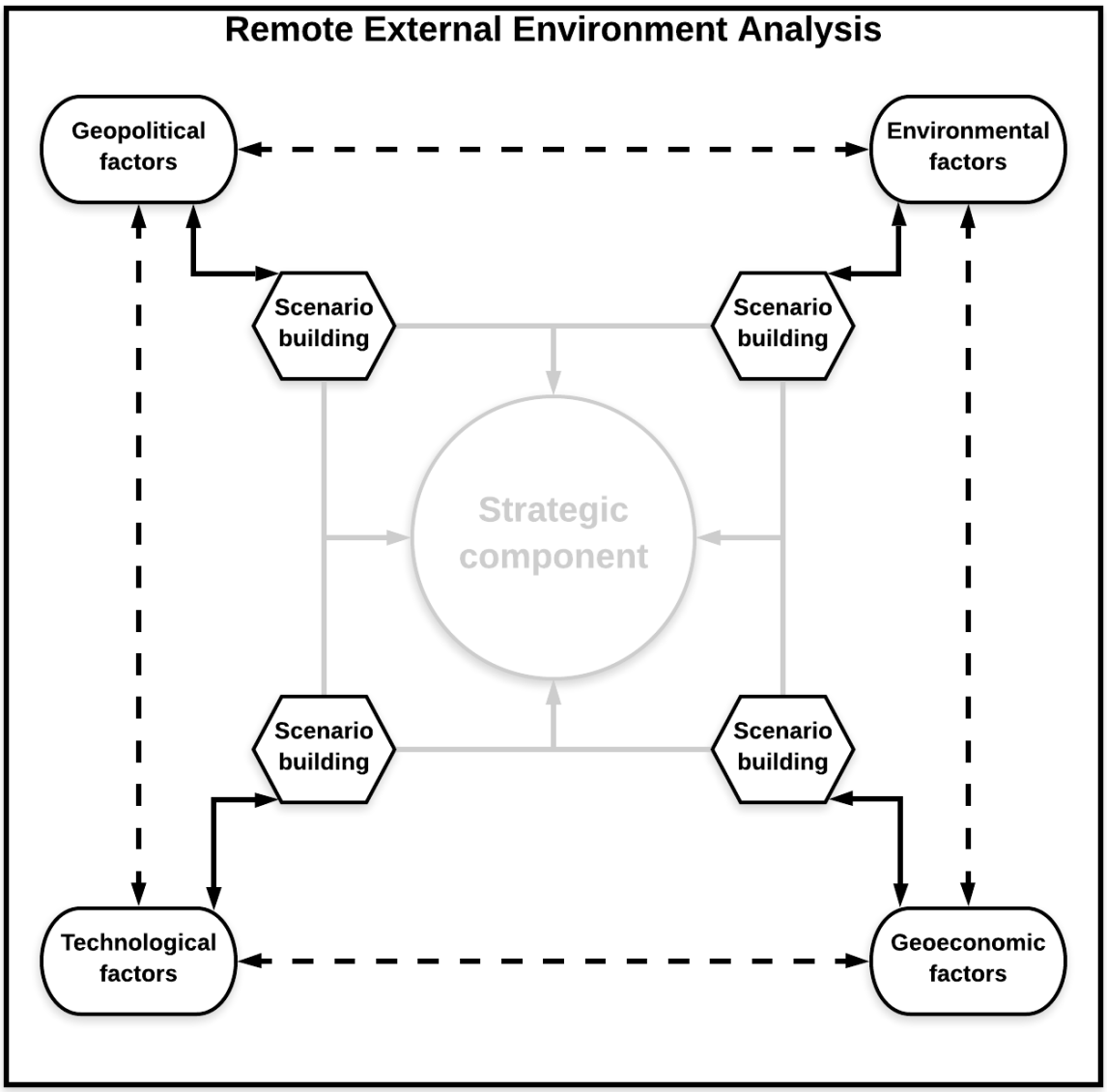

Figure 2: The Conceptual Framework
Source: Own illustration

4. Empirical Findings

This chapter presents the empirical findings of this research paper. Firstly, an introduction to the case company, its history, organisational structure and functions within the relevant departments of this paper. Thereafter, the processes of external environment analysis in the company will be presented along with the four identified external factors and the considerations given on each of them by the company. Lastly, a summary of the main empirical findings will be presented.

4.1 Introduction To The Case

Stena Bulk is one of the major tanker ship owners in the world with about 100 gas and liquid bulk tankers in the fleet (Stena AB, 2018). The company was founded in 1982 and is a part of the greater Stena sphere, a conglomerate consisting of companies within multiple business industries and sectors, however, the main part of the business is within the shipping and maritime sector (Stena AB, n.d.). With offices in six different countries, and vessels trading all around the world, the company is a global player on the tanker shipping market (Stena Bulk, n.d.). The whole Stena sphere, where Stena AB is one of three parent companies has around 16,000 employees, whereas Stena Bulk has around 2,000 employees, both on board and on shore (Stena AB, n.d.). However, on shore at the Stena Bulk offices there are around 90-95 employees, with around 25 in Gothenburg, around 20 in Copenhagen, around 20 in Houston, around 20 in Singapore and the rest in Dubai and Shanghai (Stena Bulk, n.d.).

Stena Bulk emerged as a company on their own from Stena AB as a new player in the accelerating tanker shipping industry in the early 1980's. They broke into the market with the vision of quality exceeding the competitors and with the aim of gaining long term trust from charterers due to high quality, both in terms of vessel quality but also in the manning and operation of the vessels. Due to the changing prices in oil from the oil crisis in 1973, the need for tankers rose during the 1980's and Stena Bulk expanded the fleet heavily. Most of the vessels were then employed in the spot market, where vessels are chartered out for single voyages only. Even though the freight market was good at the end of 1980's, the company decided to purchase high quality vessels on the second-hand market, where the profit could be increased compared to the profits for a new built vessel (Hermansson, 2012).

In 1989, the vessel Exxon Valdez was involved in an incident off the coast of Alaska and large amounts of crude oil was released in the arctic waters. That, along with other incidents including tankers and crude oil had caught the eye of the public and put the tanker shipping industry under pressure. Stena Bulk had, in 1989, ordered four new ships with double hulls for quality and environmental safety, anticipating new regulations in the transportation of oil. By being on the front foot in environmental sustainability and quality, the company welcomed the more stringent environmental regulations when they entered in the early 1990´s, and Stena Bulk could calmly continue the work as previously (Hermansson, 2012). This was mentioned by Göran Hermansson, the General Manager of LNG, that the more stringent environmental regulations affected the industry in terms that players increased the concern for quality and technological advancements within the industry. With more stringent regulations, the less serious actors, both charterers and ship owners, could be reduced and a higher level of safety and quality can be assured across the industry (General Manager of LNG, 2019-03-04).

In the early 1990's, another phenomenon appeared on the tanker market. The number of new vessels quickly increased, due to good freight rates in previous years, which meant that the world fleet rapidly outgrew the demand for transportation (Hermansson, 2012; Stopford, 2009). The combination of low freight rates and an ageing world fleet, many large tankers were going to scrap yards, however, with the high-quality vessels Stena Bulk owned, their vessels could be sold for offshore tanker storage use (Hermansson, 2012). Due to the changes in the world fleet during the 1990's, along with volatile oil prices, the profitability during the decade fluctuated heavily between years, however, the trough of the shipping market consisted until 2002 (Stopford, 2009). One thing that was consistent was the vision that high quality will pay off, and therefore, the company designed and built a new type of vessel, the V-MAX. By controlling the design in-house, the company could create vessels that were other than industry standard, although to a higher price, but with better transport efficiency (Hermansson, 2012).

During the 2000's, Stena Bulk initiated and participated in multiple collaborations and joint ventures, e.g. the Stena Sonangol pool of vessels and the Asahi Stena Tankers Pte. This created long term trading for many new-built vessels. The vessels were still built with new technological innovations from the engineers at Stena Teknik, further confirming the decision by Stena Bulk to be one of the front runners of quality and environmental sustainability in

tanker shipping (Hermansson, 2012). With the slogan “Oil should always travel first class” (Hermansson, 2012 p. 252), the company emphasises on the quality of the vessels.

In 2011, the company expanded the operations with the acquisition of three Liquified Natural Gas (LNG) tankers. The LNG business has risen sharply since 2011, especially in the Far East, where the political decisions in Japan to increase the use of natural gas as source of energy has aided the incline in freight rates of LNG carriers (Hermansson, 2012). Also the recent decisions by the Chinese government can be seen as indications towards a more gas based energy source, due to the environmental benefits from natural gas compared to coal and nuclear power (General Manager of LNG, 2019-03-04).

Within the last years, the uncertainty and volatility in the industry has become greater and greater (Business Controller, 2019-03-04), however, Stena Bulk has chosen to continue the focus on quality and sustainability (Hermansson, 2012). The Business Controller Jonatan Malka, part of the finance team, emphasised that the shipping cycles, which can be divided into long, short, and seasonal cycles, are becoming more and more volatile. Especially the short cycles, lasts on average seven years, are becoming more and more uncertain (Business Controller, 2019-03-04). Companies must be prepared for any changes in the short cycles and there are no regularities in the way the cycles behave (Stopford, 2009). Within this uncertain environment, external factor analysis becomes more and more important to track, and the analysis of external factors changing the surrounding environment must be part of the strategy development of the company.

4.2 The Organisation Of External Factor Analysis

According to the Vice President of Commercial Operations, Johan Jäwert, the core business of Stena Bulk is to transport oil and gas in tankers on a worldwide scale. With oil tankers transporting crude oil and refined products, such as diesel, petrol, jet fuel and vegetable oils such as palm oil and gas tankers transporting LNG. Within the core business Stena has developed contacts and knowledge during a long time from the creation of the company in 1982. Such contacts are customers, charterers, shipbrokers and competitors, and these contacts and knowledges of the industry and the players in the industry has helped Stena Bulk to develop analysing tools for the market and shipping industry in general. In the early 1980’s, the transactions in the shipping market were created by brokers of both sides of the

business, i.e. the broker of the ship owner and the broker of the cargo owner. By only having contact with their own broker, Stena Bulk could not take advantage of existing market knowledge. Therefore, the company started to command more and more information from the broker in terms of how the market looked like. The large broker houses used by Stena Bulk have major departments analysing the shipping market in order to have knowledge on how they can do business, and Stena Bulk started to buy in on that market analysis from the broker houses as a service. From then, the market analysis has been gathered from the large broker houses and by using multiple reports from different brokers, the chartering department within Stena Bulk has been able to build their own market analysis and market knowledge (Vice President of Commercial Operations, 2019-04-09).

With higher and higher volatility and uncertainty in the market over the last decade, the company created a new business group in 2016, called the Business Intelligence and Transformation Group. The task of this group was to analyse the external environment outside of the core business areas of the company, i.e. the commercial operations, LNG and chartering, in order to be able to detect and transform changes in the external environment outside of the shipping industry into projects and products applicable and workable in the core business of the company. This created a distinction in what type of factors were analysed by the different departments of the company, where the market analysis on the shipping industry was mainly kept within the commercial department, i.e. the Chartering Group and the Operations Group, and the broader analysis of external factors outside of the shipping industry was transferred to the new Business Intelligence and Transformation Group. The distinction in responsibilities in terms of external environment analysis can be seen in Figure 3, where the Business Intelligence and Transformation Group is organisationally equal to the core business functions and answers directly to the CEO.

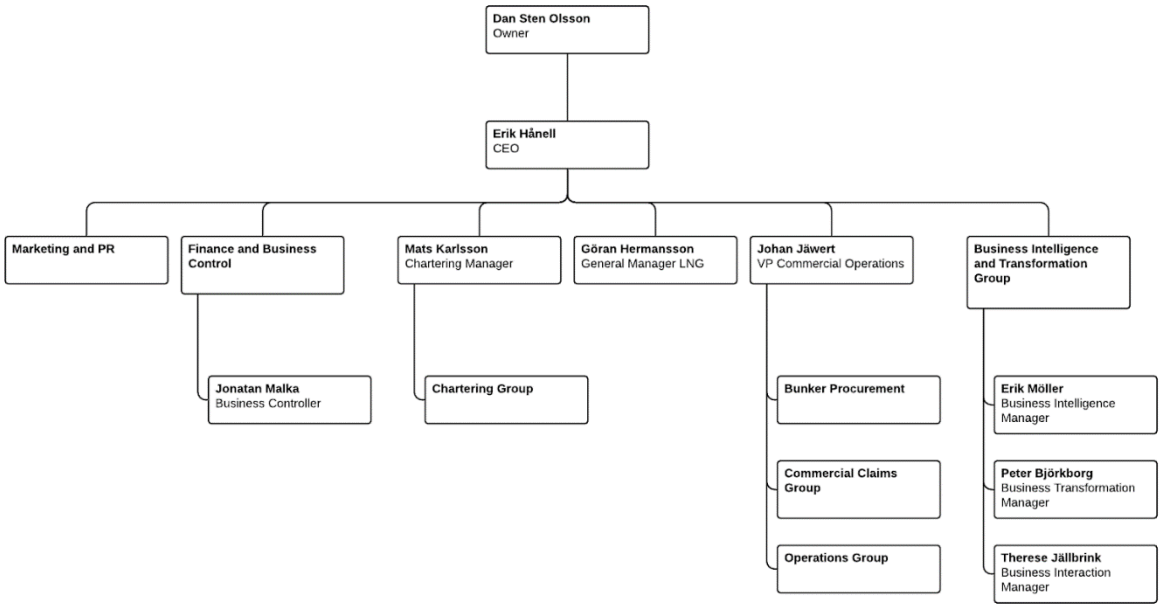

Figure 3: The organisational distinction between the core business and the Business Intelligence and Transformation Group
Source: Authors adapted from Vice President of Commercial Operations, 2019-04-09

4.3 Business Intelligence And Transformation Group

Between 2 and 3 years ago, Stena Bulk created the Business Intelligence and Transformation Group in order to look outside the core scope of the company and to analyse how external factors and rapid changes in the environment can affect the company. This group was created with the purpose of finding new external factors that can have an effect on the company, different from other factors that affected Stena Bulk in the past. Due to the constant evolution of these factors, Stena Bulk considers that rather than looking to historical factors, the company should look forward and focus on new scenarios. Another reason why external factors have become more important is because in the past, Stena Bulk was more focused on making money through asset playing, buying cheap and selling expensive. However, nowadays trading results from the core business functions are becoming more and more important and that is what Stena Bulk sees as important to move forward as a firm. Due to the fact that external environment can have a big impact on international trade, companies like Stena Bulk have shifted their effort to try to understand the remote, industry and operational environment (Vice President of Commercial Operations, 2019-03-19). Erik Möller, the Business Intelligence Manager and part of the Business Intelligence and Transformation Group, and who is in charge of searching and looking outside Stena Bulk to find things that can affect and that can be implemented in the core business of the company, mentioned that

one of the biggest challenges that Stena Bulk faces when trying to predict future trends and events is the high uncertainty that the world in general faces nowadays. Although the shipping market always has been very volatile, in the past, this industry was characterised by being very cyclical, so it was easier to predict the ups and downs of the market. But nowadays, as mentioned above, new tensions and regulations are making the global uncertainty to increase and therefore, it is more difficult for Stena Bulk to make predictions. Due to this change, Stena Bulk considers that the company has to be in the front and act fast when changes in environment happen. This means that the company is very opportunity driven rather than sticking to old habits (Business Intelligence Manager, 2019-03-08).

According to the General Manager of LNG, one of the key aspects in Stena Bulk is the high degree of flexibility, since not working with strategy plans. Due to the high volatility and uncertainty of the market, a 10 year plan can not be useful in an environment that might change every six months. This is why Stena Bulk works with building different scenarios and from there, develop a strategy with a more reactive approach. The company makes market updates based on external data from shipbrokers and oil majors annual reviews at least every quarter to analyse where the industry is going for the next 2-3 years. *"So you have to be very light footed and what you believe today could be completely wrong tomorrow."*

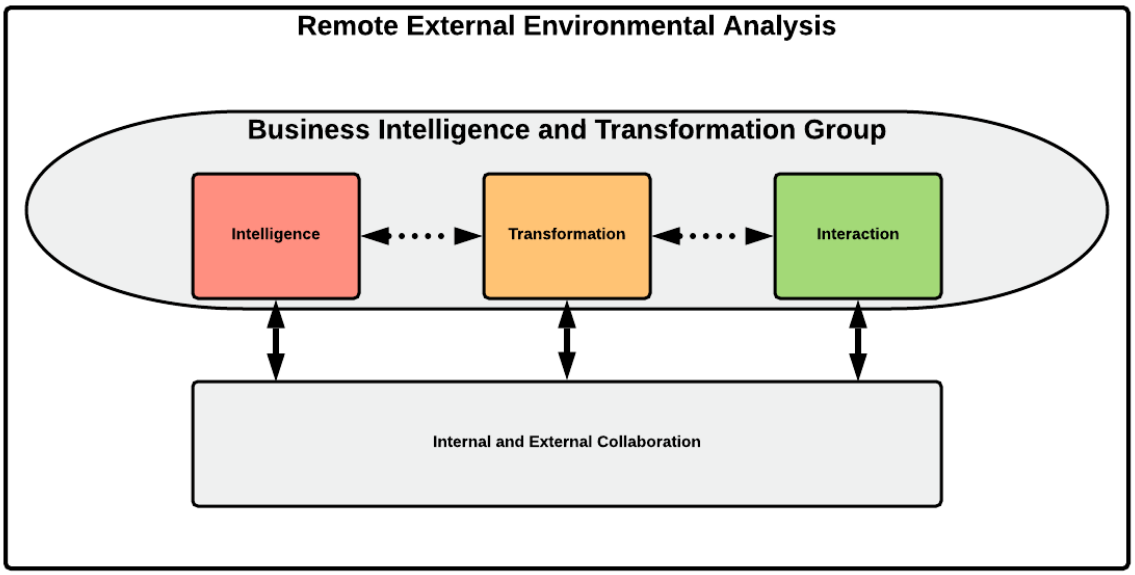

Figure 4: The organisation of the Business Intelligence and Transformation Group
Source: Authors adapted from Business Intelligence Manager, 2019-04-09

The Business Intelligence and Transformation Group has three main phases as can be seen in Figure 4 above. Firstly, in the Intelligence phase, the external environment is explored and analysed in order to see what is happening in the world and gain knowledge from different events and trends affecting or that might affect international trade. Secondly, in the Transformation phase, the goal of the group is to connect those events to the industry in which Stena Bulk operates through practical tests and finally, in the Interaction phase, the variables they have selected are transferred to the core business functions. In addition, the Business Intelligence and Transformation Group collaborates with other internal and external actors that can provide relevant input in regard to external factors and their impact on Stena Bulk (Vice President of Commercial Operations, 2019-03-19). For Stena Bulk, it is important to create and develop these teams of people doing research on the environment within the organisation instead of contacting with people outside the company to do this task. In fact, even though only three people in Stena Bulk is in charge of analysing the environment, only 95 people make the Stena Bulk group, which means that 5% of the personnel is doing this research (Business Intelligence Manager, 2019-03-08).

According to Therese Jällbrink, the Business Interaction Manager, the group does not have a Standard of Procedure which sets step-by-step instructions or procedures on how the external environment analysis process should be carried out. Despite the three different stages, the idea is that the process should be very flexible. The group is constantly trying to improve the methods they use throughout the process in order to achieve the agile style that help them to reach the highest effectiveness (Business Interaction Manager, 2019-04-09).

Despite the fact that in theory the Business Intelligence and Transformation Group looks like a straight line, in practice it works more like a circle. Although the group has three different stages and some activities are very much part of any of them, there are certain activities that have as an objective to connect the different phases and the members involved. This means that there is interaction between the three phases and that the Interaction phase can be an input for the Intelligence phase. This interaction enables the three group members to be connected and cooperate in order to achieve the goal of transforming external factors into useful input for the core business of Stena Bulk (Business Intelligence Manager, 2019-04-09). Therefore, the Business Transformation Manager, Peter Björkborg, mentioned that the three phases are not independent from each other. Members learn from and talk to each other

and this is why some activities sometimes overlap (Business Transformation Manager, 2019-04-09).

4.3.1 Intelligence Phase

As seen in Figure 4 above, the Business Intelligence and Transformation Group consists of three functions and these functions corresponds to the phases of remote external environment analysis in the company. Remote external environment analysis goes from the outside in, where the first task is to explore and investigate the factors in the remote external environment. The Figure 5 below shows how the Intelligence phase explores and investigates the external factors.

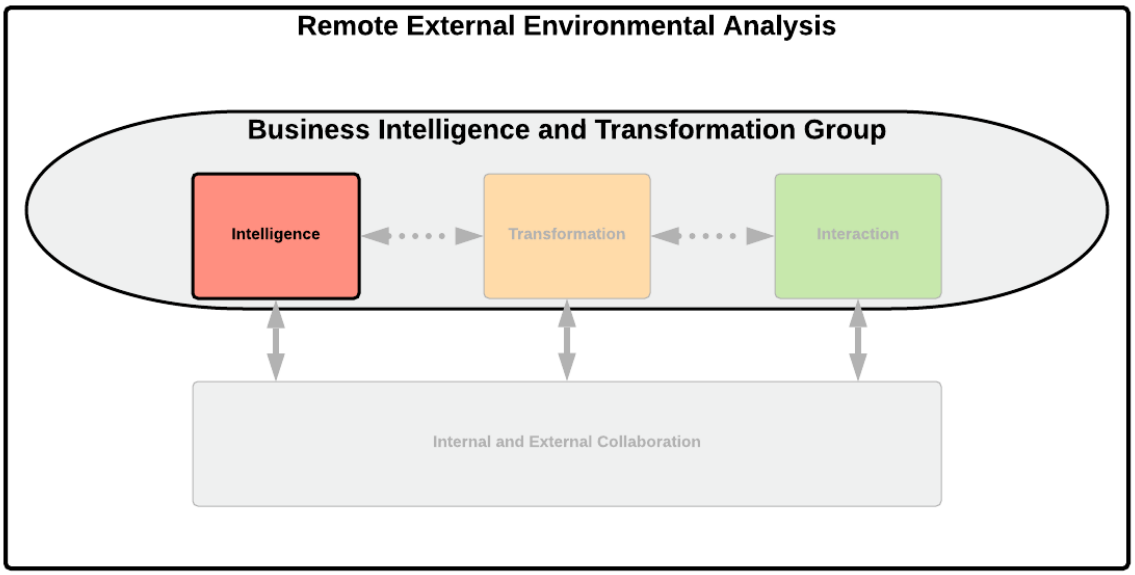

Figure 5: Illustration of the Intelligence Phase
Source: Own illustration

The Intelligence phase is considered the most external one in the environment analysis in which the Business Intelligence Manager is the responsible to explore and seek external factors that are not related to the core business of the company but that can affect the business. The three pillars of gaining knowledge on external factors are curiosity, read a lot and think outside the box (Business Intelligence Manager, 2019-03-08). In addition to this, the management level, in order to get the most from analysing external factors, is constantly looking for the right and competent people to do so within the company. In the beginning the group was created with a very large scope in order to try to capture many different external

environment factors, but in this attempt to try to capture as much information as possible, the group was not effective and was running in all kind of directions. Nowadays, the group efforts are very much oriented to digitalisation and environment sustainability factors, since it is thought that those are the two areas with the biggest implication to the core business. This focus has helped the group to be more effective when selecting the variables to analyse further (Business Intelligence Manager, 2019-04-09).

To start, the responsible of this area investigates what is going on in the world within different external factors. At this stage, it depends more on the individuals within the company to acquire knowledge from outside and, as the Business Intelligence Manager mentioned, when doing this it is important to think outside the box. In the last years, the Business Intelligence Manager realised through this phase that sustainability and blockchain were variables that were gaining relevance on international trade discussions and that therefore, due to the global scope of Stena Bulk, might have an effect on the company. At this phase Stena Bulk can contact researchers and universities to help them doing research on factors that can affect the industry and get more specific information from new generations that have a greater knowledge on new technologies (Business Intelligence Manager, 2019-03-08; Business Intelligence Manager, 2019-04-09).
Despite the fact that the Business Intelligence Manager is the responsible for the Intelligence phase in theory, in practice this position requires to be flexible. This means that the responsible person for this phase needs a connection with the internal part of the company to ensure that the information about the external environment can make good sense for the core business. In addition to this, the Business Intelligence Manager can also be available to the other functions within the Business Intelligence and Transformation Group in other stages of the external analysis environment to provide them with necessary information to achieve their goals (Business Intelligence Manager, 2019-04-09).

When analysing different external factors, a key action is to think about which is the impact that the specific factor can have 10-15 years ahead and whether it is going to affect Stena Bulk´s businesses. Through the exploration of the environment, the Business Intelligence Manager thinks that the creation of different hypothetical scenarios is useful when analysing different data sources at the same time since it helps to put different data pieces together and create a structure that the company can work with. It is also about interpreting the information and see whether the shipping industry and the competitors have really started to

work with new external trends or not (Business Intelligence Manager, 2019-03-08; Vice President of Commercial Operations, 2019-03-19).

The Business Intelligence and Transformation Group has an activity called scenario building where they create scenarios for the company and show them to the management team. Normally, the scenarios are divided in short, medium and long term and each of them is analysed in order to see the potential impact and actions in each stage. Although sometimes the scenario building might look too theoretical or unrealistic, the Business Intelligence Manager highlighted the importance of the scenario building process because in many occasions *"things that we don´t think will happen, will happen"*. This is why Stena Bulk focuses on trying not to be too narrow minded when building different scenarios and think outside the box (Business Intelligence Manager, 2019-03-08). One of the objectives of scenario building is to get the management team to think more outside the box and to think in new ways and new directions. In other words, the objective is to make the management team a bit uncomfortable with the ideas presented to them so they can be more prepared for upcoming scenarios even though they can be completely unrealistic. This process helps managers to open their minds as it gets them outside of their comfort zones and challenging the managers is very positive for the firms, since the openness for new possible changes is increasing (Business Intelligence Manager, 2019-04-09).

As seen above in Figure 5, the Intelligence Phase is the exploration phase of the remote external environment analysis, hence exploring the remote external factors. Hereunder each factor is described and analysed through the considerations of the different actors interviewed at Stena Bulk.

4.3.2 Remote External Factors

4.3.2.1 Geopolitical Factors

Nowadays, international business is being affected by increasing geopolitical tensions around the world as well as by populist parties that have started to govern in different countries. In fact, politics are becoming more uncertain and more difficult to foresee. This issue together with tensions in international relations and the domestic protectionism imposed by several countries have made firms operating internationally aware of the complexity of geopolitics. This situation stresses the need for international firms to analyse and understand the possible

opportunities and risks originated from these geopolitical and regulatory changes in order to develop their international strategy. In fact, geopolitics is considered to be interconnected to other issues such as global economics, commodity constraints and pricing and monetary policies. Due to the complexity and unpredictability of geopolitics, firms have to understand that it is an issue they cannot solve; however, they have to consider it as an external business force that has to be understood and managed (EY, 2018).

As the General Manager of LNG acknowledged *"the world is very fragile right now and has been for quite some time"*. Different events around the world such as the war in Yemen, the likely civil war in Venezuela with the sanctions from the US, and the ongoing trade war between the US and China are creating uncertainty in the LNG trade according to him. Among these, the General Manager of LNG highlighted the trade between Donald Trump and the Asian country and the difficulty of following what is happening in terms of political stability and how that can impact global trade. On the other hand, the uncertainty and the nervousness of people bring an automatic increase in shipping demand (General Manager of LNG, 2019-03-04; Vice President of Commercial Operations, 2019-03-19). Within oil and gas transportation, the need for charterers and cargo owners to sustain their supply chain in turbulent times is important, therefore, the demand for transport in turbulent times is often increased. The world will still need energy during the turbulent times and the cargo owners are then likely to charter vessels on a longer-term basis to sustain the flow in the supply chain. When a shipping company experiences that turbulence is coming, the need of operational flexibility and openness is essential (Vice President of Commercial Operations, 2019-03-19).

The Business Intelligence Manager also highlighted the uncertainty in the global market and in three important areas for global trade, the US market, the European market with the Brexit issue and the strength and dominance of China and the uncertainty regarding the position this country will have in the future. China is considered as a very interesting country in the future; due to their communist mind-set, the government there push money to make big projects happen, as it is happening in the energy sector, where Chinese government is switching from burning coal as an energy source to cleaner energy resources like LNG (General Manager of LNG, 2019-03-04). This change in source of energy is mirrored in the trade statistics of China during the last years. In 2017, China increased the natural gas consumption by 15.1 %, or an equivalent of 13 billion cubic metres. Statistics for natural gas production and

consumption in China show that there has been an average annual growth of 8.9 % since 2006 in production, but an annual average growth of consumption by 13.7 %. Today, China is the third largest consumer of natural gas in the world, only after the US and Russia. The increase in consumption created a demand for imported gas from international trade, thus a derived demand for LNG shipping into China (BP, 2018). Considering the size of the market, these types of drastic changes affect Stena Bulk and the trade patterns, since the General Manager of LNG stated the Chinese market, when it comes to gas demand, *"every month they put a new record"*.

All this considered, geopolitics can be directly related to volatility and instability and therefore, *"Geopolitics is something that could kill the market quick and it's also something that could increase our earnings very quick"* (Business Controller, 2019-03-04).

4.3.2.2 Environmental Factors

Environmental sustainability is a very important part when looking at external factors. Stena Bulk face different environmental regulations that will have to be implemented in the near future. This is a factor to consider since the company has to make fundamental restructuring of vessels, engines and propulsion systems (Business Intelligence Manager, 2019-03-08; Vice President of Commercial Operations, 2019-03-19).

In 2020, the IMO will implement more stringent global regulations where the maximum sulphur emission to air from the fumes of the vessel will be 0.5 %. The decision from the IMO was taken in 2008, however, with a review in 2016 to ensure that implementation in 2020 is possible. The review would assess the readiness of the maritime industry to run the global fleet on low sulphur fuels, or techniques reducing the emissions to the set limit, or if the implementation would have to be postponed to 2025. The review was conducted in 2016 and showed that the maritime industry is ready for the implementation in 2020 and therefore, all vessels trading must be compliant with the 0.5 % emission level for 2020 (IMO, 2016). This creates foundations for strategic choices in terms of how ship owners will work with emissions and sustainability (Vice President of Commercial Operations, 2019-03-19). Considering the 2 years of shipbuilding process and the 20 to 30 years that a vessel can be operating, the company has to consider that the ships built now have to be down the line of the regulations that are coming in the near future. The fulfilment of these regulations requires a lot of money so that the companies can adapt their vessels, either putting a scrubber or

having low sulphur fuels. The question for Stena Bulk is which of those adaptations is the best. Again, the uncertainty makes it difficult to foresee what is going to happen (Business Intelligence Manager, 2019-03-08). What is certain is that going for low sulphur fuel and scrubbers on board at the same time would be a loss for Stena Bulk. The firm has installed scrubbers on 16 out of 40 owned ships, the newer and bigger ones, in order to find the balance when facing the new sulphur regulations. However, no one knows whether it is the right decision or not, since it is a situation Stena Bulk has not been in before (Vice President of Commercial Operations, 2019-03-19).

Due to the global approach of Stena Bulk, the company has to be compliant with all the regulations that are applied in the environment and sustainability area in order to do trade. In the Task Force on Climate-related Financial Disclosures (TCFD), the G20 countries have set up different rules through the TCFD Recommendations which banks, oil companies and transport companies will have to adapt to. In the near future, shipping companies will have to show their investors and owners how they are affected by the climate change and that they are in line with the Paris Agreement and the objective of no CO_2 emissions by 2050 in order to receive financial support from banks. The companies who can not show that they have a plan or that can not show they are moving in this direction will have difficulties in getting this financial support or they might have higher interest costs (Business Controller, 2019-03-04). The Vice President of Commercial Operations also agrees on the fact that access to capital in the future will be a very important factor for Stena Bulk and that it is connected to the sustainability and environmental regulations (Vice President of Commercial Operations, 2019-03-19).

According to the General Manager of LNG, the more regulated the market is the better for Stena Bulk. The reason is that to be able to comply with these regulations, a company needs good systems, people and quality in general, which means that many players within the industry that lack the capacity to adapt to the new regulations disappear. On the other hand, due to the low entry barriers into the market, there are constantly new players coming to the industry, but all in all, the more regulatory the market the better for a global company like Stena Bulk.

Since the 1970s, when big tanker accidents started to happen, environmental regulations have become very important external factors for companies like Stena Bulk. However, for the Vice

President of Commercial Operations, the difficulty lies not so much in complying with the regulations but with the safety demand from customers. When oil companies started to realise that accidents could endanger their business, they started to inspect Stena Bulk´s ships every four to five months and inspect everything from the procedures to the maintenance of the vessels, being much more rigid and stricter requirements than the environmental regulations set by governments or institutions. The combination of all these requirements has made tanker operations a very safe and environmentally friendly business (Vice President of Commercial

4.3.2.3 Geoeconomic Factors

Changes in the origin and destination of supply and demand among developed and developing countries affect the trade routes and therefore, the distance a vessel has to cover and the size of it. One of the geoeconomic factors that has affected Stena Bulk in the last years is the location of refineries. Since 2014, there have been many oil refineries built in India, China and Japan, making oil trade routes to change. Before this trend, oil was transported mainly from countries like Saudi Arabia and West Africa to refineries in Northern Europe. From there, refined products were transported to Asia. Nowadays, as mentioned above, that trend is changing since oil is moved now mainly to India and China and from there, refined products are traded to the rest of the world (Business Controller, 2019-03-04). This change in structure of trade can be seen in the statistics over refinery capacity and the possibilities to import crude oil for developing countries. The refinery capacity in China and India has had an annual average growth of 5.4 % and 4.9 %, respectively since 2006. This can be compared to the world annual average growth in refinery capacity of 1.0 % since 2006. India is starting from relatively low levels of capacity, only 5.1 % of world capacity in 2017, whereas China holds 14.8 % of the refinery capacity in the world (BP, 2018). One of the reasons for this change is the economic development of these developing countries and the increase in their population, which means they need more energy to supply the whole system (Business Controller, 2019-03-04; BP, 2018). While developed countries in the Western part of the world, like Sweden, have already started developing renewable energies, in other parts of the world, like Asia and Africa, the dependency on oil and gas will still be very high after switching from coal. These trends in the supply and demand of commodities traded by Stena Bulk will drive its trade routes in the future (Business Controller, 2019-03-04). These changes in supply and demand also affect the prices of the commodities. The freight rates for the transportation change with the prices

of the commodities, where high freight rates in oil products do not necessarily mean high freight rates in LNG and vice versa (General Manager LNG, 2019-03-04).

In the last years trading patterns have changed considerably. When it comes to oil trade, the supply and demand is changing. Demand has already started shifting from the US to Asia and Europe, where the production and consumption of oil and oil products have grown closer and closer for each year since 2007. From a US domestic production deficit in oil of 662 million tonnes in 2007 to a domestic production deficit of 342 million tonnes in 2017 (BP, 2018; Vice President of Commercial Operations, 2019-03-19). US in general has moved towards oil and energy independence, i.e. domestic production higher than domestic consumption, in the last decade, changing the supply and demand for oil and energy (Rapier, 2018). This factor, according to the Vice President of Commercial Operations is very important, since it might affect the ton-mile measurement and therefore the demand for ships. However, less oil is moved but it is moving longer distances, so it is not having a big impact in the ton-mile. These changes have to be constantly controlled by the company, both the consumption levels and the locations of the consumption. According to him, the demand and supply of commodities like oil have a bigger and more direct impact on Stena Bulk than geopolitics (Vice President of Commercial Operations, 2019-03-19).

4.3.2.4 Technological Factors

Technology is an important external factor, especially since the digitalisation trend began worldwide. The Business Intelligence Manager spends long time reading on the web about technological advancements and different technological trends that can be applied to the shipping industry in general and to Stena Bulk in particular. In fact, thanks to this process, the blockchain concept was found as a very interesting tool to apply in the company since many other initiatives are arising in the shipping industry related to the blockchain concept. In addition, other technological aspects are of a big concern at Stena Bulk. In relation to the communication with the different vessels that are operating worldwide, the Business Intelligence Manager considers the system inefficient and commented that the communication with the vessels, the stream of information and the quality of it could improve if the sensors on board would be less isolated and if this information could be hooked up from the outside, however *"it's very easy in theory, but in practice it's not so easy"* (Business Intelligence Manager, 2019-03-08).

The Business Intelligence Manager considers that different technological advancements will help Stena Bulk to handle the transparency requirements that the industry could face in the future. Already today, the company starts to see this trend of transparency. All the vessels above a certain size need to have an Automatic Identification System (AIS) transmitter which transmits, combined with a lot of metadata, the position and the route. Due to this, the company has created an internal tool called Orbit (Business Intelligence Manager, 2019-03-08). This tool gives the chance to be transparent within the company but also with the customers, since both can track and check different specifications like the cargo, route, speed etc. of Stena Bulk vessels around the world. This transparency requirements, together with Orbit, can help Stena Bulk to analyse the movements of competitors and get conclusions for its business (Business Controller, 2019-03-04). So, as the Business Intelligence Manager stated, *"you can't hide anymore"* (Business Intelligence Manager, 2019-03-08).

The Vice President of Commercial Operations stated that before the technological transparency occurred, the operational gains from hiding the vessels could be great. A ship owner could have open vessels lying in the same spot, waiting for cargoes, without the charterers and cargo owners knowing. This gave the ship owner an advantage in terms of releasing only one vessel at the time to the market. For example, a ship owner could have multiple vessels lying open outside West Africa, however, telling the charterers that only one vessel was open, therefore decreasing the supply of transport for the charterers and increasing the freight rate. With transparency and openness, due to technological advancements, the charterers would know that multiple vessels are open in the same spot and that the supply of vessels exceeds the demand for transport, thus decreasing the freight rate. The transparency requirements from the market, i.e. the charterers, demand the ship owners to have higher efficiency in the operations and vessels cannot be lying open without the knowledge of the charterers anymore (Vice President of Commercial Operations, 2019-03-19).

Moreover, the Business Intelligence Manager considers that technological innovations will not stop, and they will push forward the whole industry. In this sense, Stena Bulk and its top management, as a global company and one of the leaders of its industry, has as an objective to be the ones always in front and push this constantly evolving factor forward instead of staying behind watching how other competitors take the lead. The fact that the shipping industry has been extremely late into the technology and that no one was talking about digitising the market has not stopped Stena Bulk in its effort to boost the technology in the

industry. The technological innovations that have happened in other industries could be happening to the shipping industry too, however, delayed. In fact, this innovative attitude within the company is important according to the Business Intelligence Manager because *"we actually see there is probably a market gap at this point where we actually have like 24 months or 18 months advantage based on others so that's also one reason why we tried to do this and put it out and get traction out on the markets".* In this line, the Business Controller also underlined the importance of the transparency of the industry in the near future and that there is no proof in the industry that the competitors of Stena Bulk are being active within this issue yet.

The Business Controller also highlighted the low-tech aspect of the oil and gas trading specifically, compared to the digitisation process that other industries have experienced. The Vice President of Commercial Operations also agrees on the fact that oil is a very easy commodity in the way it is moved. Basically, the cargo owner loads the ship and then the cargo is transported to the port of discharge to be emptied from the ship. Crude oil can be stored for a very long time and although there are different types of crudes, it is considered as one big commodity. The combination of being such an extremely high value commodity and very easy to transport make different actors within the industry to be reluctant to make technological advancements. The Business Controller acknowledged that *"it is a very conservative industry. Hopefully we can change that in the future".*

The marine technology has been neglected along the history and it was highlighted the fact that marine technology, in terms of ship design and technological innovations within naval architecture, has seen small improvements but right now the shipping industry needs big changes. In line with the Business Intelligence Manager and the Business Controller, they also consider the industry very conservative and very much oriented to production economics, meaning that shipyards want to build the same hull shape as many times as possible. These two factors are, in his eyes, the main impediments for drastic technological advancements in the shipping industry and *"to a certain degree, a bit of laziness".* In addition to this, the General Manager of LNG, raised the discussion about whether it is worth the money or not for shipping companies to have engineers and naval architects employed in order to be on the lead of technological innovations, since adding new technologies to vessels cost a lot of money, which at the same time can be a difficult situation for a shipping company that wants to be competitive price wise with their customers (General Manager of

LNG, 2019-03-04). The charterers and cargo owners are unwilling to pay higher freight rates, however, the vessels must be top quality to be able to carry the cargo. This creates contradictions and challenges in the operation of the vessels, where Stena Bulk has made a strategic decision of being one of the top ship owners in terms of quality and sustainability, but that comes with a higher cost than being just compliant to the regulations (General Manager of LNG, 2019-03-04; Vice President of Commercial Operations, 2019-03-19). By using the new technologies, Stena Bulk tries to gain operational advantages by having the option of carrying cargo for all major charterers on all their vessels. Being certified for all cargoes on all vessels gives Stena Bulk the opportunity to always substitute open vessels in regards to where the cargoes are open. If by doing so, the company manages to catch a cargo before a competitor can catch the same cargo, the competitor has to wait additional days to catch another cargo. Even though charterers are not willing to pay more for the high quality, Stena Bulk expects that operational efficiency through technological innovations like Orbit will help the company to squeeze the margins of the industry (Vice President of Commercial Operations, 2019-03-19; Business Controller, 2019-03-04).

However, a concern is that a ship owner that invests large amounts in new designs will also have to pay higher construction costs to the shipyards, therefore creating double costs for new vessel designs. A ship owner must be certain that the new innovative design will be useful and make a return on the major investment (General Manager of LNG, 2019-03-04). However, sometimes new designs that are brought to the market by different actors become the new standard in the industry. This was the case with the double hull tankers in the 1980s, where multiple oil spill accidents from tankers with single hulls created turmoil in the industry, and the oil transportation was caught in the public eye. Double hull tankers were introduced, however not legislated to be used for liquid bulk transportations until early 2000s (Theotokas, 2018).

4.3.3 Transformation Phase

The Figure 6 below shows how the Transformation phase gathers the information from the previous phase on external factors and test it in order to see whether or not a later integration into the company strategy is possible.

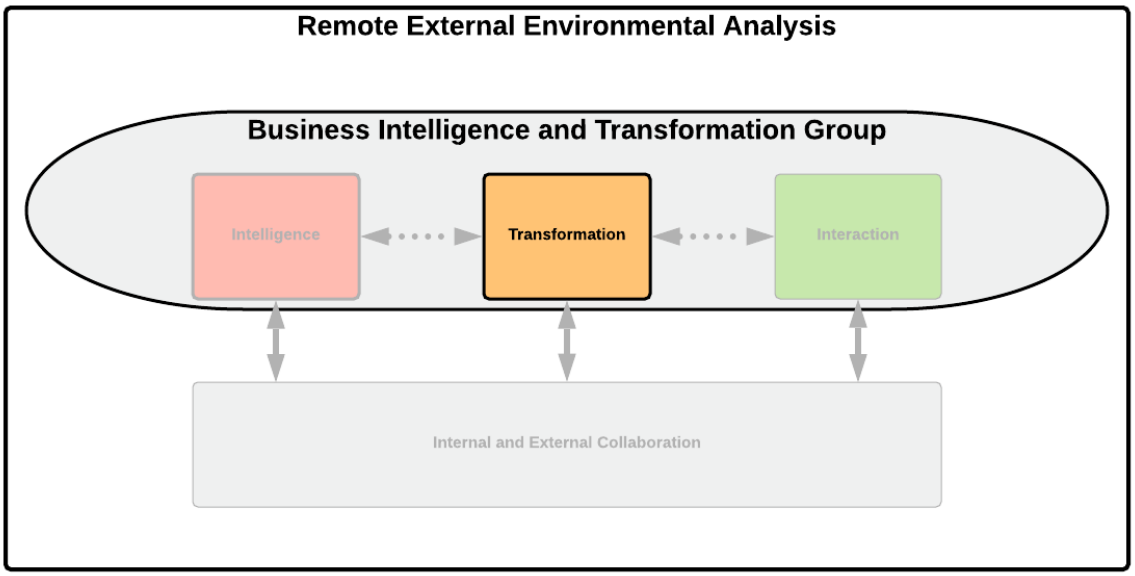

Figure 6: Illustration of the Transformation Phase
Source: Own illustration

In the Transformation phase Peter Björkborg, the Business Transformation Manager, implements and converts the external ideas from the Intelligence phase into something practical (Business Intelligence Manager, 2019-04-09).

However, before this phase takes the lead on the ideas obtained in the Intelligence phase, Business Intelligence Manager together with the Business Interaction Manager, discuss whether the external ideas obtained are relevant for the core business. They discuss if the ideas could work for the current operation of the company or if they could work in the future. If they decide that the ideas are interesting and that a project should be developed, then the task is passed to the Transformation phase where a Proof Of Concept (POC) is performed in order to test the ideas (Business Interaction Manager, 2019-04-09). A POC tests whether the idea sprung out of the Intelligence phase can be transformed into something the company can later integrate into the core business functions. The POC validates or dismisses the idea on an early stage by showing how the project can turn out if further integrated into company strategy. Without this step, the risk is that an idea is developed without testing on a small scale and when transformed into a core business function project, it turns out that the project is not possible to go through with. If the company then has invested a lot of resources into the development, then the decision to pull out from the project can be hard to take (Business Transformation Manager, 2019-04-09; Business Interaction Manager, 2019-04-09).

The POC can be developed by the company itself or collaborated with external partners to be able to perform the project. A POC that was created by Stena Bulk with collaboration with an external partner was the blockchain project in shipping, where Stena Bulk itself was not able to transform the idea to a project but needed a partner on the customer side who could be the second input in the blockchain.

The objective of putting different ideas obtained in the Intelligence phase into practice is to use that as an input for the business of the firm, but also, indirectly, to help the whole industry to move forward. Some ideas that are developed in the Intelligence phase can be suitable for moving the shipping industry forward. Therefore, in some cases it is better to unite competitors and customers in order to get the most benefits for the company itself (Business Interaction Manager, 2019-04-09). During the Transformation phase, the Business Intelligence and Transformation Group is continuously scanning the environment to see whether similar projects or ideas are ongoing in the industry. If similar developments are found, the group either make contact with the developers of the project and suggest collaboration or hold back their own project and keep the similar project under surveillance to see whether the other project can be bought and used in the future. If this continuous scanning is not made, there is a risk that the same projects are developed, and resources are wasted on projects that are also developed by other actors (Business Transformation Manager, 2019-04-09). For the ideas on new technology, e.g. the use of blockchain, to work, it needs to be spread to a broader market. Therefore, Stena Bulk does not see such projects as gaining competitive advantages against competitors, but more an advancement forward for the whole industry and beneficial for all actors within it. The competitive advantages against other shipping companies are more found in the operational environment and the market intelligence, mainly executed by the core business functions, where the company can develop trends and forecasts on how the specific operational environment will change in the future (Business Transformation Manager, 2019-04-09).

When developing the ideas further, the philosophy behind it is to be very open so as much people as possible from different areas can participate since, in the end, the outcomes of what the group does in this phase is the whole organisation (Business Transformation Manager, 2019-04-09).

4.3.4 Interaction Phase

Even though this phase is not the focus of this paper, the authors will present some empirical findings to be able to fully understand the purpose of the first two phases of the remote external environment analysis. Figure 7 below shows how the Interaction phase integrates into the company strategy the ideas on external factors previously explored and tested.

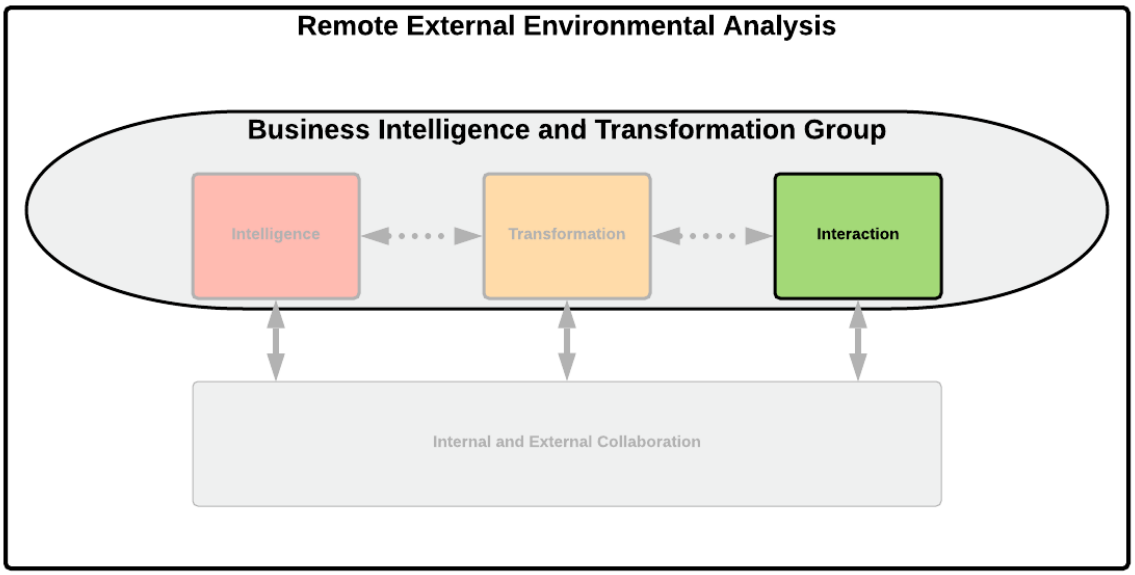

Figure 7: Illustration of the Interaction Phase
Source: Own illustration

In the Interaction phase, the role of the Business Interaction Manager is to ensure that the whole organisation is aligned in case new practical ideas are implemented within the company. In other words, the Business Interaction Manager works as a bridge between the Transformation phase and the core business. Despite the person in this position being the main responsible of this phase, the Business Interaction Manager also participates actively in the first Intelligence phase in order to help Business Intelligence Manager approach the new ideas regarding external environment in the correct way (Business Interaction Manager, 2019-04-09). This is one of the reasons why the three phases can not be seen as a straight line but more as a circle (Business Intelligence Manager, 2019-04-09).

The objective of the Interaction phase is to contribute to the strategy with new knowledge and with a different angle to see things (Business Transformation Manager, 2019-04-09). The combination of new ideas coming from the Business Intelligence and Transformation Group and the current activities within the strategy of the firm is discussed with the management

team in order to always have the appropriate strategy to face the evolving environment (Business Intelligence Manager, 2019-04-09). Since the core business of Stena Bulk is to operate vessels, the objective of the Business Intelligence and Transformation Group is to assist the chartering team to make better decisions and provide them with useful data that can help the chartering team to increase sales (Business Interaction Manager, 2019-04-09).

The idea behind the Business Intelligence and Transformation Group is then to provide the executive management team with ideas that are outside the box and it will be the responsibility of the executive management team to take the pieces of those ideas that they want to use in the company strategy. However, the transfer of information is not only in one direction in the sense that it is not always the Business Intelligence and Transformation Group that provides with ideas to the management team. In many occasions the management team also has ideas on future trends regarding the environment that are transmitted to the Business Intelligence and Transformation Group in order to do research on those. This is why the relationship between the managers and the members in this group is in both directions. So, despite the fact that the Business Intelligence and Transformation Group leads the organisation towards new ideas to adapt its strategy to new environment trends, sometimes the members within the different phases in the environment analysis process work on ideas that managers want to do research on (Business Interaction Manager, 2019-04-09). One aspect that Stena Bulk highlights is the implementation of ideas step by step. Despite the fact that ideas are tested in the Transformation phase, sometimes the implementation of these into the company have to be done gradually. With this approach, the firm makes sure that the ideas are correctly integrated into the firm. In addition, in case that the integrated ideas have not been successful, it is more beneficial for the company to take small ideas back because it means that the losses in investments are lower (Business Transformation Manager, 2019-04-09).

Due to the small size of the company, the communication with the management team is very agile. The head office is composed by only 25 people who sit next to the CEO. This is why Stena Bulk does not have a special communication tool nor structures and procedures for interacting with the management team. Every week the employees have a two-hour meeting where everyone discusses what they have been doing the last week. *"We can talk to each other, which is very nice"* (Business Interaction Manager, 2019-04-09).

4.4 Other Considerations

4.4.1 Internal And External Collaboration

The Business Intelligence and Transformation Group benefits from collaboration with both internal and external actors who help the group to develop ideas further (Business Interaction Manager, 2019-04-09).

Internal actors can include employees from other departments within the firm as well as other offices of Stena Bulk around the world. Despite the fact that the company does not have any specific process set up for collecting ideas from these actors, the firm has a Key Performance Index (KPI) that every employee has to follow. According to the KPI, every employee has to come up with 1-2 ideas every year which can be beneficial for Stena Bulk. This collaboration with internal actors helps the Business Intelligence and Transformation Group to have an extra resource from the 95 people that works in the Stena Bulk offices. In addition to this, the Transformation and Interaction managers visit Stena Bulk offices abroad twice a year in order to fetch these ideas. This face to face contact is very important and enables the Business Intelligence and Transformation Group to get ideas out in a more effective way through discussions with employees in other parts of the world (Business Interaction Manager, 2019-04-09).

Regarding external collaboration, Stena Bulk arranges regular meetings with main competitors, major industry players and customers in order to discuss new ideas or trends coming up in the market. The objective of these collaboration is to co-work as an industry to create and develop changes in different areas such as digitalisation and sustainability. Stena Bulk wants to lead the change in the industry, however, sometimes it is interesting for the company to co-work with other actors in the industry, so the change can happen. In addition to this, the collaboration can be very important to Stena Bulk to survive in the business since sometimes it can be necessary to jointly invest on new ideas. On the other hand, the strict regulations in the industry together with the small size of Stena Bulk compared to these huge, slow and not so forward leaning companies make these collaborations more difficult. This is why Stena Bulk has to find the balance and decide when it is interesting to collaborate with industry actors and when it is more beneficial to drive the change forward themselves. What is important here is that not only Stena Bulk moves forward but the whole industry (Business Intelligence Manager, 2019-04-09).

4.4.2 Importance Of Individuals Within The Group

In Stena Bulk, due to its small size, the agility is one of key drivers of the external environment analysis. It is hard to have a strict process. Instead, the group focuses on communication among its members (Business Interaction Manager, 2019-04-09). This is why the process of external environment analysis is very dependent on individuals. Different backgrounds, interests and knowledge within the group benefit the company since they provide new views of things to people who has been working in the industry for a long time. For instance, having employees with an IT background have helped them to get a new perspective or angle on things that other employees with shipping background have not realised, based on that they are so used to work in a certain way and not aware of new opportunities (Business Intelligence Manager, 2019-04-09).

One of the key characteristics of the employees at Stena Bulk is that they are engaged to their jobs and they feel as the owners for their own tasks, which helps the firm to get much more valuable input from its employees. It is important to train the employees so that they can develop their own tasks and take their own decisions rather than only be able to take orders from the top management. Despite the fact that managers act like leaders, they do not take decisions for employees, but they guide employees within the firm to the right decision with solutions and recommendation in order to find an answer (Vice President of Commercial Operations, 2019-04-09).

4.4.3 Time Dimension

In the last years, external factors in general and environmental sustainability in particular have been considered more and more in the work and strategy of the company. This is why nowadays there is a connection in Stena Bulk between the external exploration and the strategy decision. An important factor to consider here is the actual time that it takes for the Business Intelligence and Transformation Group to integrate external ideas into the core business of the firm. In fact, the process from the Intelligence phase to the actual integration of the external idea into the company's strategy is not something that happens over a day or two. This process can take years before it gets from one end to the other (Business Intelligence Manager, 2019-04-09). Some ideas for projects can be found in high profiled international debate, where there has been little need of improvements until now. The sustainability and emission debate is highly regarded today, however, this debate has only increased within the shipping industry during the last years. Due to faster paced regulations in

the industry, decisions need to be taken faster within the company. With the IMO goal of reducing the emissions with 50 % by 2050 and life spans of vessels between 20-25 years, decisions need to be taken today on how to proceed within sustainability (Business Interaction Manager, 2019-04-09). The speed of the debate and need of decisions within the sustainability part of the company has been exponential, where the discussions have been slow until recently and now decisions need to be taken rapidly (Business Intelligence Manager, 2019-04-09). Since one of the objectives of the group is to support the decisions of the top management on future strategies and the direction that the firm is going to take, it takes some time until the group members understand, interpret and gain good knowledge on the ideas that are going to be suggested to the management team (Business Transformation Manager, 2019-04-09).

4.5 Main Empirical Findings

Stena Bulk is a company operating in a very volatile industry. In fact, it has suffered changes over the last years and has become more unpredictable. This considered, the company felt the need of keeping a better track on the external environment and created the Business Intelligence and Transformation Group. The goal of this group is to manage a three-phase process that includes the exploration of the remote external environment, transform theoretical external information into practical ideas and integrate those ideas into the core business of the organization. The first and most external phase called Intelligence phase at Stena Bulk, has focused on technology and environmental sustainability as the main remote external factors to explore. However, geopolitics and geoeconomics have been found to be present throughout the Intelligence phase and also present as factors to consider for the core business functions too. Moreover, the responsible of this phase builds theoretical scenarios in order to evaluate how different factors within those two areas can impact the company in the future. In the second phase, called Transformation phase, Stena Bulk has developed an activity which transforms theoretical scenarios into practical ideas in order to test them and see in a more real way how it can affect the business of the company. This has been found as a POC, and can either show that the project is able to implement, or that it is rejected for now. For this reason, interviewees have highlighted the importance of this tool. Finally, the idea behind the third phase of the analysis, the Interaction phase at Stena Bulk, is to integrate the practical ideas into the strategy of the company in which the responsible of this phase, together with the top decision makers of the company, which includes the owner at Stena

Bulk, discuss how to integrate the ideas from the external remote environment into the strategy of the firm. As mentioned above, due to the lack of resources, the authors of this paper consider this phase as not fully covered in this case study. One of the keys of this group at Stena Bulk is the flexibility and the agility among its members because, the process is not seen as a straight line going from the first to the third phase, but the members interact with each other in any of the phases in the process.

Additionally, the Business Intelligence and Transformation Group consider the time dimension as important in the process of exploring, transforming and integrating the external remote environment factors into the core business. The individuals and their skills are also important in order to maximise the efficiency of the whole organisation in general and the Business Intelligence and Transformation Group in particular. Furthermore, external actors can help in the process by providing support to the Intelligence and Transformation phases. Internal employees can also support the Business Intelligence and Transformation Group with ideas or knowledge on external environment.

5. Analysis

This chapter discusses around the research question of this paper by relating the empirical findings with the theoretical contributions on the field. The theoretical model developed from the research done on the subject will be used as a tool to guide the analysis. Finally, the chapter ends with a revised theoretical model based on the empirical findings of the case study.

5.1 External Environment Analysis

5.1.1 Importance Of External Environment Analysis

The importance of the external environment analysis is highlighted in the theoretical framework and it has been shown that this activity can benefit firms in several ways. Due to the complexity and volatility of the external environment, organisations have to deal with unpredictable future trends or events, which are named as strategic uncertainties by Aaker & McLoughlin (2007). The external analysis gives firms management skills in order to deal with these strategic uncertainties and the impact of them on the different business activities of the company (Aaker & McLoughlin, 2007). Stena Bulk is very much aware of this situation, in fact, interviews have shown that uncertainty and volatility in the shipping industry has increased considerably in the last 10 years. Shipping cycles have become shorter, more uncertain and less regular and this is why Stena Bulk, in response to the changing external environment, decided that the external factor analysis had to be part of the strategic management process of the firm.

Moreover, research on external analysis processes has shown that a fit between the firm and the external environment is needed in order to improve or develop new strategies among firms (Whittington, 2001; Pearce & Robinson, 1997). In fact, these processes help companies to obtain resources from the external environment so that the company later can deliver outputs that fit the complex external environment. This, in consequence, help firms to improve their performance. However, the external environment is rapidly changing, so it is oftentimes difficult for firms to constantly follow what is going on in the external environment, if it is also considered that in many occasions firms lack time resources for this task. This considered, the theoretical framework concludes that the external analysis process has to be as efficient and effective as possible in order to face the challenges of the external

environment and getting the most benefits out of it (Coulter, 2013). This is why, as mentioned above, Stena Bulk recently created a new team called the Business Intelligence and Transformation Group which had the objective to interpret and analyse the external environment in order to obtain and transform ideas that could be integrated into the core business of Stena Bulk.

The fact that Stena Bulk, after considering the complexity of the external environment, decided to create a team and invest internal resources to try to understand what forces and factors drive changes in the external environment, gives a sign on the importance of this activity for the organisation as a whole. Since the shipping industry, as mentioned above, has moved away from regular cycles towards more inconsistent and shorter cycles, Stena Bulk has been forced to re-evaluate the way of taking advantages of the external environment. The strategy of not looking exclusively on the past to see trends has forced Stena Bulk to start analysing the current and future external trends that might impact the company and its industry and to develop an opportunity driven behaviour. In this situation of constant uncertainty, the more knowledge on external factors, the better for Stena Bulk and its competitive advantage against its competitors. The Business Intelligence and Transformation Group helps the company to dedicate more time resources to the analysis of the external environment, which, although it does not help to slow down the rapid changes of the external environment, it helps, to a certain level, to keep a better track on it. As mentioned before in this paper, one of the biggest challenges for this team is to make accurate predictions on future trends. This is why the question of whether the time and human resources dedicated to the team are sufficient or not for an efficient and effective external environment analysis will be further discussed in the following sections of this analysis.

5.1.2 Three Layers Of External Environment

The theoretical framework has shown the authors that the external environment can be divided in three different layers: operational, industry and remote environment (Pearce & Robinson, 1997). Firstly, in line with the different external environment levels discussed in the theoretical framework, since the creation of the Business Intelligence and Transformation Group, the external environment analysis has been divided between what the core business functions analyse and what the Business Intelligence and Transformation Group analyses. The distinction can be seen as similar to the layers of external environment, remote, industry, and operational, where the Business Intelligence and Transformation Group analyses the

most remote external environment and the core business functions analyse the industry and operational external environments, which has also been referred to as market intelligence. With the Business Intelligence and Transformation Group analysing the remote environment through the Intelligence phase, the core business functions analyse the industry and operational environments through the use of ship broker reports on the shipping market and shipping industry and gaining competitive advantage through availability of open vessels for customers ahead of competing vessels. The analysis of the industry and operational environment has been part of the core business at Stena Bulk for a long time. When the external environment started to get turbulent and uncertain, the idea of analysing external factors that could have an impact on the company went one step further with the creation of the Business Intelligence and Transformation Group. This team was created not as a substitute for the analysis of the industry and operational environments but as a complement in order to explore the remote environment.

This distinction in responsibilities and assignments has meant that Stena Bulk have two different types of external environment analysis which are performed by two different groups. This is to ensure that the company is flexible and prepared for changes in the external environment that can happen quickly, e.g. a political decision on sanctions on a specific product or import from a specific country, to changes that are bound to happen in the longer term, i.e. the sustainability goal from IMO of 50 % reduction in CO_2 to year 2050. This goes in line with what Thompson (2001) suggests, that managers and company leaders need to be alert on changes and consistently scanning the external environment on changes in an uncertain industry. This need of consistent scanning of emerging changes in the uncertain external environment was highlighted when interviewing Göran Hermansson, General Manager of LNG and part of the core business functions, *"What you believe today could be completely wrong tomorrow"*, when discussing geopolitical changes and how the company prepares and analyses the changes within that factor. Such statement further indicates that the core business functions operate within a shorter time frame than the Business Intelligence and Transformation Group and are handling external environment analysis on a closer level to the company.

Despite the fact that it is the responsibility of the Business Intelligence and Transformation Group to do research on the external environment, it has been seen that it gets support from other departments of the firm. This division helps the company to not only depend on the

inputs from the Business Intelligence and Transformation Group when it comes to external environment information but other individuals within the firm help to gain knowledge and different ideas on this topic. Although interviews have shown that Stena Bulk organises weekly meetings among all its employees to discuss improvements on different areas of the company, it seems to the authors that the process of sharing ideas and knowledge on external environment lack a systematic or formal process. In fact, it seems like a very informal information-sharing process in which individuals, their knowledge, interests and backgrounds shape the decision on the ideas on external factors which will be further taken into the Transformation and Interaction phases. The fact that the whole external analysis process, including the remote, industry and operational levels, is not solely carried out by the Business Intelligence and Transformation Group, might bring strengths but also weaknesses to the whole process of exploring, transforming and integrating the external ideas into the strategy of the company. On one hand, the fact that not only the Business Intelligence and Transformation Group takes part of the external environment research can be beneficial for the company since other individuals within the company can collaborate internally providing this group with new knowledge and different perspectives on external factors (Coulter, 2013). The fact that the core business can put more focus on shorter decision taking can be seen as positive for the firm since it can rapidly apply changes within the organisation in response to rapid movements in the external environment, i.e. be very flexible in reacting to the external environment changes (Whittington, 2001; Thompson, 2001). This also allows the Business Intelligence and Transformation Group to focus more deeply into external factors that can be applied on a more long-term basis in the company, i.e. creating an impact and immediacy situation where the most immediate changes are handled by the core business functions (Aaker & McLoughlin, 2007). On the other hand, the fact that Stena Bulk does not have a set information-sharing process between the two groups can at the same time make the whole external environment analysis process less efficient and much slower (Coulter, 2013). This can negatively affect the agility of the company and therefore the ability of keeping track on the rapid changes happening in the external environment.

5.2 Four External Factors Of Remote External Environment

When gathering information on external environment analysis, the authors of this paper have seen that the theory highlights the importance of flexibility throughout this activity, especially when doing research on volatile external environments. The skills of the managers

doing this activity are important so they can be open and responsive to rapid changes (Thompson, 2001). In addition, the research done in regard to external environment information gathering mentions two approaches that firms can use, (i) an informal and non-scientific research process and (ii) a more systematic and formal process of information gathering. The later one helps organisations to obtain a greater, deeper and more regular knowledge and understanding of the external environment through an external information system. This formal and systematic approach can be of great importance for firms operating in turbulent external environments in which they have to deal with great amounts of information in order to work with external variables that are really relevant to integrate into the company (Coulter, 2013).

Considering the theoretical insights above and how Stena Bulk manages the first phase of the external environment analysis, called Intelligence phase, this activity has a very flexible approach in which the individual in charge of the phase decides how to do research on external factors that might have an impact on the firm. Stena Bulk does not have a formal or systematic procedure in how the responsible for this phase should explore the external environment. It is then up to the skills, background and interests of that individual to decide which external variables could be of interest for the organisation. Initially, the authors of this paper could see some weaknesses in the way the Intelligence phase is carried out at Stena Bulk. Firstly, the Intelligence phase is formed by only one individual, which might not seem sufficient to scan and explore the large amount of information that the external environment can offer (Coulter, 2013). This can lead to a selection of less accurate external ideas to apply into the company, which can later affect the core business of the firm. Secondly, as mentioned before, this phase depends to a large extent on the individual and its characteristics. The fact that the individual can choose what to do research on based on the interests or research skills can lead to a selection of external variables not relevant for Stena Bulk (Pearce & Robinson, 1997). Thirdly, although the theory mentions that a flexible approach is needed when dealing with a volatile and uncertain external environment (Thompson, 2001), it also mentions that a formal external information system can help firms to acquire deeper knowledge on relevant external factors for them (Coulter, 2013). As the empirical findings have shown, Stena Bulk does not have a fixed guide about how the procedure on the external environment research should be executed since it depends more on the individuals. This can lead to problems when trying to find new responsible for the Intelligence phase in the future. On the other hand, as interviews also have shown, Stena Bulk

is ready to spend more time on searching for appropriate proactive individuals for the company that can take decisions and responsibilities on their own without any major internal procedure guidelines since in the long run it is more beneficial for the firm.

After analysing how the Intelligence phase explores the external environment at Stena Bulk, the previously discussed four external factors i.e. geopolitics, environmental, geoeconomics and technological, will be analysed in the next paragraphs.

5.2.1 Geopolitical Factors

Geopolitical issues are of great concern for global trade and can change the way countries are trading with each other (Blunden, 2012). New power areas are emerging around the world and political disputes and tensions are increasing, hindering the development of cooperation and new agreements between nations (Suárez-de Vivero & Rodríguez Mateos, 2014). With the decisions taken on a national level, this factor is out of control of companies and there is nothing a company can do to prevent or work with the changes proactively (EY, 2018). However, in the shipping industry, a turbulent global trading environment is increasing the demand for transport of commodities, where the need for cargo owners to sustain their supply chain in turbulent times creates business opportunities for the shipping companies. To be able to follow the volatile and fragile trading environment, Stena Bulk has developed the operational flexibility as a competitive advantage, where the company is able to position vessels with less regards to who the charterer is, since all vessels are approved by all charterers the company has as customers. The empirical findings show that this means the volatility and uncertainty can be decreased for geopolitical issues through operational flexibility and excellence.

With geopolitical decisions changing constantly, some decisions have greater impact than others. This has been exemplified by the Chinese political decision to increase the use of LNG as an energy source and how that decision has changed the demand for LNG imports to China. To be able to take advantage of such a fast-paced decision, the company must view the geopolitical arena with great awareness and be able to quickly adapt to decisions that could heavily change the market through operational excellence.

5.2.2 Environmental Factors

The Porter Hypothesis, which states that stricter environmental regulations have a positive impact on the productivity and innovation of a company (Ambec, et al., 2016), can partly be applied to the shipping industry. Through the empirical findings, indications have been brought forward that Stena Bulk sees stricter environmental regulations as a positive thing, where the stricter regulations would give already highly sustainable companies an advantage against more dubious sustainable shipping companies. This has been exemplified through the emission control and Sulphur regulations coming in 2020, where the company has already started to take action for compliance, and also how a high sustainability work will ease the possibilities to receive financing through the TFCD programme. Since the maritime industry is globally regulated through IMO, shipping companies from all countries of the world must adhere to changes within environmental regulations. If the global regulatory body accepts what is suggested by research (Lister, Taudal Poulsen & Ponte, 2015), the environmental regulations in different regions of the world may look very different and the pace of changes in the environmental factor can speed up significantly and create changes for the companies trading in the different regions.

With a history of high sustainability compliance and quality work (Hermansson, 2012), the company is experienced in working in a sustainable way. The environmental regulations implemented in different parts of the world, with ECAs in Europe as an example are tasks that the Business Intelligence and Transformation Group must work with in a long-term perspective. However, since the life length of the vessels are 20 years and above, the Business Intelligence and Transformation Group must be able to find what regulations may be implemented and how the company can work with the regulations now.

5.2.3 Geoeconomic Factors

As Wigell and Scholvin (2018) argue, states and nations use the economic power to achieve strategic objectives in the development of the state or nation and this is seen in the way developing countries like China and India are increasing the refinery capacity of oil and gas products (BP, 2018). This also goes in line with the arguments by Baracuhy (2014) that with economic power, the position in the GVC is changing, therefore new areas of supply and demand are emerging. Jugovic, Komadina and Peric Hadzic (2015) argue that international maritime trade is heavily affected by the change in economic power and trends in the geoeconomic environment. This has affected the way Stena Bulk operates their vessels, since

a shift has happened in the last years of supply and demand of the products, the trade patterns for the vessels have changed simultaneously. However, it is not only the trade patterns that have changed, but also the demand for vessels due to changed areas of trading. With crude oil moving longer distances for refining, the need of large vessels that can transport high quantities are more needed. Such change may affect the composition of the fleet in the company in the long term, however, the interviews also indicate that the company see that less oil is moved, but longer distances, therefore the view of the Vice President of Commercial Operations on the geoeconomic factor suggests that the importance of this factor is great and that changes in the supply and demand of oil and gas products are affecting the company more than geopolitical decisions, hence the company must keep constant track of the changes in supply and demand for oil and gas products.

5.2.4 Technological Factors

As discussed in the theoretical framework chapter, technology is an important factor to consider when doing external environment analysis. Despite this, the difficulties for companies to predict the outcomes of innovations in this field are also highlighted (Aaker & McLoughlin, 2007). According to Theotokas (2018), the external environment is constantly changing and so is technology and technological innovations. For this reason, companies have to be aware of rapid changes in order to apply new innovations on their businesses.

The empirical findings have indicated that the technological innovations in the remote external environment is something Stena Bulk focuses much resources on. With the development of new technological tools such as Orbit and the blockchain project, the company sees competitive advantages in being in the front when it comes to technology in the shipping industry. Here, the company looks to gain first mover advantages (Porter, 1990) by being the leader of new technology in the industry. In contrast with Frankel (1991), who stated that shipping is an early adopter of new technologies, the empirical findings have indicated that Stena Bulk sees the shipping industry as a very traditional and lagging market, and in need of technological innovations.

The Orbit project is a clear example of how the company sees to gain competitive first mover advantages from technological innovations. Whereas focus within technological innovations has previously been on ship design and innovations that can change the way the vessels are operated, the focus has now shifted towards digitisation and computerisation. This trend has

been exemplified through the empirical findings where the General Manager of LNG stated that the earlier technological advancements within ship design has been too small to make a big difference (p. 48), however, with the new digitised platform the operational aspect of the vessels will change greatly. By offering customers the possibility to track the vessels in Orbit, the company sees opportunities to gain a competitive advantage due to changes in the external environment.

5.2.5 Combination Of The Four Factors

Along with the PESTEL model and the suggestions by Theotokas (2018), the conceptual framework in Figure 2 showed a connection between the four different remote external environment factors, and that all factors should be analysed in the external environment analysis. The empirical findings and the analysis of the four factors individually have suggested that the company views the factors in different ways. Analysis shows that there is no hesitation that a global shipping company with customers around the world needs to sustain knowledge of all the factors and the developments within each factor. However, there seems to be different perspectives on each factor, where some are deemed more long-term and some are on a more day-to-day basis. This was exemplified through the quote by the Business Controller (p. 43), where the geopolitical issues were highlighted as something that could change the market very rapidly in both good and bad ways. However, the environmental regulations are not viewed as something that can change the market very rapidly but put a more long-term change to the industry as a whole.

This raises the question whether there is a connection between the factors suggested by theory (Pearce & Robinson, 1997; Theotokas, 2018; Lorange, 2005), or if the factors could be analysed individually. The empirical findings suggest that there is a connection between the factors, however, that the factors have been analysed in different ways depending on what function in the company has viewed it. As mentioned above, the organizational distinction between the core business functions and the Business Intelligence and Transformation Group has divided the layers of external environment analysis between them in a more significant way, with the core business functions analysing the rapid changes and how the changes affect the market and day-to-day operations, whereas the Business Intelligence and Transformation Group has been focused on the more long-term changes that can possibly change the whole industry.

The connection between the factors can be seen when analysing how technological innovations assist the company in reducing the uncertainty of geopolitical and geoeconomic changes in the operational process. With the digital platform Orbit, the company has a higher operational flexibility, which can give the company an advantage against competitors in terms knowing more precise how to position the fleet. A connection can also be seen between the technological factor and the environmental factor, where stricter environmental regulations need technological innovations to be implemented, e.g. the IMO 2020 sulphur regulations.

The empirical findings have suggested that it is mainly changes in the technological and environmental factor that are developed into scenario building and moved further in the process of the Business Intelligence and Transformation Group, whereas the geopolitical and geoeconomic factors are more observed and reacted upon. This can be related to the time dimension discussed in the empirical findings. While there are some external factors that can have a faster impact on Stena Bulk, other factors are more long-term and can take months or even years until they have a direct impact on the company.

5.3 The Process Of Building Scenarios

Both the theoretical framework and the empirical analysis have shown the importance of scenario building for managers in order to take decisions. According to Johnson, Whittington and Scholes (2011), the scenario building provides companies with information about future events that might happen in a complex external environment and at the same time help managers to be informed about different future situations. In line with this, Pearce & Robinson (1997) comment that although scenario building does not help firms to anticipate changes in the external environment, it helps to eliminate the variables that are not relevant to apply within the strategy of the company. Coulter (2013) also highlighted that scenarios or forecasts are not facts but predictions. This is why managers have to take into consideration that scenarios are not perfectly accurate, so flexibility and openness when interpreting and integrating those ideas into the core business is needed. The scenario building can be executed in two different ways, depending on what strategy the company has or intends to develop (Aaker & McLoughlin, 2007; Whittington, 2001). The empirical findings have indicated that Stena Bulk mainly uses a form of emergent strategy development, where the strategy is emerging from the consequences of the market and industry the company operates

within. This has been pictured in terms of how the company utilises flexibility in the operations of both the vessels, but also in terms of what external environment factors may change the industry and trading business in the future. By having a high flexibility and preparing the company for multiple different scenarios, the company can develop a higher degree of responsiveness towards changes in the external environment. In line with Whittington (2001), Stena Bulk prepares to create a fit between the company and the external environment. However, some parts of deliberate strategy can be argued to appear in the company. This is exemplified through the distinction between the core business functions and the Business Intelligence and Transformation Group, where the company sees possibilities to build projects that can be deliberately used in the strategy of the company. The fit between fixed features on the current strategy of Stena Bulk and the emergent ideas coming from the Business Intelligence and Transformation Group is possible due to the two-way information transfer that the company has developed, meaning that the constant communication between the executive management team and the members of the Business Intelligence and Transformation Group help to update the strategy of the firm in accordance to the settings of the external environment.

Stena Bulk has created the Transformation phase to further develop the way scenario building can be used to foresee the changes in the remote external environment. By developing the Transformation phase, the company takes the scenarios from the findings in the Intelligence phase and create the POC, to ensure that the findings and projects explored in the previous phase can be developed into full scale operational use. This goes in line with the *strategy-developing scenarios* (Aaker & McLoughlin, 2007), where the company does research on future contexts and develop strategies and operations after how the scenarios play out.

This considered, the POC tool that Stena Bulk has developed helps the firm to transform uncertain theoretical scenarios on changes in the external environment to practical ideas and projects. This activity provides the firm with a better understanding on how ideas on future trends can be applied into the firm. However, the challenge of transforming these theoretical scenarios into practical ideas is to select the scenarios that can actually be good and appropriate to integrate into the company (Pearce & Robinson, 1997). In fact, testing scenarios is not a cheap process, this is why the scenarios to be tested have to be selected carefully in order to take advantage of the investment done for this task. In many occasions, the testing of these ideas require support from external actors. The reason for this is that

Stena Bulk aims to develop not only its business but the whole shipping industry. This is why the authors see the Transformation Phase as a very important stage in which Stena Bulk shows its strong position in the industry and the aim of not only react to changes in the external environment but drive the changes and partnering with other important actors within the industry.

5.4 Revised Conceptual Framework

When analysing the external environment analysis in Stena Bulk, similarities and differences appear compared to the conceptual framework (Figure 2) produced for guidance of the research. In general, the company follows the major outline of the framework in terms of what remote external environment factors are investigated. However, the distinction in the organisational structure of the company with the division of core business activities and the Business Intelligence and Transformation Group has also led to a distinction on what factors are prioritised in the different functions. While the interviews indicated that all factors identified in the literature are of great importance for analysing the external environment, the factors are put in different layers of the external environment, where geopolitical and geoeconomic factors are explored and analysed within the industry and operational external environment layer, hence within the core business functions of the company, and the environmental and technological factors are explored and analysed within the remote external environment layer, hence within the Business Intelligence and Transformation Group. The company therefore uses different types of activities to analyse the external environment, due to the pace of changes in the factors. Since the geopolitical and geoeconomic factors can change on a daily basis, they are more suited to be analysed within the daily operations of the core business functions, however, major changes in the environmental and technological factors are of a slower pace nature and deeper analysis of how to deal with the changes in the future is needed. Hence, the analysis shows that the two factors applicable for the conceptual framework on remote external environment analysis are the environmental and technological factors.

The company further utilises the tools explained by the conceptual framework, i.e. scenario building, to enhance how the changes in the external environment factors may appear and present how to work with the changes for the executive management. However, the Business Intelligence and Transformation Group has developed an extra layer of scenario building, i.e.

the Transformation phase, where the group is constructing the POC for the company to learn from the future changes and projects in a smaller scale before implementing the project fully into the company. This step is an extension of the scenario building, however, of great importance for the company to ensure that the scenario created before the POC is actually realistic.

The final step of the remote external environment analysis is the Interaction phase, where the knowledge and analyses from the previous phases are integrated and implemented into the whole organisation. The empirical findings has shown that this is the step where the remote external environment analysis is actually used as a part of the strategy development.

Due to the empirical findings and analysis made on the processes of remote external environment analysis in Stena Bulk, a revised conceptual framework is needed to capture the processes in the company. In Figure 8, the connection between the four factors is still evident, however, only the environmental and technological factors are analysed as remote external environment, therefore those two factors are focused on within the next step of the analysis process. The scenario building is still evident, but the next step of analysis, the POC, is added to the framework. From the POC, components for strategy development and company strategy is produced and integrated into the company.

In addition, the revised model takes the time dimension into consideration. While the process of transforming and integrating the technological and environmental factors into the strategy of the company includes building and testing scenarios, geopolitical and geoeconomic factors have a shorter time frame due to their volatility and therefore, they are analysed on a short-term basis. The connection between all four factors is still evident, however, they are worked with in different ways.

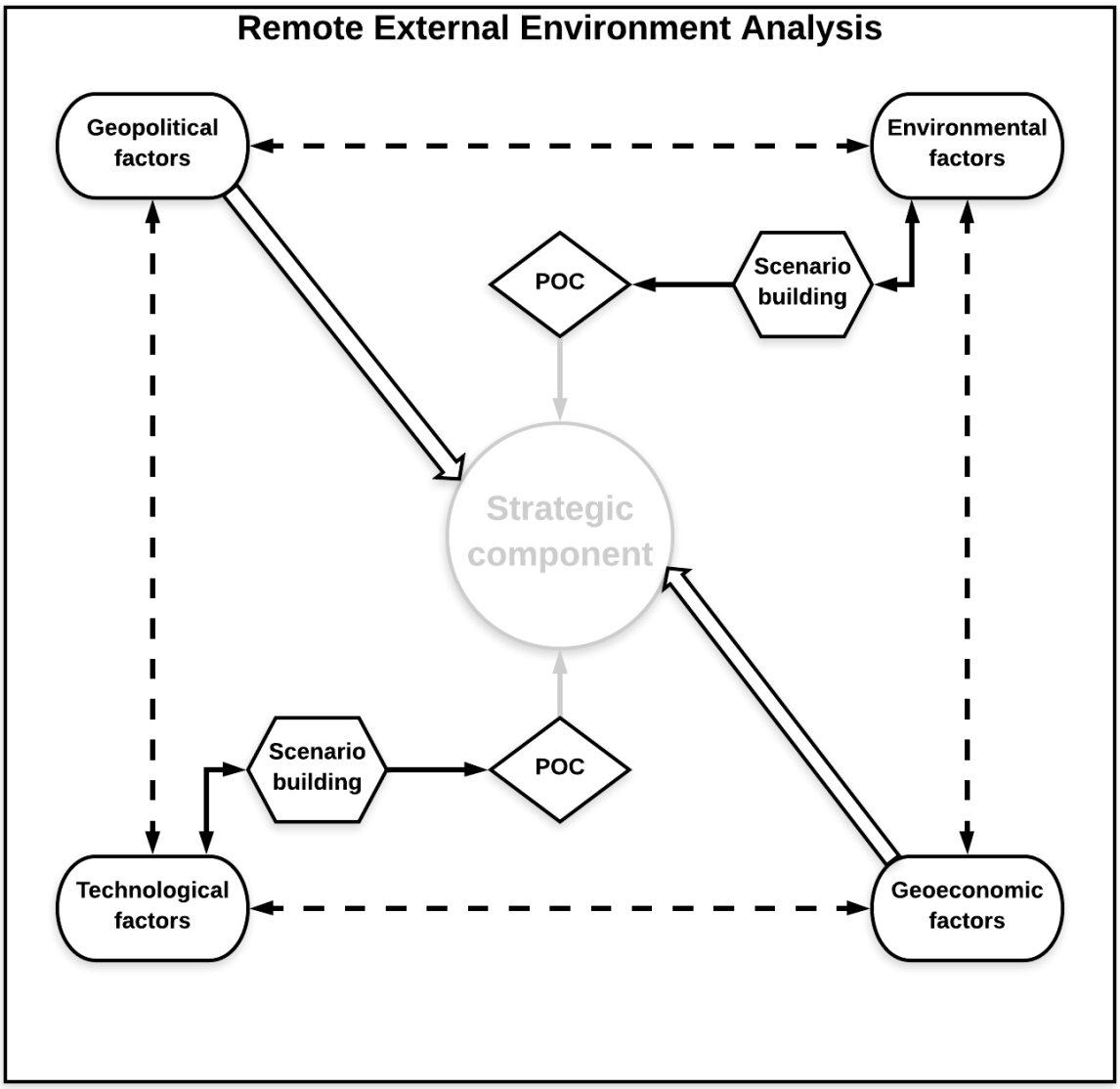

Figure 8: Revised Conceptual Framework
Source: Own illustration

6. Conclusions

This chapter shows the conclusions from the previous chapters with the aim of giving an answer to the research question proposed in the beginning of this paper "*How can a shipping company gain knowledge and make use of remote external factors through remote external environment analysis?*". Finally, managerial implications and future research and outlooks will be proposed.

6.1 Findings and theoretical contributions

6.1.1 Findings

This case study has investigated how a global shipping company can use external environment analysis as a tool to gain knowledge and make use of the remote external environment. The findings of the study show that the external environment analysis is of great importance in a volatile industry as the shipping industry and reinforces theory on that companies within a volatile and uncertain industry must be aware of the external environment to build competitive advantages. It is also evidenced that external environment analysis is of great importance and that the external factors can quickly change the environment that the company operates within and that a fit between the company and the external environment is needed. Individuals have been found as a very relevant internal resource for organisations when doing external environment analysis. Individuals who are trained to take decisions and with a high degree of responsibility and flexibility are better when it comes to take the most opportunities from the remote external environment. However, too much dependency on individuals may lead to a biased view on the remote external environment based on the interests and abilities of those individuals. The case study presented findings on external environment analysis in terms of how the time dimension of the external factors play part in the type of analysis used and how different factors are analysed by different departments of the company. A finding of importance is the organisational distinction that enables the company to utilise the time dimension of changes in the external environment by having different departments who execute analysis on different layers of the external environment.

Finally, a major finding is the importance of the flexibility needed to create the fit between the company and the external environment by showing how an additional step in the conceptual framework can be used, which implies that a company can decide on how to make

use of the changes in the external environment. By adding the extra step to the conceptual framework, companies can enhance the reliability of what has been analysed and be more proactive towards changes in the remote external environment, instead of only react to changes. This finding adds to the theory of external environment analysis and the possibility for companies to benefit from the changes.

6.1.2 Theoretical Contributions

This paper had the aim to connect existing theory and empirical insights on external environment analysis from a global shipping company.

Firstly, this paper contributes to the limited research on global shipping companies and how knowledge can be gained from external factors. With prior research on strategy work within tanker shipping companies focusing on a holistic view of the business strategy with limited focus on the different strategic components, this paper has developed the understanding of the external environment as component for strategy. The authors of this paper provide relevant information on how a global tanker shipping company explores the external environment and transforms relevant ideas in order to obtain useful input for the development of strategy of the firm. Especially how the importance of external environment analysis is considered high for a company in a volatile industry and how to use the analysis of the external environment as a component for strategy development. The importance of the remote external environment has been showed through the organisational distinction in the company and the creation of an additional group handling remote external environment analysis, and this further confirms the theory on why companies should execute external environment analysis. The remote external environment has been investigated through the combination of four factors, where theory implies that there is no mutual exclusiveness between them, and the case study has confirmed that theory, however, the revised conceptual framework presented shows how there can be difficulties in finding a connection between all four of the factors, due to the different layers of external environment.

Secondly, in line with the lack of research on operational management studies from the shipping industry and how a shipping company can use operational resources and align them with the overall business strategy, this paper provides relevant contributions on how a global tanker shipping company uses internal resources in the early stages of aligning external environment factors with the overall strategy of the firm. The case study has shown that in

order to fully utilise the analysis of the remote external environment, resources must be dedicated to the exploration and seeking of the changes. This contributes to the literature in terms of how internal resources on external environment analysis can be used for operational use and creation of competitive advantage. The main insight in this finding is that resources put on non-core business functions can add value in the core business functions and aid in building competitive advantages. The case study has also found that with the exchange of information internally, external environment analysis can be enhanced.

Thirdly, this paper contributes to the lack of development on the understanding about the tools used by shipping companies when evaluating the external environment. The case study has shown different tools applied by a global shipping company when exploring and transforming external remote environment factors into relevant input for the strategy development of the company. Global shipping companies can benefit from developing a flexible communication process that helps to ensure that the ideas obtained from the external remote environment are relevant for the core business of the company. The activity of transforming theoretical scenarios about future trends into practical ideas through idea-testing tools provide the company with an effective way of integrating only the ideas and factors that are beneficial for the whole organisation.

6.2 Managerial Implications

As commented before, this paper has highlighted the importance of the external environment analysis for a global shipping company. Firms of this characteristics have the challenge of using internal resources in the most effective and efficient way in order to take the most advantages of the external environment and integrate them into their core businesses. Firstly, the fact that the analysis of remote environment factors is part of two differentiated groups requires from the firm a very refined communication system. The communication between different individuals within the firm is essential for an agile and flexible analysis process. This at the same time, helps firms to keep track on the rapid changes happening in such a volatile environment. Secondly, the human resources assigned for the external environment analysis should correspond to the importance of this task, not only in the number but also in the skills and proactiveness of the individuals. Not having enough human resources responsible for this task can later affect other functions of the firm that can hinder the competitive advantage against other competitors.

6.3 Future Research And Outlooks

This paper has contributed to research on external environment analysis processes. However, the paper has some limitations that give the opportunity to develop new areas of research in the field. As commented before, further research on how the explored and transformed external factors are integrated, implemented and used in the strategy of a global shipping company would be of interest. This last part of the external environment analysis process would give light to how the executive management team integrates practical ideas into the whole organisation and the importance of those ideas in the strategy development. A second limitation that can give rise to further research is that this single case study investigates one single company within a very specific and volatile industry. Researching how other companies in the same industry uses external environment analysis in the strategy development would further enrich the literature and theory on operational management on shipping companies and also give additional views on the findings regarding the importance of external environment analysis given in this paper. Moreover, due to the time constraints in this study, a longitudinal case study on how a tanker shipping company uses external environment analysis would also be beneficial for the development of theory in this field. A longitudinal case study would enable researchers to follow the full process from exploration, through transformation, to integration in real time and give a full account on the time dimension of the changes in the external environment.

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Appendices

Appendix 1

Interview with Göran Hermansson 4/3-19

Length of interview: 80 min

4 general/introduction questions

Name

What is your background in the industry?

How long have you been at Stena Bulk and what is your role at the company nowadays?

External factors or variables

Technology

- Technology is changing very rapidly, what signals or variables within technology innovations within the shipping industry as a whole and technology advancements within the gas sector do you see important to consider?

- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.

- Do you consider that technological advancements can have an influence on the way the products are traded? E.g. pipeline vs vessels or small vs large parcels Both where and how

- How does Stena deal with these external factors/variables/signals?

- How is the analysis of external factor implemented in the company's strategy?

Geopolitics

- What signals or variables do you see important to consider?

- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.

- Do you consider that geopolitical tensions can have an influence on the way the products are traded?

- How does Stena deal with these external factors/variables/signals?

- How is the analysis of external factor implemented in the company's strategy?

Environment

- What signals or variables do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.
- Do you consider that environmental regulations can have an influence on the way the products are traded?
- How does Stena deal with these external factors/variables/signals?
- How is the analysis of external factor implemented in the company's strategy?

Economics

- What signals or variables do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.
- Do you consider that these economic factors can have an influence on the way the products are traded?
- How does Stena deal with these external factors/variables/signals?
- How is the analysis of external factor implemented in the company's strategy?

The special commodity transportation of LNG

- How external factors are detected from the commercial side of LNG shipping?
- How the main differences in LNG shipping can affect the corporate strategy?
- Once the strategies are identified, how are these applied/transferred to the commercial area/department?

Appendix 2

Interview with Jonatan Malka 4/3-19

Length of interview: 62 min

General/introduction questions

- Full name and position.
- What is your background in the industry?
- How long have you been at Stena Bulk and what is your role at the company nowadays?

External factors or variables

Technology

- Technology is changing very rapidly, what signals or variables within technology innovations within the shipping industry as a whole and technology advancements within the gas sector do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.
- Do you consider that technological advancements can have an influence on the way the products are traded? E.g. pipeline vs vessels or small vs large parcels. Both where and how.

Geopolitics

- What signals or variables do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.
- Do you consider that geopolitical tensions can have an influence on the way the products are traded?

Environment

- What signals or variables do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.

- Do you consider that environmental regulations can have an influence on the way the products are traded?

Economics

- What signals or variables do you see important to consider?
- What are the possible opportunities and/or threats that these variables can bring to Stena? E.g. how the variables might change the way Stena is transporting commodities or offering their services.
- Do you consider that these economic factors can have an influence on the way the products are traded?
- In your opinion, what variables are the most important to keep an eye on for the future, where the greatest changes may happen for the company?
- If any, what other external variables do you consider important when analysing the external environment for Stena Bulk?

The internal handling of the variables

-Do you have any internal policies regarding data gathered on external factors?

If so, how do you use them in the analysis of the external market?

- How connected is the financial department with the external factor analysis, evaluation and decisions?
- How does the external factor analysis affect financial strategy? I.e. how are changes in the variables considered when looking at future financing strategies?
- How do you use the external factor analysis in your daily work?
- Which are the impacts of the external factors in your daily work?
- Have you seen any changes in internal handling of external factor analysis over the years?
- Do you see any missing points in the external factor analysis that would improve the strategy organisation?

Questions on the Financial side of strategic planning and external factor analysis

- How does the strategy of the company affect the financial department?
- Do you have different financial solutions scenarios depending on how the variables change and the external environment analysis forecasts?

Appendix 3

Interview with Erik Möller 8/3-19

Length of the interview: 75 min

General/introduction questions

- Full Name and position.
- What is your background in the industry?
- How long have you been at Stena Bulk and what is your role at the company nowadays?

External factors or variables

Technology

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?
- Do you have any specific example of a technological factor change that have affected the company, or will affect the company? E.g. how the technological innovation of

If so, how has that change affected the company?

-In your opinion, what degree of knowledge do you have on this factor and how do you gain knowledge of changes within the technology factor?

Geopolitics

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?
- Do you have an example of any major geopolitical tension that has affected Stena Bulk in the past or will affect the company in the near future?
- In your opinion, what degree of knowledge do you have on this factor and how do you gain knowledge of changes within the technology factor?

Environment

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?
- Do you have an example of any major environmental regulation that has affected Stena Bulk in the past or will affect the company in the near future? E.g. IMO 2020, domestic environmental regulations on the use of fossil fuels etc.

- In your opinion, what degree of knowledge do you have on this factor and how do you gain knowledge of changes within the technology factor?

Economic

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?
- Do you have an example of any major economic phase change among countries that has affected Stena Bulk in the past or will affect the company in the near future? E.g. changes in the Global Value Chain or changes in the energy demand among developed and developing countries
- In your opinion, what degree of knowledge do you have on this factor and how do you gain knowledge of changes within the technology factor?

General information on the field

- In your opinion, from these variables, which is the one that is the most important to keep an eye on?
- If any, what other external variables do you consider important when analysing the external environment for Stena Bulk?
- Do you, in any way, combine the factors into one analysis or is the external factor analysis made on each factor individually?

Strategy building

- How many people (and roles within the company) participate in the strategy building and decision making regarding the impact of external factors in Stena Bulk?
- Can you explain the process of strategy building that Stena Bulk uses in order to face the effect of the external variables mentioned above? E.g. is the strategy emerging as it comes or do you have deliberate processes for dealing with changes?
- What does the company do to reduce the impacts from uncertainty and volatility of the industry as much as possible?
- Do you trust more long term strategies or short term actions?
- How does the company come up with the short term actions?
- Are the long term strategies easy to apply considering the volatility of the industry?
- What do you consider when building different scenarios? Do you weight the different external variables to come up with the “best” and “worst” scenarios?

- Do you consider/analyse the impact and the likelihood of the scenarios that you come up with?

Appendix 4

Interview with Johan Jäwert 19/3-19

Length of the interview: 65 min

General/introduction questions

- Full Name and position.
- What is your background in the industry?
- How long have you been at Stena Bulk and what is your role at the company nowadays?

External factors

- How are external factors analysed in Stena Bulk today? And how is that analysis structured? Who does what, etc?
- How do you combine the different knowledges of the external factors from each part of the company into an overall analysis? E.g. how is the knowledge on changes in the external environment from Göran combined with the knowledge of Erik?
- What degree of knowledge do you have on external factors and how do you gain knowledge?
- What external variables do you consider important when analysing the external environment for Stena Bulk?
- Do you see anything that Stena lacks when doing research on external environment? E.g. lack of structure, tools, qualified personnel...

Strategy development

- Can you explain the process of strategy development that Stena Bulk uses in order to face the effect of the external variables mentioned above? E.g. is the strategy emerging as it comes or do you have deliberate processes for dealing with changes?
- What does the company do to reduce the impacts from uncertainty and volatility of the industry as much as possible?
- What tools are currently used in the strategy development in regards to the external factors? E.g. PESTLE, SWOT, scenario building etc
- How has the strategy development changed over the last years? Is there a heavier importance for external environment now or not?
- Does the company combine long and short term actions/strategies?

- Göran told us that the company has a list of objectives to be achieved in a year time. How often are those objectives revised or modified within that year?
- Is a solid strategy of higher importance to be able to deal with the uncertainties of today?
- How can such a big company like Stena be so flexible and quick when it comes to responding to external environment changes?
- How difficult is it for Stena to be in the front/leading the industry when there is such a volatile and uncertain environment? E.g. with the environmental regulations now, how have the strategic discussions gone with regards to the choice of installing scrubbers or go with low sulphur fuel?
- Do you consider/analyse the impact and the likelihood of the scenarios that you come up with?
- Do you use other industries as examples on strategies? Do you look at competitors to see how they position themselves strategically to be able to differentiate yourself? If so, what parts do you copy or differentiate yourself from?

Appendix 5

Interview with Johan Jäwert 9/4-19

Length of the interview 45 min

First phase

- Explain the process and the roles of the members
    - Are the processes set? If so, not relevant who is in the team…
    - If the processes are not set, how do you explore the environment?
    - How is it decided on what to explore?
    - How do you decide with your teammates what factors to take to the second phase?

Second phase

- Explain the process and the roles of the members
    - Are the processes set?
    - Clarification, is the scenario planning part of this phase?
    - Who and how are the scenarios established?

Third phase

- Explain the process and the roles of the members
- Is the same person responsible for the whole process for a factor or is the process divided within the team? E.g. if one person explores a new thing within an external factor, does that person investigate that thing through the whole process or is someone else taking charge of the interaction, and then a third person in charge of the transformation?
- In your opinion, do you see this process as the most effective and productive way of determining what factors to explore, how to interact them and in what way transform them to company strategy?

Appendix 6

Interview with Peter Björkborg and Therese Jällbrink 9/4-19

Length of the interview 57 mins

General/introduction questions

- Full Name and position.
- What is your background in the industry?
- How long have you been at Stena Bulk and what is your role at the company nowadays?

External factors

Technology

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?

Geoeconomics

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?

Geopolitics

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?

Environmental issues

- Can you explain a bit on how this external factor has affected Stena Bulk in the past and how that factor affects Stena Bulk today?
- What other external variables do you consider important when analysing the external environment for Stena Bulk?

External environment analysis

First phase

- Explain the process and the roles of the members
    - Are the processes set? If so, not relevant who is in the team…
    - If the processes are not set, how do you explore the environment?
    - How is it decided on what to explore?
    - How do you decide with your teammates what factors to take to the second phase?

Second phase

- Explain the process and the roles of the members

- Are the processes set?
- Clarification, is the scenario planning part of this phase?
- Who and how are the scenarios established?

Third phase

- Explain the process and the roles of the members
- Is the same person responsible for the whole process for a factor or is the process divided within the team? E.g. if one person explores a new thing within an external factor, does that person investigate that thing through the whole process or is someone else taking charge of the interaction, and then a third person in charge of the transformation?
- In your opinion, do you see this process as the most effective and productive way of determining what factors to explore, how to interact them and in what way transform them to company strategy?

Appendix 7

Interview with Erik Möller 9/4-19

Length of the interview: 50 min

First phase

- Explain the process and the roles of the members
    - Are the processes set? If so, not relevant who is in the team…
    - If the processes are not set, how do you explore the environment?
    - How is it decided on what to explore?
    - How do you decide with your teammates what factors to take to the second phase?

Second phase

- Explain the process and the roles of the members
    - Are the processes set?
    - Clarification, is the scenario planning part of this phase?
    - Who and how are the scenarios established?

Third phase

- Explain the process and the roles of the members
- Is the same person responsible for the whole process for a factor or is the process divided within the team? E.g. if one person explores a new thing within an external factor, does that person investigate that thing through the whole process or is someone else taking charge of the interaction, and then a third person in charge of the transformation?
- In your opinion, do you see this process as the most effective and productive way of determining what factors to explore, how to interact them and in what way transform them to company strategy?