Portfolio Management - The key to successful business

A longitudinal case study of a construction company

Britta Ek Thomas
Filip Eliasson
Elin Skoghagen

Department of Automatic Control
Faculty of Engineering, Lund University
Box 118
221 10, Lund
Sweden

Institute of Economic Research
Lund School of Economics and Management, Lund University
Box 7080
220 07, Lund
Sweden

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Abstract

Title	Portfolio Management - The key to successful business A case study of a construction company
Authors	Britta Ek Thomas - Master of Science in Technology Management Filip Eliasson - Master of Science in Biotechnology Engineering with Technology Management Elin Skoghagen - Master of Science in Technology Management
Advisors	Charlotta Johnsson, Associate Professor Department of Automatic Control, Faculty of Engineering, Lund University Thomas Kalling, Professor Institute of Economic Research, Lund School of Economics and Management, Lund University Supervisor A, Product Manager The Mother Company Supervisor B, Director of Product Development The Mother Company
Issue of Study	Managing product portfolios in today's business environment is highly complex; there are a number of orthogonal dimensions to consider in order to be successful. Theories within the area of portfolio management are often single tracked and lack the comprehensive picture of what vital aspects to consider to achieve portfolio management excellence.
Purpose	The purpose of the study is to increase the understanding of the mechanisms impacting portfolio management in an increasingly complex competitive and corporate environment.
Methodology	A longitudinal case study was chosen as research design since the authors aimed for a thorough and deep understanding of the case company's strategic portfolio management over time.

Initially, a literature review was conducted to increase the knowledge of portfolio management and the surrounding context of internal processes and the external environment. The chosen theories; portfolio management theory, PESTLE, Porter's five forces, Porter's generic strategies, Resource-based view and strategy process theory, were then composed into a unique theoretical framework. In the next step, empirical data from the case company was gathered through interviews, questionnaires, databases, observations and following of relevant employees. Finally, the theoretical framework and empirical conclusions were synchronized by using pattern matching. The conclusions drawn resulted in an increased understanding of the mechanisms impacting portfolio management in an increasingly complex competitive and corporate environment. The findings were visualized in Cheez - a generic portfolio management framework applicable in acquisition focused, capital and technology intensive industry companies operating within multinational B2B contexts.

Conclusion The output of the study accentuates an amplified importance of internal company-specific processes, intrinsic barriers and driving forces to consider when managing product portfolios in an increasingly complex competitive and corporate environment. Further, deep understanding of the company's internal and external market environment is required. Depending on the company's portfolio management prerequisites, different aspects of the environment and the corporate processes have to been considered when striving for enhanced portfolio performance. To visualize the logic of the impacting mechanisms, the generic portfolio management framework Cheez has been developed, applicable on acquisition focused, capital and technology intensive industry companies operating within multinational B2B contexts.

Keywords Portfolio Management, Strategy Process, R&D, Strategic Management, Corporate Culture, Path Dependency, Decentralization, Construction Industry

Preamble

Writing a master thesis is a mandatory part within the master program Technology Management at Lund University and comprises 30 credits, which is the equivalent of the work of a semester's studies. This master thesis is collaboration between two business students and one engineering student, a host company and Lund University. It is of great importance that the scope and contribution of the master thesis have strong relevance for the host company as well as an explicit academic anchoring.

The master thesis is written for a Swedish construction company, from now referred to as *the Mother Company*, within a certain product area that will be called *the Division.* The Mother Company is a part of a bigger organization named *the Group*. The project is chosen due to the technological as well as strategic relevance to match the requirements from the master program. The Division has an R&D department that possesses a key role within the company, where the study has been executed. Currently, the Division faces a transformation of strategic relevance where highly technological products in shape of construction equipment are central, which mirrors the interdisciplinary approach and scope of the study.

Writing this paper has been a complex and confusing journey, and it would have been impossible to execute without a few key persons. Hence, the authors would like to thank Thomas Kalling and Charlotta Johnsson - the dedicated, understanding and patient supervisors from Lund University. Further, the authors are deeply grateful to the supervisors from the Mother Company, for all received assistance and for being open to the explorative approach of the study. Lastly, the authors would like to thank all the employees at the Mother Company and the Division that have supported the working process of the paper.

Finally, the authors would like to thank each other for a prosperous cooperation. This small piece of art has been created through mutual motivation, support and inspiration from one another. The study would not have been possible to accomplish alone. To all readers - enjoy your time!

Lund, May 15, 2015

Britta Ek Thomas, Filip Eliasson and Elin Skoghagen

Glossary

B2B - Business to Business
B2C - Business to Consumer
R&D - Research and Development
EU - the European Union
GDP - Gross Domestic Product
Cheez - the Generic Portfolio Management Framework

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1. Introduction

This chapter will introduce the reader to the background of the study, followed by the purpose, delimitations and a disposition of the thesis.

1.1 Background

Competition in mature markets worldwide is becoming more and more intense, which can result in lower profits and customer losses for firms. The factors contributing to staying competitive on the market is critical, why it is important for firms to optimize every single operational process. Managing the configuration of product portfolios is a part of companies' profitability puzzles and the subject is today considered an important strategic matter for organizations within all industries (Levin and Wyzalek, 2014). The subject has gained much attention among senior management the two last decades (Cooper, Edgett and Kleinschmidt, 2001). Portfolio management is incorporated directly, or indirectly, in all divisions of a company, such as marketing, manufacturing and product development, and affects the varying divisions differently. The topic has transformed from something that was favorable for a firm to have, to a necessity for success (Rajegopal, 2013; Jugend and Luis da Silva, 2014). Portfolio management is a dynamic decision process where a company's active projects are constantly updated and reviewed and new projects evaluated and prioritized. Hence, some projects are chosen to proceed with and accelerated on, and some are rejected or annulled. Throughout the process, resources are constantly allocated and reallocated (Cooper, Edgett and Kleinschmidt, 2001).

Portfolio management is characterized by tough strategic decisions and deliberations, continuously changing and uncertain conditions, multiple decision makers and objectives, and interdependency among projects (Denney, 2005). According to Cooper, Edgett and Kleinschmidt (2001), only six out of 100 companies succeed with portfolio management. The common identified failure factor is insufficient incorporation of the portfolio management at strategic level. Further reasons are prioritization of projects based on executives' agendas, too much focus on financial metrics and absence of concrete and processed guidelines. The successful companies on the other hand, have a common denominator. They all have mature explicit practices in place and have learnt how to tackle: the scale of their firm, the environment in which it operates and the challenges and changes it faces, the organizational culture, and the determination to work systematically with portfolio management (Cooper, Edgett and Kleinschmidt, 2001; Rajegopal, 2013). The successful firms have management groups that are well-experienced with the portfolio management methods and support it with their actions. Further, they consider the projects in a portfolio context, together in a bigger picture, and there is consistency and alignment across all ongoing projects (Cooper, Edgett and Kleinschmidt, 2001).

Today, the strategic management of product portfolios is more complex than ever before, and existing research into the matter is not exhaustive. As of today, the portfolio management theories do neither take any internal or external market factors nor corporate strategy processes into pragmatic consideration (Cooper, Edgett, Kleinschmidt, 1999; 2001; Rajegopal, 2013). The theories mean that market factors are of importance, but do not cover *how* to consider them, *what* factors to consider, or *what is preventing* the factors from being tackled (Cooper, Edgett, Kleinschmidt, 1999; 2001; Gorchels, 2003; 2012). The business environment is more complex today than previously and consequently the management of product portfolios cannot be treated in vacuum. Instead, a strategic management perspective has to be taken into account, where emphasis is put on impacting corporate processes. This is something that is omitted in the portfolio management theories of today. A strategic management perspective is essential in order to understand the magnitude of the product managers' and strategic decision makers' complex reality when designing product portfolios. When mapping and trying to understand strategic management and strategy processes in a portfolio management context, it is essential to put everything into a context. All companies have different prerequisites when it comes to portfolio management and different corporate processes and surrounding environments that impact the performance, either as barriers or as driving forces. Hence, the unique context where the company is operating is vital to understand in order to move towards an enhanced portfolio management function.

As is evident, portfolio management is subject to many barriers and is hence not a trivial matter. In an increasingly complex world of markets, competition, organizations, products and services, it becomes an even more complex matter. A multinational organizational context, with a high degree of capital intensity and technological and industrial B2B complexity, generates even stronger ramifications for the decision makers and product managers. Combine this with a context of a mature company possessing a strong acquisition focus, and the dimensions of intricacy increase - parallel to other factors such as product complementarity and cannibalization, customer preferences, willingness to pay, competing offerings and more. Consequently, a company's impacting business environment is critical to map and understand in order to enhance the performance of management of product portfolios.

1.2 Purpose

The purpose of the study is to increase the understanding of the mechanisms impacting portfolio management in an increasingly complex competitive and corporate environment.

1.3 The Case of the Mother Company

To accomplish the purpose of the study, *the Mother Company* has been chosen as a case company, and more specifically *the Division*. The Mother Company is a part of the Swedish company *the Group*, and is present worldwide within the construction industry. The company is B2B focused, technology and capital intensive, and has a strong acquisition focus. The Division is one of the Mother Company's divisions and sells construction equipment. The Division is in an initial phase of a demanded strategic change in a context of portfolio management, which makes the case interesting for this study.

1.4 Delimitations

In order to fulfill the purpose of the study in a sharp and concise manner, delimitations have been made. The focus has been limited to exclusively pay attention to comprehensive strategic level, why practical hands-on directives on detailed level have been left out for further research. Moreover, to limit the scope, the targeted companies in the study are chosen to be *acquisition focused, capital and technology intensive industry companies operating within multinational B2B contexts*, i.e. companies possessing similar attributes to the Mother Company, the case company.

The time frame of the study was predetermined to four months, which constrained the mapping and investigation of the many processes within the Mother Company and the Division. The design of the study is longitudinal, why it would have been more beneficial for the results if the study had taken place over a longer period of time. Therefore, the time frame would have been extended in a perfect world. All data collected in the study originates from the Mother Company. Having other data sources than consistently internal would had enriched the independency and trustworthy of the study.

1.5 Disposition

The study is comprehensive why it is valuable for the reader to get an overview of it. A disposition of the paper in the shape of a process chart can be seen in figure 1.

Figure 1. Disposition of the study (Authors' figure).

2. Methodology

This chapter presents the methodological approaches used in the study. The chapter is divided into scientific approach, research design, data collection, pattern matching, and validity, reliability and representativeness.

2.1 Methodological Disposition

An appropriate research design for the paper was a case study, and the Mother Company was identified as a representative case. The authors chose a system theoretical approach, as the challenges of the Division's portfolio management best were seen in the light of a bigger system and context. An abductive attempt fitted the explorative approach of the study why the working process has been iterative. Theoretical review was alternated with the collecting of empirical data through interviews, observations, following of key personnel, and existing documentation. This was then analyzed through the logic of pattern matching. The disposition of the chapter can be seen in figure 2.

- **Scientific Approach (2.2)**
- **Research Design (2.3)**
    - **Case Study (2.3.1)**
- **Data Collection (2.4)**
    - **Formal Interviews (2.4.1)**
    - **Informal Interviews (2.4.2)**
    - **Observations and Following (2.4.3)**
    - **Databases (2.4.4)**
    - **Questionnaires (2.4.5)**
    - **Literature review (2.4.6)**
- **Pattern Matching (2.5)**
- **Validity, Reliability and Representativeness (2.6)**

Figure 2. Methodological disposition (Authors' figure).

2.2 Scientific Approach

A theoretical system perspective with a business mindset became a starting point for the authors when the research begun. System theory was introduced during the 1950s and 1960s in contradiction to the prior assumption that companies are closed and not open systems, claiming that in order to improve the performance of a big system, the small parts must be optimized in order to achieve success (Eriksson-

Zetterquist, Kalling and Styhre, 2012). A system perspective made it possible for the authors to see the Division's portfolio management challenges from a holistic point of view. The approach contributed to a deeper understanding, due to the possibility of putting everything in a *context*. The authors initially discovered that it was not enough to investigate the Division's portfolio management solely, as the challenges were part of a greater system. Hence, the whole Mother company was incorporated in the study, as well as the company's business environment. The Division's portfolio management challenges consist of a variety of factors, which is directly or indirectly affected by how the Mother Company acts in different situations. To conclude, the key take away from system theory is that all parts within and outside a company must be observed in relation to each other, since they are interdependent. There is no universal solution for the Division, why the authors put the division and its problems in a broader context which made it possible to study the problem from a given framework with dependent factors.

2.3 Research Design

With a mindset in system theory, the method of the study has been exploratory and iterative when the authors have tried to find a causal link between theories and empirics. Thus, both a *qualitative* and a *quantitative* research method were suitable, allowing the authors to collect data in different ways (Höst, Regnell and Persson, 2006). A qualitative approach allowed the authors to treat soft parameters satisfying, taking individual opinions into consideration. At the same time, a quantitative method made it possible to gather a certain amount of data, where conclusions more easily could be drawn.

The approach of the study was *abductive*, as it was approached both in a deductive and an inductive way. The initial approach was deductive and had its starting point from a frame of different theories, and not from reality. The chosen theories were applied and tested against the reality through different data collection methods. Later in the study, the approach changed to an abductive approach, since empirical data and theory were alternated in an iterative order. Interviews, questionnaires, observations and theoretical research were combined to create a better understanding of the problem. After the configuration of the theoretical framework, the different theories and the collected empirical data were synchronized. Empirical data generated theory at the same time as theory generated empirical data; in other words, abduction. To summarize, the abductive approach was chosen due to the iterative work process, where the final theoretical contribution resulted from a systematic combination of theory and empirical data (Le Duc, 2007).

With the purpose of the study in mind, the authors chose to perform a *longitudinal study*, i.e. a research over time (Bryman and Bell, 2007). This design was well suited as the purpose demanded several continuous measurements of the Mother

Company. Furthermore, a longitudinal design was appropriate for the *case study* of the company, since it is well suited when an explorative research is performed (Yin, 2003).

2.3.1 Case Study

A case study is a research method involving an analysis of a specific case in order to test the theory in a characteristic context (Yin, 2003). The reason for investigating one case company in this study, rather than multiple, was due to the depth of research the authors were striving to accomplish. Examining only one company made it possible to investigate the Mother Company and specifically the Division more closely. Hence, a more time-consuming longitudinal study was possible to execute. The authors believed that a detailed examination of one sole case would result in further reliable conclusions. By only choosing one company, time could be spent on creating a deeper understanding of the problem, instead of studying many cases superficially. The Mother Company and the Division fulfilled the required attributes of the delimitations, thus the firm and the division were chosen as a representative case, which throughout the study proved to be a suitable choice.

2.4 Data Collection

The choice of performing a case study made it possible to use both quantitative and qualitative data collection methods. Consequently, the authors used several methods to obtain the deepest possible understanding of the portfolio management challenges at the Division. Continuous formal and informal interviews, two questionnaires, observations, existing documentation as well as discreet following of the employees were used as data collecting methods. All data collected was made internally, i.e. the interviews, questionnaires and observation directed employees at the Mother Company globally, and especially at the Division. See more about the details of the data collection in sections 2.4.1, 2.4.2, 2.4.3, 2.4.4, and 2.4.5.

Using several data collection methods, both from primary and secondary sources, is called triangulating and makes the results more reliable (Bryman and Bell, 2007). Triangulation, i.e. using of complementing methods, is a good way of receiving both depth answers through interviews and broad data through surveys (see figure 3). This approach made it possible for the authors to receive a comprehensive data collection that could be confirmed from different sources. When using triangulating, it is important with documentation of the process and vital to be close to the researched phenomenon. The authors worked at the Mother Company several days a week, and documented every interview and meeting held in order for the results to be as reliable as possible.

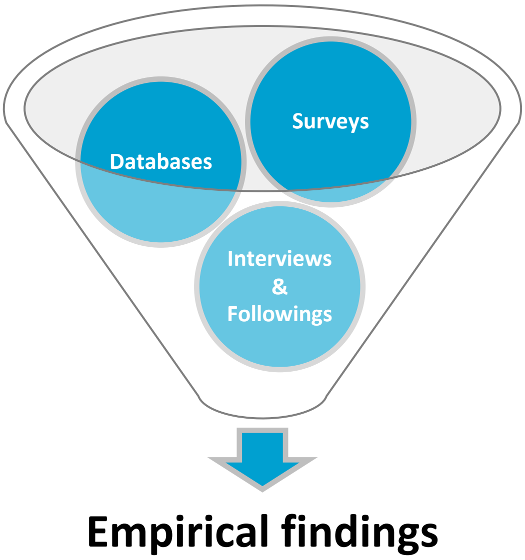

Figure 3. Triangulating - all complementing collection methods were treated from both a technical and commercial side of portfolio management to generate accurate findings (Authors' figure).

Interviews as well as two questionnaires of different designs were conducted retrospectively when the authors realized there was a demand of input from new respondents with new perspectives. Over time, the authors gained deeper knowledge both regarding the Division's portfolio management challenges as well as of the Mother Company, i.e. the case company. Since the collected data solely was internal and analyzed simultaneously, biases naturally appeared, which can lead to distorted results. Nevertheless, this is not something the author's experience as a major risk since they were well aware of this possibility and strived to be critical to the respondents weighted answers. Further, the authors tried to distinguish whether the respondents answered what they thought was appropriate or as they believed the situation at the Mother Company actually was. Since there were three authors, the validity was increased and the risk of becoming bias was reduced, since it was always three individual interpretations, beliefs and contestations.

2.4.1 Formal Interviews

Approximately twenty formal semi-structured interviews were held with key personnel at the Mother Company and the Division important from a portfolio management point of view throughout the authoring process (see information about the respondents in Appendix 1). The interviews were held either in person, at the Headquarter or at another nearby office, or via IP or regular phones to offices all around Europe. Through these, the authors received a better understanding of the company's business, with special focus on the Division. A great share of the interviews was built on factors gathered from initial studied strategy literature. After reviewing and analyzing the interviews, more interviews were held with the same employees to follow up and confirm the situation. The main purpose of the interviews was to map and create a concrete and accurate understanding of the Mother Company and the Division.

2.4.2 Informal Interviews

To understand the construction industry and acquire factual knowledge about the Mother Company and the Division, as many informal as formal interviews and meetings were held continuously throughout the period of the master thesis. In the beginning of the study, these were held more frequently, until a satisfying knowledge of the firm and its challenges was achieved. The authors strived a broad understanding why interviews were conducted with people from all different parts of the Mother Company and the Division. Moreover, the respondents were chosen on basis of their competence and knowledge, with the aim of discovering new sources and views in the different departments of the Mother Company.

2.4.3 Observations and Employee Following

In combination with the formal and informal interviews, casual observations were conducted throughout the study. The authors used many ways of approaching the stated purpose, but strongly believe that the observations and discreet following of key employees at the Division and the Mother Company were the most important methods. This since it contributed to great tacit knowledge and invaluable understanding of the challenges at the firm. Therefore, the authors chose to spent at least three days a week at the Mother Company’s headquarter during the time frame of the study. Also, a visit to other of the Mother Company’s offices were made to get a more comprehensive picture of the organization. During the time spent at the headquarter, the authors had an own office in a central corridor close to key personnel involved in the Division’s portfolio management. This made it possible to work effectively and spend a lot of time with the personnel, and hence the authors received a thoroughly understanding and overview of the Mother Company’s and the Division’s daily operations regarding portfolio management and the surrounding activities. Moreover, many lunches and daily corridor conversations with employees represented from all parts within the Mother Company were held. During the observations, the authors were able to form their own perception of the situation. In contrast to intrusive interviews this method let the employees feeling comfortable; they did not act or answer in a particular way. Hence, the authors could interpret the situation themselves. To conclude, the informal observations and discreet following of employees in their daily natural environment made it possible for the authors to create a unique knowledge of unknown parameters influencing the challenges of the Division and the Mother Company.

2.4.4 Databases

Data, required in order to map how it looks in the Division's different markets and customer segments, was collected from the Mother Company's central warehouse database. Financial information as well as product information was gathered from this database to get a better understanding of the company. Further, it was vital to have an understanding of every part of the Mother Company to find the main issues creating the problematic portfolio management situation at the Division.

2.4.5 Questionnaires

To fulfill the purpose of the study, the authors conducted two questionnaires of different designs. The first one was an external screening of the Mother Company's and the Division's context, which was built on wide, relevant strategy theories. This questionnaire consisted of an excel sheet with a large amount of different factors derived from what the authors chose to call content theories (see a simplified version of the excel sheet in Appendix 2). Here, the respondents were requested to rank the factors' impact on the Division's portfolio management. Only three respondents participated since the questions were directed to experts within the Division area. Further, the questionnaire was very comprehensive, detailed and time-consuming to fill in and the authors did not want to demand that time and effort from less updated employees unnecessarily. The respondents who participated were the Product Manager of the A portfolio and the B portfolio, and the Sales Director of the Division in Europe. After receiving the answers, the results were screened, compared and analyzed. To prevent misunderstandings and varied interpretations of the questions asked, uncertainties were pinpointed and discussed afterwards in person or by phone with the respondents through semi-structured interviews. By this approach, different interpretations could be detected and corrected. This stage was very important in this case since the accurate respondents were so few and the fact that correct answers were highly demanded for the further process of the study.

After further research regarding strategic implications of the operations within the Division, and analysis of the received answers from the first questionnaire, a second questionnaire was shaped. This was done in order to gain insights into the Division's business from a broader crowd. The questionnaire was distributed to a larger number of respondents than the first one; 40 employees participated. In this step, employees with practical experience of the Division's portfolio management and closely impacting operations were demanded. Hence, the form was sent to sales managers and salesmen, and to other employees with suitable positions in diverse markets. This questionnaire was made in the survey tool Netigate and was much simpler and user friendly than the first questionnaire, which was more comprehensive. The second questionnaire can be seen in Appendix 3. After the answers were collected an analysis was made.

2.4.6 Literature Review

As the purpose investigated in this paper originates from lack of strategic understanding regarding portfolio management, broad strategy theories were in focus during the initial working process. An initial perspicuous literature review of current strategic theories was carried out, given the stated strategic problem definition. It was essential to get well versed into these theories in order to understand the context in which the portfolio management was a part of. Moreover, in order to answer the purpose of the study, a comprehensive literature review regarding project portfolio management was carried out. Afterwards, the authors understood that to be able to solve the stated aim of the study, further reading was necessary. To reach an optimized portfolio management, the authors had to look into the processes of the chosen case company. Aiming for knowledge about strategic management in a context like this required further understanding of how it could be implemented, and what processes that plays an essential role. Thus, the authors chose to get an overview of relevant process theory as well, which turned out to be very useful.

2.5. Pattern Matching

To analyze the collected empirics, the logic of pattern matching was used. This technique enabled the authors to generalize the collected data into new theory. Hence, it was an adequate analysis method. Moreover, this approach made it possible to compare the empirically found pattern with the predicted theoretical pattern. Pattern matching was used with the intention to find: (1) confirmation of the theoretical elements in the empirical findings and vice versa, (2) elements from the theory absent in the empirical findings, and (3) empirical findings absent in the theories (Yin, 2003). The overlap symbolizes where the theory and empirical finding corresponds, i.e. (1), see figure 4. The remaining parts of the circles are symbolized as (2) and (3). To summarize, the authors compared the theoretical and empirical patterns and thereafter draw conclusions regarding both the empirical and the theoretical contributions (Almutairi, Gardner and McCarthy, 2014).

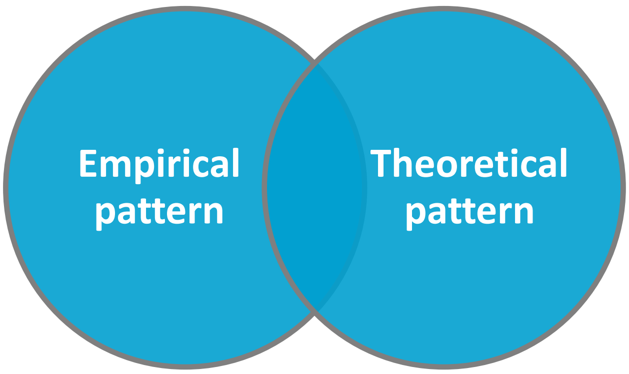

Figure 4. Pattern matching (Authors' figure).

2.6 Validity, Reliability and Representativeness

In order to author a successful method in a scientific paper, it is important to be aware of three fundamental cornerstones: *validity*, *reliability* and *representativeness*. The first concept, *validity*, refers to a correct measurement, i.e. that the right object is measured. It can be expressed as the correlation between the theoretical definition and the operational definition (Höst, Regnell and Runesson, 2006). The second concept, *reliability*, is the quality of measurement, i.e. how good and accuracy the measure method is. The last concept, *representativeness*, refers to the sample and the generalizability of the conclusions (Höst, Regnell and Runesson, 2006). The authors have had these three concepts in mind during the working process of the study to accomplish as credible and adequate results as possible.

The concept of validity was of big importance throughout the study and the authors tried to increase it through the logic of triangulating. In this way, the object was studied by using different methods. The validity was especially fundamental when designing the two questionnaires, due to the importance of suitable questions. The questions had to be framed in a proper way to measure the actual relevant problem. Thus, the authors had to be careful when formulating the questions. Both the relevance and the format of the questions were taken into consideration. When designing the first questionnaire, the authors wanted to achieve a broad perspective and understanding, why the relevance of the questions was important, rather than an easy format for the respondents. On the contrary, a proper formulation of questions was of greater importance in the second questionnaire. The main purpose with that survey was a further validation of the empirical data gathered earlier in the process, why the formulations as well as the format of the questions were essential. With the aim of a large amount of respondents, the structure of the second survey had to be easy and user friendly.

To accomplish a satisfying reliability it is important to be accurate when collecting data. Through a proper presentation of the study, the reader can easily follow and evaluate the research approach. Taking the representativeness into account, and finding the right respondents was another essential aspect. The authors' intention was to receive a solid source of data, why source criticism was of importance. Thus, the respondents of the two questionnaires were carefully selected to ensure a valid source of data. Having the wrong respondents could lead to an insufficient assortment due to lack of expertise within the certain field. To reach both a satisfying reliability and a good representativeness, a selection of respondents from different backgrounds is usually perceived as sufficient (Höst, Regnell and Runesson, 2006). Therefore, respondents from all different parts of the Mother Company were involved in the study in various ways. In the first comprehensive questionnaire the respondents were employees seen as experts at the Division. Having respondents with less knowledge about the topic would have challenged the reliability, as they could have been forced to guess on the questions. The second questionnaire, with fewer and simpler questions, focused on a broader selection of respondents within the Division. Here, the focus was to receive a large selection of participants with different views on the subject. A risk with the paper is that it is based principally on internal sources within the Mother Company, which could derail the reliability and representativeness somewhat. An external perspective could have enriched the source of data further.

3. Theoretical Review

In this chapter, the theoretical framework relevant for the purpose of the study is presented. The chapter begins with a brief overview of the concept of strategy, followed by content theories, portfolio management theory and strategy process theory. Finally, the chapter ends with a theoretical framework based on all these theories.

3.1 Theoretical Disposition

As previously described, the study's scope has a broad perspective, and the authors have been open to explanatory factors regarding the strategic management of product portfolios. Therefore, a set of theoretically grounded content variables are presented, including factors more or less remote from the Mother Company's operations. Moreover, a process perspective is taken, including an inductive repertoire of possible factors that can influence strategic management processes related to portfolio management over time, such as cultural, cognitive and organizational factors. The most relevant theories for the study concerned throughout the chapter can be seen in figure 5.

- **Strategy (3.2)**
- **Content Theories (3.3)**
  - **PESTLE (3.3.1)**
  - **Porter's Five Forces (3.3.2)**
  - **Porter's Generic Strategies (3.3.3)**
  - **Resource-Based View (3.3.4)**
- **Portfolio Management (3.4)**
- **Content Strategy and Strategy Process (3.5)**
- **Strategy Process (3.6)**
- **Theoretical Framework (3.7)**

Figure 5. Theoretical disposition (Authors' figure).

3.2 Strategy

Clear objectives are critical for a company in order to be competitive and successful. To fulfill set objectives, a sufficient strategy is desired. The concept of strategy is multifaceted in terms of definition and impact, both regarding the actual meaning and the underlying meaning between the lines (Gillespie, 2007). According to Chandler (1962), strategy is the determination of the most basal objective for a firm in a long-term perspective, and the adaption and adjustments of the set of actions and resources required to execute and implement these objectives. Porter (1980) defines strategy as a broad ranged formula of how a business should be managed to be competitive. The fundamentals in the formula include aspects such as goals and what policies necessary to fulfilled these goals. Gillespie (2007) describes a strategy as a long period plan with activities of how to achieve the set objectives. It usually involves high risks and capital investments why it would have big impact if the chosen strategic direction retroactively turns out to be wrong. Further, a strategy is hard to reverse due to fact that it most often is difficult to switch strategy when it has been pursued. To summarize, the concept of strategy have to be set in a context to best define and be suitable as a foundation for a company's persistence and growth.

3.3 Content Theories

To put strategic management of product portfolios in a context, strategy content theories are presented below. Both external macro-environmental factors impacting a company's performance, and internal market forces that impact a company's competitive position are discussed, followed by a company's positioning strategy as well strategic resources and capabilities.

3.3.1 PESTLE

For the majority of organizations, it is not enough to solely be aware of and consider the biggest competitors and the most important stakeholders on market level. A large number of potential possibilities and threats originate from the other industries than the one the own organization operates within. New players, and players from distant industries, form competitors in a more and more rapidly changing competitive landscape. This fact creates a need for an understanding of the business environment that extends outside an organization's specific market conditions. High technology industries like biotechnology, medicine and information technology are more likely to be affected by changes in the macro business environment than other industries (Bengtsson and Kalling, 2012).

There are many macro-environment factors that can affect an organization, and consequently impact the strategic decision making for managers within it. New laws and improved technologies are examples of macro changes impacting the strategic work within an organization. The macro-environmental changes can be assessed in a structured way by the PESTLE analysis model, which evaluate seven critical macro-environmental areas (Gillespie, 2007). The model, which can be seen in figure 6, concerns political, economic, social, technological, legal, and environmental macro factors. There are a lot of sub factors under each of these factors that can be seen in Appendix 2.

Figure 6. The macro-environmental factors impacting an organization (Authors' figure).

Political

The political factors connected to the PESTLE model include interventionism and isolationism, and to what extent that occurs as well as impact a firm. Moreover, elements such as favored industries, investments in educations and infrastructure etcetera, are political factors of matter (Aguilar, 1967).

Economic

Critical economic factors are ranging from interest rate and taxation levels to a nation's growth and inflation trends. Other economic factors that can have impact on an organization's performance are exchange rates and cost of insurance and more (Aguilar, 1967).

Social

Social trends, demographical structure and public opinions are social factors that affect the common demand for products and services in the society, and hence firms' profitability (Aguilar, 1967).

Technological

Technological factors concern the development of new technologies in the society that can have impact on an organization's products or services in any way. The impact from new technologies can appear in terms of competitors' actions, the role of substitutes or the use of new technologies in an organization's operations (Aguilar, 1967).

Legal

The scope of the legal factors tends to concern the remaining elements in the PESTLE model but from a legislative perspective. For instance, legal factors can be related to contracts in different contexts, like how to advertise in a specific region or which safety requirements that are demanded in a certain market (RAPIDBI, 2007).

Environmental

The environmental element's ambit works similar to the legal in the sense that it is often connected to one or more of the other elements in the PESTLE model. This concerns environmental regulations and protection, such as rights to emit pollutants in a certain area (RAPIDBI, 2007).

The PESTLE model originates from more basic models such as ETPS (Economic, Technical, Political and Social) founded by Aguilar (1967), and Brown and Weiner's (1984) STEP (Strategic, Trend, Evaluation and Processes). Other researchers like Mecca and Morrison (1989) and Davenport and Prusak (1997) later added the legal and environmental elements to the model, which shaped the PESTLE model. In some contexts, the environmental and legal factors can be seen as redundant to the PEST factors why it is important to define them dependent on the context in the applied case.

The PESTLE model can be used in different contexts connected to managing a company, like business planning and marketing, product development, research and the organizational structure. PESTLE is useful in a *business planning* context since it can provide the management with information to back up business decisions. When it comes to marketing, the PESTLE analysis can be used to gain understanding of the marketing environment of a product or service and the factors affecting it. In terms of product development, the model evaluates the external factors to consider in a decision making context. The same argumentation is applicable regarding the value of using the PESTLE analysis connected to research. The organizational structure within a company can be supported and/or affected by a PESTLE analysis, for example in terms of the impact of political changes within a specific region (RAPIDBI, 2007).

3.3.2 Porter's Five Forces

Porter's book "Competitive Strategy" from 1980 arose from the belief that firms face more competition than solely from existing competitors (Porter, 1980). A firm's market environment is vital for the performance - it determines the attractiveness of the entire industry. Hence, Porter extended a company's threats beyond established competition by adding four other impacting factors. All the critical factors, including competition, can be seen in figure 7, and are summarized in five industry environment forces. The forces are: (1) the threat of new entry, (2) the rivalry among existing competitors, (3) the threat of substitutes, (4) the buyer bargaining power, and (5) the supplier bargaining power (Porter, 1980; Hedman and Kalling, 2002).

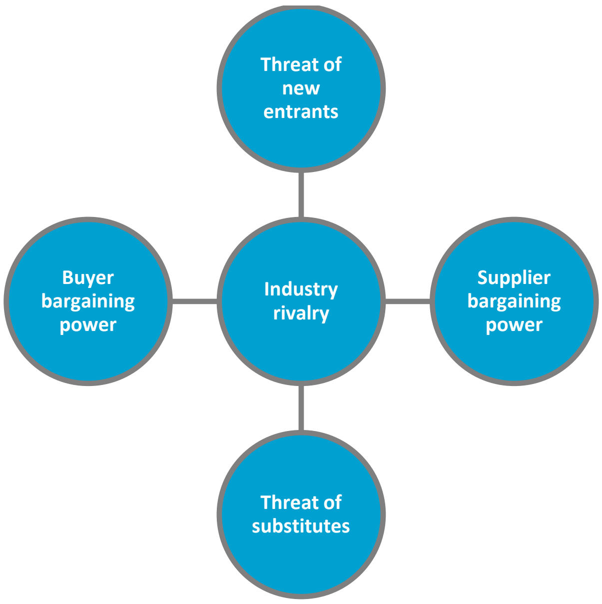

Figure 7. Porter's five market forces impacting a firm's success (Porter, 2008).

Threat of new entrants

New industry entrants seize market shares from existing actors and put pressure on costs, prices and investment rates. This applies especially on mature entrants diversifying into new industries, like when Apple took a step into the music distribution business. The company already had useable capabilities and resources and a steady cash flow, which made the entrance plausible. Hence, the industry profitability will increase if high entrance barriers exist. Factors impacting the entrance barriers in an industry are for instance economies of scale, capital requirements, customer switching costs, access to distribution channels, and government policy (Porter, 2008).

Industry rivalry

Competition, or rivalry, within an industry includes all existing actors on the market who compete with one another regarding different parameters such as pricing, product launches, marketing etcetera. High competition within an industry erodes the profitability. For instance, the competition intensity is high if there are several similar actors, the industry growth is slow, and exit barriers exists, or if there is limited possibilities of differentiating products (Porter, 2008).

Threat of substitutes

A substitute to a product is a product that covers the same customer need as that product with a similar function but in a different way. To go by train is for example a substitute to flying an airplane. The profitability within an industry suffers when the threat of substitutes increases. The threat of substitutes is high when the substitute offers the same value to a lower price or higher value as the prior product for the same price, and/or when the customers' switching costs between the substitutes are low (Porter, 2008).

Buyer bargaining power

The buyer bargaining power is essential - business cannot exist without customers. The buyer power applies equally to B2B and B2C customers. A way of meeting the demand and manage the buyer power is to segment the customers (Hedman and Kalling, 2002). Customers tend to be powerful when there are few customers each buying a large share of a single vendor, the products are standardized, the switching costs are low, there is threat of backwards integration, the buyer has access to full information, and when the costs of the goods purchased represents a large share of the customer total purchases (Porter, 2008).

Supplier bargaining power

The factors making suppliers powerful follows the same pattern as the factors imposed by the customers but reversed. Suppliers with market power can control the profitability within an industry due to threats of reduced quantity of products and increased prices. Suppliers are considered powerful when they are few and concentrated, there are no accurate substitutes for the supplied product, there are relevant switching costs when switching suppliers, there is threat of backwards integration, or when the suppliers' products are differentiated (Porter, 2008).

How well a company can meet and handle the five external forces determines its strengths and weaknesses. The best protection against the forces is diversification to other profitable industries than the core business. By doing that, firms can get more independent and immune to the industry environment, at least in an initial phase. There are three ways in which a company can approach the forces (Hedman and Kalling, 2002):

- Position itself in a way that the internal capabilities best defense the company against the external forces
- Use strategic change to influence the balance of the forces
- Respond quickly to changes in the forces and detect and embrace new opportunities before competitors

Porter's five force model is widely spread and an accepted tool for assessing external industry threats among business practitioners all over the world. The model has some obstacles though. The major critique is directed towards the fact that it, to a large extent, neglects internal factors that affects competitiveness within an industry (Hedman and Kalling, 2002).

3.3.3 Porter's Generic Strategies

The first fundamental aspect to take into consideration when analyzing a firm's profitability is the industry attractiveness. This is easiest done through an analysis of the five competitive forces described earlier. The forces change over time and are influenced by companies' strategies why they are important to understand (Porter, 1980).

Regardless type of business, it is important to understand a firm's position on the market. The positioning determines whether the firm's profitability is above or below the industry's average. Firms naturally strive to perform above average and reach sustainable competitive advantage. Porter (1985) defines three generic strategies that can be used to attain competitive advantage: (1) cost leadership, i.e. lower costs than the competitors, (2) differentiation, i.e. distinction from competitors through differentiated products and (3) focus, i.e. targeting of a niched focus segment, customer or geographically wise. It is essential to choose one of the three generic strategies to not waste resources. Which one to choose depends whether the firm is cost- or differentiation oriented, and whether the company aims to target a broad or narrow customer group. A firm's decision of focusing on either costs or differentiation will also affects whether the firm will reach a broad or particular segment (Porter, 1980).

Cost leadership
When having a cost leadership strategy, cutting costs are important and require economies of scale and/or scope. The firm with the lowest cost will be the most profitable, and become an above average performer; the competitors will need to cut prices to be able to compete (Hedman and Kalling, 2002). Moreover, a cost leader cannot totally ignore to differentiate itself. The products must still be perceived as comparable to the competitors' products in terms of value, otherwise the firm will has to discount prices significantly below its competitors to be able to sell (Porter 1985).

Differentiation
When using a differentiation strategy, a firm tries to obtain competitive advantage through differentiating its products against the competitors'. The strategy of the firm is to seek to be unique within the industry and focus on attributes that are perceived particularly important for the customers. This is often attained by customization of the products. A premium price can be taken for differentiated products due to the uniqueness compared to rivals' products. The company will become an above average performer in its industry if the value the uniqueness

creates for its customers exceeds its premium price. Thus, firms using this strategy should strive to find opportunities of differentiating products leading to premium prices superior of the costs of the differentiating. However, the differentiator cannot ignore costs totally, since inferiors can annul the premium prices (Porter, 1985).

Focus

The focus strategy is different from the others since it concerns choosing the right market focus. When using this strategy, a firm has to decide how narrow the scope should be within the industry. The focus strategy is about selecting a segment and customizes the strategy accordingly, and serve this specific segment in exclusion of others. Competitive advantage can then be obtained within the chosen segment by optimizing the strategy for this segment in particular. Consequently, by using this strategy, a firm can gain competitive advantage within the selected segment even though it does not possess it in the industry overall.

There are two variants of focus strategies, cost and differentiation based. The cost based focus is similar to the cost leadership strategy, with the difference that it only focuses on a smaller part of the market. The same logic is applicable on the differentiation based focus which is related to differentiation strategy in the same way, with a certain part of the market in focus (Porter, 1985).

Stuck in the middle

A firm that seeks to reach several of the generic strategies, but fails to obtain any of them fully, is considered “stuck in the middle”. This position is usually a result of below average performance and absence of competitive advantage. When a firm is “stuck in the middle”, it will never have a chance against the cost leaders, the differentiators and the focusers since they will be better positioned in respective segment. Unfortunately, there are always competitors in all industries that are “stuck in the middle”. Companies “stuck in the middle” can launch profitable products, but a competitor with more sustainable competitive advantage will eventually replicate the new product or service and eliminate the rewards of it (Porter, 1985). To conclude, being “stuck in the middle” is usually a result of unwillingness to make choices regarding how to compete in the best way. Firms in this position seek to achieve competitive advantage through every channel and ends up with none consequently (Porter, 1985).

3.3.4 Resource-Based View

In order for companies to be successful it is important that the internal conditions are adapted to meet the changes of the external business environment, which often take place in today’s markets. The resource-based perspective emerged as a new branch within the strategy research in the 1980s when researchers began to focus on the identification of the individual firm’s unique and inimitable resources and capabilities. This perspective claims that consideration of a firm’s internal resource base is vital for a firm to be competitive. Hence, the resource-based view is a useful tool when identifying and analyzing a firm's internal resources and capabilities, which could lead to sustainable competitive advantage (Wernerfelt, 1984; Barney, 1991).

Resources are firm-specific material or immaterial assets that companies use when creating and implementing strategies. Examples are human capital, corporate brand and patents (Barney, 2001). Capabilities, on the other hand, include a firm's distinctive ability to act and make use of its resources in the best possible way. The resources and capabilities are considered sources of sustainable competitive advantages if they persist despite competitors' attempts of replication (Besanko et al., 2010). Such attempts are more difficult when the resources and capabilities possess the attributes of *heterogeneity*, *imperfectly mobility* and are protected by *isolation mechanisms*.

According to Barney and Clark (2007), a resource or capability can be defined as heterogeneous when it is evaluated to be *valuable*, *rare*, *inimitable* and *organizational* (VRIO). Imperfect mobility means that a resource or capability must be specific to the firm, and hence not as valuable in any other firm. Further, this means that the resource or capability cannot be sold to the highest bidder on the market (Barney, 1991). The third condition, isolation mechanisms, includes the two criteria *impediments to imitation* and *early mover advantage*. The first mechanism, impediments to imitation, refers to factors that make it difficult for competitors to imitate a firm's successful resource or capability. It includes four different obstacles: government restrictions, access to critical resources, economies of scale, and intellectual barriers (Besanko et al., 2010). The second mechanism, early mover advantage, states that firms who are first to implement a strategy within a certain market receive benefits. In this case, the timing is critical and a mature firm's long time in a particular industry is of importance in terms of sustainable competitive advantage. When entering the market first, a company can gain access to key distribution channels, build key customer relationships and develop a strong brand before competitors (Barney, 1991). Being an early mover is not always compatible with benefits though. Sometimes early movers have to invest in expensive and unprofitable technologies and products, which competitors can learn and benefit from. Thereafter they can choose to only imitate the successful concepts; such firms can be termed as free riders (Lieberman and Montgomery, 1998).

3.4 Portfolio Management

Managing the configuration of product portfolios, and prioritizing and choosing between projects have become a hot topic, and is today viewed as an important strategic matter for organizations in all industries. *Project portfolio management (PPM*) or *portfolio management*, has transformed from something that was favorable for a company to have, to a necessity for success (Rajegopal, 2013; Levin and Wyzalek, 2014). Hereafter, the authors will use the terminology “portfolio management”, instead of PPM throughout the paper. Portfolio management is a complex matter, where many parts of the organization are involved, most frankly the marketing division, the manufacturing division and the product development division (see figure 8). For instance, the marketing department desires completely customized products suited for everyone within the targeted segments, while the product development have an ideal of not wanting more products than they can handle, hence not as many as the marketing want (Cantamessa, 2005). Marketing and sales managers within a company do not perceive portfolio management as critical as the technology related management, such as the CTO, vice presidents of R&D etcetera. This is problematic since it fades away the relevance of portfolio management for a company’s success. However, it is natural phenomenon as the marketing and sales employees are not involved in the portfolio management and project selection process (Cooper, Edgett and Kleinschmidt, 2001).

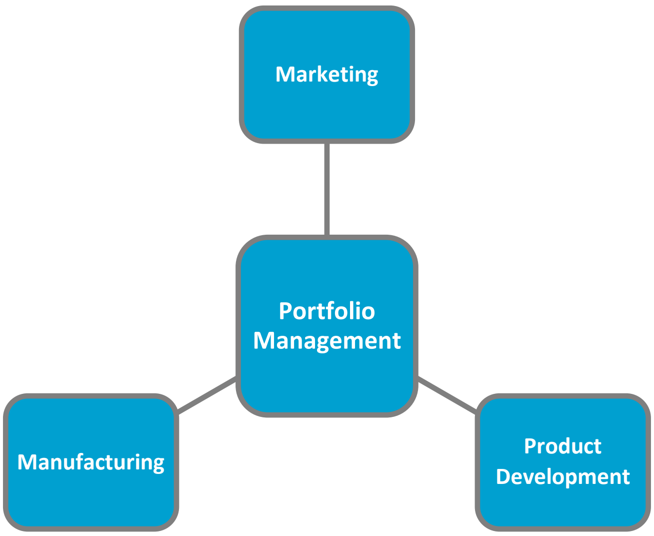

Figure 8. The pressures of portfolio management (Levin & Wyzalek, 2014).

Cooper, Edgett and Kleinschmidt (2001) define portfolio management as a dynamic decision process where a company’s active projects are constantly updated and reviewed, and new projects evaluated and prioritized. Consequently, some projects are chosen to proceed with and accelerated on, and some are rejected or annulled. Throughout this process, resources are constantly allocated and reallocated. Gorchels (2003) defines portfolio management as an organizational business structure that deals with the development, marketing and sales of a product or product portfolio throughout the product life cycle. It manages the forecasting, planning, production and marketing of a product portfolio with the objective of attaining competitive advantage and sustainable customer satisfaction. The management comprises all activities related to getting the product into the market, and the subsequent follow up and support after the launch (Gorchels, 2003). Portfolio management is characterized by tough decisions, continuously changing and uncertain conditions, information, opportunities and challenges. Further, the decisions processes involve strategic deliberations, multiple decision makers and objectives, and interdependence among projects (Cooper, Edgett and Kleinschmidt, 2001).

Basically, companies differentiate their products and product groups when dealing with portfolio management. Greater customer value can be created, and hence revenues, by differentiating. There are two types of product differentiation: *horizontal* and *vertical*. Horizontal differentiation is subjective and characterized by a new product feature that is creating value for some customers and not all, like a new design of a car. Vertical differentiation, in contrast, is objective and characterized by a new product feature that is creating value for all customers, like a car with increased comfort of fuel consumption. Hence, the customers' willingness to pay will increase. On the other hand, vertical differentiation often leads to intense competition at an identical quality level, which can force reductions in price and therefore decrease profits. At a higher level of competition, product differentiation is typically lower. If extremely intense competition, the products are commoditized and there are no profits to make (Cantamessa, 2005).

The largest challenge and most meaningful inquiry with portfolio management is which projects that should be kept and put investments on, and which should not. For each selected project there are probably ten to hundred times as many projects that never get to see the daylight. Choosing the right project can never fully be predicted beforehand, but it is a vital decision for a company's success. Doing the right things in the right order is what separates the leading firms from the rest in today's fast moving business society. Consequently, companies need to understand how to optimize their product portfolios, balance investment risk and make the right cost reductions on the right places now more than ever. Many company's attempts to optimize the product portfolio and choose the right projects typically fail. Some common factors that lead to failure are following (Rajegopal, 2013):

- Insufficient incorporation of portfolio planning at strategic level
- Lack of processes to measure to what extent the projects are strategically aligned
- Too much capital and effort put on obsolete projects that do no longer apply to changed priorities
- Absence of concrete, processed guidelines for review of business cases and new ideas
- Prioritization based on individual executives' agendas
- Initiating of too many project at the same time

- Absence of interconnection between the corporate strategy and technology initiatives
- Absence of the broad visibility of problems and risks in a broader context
- Too much focus on financial metrics as project selection standard

How to organize the product portfolios in an optimal way differs from firm to firm. Four factors that influence the portfolio management decisions are the company's *culture*, external *environment*, portfolio management process *maturity level*, and the company's *executive buy-in*, i.e. the company's executives will to adapt to a systematic portfolio management (see figure 9). Important qualities companies need to consider when dealing with portfolio management are following (Rajegopal, 2013):

1. To secures that the right projects are performed
2. To choose the right principles in the project selection process
3. To judge the decisions made in the right way
4. To benchmark the projects with successful predecessors

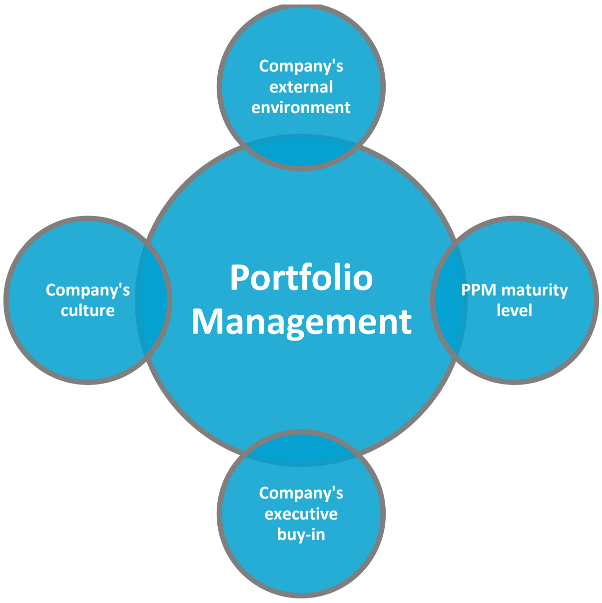

Figure 9. Factors influencing portfolio management decisions (Rajegopal, 2013).

A product manager is often in charge of the portfolio management. Depending on company, the functions of the product manager are different. The role has a wide span from strategic and tactical activities, and focuses on driving new product development into the market to increase profitability. The product manager is an interdisciplinary link between R&D, sales, marketing and advertising that brings the engineering oriented teams and the commercially teams together, as seen in figure 10 (Gorchels, 2012).

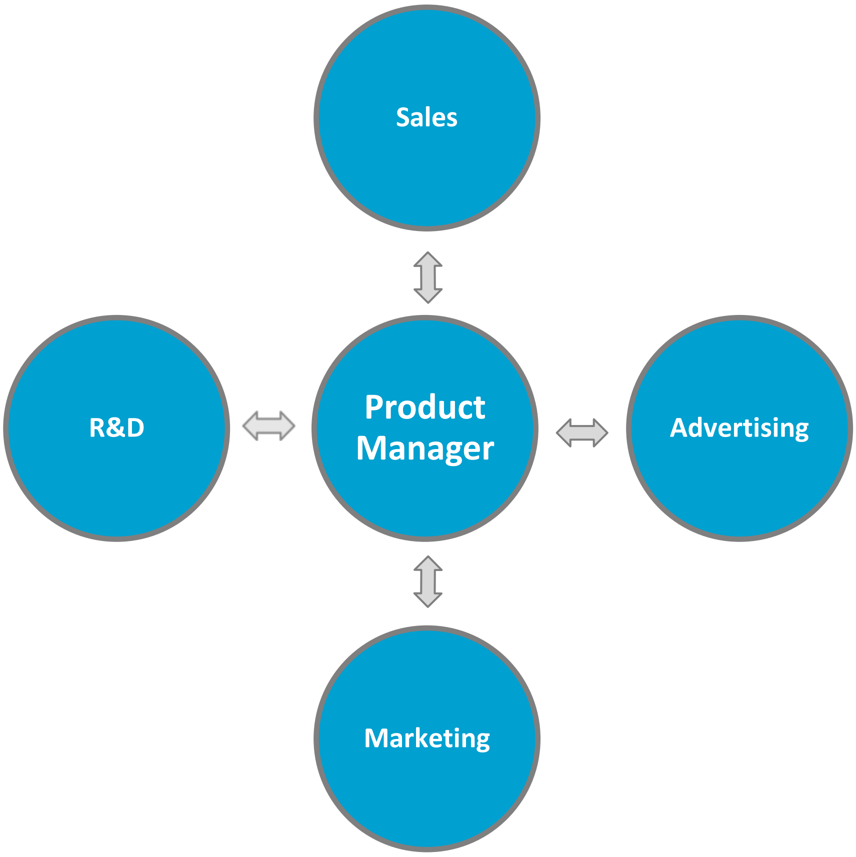

Figure 10. The different product manager interfaces (Gorchels, 2012).

The five essential goals of a product manager are to: drive business results, deliver results through people, ensure market driven direction, guide product's fit and function and manage multiple priorities, and can be seen in figure 11 (Gorchels, 2003).

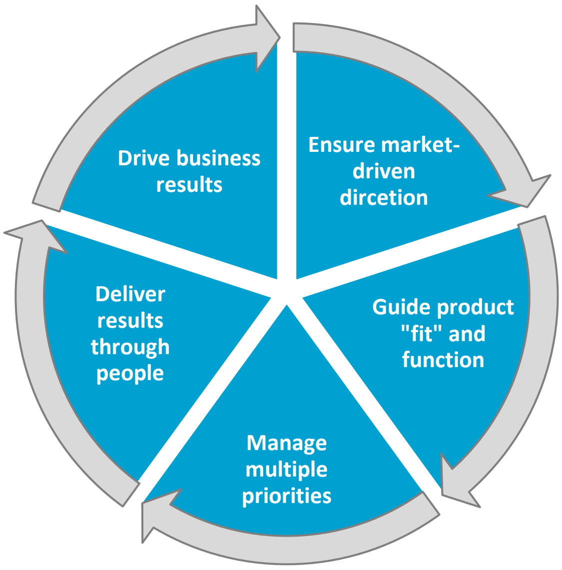

Figure 11. The essential demands of a product manager (Gorchels, 2003).

According to Rajegopal (2013) only six out of 100 companies succeed with portfolio management, and they have one thing in common. They all have mature, processed practices and standards in place and have learnt how to tackle the following four aspects: (1) the environment in which they operate, (2) the scale of their firm, and the challenges and changes it faces, (3) their organizational culture, and (4) the mutual determination of the company's executives and stakeholders to work systematically with portfolio management (Rajegopal, 2013).

The following eight factors are *reasons* why portfolio management is vital for a company's business according to senior managers (Cooper, Edgett and Kleinschmidt, 2001):

1. To achieve financial goals and maximize return and R&D productivity
2. To maintain or improve current competitive position; stay competitive and increase sales volume and market share
3. To allocate resources efficiently
4. To stress the vital alignment between the corporate strategy and the portfolio management so the portfolio selection supports the strategy
5. To obtain focus on the right projects and put more resources on those and less on other projects
6. To obtain objectivity in the project selection
7. To obtain the right balance between the projects in terms of time horizon and risk
8. To communicate priorities vertically and horizontally within the company

The first factor concerning financial goals is by far the most frequent reason why portfolio management is perceived so important among senior managers. The financial reason is further connected with the second factor, which is about maintaining or improving current competitive position (Cooper, Edgett and Kleinschmidt, 2001).

There are many popular methods on how to work with portfolio management and project selection. Cooper, Edgett and Kleinschmidt (2001) conducted a study in 2001 regarding successful portfolio management and the methods firms use. The study was based on in-depth personal interviews with key portfolio management employees from 30 international leading companies within divergent industries (Cooper, Edgett and Kleinschmidt, 2001). Some of the vital findings from the study are presented throughout this section.

The most common portfolio management methods used by successful firms are, according to Cooper, Edgett and Kleinschmidt (2001): *financial*, *business strategy*, *bubble diagrams or portfolio maps*, *scoring models* and *checklists*. Most companies work with a mix of these with different shares of focus put on them, and one dominant method. Chart 1 shows to what extent the methods are used in today's businesses, and to what extent they are representing the dominant portfolio selection methods. There are inevitably more portfolio management methods to use, such as using probabilities of commercial and technical success, or simply relying on intuition and experience, but these methods are not as present as the prior mentioned ones (Cooper, Edgett and Kleinschmidt, 2001).

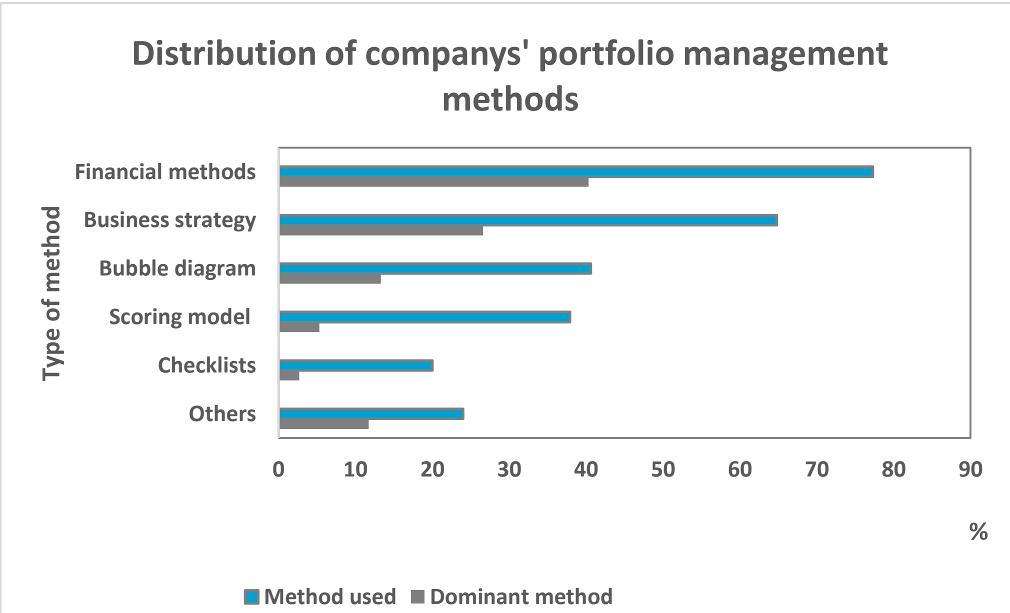

Chart 1. Distribution of companies' portfolio management methods in terms of used and dominant methods (Cooper, Edgett and Kleinschmidt, 2001).

Financial methods

The most frequently used methods in portfolio management are financial. 77 % of the firms incorporate this method in their project decision making formula according to Cooper, Edgett and Kleinschmidt (2001), and 40 % rely on it as the dominant method. The financial methods can have different approaches, but most often they are used to compare different projects against each other. This is done by calculating the projects' financial result or expected value (Cooper, Edgett and Kleinschmidt, 1999). After this, the projects are ranked against each other by comparing the values. The value determines which projects that should be continued with, and which that should not. Almost 40 % of the organizations employ this approach, while a little less popular approach compare financial measure against an acceptable level or "hurdle rate" to determine which projects to continue with and which to annul. Close to 30 % of the firms use the latter one. 10 % uses both these approaches, while 23 % are not using financial methods at all (Cooper, Edgett and Kleinschmidt, 2001).

Strategic approaches

The use of strategic approaches is the second most popular portfolio management method - incorporated by 65 % of the organizations and dominant in 27 % of the cases. When using a strategic approach, the portfolio decisions are directly linked with the company's corporate strategy (Cooper, Edgett and Kleinschmidt, 1999). The method mainly entails to allocate R&D resources on different types of projects. The money are put in "buckets" divided by for instance market, product line or product type, based on the type of business and the corporate strategy of the firm. The projects are then ranked against each other within the buckets. The ranking can be performed with a financial index or a scoring method. The elements of the buckets vary a lot in different companies. The most companies using this method do not use this method formally or include financial values; the corporate strategy drives the portfolio selection (Cooper, Edgett and Kleinschmidt, 2001).

Bubble diagrams/portfolio maps

The use of bubble diagrams or portfolio maps have become popular, with 41 % of the companies using them incorporated in the portfolio decision process. On the other hand, it seems more like a supporting tool, since only 13 % of the companies use the method as the dominant one. Managers are rating bubble diagrams as a very effective tool and would recommend them. In the bubble diagrams, the different projects are plotted on a map in bubble shapes of varying sizes. The bubbles are plotted in the map in the quadrant they are represented in (Cooper, Edgett and Kleinschmidt, 2001). The method is similar to the basic Boston matrix with stars, cash cows, dogs and question marks, but the axes are different (Airline, 2015; Cooper, Edgett and Kleinschmidt, 2001). The most common type of chart used in a bubble diagram is risk versus reward, where the axis are reward (net present value (NVP), internal rate of return (IRR) or market value) and probability of success, technical or commercial. 44 % of the organizations that uses bubble diagrams are using this type (Cooper, Edgett and Kleinschmidt, 2001).

Scoring models

Scoring models are used by 38 % of the companies, and is the dominant method in 5 % of the cases. When using this method, the projects are scored on a number of criteria, often on scales of 1 to 5 or 1 to 10, or by a qualitative ranking such as low/medium/high. The ratings on the scales are then added in a weighted fashion, which results in a total project score. 27 % of the companies that use scoring methods then rank the total project scores of the different project and compare them in the selection process, where the projects with higher total score are favored. In this process the single project are not in focus; a bigger picture with many projects together is rather central. On the other hand, a little share of the companies using scoring models, 8 %, uses scoring methods for go/annul decisions. In this case the scores are compared to cut-off criterion for a single project and no ranking. The most commonly used criteria in scoring methods are strategic fit, financial reward/payoff and risk and success probability. Scoring models are rated by managers to overall have much strength and few weaknesses (Cooper, Edgett and Kleinschmidt, 2001).

Checklists

When using checklists, projects are evaluated and compared by a number of “yes” or “no” questions. In order for a project to proceed it must score “yes” on every question or on a certain amount of questions determined beforehand. Hence, the number of yes-answers determines if the project should be empathized or annulled. 15 % of the companies using checklists uses it for go/annul decisions with focus on single projects, and barely 4 % use it as ranking methods, i.e. the opposite to scoring models. Just like bubble diagrams, checklist tend to be used as a supporting decision making tool. 20 % of the organizations incorporate checklists in their portfolio management process, but only 3 % uses it as dominant decision method (Cooper, Edgett and Kleinschmidt, 2001). Cooper, Edgett and Kleinschmidt (2001) argue that there is a direct link between a company’s senior management’s opinion of the importance of portfolio management, and the performance and results it achieves. When it comes to portfolio management, the managers in the best performing companies are scoring the importance of portfolio management higher than the firms that are performing less good. The biggest difference between the best and the worst performing companies is that the best companies (Cooper, Edgett and Kleinschmidt, 2001):

- Have a clear and deep rooted method for portfolio management, with explicit rules and procedures
- Have management group that is well-experiences with the method and supports it with its actions

- Consider the projects in a portfolio context, together in a bigger picture and not alone
- Have consistency and alignment across all ongoing and selected projects

All the above mentioned differences between the best and worst performing companies are clear. A company with positive product portfolio results, i.e. a strategically aligned, balanced and high value portfolio with the accurate amount of projects, covers all the above criteria, while poor performing companies do not. What is significant among the best performing companies is that they rely on strategic approaches as the dominant method to a large extent - 39 % - compared to the average company of 27 %. Only 10 % of the worst performing companies use business strategy as their dominant method. Further, the best performing companies rely less on financial methods when it comes to portfolio decisions with a rate of 36 % compared to the average of 40 %. The worst performing companies on the other hand, rely to 56 % on financial methods. See company best versus worst performance and dominant portfolio selection methods in chart 2. Further, the best performers are incorporating many methods in their portfolio management compared to the worst performers. The best performers on average use 2.43 different methods in the decision process and half of them use three or more techniques. This while the typical company uses on average 2.34 different methods, and the worst performers on average 1.83 with half of them only focusing on a single one (Cooper, Edgett and Kleinschmidt, 2001).

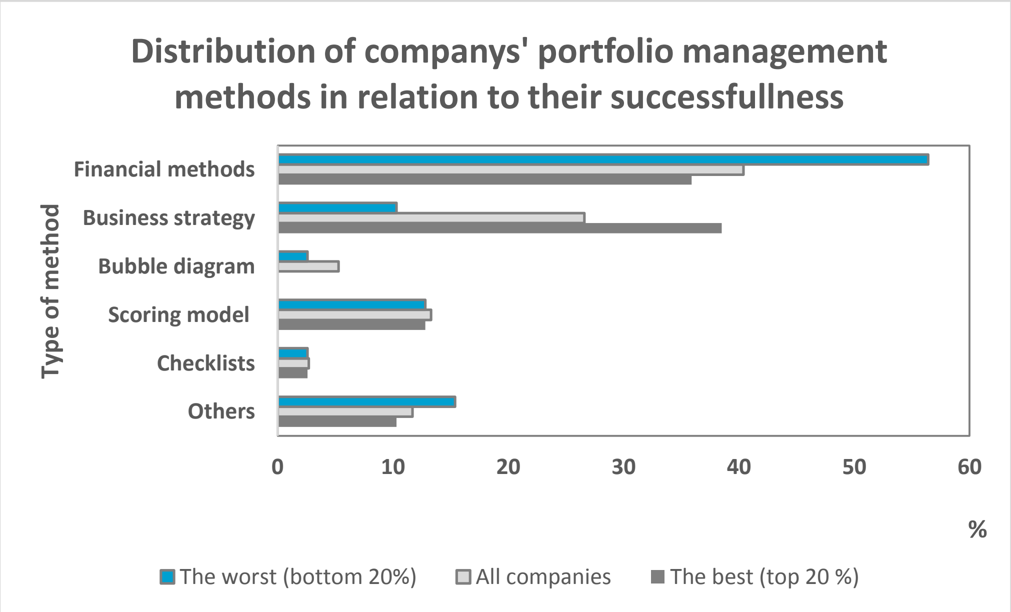

Chart 2. Distribution of companies' portfolio management methods in relation the successfulness (Cooper, Edgett and Kleinschmidt, 2001).

3.5 Content Strategy and Strategy Process

It is important to distinguish between content and strategy process but at the same time be aware of the correlations between the two and how they function together. The above presented strategy content theories are of static kind. Content strategy is the knowledge of what can be done (Burgelman, 1988). It is solely focusing on a company's strategic position and how it can be favorable under changing external conditions and environmental contexts. It states the company's scope, i.e. under what special conditions it competes; the positioning versus the surrounding environment. The content research suggests the desired competitive situation and the valuable resources of a company, but does not declare how the company can reach their desired strategic position or how to maintain it, either deliberately or through a trial-and-error approach (Chakravarthy and Doz, 1992).

Strategy process research on the other hand, is more dynamic and concerns individual level in a company in addition to the more external focus of content strategy. It focuses on how a company's decision processes and administrative systems affect its strategic situation. Strategy process research implies how a manager can impact on the company's strategic position by using administrative systems (a company's organizational structure, incentives, human resource management, planning, control, and value systems) and accurate decision processes (Chakravarthy and Doz, 1992).

To distinguish between content and process, process is the successful performance of content, i.e. what can be done (Burgelman, 1988). Strategy process research can be compared to full color video, and strategy content research to static photography. Both the fields strive to improve the performance of a firm, but stresses different implications of company managers' problems. Figure 12 shows the basics that support strategy content and strategy process. Strategy content touches the company's environmental context and the firm's strategic position, as stated before and treated in the content part of this chapter. It is static in the way that it does not treat individual levels within an organization, such as the management's behavior. Further, it is based on the assumption that decision makers are rational and does not get affected by opportunistic behavior. In contrast, strategy process takes this fact into consideration, and dig deeper into an organization to an individual level. It covers the whole spectra as seen in the matrix displayed in figure 12 (Chakravarthy and Doz, 1992).

Unit of Analysis				
	Environmental Context (markets, society)	-Macro Economics -Micro Economics	-Political -Economics -Sociology	-Political Science -Theology
		Strategy Content	**Strategy Process**	
	Firm	-Organizational Economics	-Business Policy & Planning -Institutional Economics	-Social Psychology
	Individual (in and outside the firm)	-Decision Science	-Behavioral Decision Theory -Organizational Politics	-Psychology -Ethics
		Rational	*Bounded Rational*	*Extra Rational*
			Assumptions about Decision Making	

Figure 12. Base disciplines that support strategy content and strategy process research (Chakravarthy and Doz, 1992).

Content and process needs to intertwine; the process generates content that the processes can impact, and the content sets the guidelines for the process. The outcome of the two needs to be analyzed together and interpreted accurately at each level within an organization, from operational to corporate, and serve to deliver strategic content at the respective level. Then the strategic content transforms into material for the strategic actions at the next level of management (Burgelman, 1988).

To fulfill the purpose of this study and increase the understanding of the mechanisms impacting the management of product portfolios in an increasingly complex competitive and corporate environment, strategy process theory needs to be addressed. Portfolio management is directly dependent on the individual decisions by the product manager and the internal processes linked to the decision. Hence, strategy process theory and its implications are presented below.

3.6 Strategy Process

Historically, the concept of strategy has mainly been directed in an analytical way. Researchers on the topic have seen strategy as static plans that companies are to follow if they are to succeed. Many latter researchers, with start in the 1970s (such as Mintzberg 1978, 1987, 1994, Pettigrew 1985, and Quinn 1978), have posed criticism towards this cross-sectional view due to emerging macro changes in the society that has major impact on companies' business. Likewise, these researchers saw the resource-based view as static. Examples of new macro conditions that appeared were increased liberalization, globalization, inflation, emerging information technology, and the oil crisis that made the oil prices increase dramatically. All these happenings contributed to a more complex world where the thought of relying on detailed plans became obsolete (Eriksson-Zetterquist, Kalling and Styhre, 2012; Bengtsson and Kalling, 2012). This gave rise to a new strategy research era where a strategy plan is not complete as it is; it additionally needs to be adapted to its unique context and continuously updated. This phenomenon is referred to as a processed view of strategy, where a company's strategy is seen as a continuous process that retrospectively is impacted by the surrounding and widely spread affecting circumstances (Mintzberg 1994; Eriksson-Zetterquist, Kalling and Styhre, 2012; Bengtsson and Kalling, 2012). Hence, the strategy process view can be compared to jazz music where improvisation, seizing the moment, and parrying are important characteristics. The planning view on the other hand, can be compared to a symphony orchestra, where the play ought to deviate as little as possible from the original plan (Bengtsson and Kalling, 2012).

Mintzberg (1994), one of the pioneers within the strategy process view, had objections against especially three following basic assumptions within the prior strategy planning orientation: (1) the belief that the future can be predicted, (2) the assumption that strategy analysis can be separated from the strategy implementation, and (3) the belief that formal procedures can contribute to innovation. As of today, it is a reality that the future cannot be predicted. Things happen and get in the way of the planning and that is the way it is. A company needs to consider and count on its operational ongoing activities when introducing a strategy plan, and hence implement it in a way that suits the company's distinctive context. Mintzberg (1994) means that there is no creativity in a formalized planning procedure, and consequently no room for outside the box-thinking and innovation within the organization. Today, there are few companies that solely rely on strategy planning, and the strategy process view is widely accepted (Eriksson-Zetterquist, Kalling and Styhre, 2012).

Strategies can either be *planned* or *realized* as illustrated in figure 13 (Mintzberg, 1987). A company's new strategy can be a result of a plan or an unplanned emerging strategy due to individual circumstances. Planned strategies can be used to a larger extent in companies operating within a stable environment, such as industries with slow technological changes and few competitors. This since the stable circumstances increases the survival chances of the plans. In addition to this, it is almost impossible for a company operating within a continuously changing environment, with for instance many competitors and fast technology development pace, to plan their actions beforehand with good results (Mintzberg, 1987).

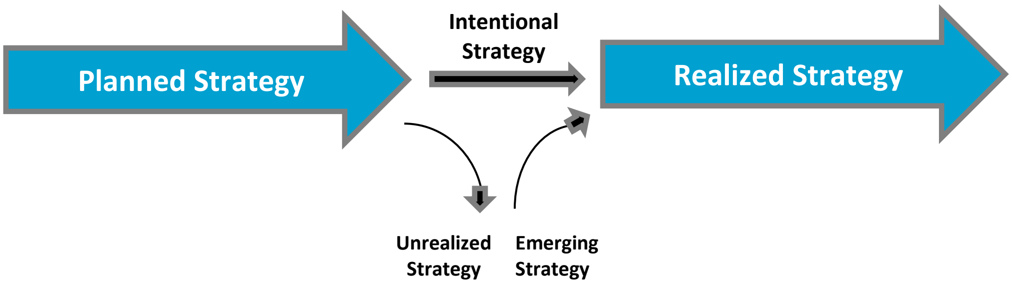

Figure 13. Dimensions impacting a company's realized strategy (Mintzberg, 1987).

To keep up with the changing conditions in the environment; it is important for companies to be adaptive. Kenney (2010) have identified some attributes that differentiate an adaptive organization from a static one. The attributes pinpointed enable the adaptive organization to shape after the economic and societal circumstances affecting the organization directly and indirectly. Attributes of matter are (Kenney, 2010):

- The organization's ability to collaborate and communicate effectively among groups, departments and employees within the organization
- The ability to gain external sources knowledge and perspectives for all employees at all levels within the organization, including networking with customers, external industry experts and competitors
- Innovative and experimental mindset at all levels and functions within the organization that is facilitated, supported and potentially rewarded

The dynamic processes of effectively aligning an organization's external environmental change and uncertainty with the internal interdependencies are tremendously complex and abstract. This due to the many aspects such as several decisions and behaviors at different organizational levels that are affected by the organizational culture (Miles et al., 1978).

Relevant implications in the strategy process view are organizational learning, flexibility and the ability to adapt to changes, and the fact that strategies are quietly and unintentionally growing on a daily basis (Bengtsson and Kalling, 2012). This mindset reverses the idea of people being rational and able to plan beforehand, to fend off upcoming problems instead. This means that strategy becomes a problem solving process rather than a planning process. The fact that a firm constantly is moving forward, makes decisions on the way and is impacted by the surrounding environment, equals the firm's strategy, according to the strategy process view, since it is a growing phenomenon where the process is what counts. A company's strategies need to be revised over time when new environmental opportunities and threats arise and when there are changes in the corporate intent (Chakravarthy, 1992). This highlights the connection between the process view and organizational and management theory (Mintzberg, 1987). There are especially three aspects, which have vital impact on the strategy process: the company's environment, the executive management within the organization and the organizational system. Major focus is put on the management, who needs to harmonize the company with its environment (Mintzberg 1978; Eriksson-Zetterquist, Kalling and Styhre, 2012).

Burgelman (1988) argues that strategy is a social learning process. The individual learning generated by actions of managers on operational and middle level is something the companies can take advantage of. This learning process is initiated with a single employee's action on an opportunity on operational level. Then the action travels up in the organizational hierarchy, from a narrow and concrete scope on individual level to a broad and abstract scope on corporate level. This learning process is reliant on interconnections between action and cognition, and the processes go continuously back and forth between the two. Hence, strategy is derived from operational level, and not corporate, through social learning processes. Efficient and well-established communication processes are a in these contexts fundamental to achieve desired streams of information (Burgelman, 1988).

Since the strategy is emerging continuously within a company, it is essential to support the process and form the surrounding as responsive as possible for changes. A way of doing this is through a horizontal approach, where the strategic engagement is delegated throughout the organization, and not solely planned from top management (Bengtsson and Kalling, 2012). A changing environment requires companies and employees to be receptive to learning. In such a learning system, all individuals need to be able to reflect on their own and other's actions (Burgelman, 1988). In the case of organizations operating within a strongly changing environment, it is especially important that the strategies are generated decentralized in the firm through the learning of the individual employee. Improvisation is a vital part of this process. Common for companies that are good at improvising and have strong ability to parry and embrace changing conditions is that the strategic responsibility is decentralized and owned by a large amount of actors within the organization. Teamwork is frequently present, where the members are devoted to learn and reflect to achieve the strategic goals (Bengtsson and Kalling, 2012). A company is considered to have good ability to improvise when (Weick, 1998):

- There exist a will to ignore plans in favor for real time acting
- It is liable on processes rather than structures
- It has confidence towards handling unexpected situations
- It has thorough understanding of their internal resources and capabilities
- There is access to tools necessary for creating new action plans (concepts, ideas, models etcetera)

- It observes external performance and is able to build on these ideas and create new opportunities
- It has ability to keep a high and stable standard rhythm in the work

According to Miles et al. (1978), theories of management usually consist of three dimensions or core elements: (1) a number of assumptions about human attitudes and behaviors, (2) authorial and managerial policies, and executions based on the assumptions in (1), and (3) prejudice and expectations about performance of employee if the policies and executions in (2) are implemented. In general, organizations are constrained in their decision making and adaptive behavior to key individuals, i.e. top management and fellow employees that have earned the top management's trust. Employees of this kind could be anything from middle level managers to human resources accountabilities. The insight of how key individuals' response and tackle an organization's internal climate, i.e. the company culture, and external climate, i.e. the operating market, is fundamental for the understanding of its ability to function as an adaptive organization (Miles et al. 1978).

To summarize, key processes within the area of strategy process that have been identified throughout the literature review are: (1) management, (2) organizational, (3) communication, (4) competence, and (5) cultural (see figure 14). These are considered important processes to understand while mapping a firm's strategy processes, dynamic environment and portfolio management. Together the five key processes shape the foundation of successful strategy process within an organization.

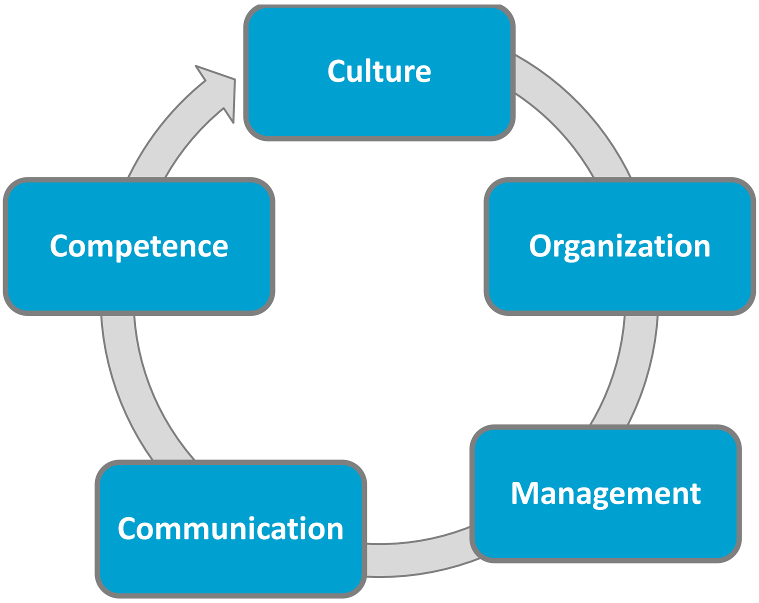

Figure 14. Key processes within the area of strategy process (Authors' figure).

3.7 Theoretical Framework

To fulfill the purpose with the thesis, and map the challenges of the Division's portfolio management, a theoretical framework has been developed (see figure 15). In order to apply portfolio management in a context, the influencing content theories PESTLE, Porter's five forces, Porter's generic strategy, and the Resource-based view are placed around portfolio management theory. Strategy process interacts with both portfolio management and the content strategies, and has hence been applied as an influencing pillar. The theoretical framework includes comprehensive and well established strategy theories, excluding the portfolio management theory. They cover internal and external business environmental impacts on a company, as well as sources of competitiveness and positioning strategies. In other words, the theories cover a broad spectrum that is mutual exclusive and collectively exhaustive. The used theories may be old, but they are still the most recognized and commonly used in successful companies.

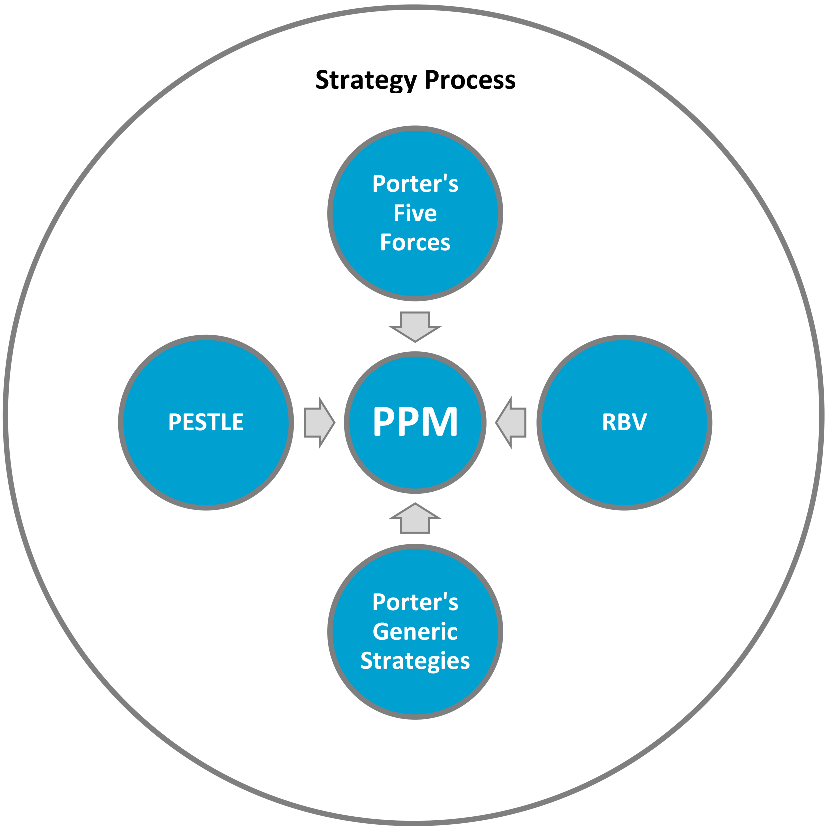

Figure 15. Developed theoretical framework (Authors' figure).

4. The Case Company

This chapter presents a description of the Mother Company, i.e. the case company investigated in the study, and the Division. Further, the company's history, industry, and current markets are described.

4.1 Chapter Disposition

The disposition of the chapter can be seen in figure 16.

- **The Group (4.2)**
- **The Mother Company (4.3)**
- **Industry (4.4)**
- **Acquisition Focus (4.5)**
- **Pre-Mother Company (4.6)**
- **The Division (4.7)**

Figure 16. The disposition of chapter 4 (Authors' figure).

4.2 The Group

The Group is a leading Swedish company group operating within the construction industry. The Group was formed during the 1990s as a result of a consolidation of two companies. Today, the Group is present globally and consists of five divisions (see figure 17). The Group has thousands of employees and an annual turnover of SEK 20-80 billion in 2014 (The Group, 2013a).

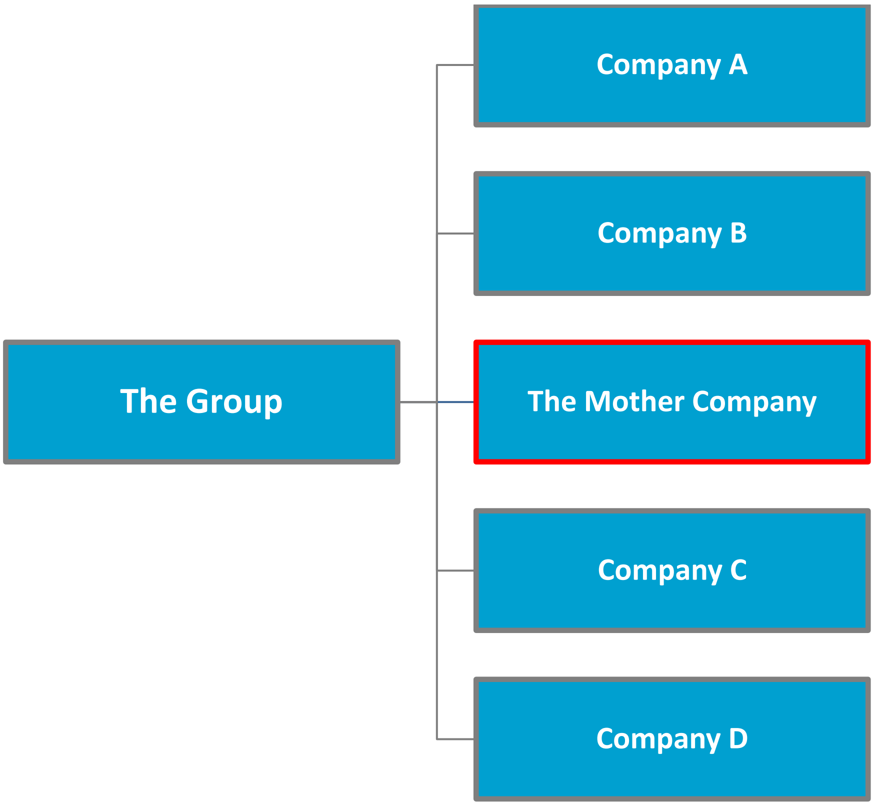

Figure 17. Organizational map of the Group (Authors' figure).

The Group is a capital intensive player within the construction industry. The company's vision is divided into the following three dimensions: (1) *to be the leading within the construction industry*, (2) *to be number one in innovation and offer great products*, and (3) *to be a good place to work at.* The Group's long-term objective translated into numbers is to have an annual growth of 5-20 %, both organic and through acquisitions, and an operating margin of 10-20 %. To achieve the vision and the financial goals, the Group's strategy relies on three pillars. The first pillar aims to increase the growth within the core operations and expand to new markets and within new segments. The second pillar aims to continuously develop innovative products that increase the customer value and satisfaction with lower production costs. Finally, the third pillar aims to reduce the cost base through improved processes, flexible and customer oriented end-installation services and by manufacture the products in low cost countries (the Group, 2014; the Group, 2013b).

A handful of big owners possess the lion's share of the ownership of the Group, which implies that these owners control the majority of the voting rights. The common denominator of the bigger owners is that they all have a long-term growth focus on their investments, which mirrors the Group's vision and strategy (The Group, 2014).

4.3 The Mother Company

The Mother Company is one of the Group's largest divisions. The turnover was 10-20 billion SEK in 2014 compared to the Group's 20-80 billion SEK. Further, the Mother Company has the greatest share of the total number of employees within the Group (The Group, 2014).

The Mother Company is a global industry leading company within the construction industry. The company provides different construction solutions and is present within many industries. The Mother Company operates in many countries and has a strong and wide global product portfolio, with both local and international brands. The production is centralized to a few manufacturing plants in different continents of the world (The Group, 2014). The Mother company's' vision and strategies are the same as the Group's.

4.4 Industry

The Mother Company operates within the construction industry. The construction industry is characterized as project intensive, which makes it somewhat uncertain for the involved actors (Svenskt Projektforum, 2015). The industry is characterized by sales both to end-customers and to wholesalers.

The construction industry is characterized by strong customer relations. The niche within the industry, where the Mother Company is a major player, is historically fragmented with local and regional players on the markets. An implication of this setup is that local customer relations have been, and still are, a key factor for this segment's business. The success of the construction companies is hence dependent on close local customer relations. Further, it is common that a large share of the revenues from companies within the industry is derived from in-house service, maintenance and upgrading of the products.

When it comes to marketing within the construction industry, presence on different construction equipment exhibitions and fairs is important. Key customers in the construction industry are architects, why the marketing towards them is fundamental for success. As the architects are modeling the construction where the construction equipment would potentially be installed, it is important that the Mother Company's products easily can be modeled in the systems used for this. However, the marketing focus among the competitors within the industry is varying.

4.5 Acquisition Focus

The Group has grown significantly through acquisitions since the start. The Mother Company was established through an acquisition of a Swedish company, the Pre-Mother Company, and has continuously grown mainly through acquisitions since. The Mother Company offers a wide range of construction equipment and the target is to cover the whole range in the future. A major part of the corporate strategy is to grow on all existing and new construction equipment markets mainly through acquisitions. However, the authors believe that there is a threat of fragmentation within companies such as the Mother Company, due to the corporate strategic emphasis on acquisitions. Both the Group and the Mother Company has an explicit decentralized company structure, where acquisition focus is a central factor.

4.6 The Pre-Mother Company

The Pre-Mother Company, the very start of the foundation of the Mother Company, was founded during the last century and was one of the first businesses in Sweden focusing on construction equipment for certain segments. During the second half of the past century, the company started its European expansion followed by the North American and Asian. The Pre-Mother Company's first-mover advantage led to a successful beginning and the Mother Company has kept the profitability since. Except the geographical expansion, the company expanded their product portfolios and target customer segments. The Mother Company, and in particular the Division, is much influenced by the Pre-Mother Company as the acquisition of it was the actual start of the Mother Company. Many Pre-Mother Company employees are working at the Mother Company today. Hence, there is a firm historical way of thinking within the organization (the Pre-Mother Company, 2009).

4.7 The Division

Today, the Division has three different product portfolios: *A*, *B* and *C*. Apart from these, the Division also sells D equipment. The structure of the Division can be seen in figure 18.

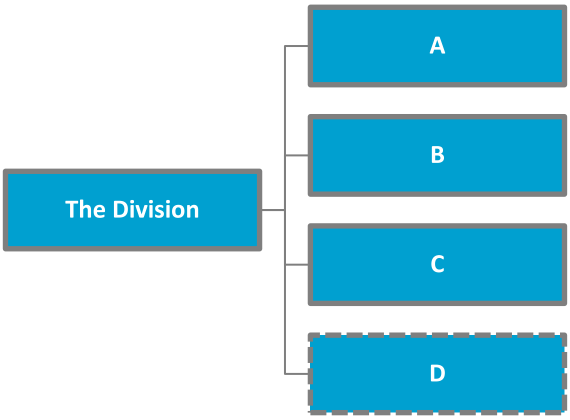

Figure 18. The Division's four different product areas. D is a minor product area and is therefore neglected from the scope of the study (Authors' figure).

Today, there are three operating product managers for the Division' product portfolios based in the Mother Company's headquarters in Sweden. Each of them has global responsibility for their respective product areas. The product managers are a part of the Mother Company's R&D department. In a European context, the local Division activities outside Sweden, except for production, primarily consists of sales companies in a great number of countries. The sales companies have limited impact over the Division's portfolio management and product development.

The Group is decentralized, which the authors have identified limits the directives from Group and/or Mother Company level to the Division's product managers. The product managers have a large extent of freedom to design their respective global product portfolio in discussion with R&D and the sales companies, and the main request from the Group is profit generation. When evaluating the portfolios, the lion's share of the focus is put on financial metrics, which is something that the Mother Company and the Division wish to change. Therefore, the Division desires a holistic overall analysis tool that takes external conditions into consideration. This to ensure the greatest possible value creation in their strategic choices linked to the Division's product portfolios A, B and C.

5. Empirical Analysis

In this chapter, the relevant empirical findings from the Mother Company and the Division are presented. The chapter is structured on basis of the theories presented in chapter 3.0, Theoretical Review.

5.1 Empirical Disposition

The empirical findings from the Mother Company and the Division relevant for the purpose are analyzed throughout this chapter from a process point of view. The data is obtained from the conducted interviews, the two questionnaires, the databases and the observations and the following of important employees. All the sources are thoroughly processed and analyzed subjectively by the authors. The strategic challenges of the Division's portfolio management are covered from a content perspective, and both content and processes are simultaneously treated. This approach allows the authors to investigate the two different aspects in an integrated manner, and map the complexity of what impacts the Division's portfolio management, both directly and indirectly. Important to note is that everything presented in this chapter are the result of the authors' own subjective valuations, based on the thoroughly processed and analyzed collected data. The structure of the chapter can be seen in figure 19.

- **Portfolio Management in Conjunction with Processes (5.2)**
- **Empirical Content (5.3)**
    - **PESTLE (5.3.1)**
    - **PESTLE in Conjunction with Processes (5.3.2)**
    - **Porter's Five Forces (5.3.3)**
    - **Porter's Five Forces in Conjunction with Processes (5.3.4)**
    - **Porter's Generic Strategies in Conjunction with Processes (5.3.5)**
    - **Resource-based View in Conjunction with Processes (5.3.6)**
- **Empirical Conclusions (5.4)**

Figure 19. Empirical disposition (Authors' figure).

5.2 Portfolio Management in Conjunction with Processes

As of today, the Division's three product portfolios (A, B and C) are considered solid, both product and technology wise. However, the authors believe the portfolio management of the division to have improvement potential. Today, the management is heavily dependent on a financial method in the shape of a financial business case template, based on financial estimated metrics. This business case template is required of all companies within the Group to use. The authors claim that the strict financial focus is permeating the Mother Company's corporate culture. From a financial perspective, the business case template is thoroughly elaborated and includes all numerical parameters demanded from the theory. However, the connection between the estimated financial numbers and the strategy of the Mother Company is hard to detect, which is unaligned with the theoretical recommendations by Cooper, Edgett and Kleinschmidt (2001). Alignment with the strategy is vital as portfolio management is a direct link between R&D and the market.

In addition to the financial method, which is dominating the Division's portfolio management, the product managers have access to bubble charts as a supporting tool. These are based on the financial metrics and the main function is to make the numbers from the business case template visual. However, the bubble charts mentioned in the theory, are used limitedly by the product managers and are low prioritized. Scoring models and checklists - other common methods - are not used at all when composing the Division's product portfolios.

As of today, the authors claim that the Division puts more resources on internal parts of the product portfolios, such as R&D, than on market focus. One of Gorchels' (2003) five pillars of a product manager's responsibilities - to ensure a market driven direction of the portfolio management - are therefore not performed in a complete way. This is mostly a consequence of lack of external and internal market data. The financial method the Division uses is dependent on this data.

Due to lack of data, the employees have free ability to interpret differently, which could potentially impact the objectivity of the portfolio management processes. A critical part of making the right portfolio decisions is, according to Cooper, Edgett and Kleinschmidt (2001), to obtain objectivity throughout the processes, and base the decisions on objective data.

The authors argue that lack of data, both regarding market and sales data, can be a consequence of undefined roles of the employees involved in the Division's portfolio management, lack of communication between these stakeholders, and an unclear incentive structure. The authors believe that this has contributed to a perceived intrinsic path dependency, and an embedded complacency within the company culture. Path dependency refers to the fact that a company's decisions taken in the past have essential impact on future decisions, even if they are not relevant anymore.

The authors believe the sales employees and the product team involved in the portfolio management to have relatively undefined roles due to the decentralization and financial control. The same goes with incentives to work outside the box. A cause of lacking reliable data may be different use of ERP systems.

The alignment between the R&D side of the portfolio management and the commercial functions could be improved according to the authors. Today, there are no defined processes regarding the relationship between the two parties. A part of this is probably lack of communication between the entities, which according to Kenney (2010) is highly important for organizations striving for adaptability and efficiency.

The Mother Company's corporate strategy is built on the three cornerstones; market presence, having the best products and being cost efficient. According to Cooper, Edgett and Kleinschmidt (2001), the best performing portfolios have an accented linkage and support from the top management of the firm. Further, Rajegopal (2013) highlights the essence of measuring to what extent the portfolio management is aligned with the strategic objectives. The authors believe that the Division's portfolio management lack explicit strategic alignment with the Mother Company's corporate objectives, and a way to measure this. The alignment between the Division's portfolio management and the three strategic cornerstones will be discussed below, one by one.

The essence of the Mother Company's vision's first cornerstone, market presence, is to increase growth both within the core business and on new markets and segments, mainly by expansion through acquisition. The Division's product portfolio has continuously grown historically and is today broad and covers a wide range of products. On the other hand, the portfolio management is much based on financial metrics. Product leadership intends that the Mother Company continuously strive to enhance the customer value in parallel with decreased product costs. The Division's product portfolios fulfill this cornerstone in a comprehensive way. The last cornerstone of the Mother Company's strategy, cost efficiency, is something that the Division copes with in a pronounced and elaborated way in regards to the portfolio management. However, strong cost focus can potentially lead to quality problems. To summarize, the Division's portfolio management fulfills most parts of the Mother Company's three strategic cornerstones. Nevertheless, it may not be steered purposely into the direction of the Mother Company's corporate strategy, which is something that could be emphasized for dynamic processes and increased success. New initiatives from the R&D department highlight the importance of the portfolio management, which is supported from top management.

Obtaining the right balance in terms of time horizon on each project, and the risk associated with it, should be highly prioritized when managing product portfolios (Cooper, Edgett and Kleinschmidt, 2001). Historically, this has sometimes been a struggle for the Division, and delays have occurred. The authors believe that one reason for this is that plans are not always strictly followed. Instead, the strategy is emerging subsequently when time passes like in most companies, and hence, the plans changed accordingly. This is characteristic features of the industry where the Division operates within: a fast technology development pace and intense rivalry on the market (Mintzberg, 1987).

The Division's products are technology intense and dependent on continuous R&D. Today, the R&D operations are sometimes focused on solving problems with already launched products. The authors believe this can potentially contribute to difficulties regarding working with predictable R&D, which is desirable.

To summarize, the Division has a bit left to fully tackle the Mother Company's internal processes containing management-, organizational structure-, communication-, cultural- and competence processes impacting the division's portfolio management. The authors argue that an enhanced handling of the corporate processes can have positive impact on the portfolio management, both directly and indirectly.

5.3 Empirical Content

In the content section, the environment where the Mother Company operates within will be described. A mapping of the most important market and macro-environmental factors will be presented to easier and more thoroughly understand the Division's portfolio management, as well as how the Mother Company and the Division tackles these vital impacting factors.

5.3.1 PESTLE

This section presents the PESTLE factors that are considered to affect the Mother Company's and the Division's operations from a portfolio management perspective, and how respectively factor impacts, both directly and indirectly. Other PESTLE factors from the theory have intentionally been left aside. The factors are not necessarily presented divided into the categories of political-, economic-, social-, technological-, legal- and environmental factors. Instead, the factors are presented in a way that creates an easy overview of the case company's situation in a PESTLE context.

Government stability

The stability of the long-term rule, and the government's values and attitudes, impact the Mother Company's, and consequently the Division's, operations. It is favorable if the government in a country is stable and places heavy investments in construction projects within the public sector, healthcare or infrastructure.

Investments in areas like this are of great interest for the Division since they often are of great size.

Product compliance and safety

Product compliance requirements are resource demanding and impact all product companies' daily operations differently in different markets and regions. An important European legislation affecting all companies is the *product liability law*, which implies that companies are responsible for the safety of the product 10 years after it has been launched. If a firm does not live up to this, it may be held liable for up to three years after a potential accident or damage has occurred. This means that companies have to keep track of their products for 13 years after market release. Accidents related to the products have historically occurred within the construction industry, why it is essential for the Mother Company and the Division that their products meet the markets' different compliance requirements. With this in mind, it is important for all operators involved in the product development process to establish product safety standards in order to ensure that the certain requirements are met. There are mainly three key product safety areas within the construction industry: *user safety*, *fire safety* and *electrical safety*. All three are important elements for the Mother Company and the Division to take into consideration. The compliance processes of different safety standards affecting the Mother Company and the products are usually protracted, due to dependency of a hierarchy of organizations.

There are organizations working with developing different standards at international, European and national level, that all have to be fulfilled in order to sell construction equipment on respectively markets. Svensk Elstandard (SEK) and the Swedish Standards Institute (SIS) are working at Swedish national level with safety standards. The European Committee for Standardization (CEN) and the European Committee for Electro technical Standardization (CENELEC) on the other hand, are commissions establishing directives and regulations for the entire EU. Further, the International Electro technical Commission (IEC) is an international body that represents the top of the hierarchy of organizations issuing standards that are affecting the Mother Company's and the Division's products and business. The EU possesses a key role regarding standards today as there are both supranational directives and regulations for how product standards should be formed at today's European markets.

There is a distinction between *directives* and *regulations*. Directives urge individual nations to incorporate these into their own laws, while regulations are directly supranational from the EU. Different countries have different interests and requirements, which protract the processes for all parties involved. Germany, for example, has very strict requirements, which impacts CEN as the committee tries to take the German claims into consideration. CEN's prevailing standard that affects all the Division's products on the European markets is called EN16005. At the moment, Germany's own standards are stricter than this standard, something that creates a more complex trading climate for the Mother Company when it comes to Germany. For instance, the Mother Company is heavily affected by health and safety requirements that have to be taken into consideration differently in diverse markets and segments. Having the European markets in mind, it is CEN’s EN16005 that is the most important in terms of compliance connected to health and safety regulations. Consequently, the standards work as barriers when launching a new product or feature or when entering the construction industry.

Compliance is important for all companies within the construction industry as it is essential to be vigilant and constantly scan the market of what is happening. To be able to receive important declarations of conformities such as CE and UL markings, it is vital to follow the prevailing standards. The Mother Company is only affected by certain parts of a number of standards. In Sweden, the Swedish Testing Institute (SP) is responsible for the testing of the products as well as the issuing of the declarations of the testing’s’. The declarations of conformities are the Mother Company’s evidence that each product is complying with the current standards.

In conclusion, the Mother Company and the Division is impacted by which organizations and commissions they chose to be a part of. It is expensive being a member of such an organization or commission, why the choice becomes strategic; companies have to prioritize being part of it or not. Having the opportunity to lobby important negotiations in commissions at different levels is critical in order to be a key player in the standard formulation process.

Trading regulations

Today, it is easier than ever to trade between countries. The World Trade Organization (WTO) sets the rules for world trade and ensure that trade agreements are fair. The EU is the world’s biggest trader and is committed to liberalizing world trade in general. Hence, trade is free among the members. Naturally, different trading regulations impact the ease and costs of the Mother Company’s global export and import. However, most of the products sold on the European markets are produced in Europe. Therefore, the trading regulations are of less importance since it is free trade within the markets. If the Mother Company exports products that are considered to be made in Europe, to a country with free trade agreements, the company can totally avoid custom fees. 70 % of the components need to be made in Europe in order for the end product to be considered European. The geographical origin of the products and its components is consequently important to avoid custom taxes. However, the Mother Company must take the whole picture into account when deciding where to sell products and source components from. In many cases, it is beneficial to produce products, or source components, outside of Europe, even with custom fees included.

Taxes and duties

Taxes and duties on the Mother Company’s different markets have impact on the company’s business. The tax regulations in the European markets are similar, while there are bigger differences in the US and in China. The geographical positions of the production affect taxes and duties that impact the Mother Company. An example of a local difference is in China, where the Mother Company, in addition to regular taxes and customer fees, has to pay a supplementary fee correlated to the extent of products processed outside the Chinese borders. The more processed the products are, the less fee the Mother Company has to pay.

Skill level and availability of expertise

If the skill level and availability of expertise is high in a specific country, it is easier for the Mother Company and the Division to find the right labor. The Mother Company’s international scope implies a crucial need for attracting the right competence to be able to operate successfully around the globe. This due to the important need of understanding of each specific market and its unique demands. The same applies to technical knowledge, which is the fundament of all of the Mother Company’s operations. One employee points that:

“Experts focus is key for the operations within all parts of the organization”

Technological rate of change

The frequency of technology changes in the society and its rapidness has to be considered in the construction industry. New technologies, both on component and manufacturing process level, have impact on the Mother Company’s and the Division’s operations. Further, changes in technologies regarding the configuration of products also have major impact. In order to make sure that Mother company and the Division are up to date when it comes to facilitating and utilizing new technologies, more structured ways of gathering information from local customers and operations would be beneficial. However, when it comes to the Division’s product portfolio, the composition is today considered complete from a technological perspective. In order to stay as market leader, the Mother Company tries to allocate resources and personnel on the right positions.

R&D

When it comes to quality improvements in terms of product components, end products and development of new features, it is important that the Mother Company acts responsive and has an open attitude towards new trends and solutions. This in order to keep and maintain the company’s cost focus and vision as a global leader within the construction industry.

ERP and knowledge management systems

The Mother Company seeks to collect data from the different markets around the globe. To facilitate this data collection, it is of great importance that the systems used for this purpose are aligned. Systems that can collect, handle and process different types of data are valuable in many ways. The authors believe there is improvement potential within this area, and that it would be beneficial to use one or few ERP systems.

Outsourcing

To maximize the profit and capture the best expertise, some of the value chain activities of the Mother Company and the Division are outsourced to other companies. The Mother Company is a big customer of transport, and buys different kind of transportations from several companies. Unlike many similar companies, the Mother Company owns a critical part of the value chain; its *sales companies*. This setup makes it easier for the company to control the sales, but it also makes the internal capabilities critical for success. In this way the Mother Company’s total performance is solely dependent on the own organization, which both has embedded pros and cons.

Cost savings

The Mother Company seeks to cut costs in every part of the value chain. The initiatives related to the actual products mainly come from the R&D department and the sourcing department. The sourcing department sets up annual cost saving goals to easier measure and improve the cost saving processes. New technologies, both in a product component and product manufacturing context, can contribute to significant cost savings with great impact on the Division’s product portfolios. This is something that the Mother Company continuously strives to achieve. In terms of sourcing, the company has increased the trading with low cost production countries like China, which is consistent with the company's cost cutting strategy. There is a KPI for how much of the total sourcing the company should purchase from low cost production countries. The downside with sourcing from low cost countries is long lead times which bind a lot of capital.

Patent

Patenting new technologies is a way of making them more profitable over time, since the competitors cannot copy the solutions straight away. While competitors historically have been focusing on developing new products and the protection of them, the Mother Company has rather focused on global expansion and a wide product portfolio.

As of today, the Mother Company strives to be the market leader within the construction industry and the goal for the future is to possess the market’s most innovative products. This means that the Mother Company has to be in the forefront when it comes to patent and product development.

The authors believe an improvement area in the patent context to be close collaboration between the functions that are developing and maintaining the standards. Patent and standard initiatives can generate synergies, as well as play out each other's' roles. If the Mother Company for instance possesses a patent that is somewhat required to fulfill a standard in a reasonable manner, the competitors would never let such a standard come to reality.

Quality and pricing

New technologies' positive impact on quality and pricing of products is vital for the Mother Company. The company's products are premium, which makes it crucial to maintain high quality and prices at the same time, and keep the good reputation within the industry. However, there is a clearly stated cost focus within the organization, which often is a trade-off related to the quality of the products.

A critical parameter for the customers purchasing the Division's products is the price of the products. Therefore, it is of great importance that the Mother Company aligns the prices in a way that is beneficial both for themselves and for their customers. Discounts are usual within this kind of business.

The society's attitudes and beliefs

Common lifestyles, ethics, attitudes and beliefs are varying in the societies of the Division's different markets, due to historical and/or religious heritage. For example, the Division's three product portfolios have typical markets where they are more popular than others.

Consumer behavior

The impact from authority regulations affects the Mother Company in terms of customers' behavior since the company is obliged to follow the regulations and consequently teach the customers about them. The Mother Company is accountable to follow the rules and interpret them, and the end customer lacks the knowledge about all the complex rules within the industry. For instance, if a country changes its safety requirements for a specific product, or legislate a mandatory feature for portfolio A, the configuration of the A portfolio may need to be updated to fulfill the new standards. In many cases this can lead to a cost increase on the specific product, which in turn can have negative impact on the customers' perceived value if they do not see the extra value of the new potentially expensive added or changed feature. Hence, the Mother Company needs to communicate the necessity and benefits of the updates to the customers, and use it as a sales argument.

Welfare

A country's welfare is dependent on several factors, which all are based on the economic situation. The cost of living and peoples' income determine the current price level in a certain country. Moreover, the GDP and the price level affect the welfare. As the Division's product portfolios are influenced by the overall economic performance, it is important for the division to understand the welfare of its markets. The development of the global welfare generates construction initiatives, which impact the Mother Company and the Division positively since they are important customers. Factors like level of education, unemployment rate, and income and wage patterns are all consequences of a country's welfare. The welfare affects the sales performance of the Division's products, as it is a result of the economic situation.

Level of globalization

The level of globalization is increasing rapidly in today's society, and with it comes many opportunities for the Mother Company and the Division. A higher level of globalization opens the door to many new markets where there are potential profits to gain. There are many markets where the company is not present, which implies big expansion possibilities.

By looking from a more general global perspective, the increasing level of globalization contributes to the outlook of for example investments in infrastructure. A report made by PWC and Oxford Economics, projects the spending in infrastructure to rise significantly by 2025, which, if true, will have a positive impact on the Mother Company, and the Division's product portfolios (PwC, 2014).

Another trend related to the increased level of globalization is the ascending urbanization. This trend is impacting the Mother Company and the Division in a more direct way than the globalization since it affects the already existing markets. The reasoning behind this is that the facilities built in urban environment utilize a higher degree of technology and demands construction equipment with higher requirements, than facilities outside the urban areas.

To summarize, all the above discussed PESTLE factors are important for the Mother Company and the Division to consider when managing product portfolios, since they all impact directly or indirectly.

5.3.2 PESTLE in Conjunction with Processes

Well-established processes are the key to tackle the many important PESTLE factors mentioned above. The Mother Company's and the Division's current handling of the impacting PESTLE factors can be seen in figure 20.

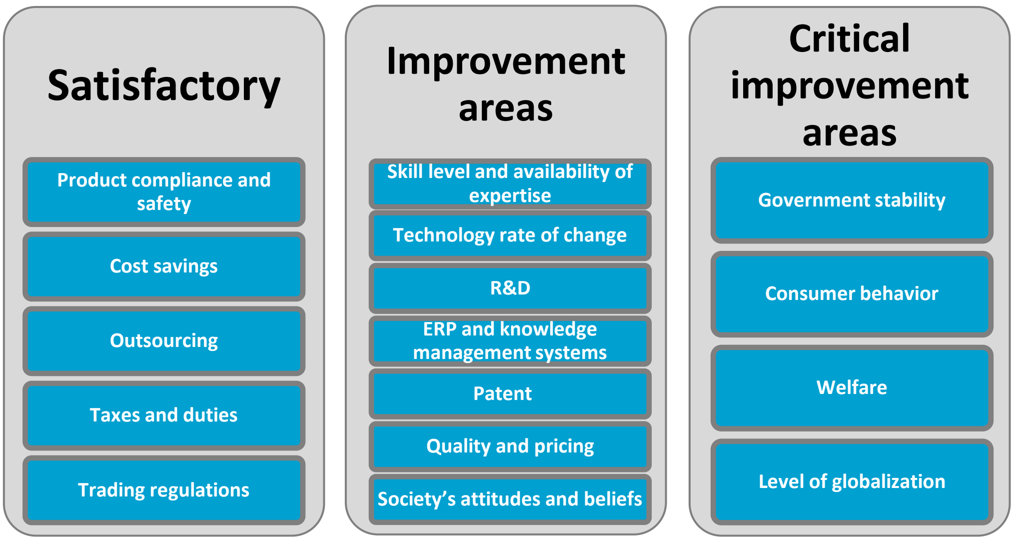

Figure 20. The Mother Company's satisfactory processes and areas with improvement potential regarding how the company handles impacting PESTLE factors (Authors' figure).

When it comes to *product compliance and safety* and coping with the many European standards, the Mother Company and the Division have well-developed and defined processes supporting them. The processes in this context are ranging from supporting organizational and managerial process structures, to the right competences and communication on the right places at the right time. The competence required for managing these tasks is sufficient today. Further, the Division is prepared to meet potential threats and changes regarding the market's current standards and safety regulations; there are well-defined processes in place to cope with possible changes.

The processes related to *cost savings* are probably the most well-established within the Mother Company and the Division. The organization strives to cut costs in every stage of the value chain, why every process in this field is accurately considered and well-balanced. The tangible cost saving culture present within the organization has its heritage from Group level. The predominant processes contributing to the cost savings are hence devised from organizational level to management level. It also manifests in many of the competences that the Mother Company's human capital possess in areas regarding cost savings. The other important PESTLE factors where the Mother Company and the Division have well-defined processes are *outsourcing*, *taxes and duties* and *trading regulation*.

PESTLE factors where the authors believe the Mother Company and the Division have great possibilities to improve the processes are: *skill level availability, technological rate of change and R&D, ERP and knowledge management systems, patent, quality and pricing,* and *the society's attitude and beliefs*. In terms of skill level among the Mother Company's employees, there is a crucial need for the right people, especially from the sales companies, possessing sales, general industry and technical knowledge. Given this demand it is important that the Mother Company and the Division are ready with established processes on how to attract and capture relevant employees, and are able to cope with and handle the fact that the competence needed is scarce.

When it comes to technology rate of change and R&D, which are dependent on many different dimensions of processes, the Mother Company could improve the different dimensions of dependent processes in line with the strategic vision. The authors believe that the Mother Company's corporate culture influences the management, communication, and competences within the organization. The way it is structure can potentially partly be derived from a perceived complacency and path dependency. The signs of complacency mirror the company's corporate processes. This is influencing the management and the competence processes, especially from a historical perspective. Further, the authors believe that the communication between the Division's R&D department, the sales companies, and other related stakeholders can be improved.

Quality and pricing are dependent on processes in terms of competences within the Mother Company. The quality of the products has to be aligned with the customers' expectations in relation to the premium prices.

The authors believe the Mother Company and the Division to have bigger improvement potential when it comes to the following PESTLE factors: *government stability*, *consumer behavior*, *welfare* and *level of globalization*. The stability level of the current markets' *governments* and governmental decisions affect the company's operations. The *welfare* conditions impacts the Mother Company and the Division since it often goes hand in hand with investments in new and existing infrastructure projects. The rising welfare also has positive impact, since it results in larger economies and increased purchasing power, and consequently more sales of the Mother Company's products.

All processes mentioned above are connected to the Mother Company's corporate culture and the organizational structure and management of the company. The current way of working is connected to prior established patterns.

To summarize, the Mother Company and the Division has improvement potential regarding several of the PESTLE factor processes. It is important to secure the best treatment of macro-environmental impact in the future when it comes to all the different PESTLE areas: political-, economic-, social-, technological-, legal- and environmental factors.

5.3.3 Porter's Five Forces

Porter's five forces' impact on the Mother Company and the Division's product portfolios is discussed below, one force at a time. A summary of the forces' impact can be seen in figure 21.

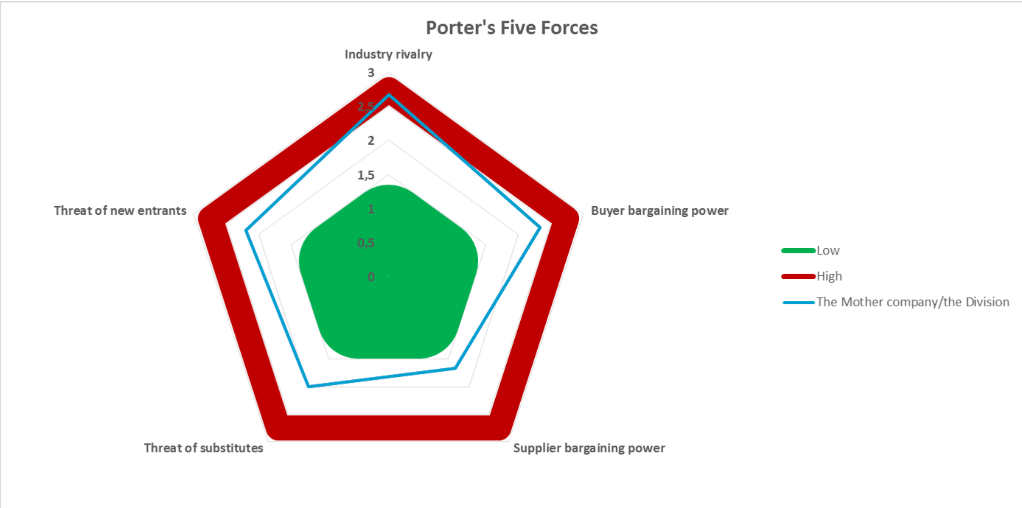

Figure 21. Porter's five market forces' degree of impact on the Mother Company' and the Division's product portfolios (Authors' figure).

Threat of new entrants

There are, to a great extent, economies of scale involved in the construction industry, both on the supply and on the demand side. It is especially prominent on the supply side, where large volumes of purchases of components push down the costs. On the demand side of the economies of scale the corporate and local brands are vital; the customers trust the products and the brands of incumbents over potential newcomers'.

The construction industry and the Division's business are highly restricted by government policies. There are many legal restrictions regarding certificates of different kind in the different markets. These certificates mainly concern safety aspects, such as different fire escape policies. Due to factors like this, the Division's product portfolios need to be customized to fulfill the different requirements in the markets in alignment with these mentioned conditions the threat of potential entrants is low, and as one employee describes that:

"Quite much competence has to be built to enter this industry"

Industry rivalry

The construction industry is characterized as slow moving. The industry is for instance behind others when it comes to digitizing. A few numbers of large capital intensive firms are typically controlling the industry. Exit and entry barriers exist, due to capital requirements and in particular economies of scale, which makes the industry structure relatively stable in a long-term perspective. It is intense rivalry between the few competitors on the market, especially on some of the markets, which has big impact on the growth, profitability and the business in general. The cost of switching to a competitor is relatively low for the customers, due to lack of customer lock in effects which would make it expensive for the customers to switch between construction equipment. On average, the industry rivalry is considered strong. Most of the respondents in the survey believe it to be relatively strong though.

Threat of substitutes

There are no direct existing substitutes to the Division's products on the market. The few substitutes to the Division's construction equipment are usually only suitable substitutes under certain conditions, and therefore do not equally substitute the Division's products. Further, many of the small number of substitute are inferior to the Division's products in many dimensions, ranging from energy consumption to performance. Hence, the authors consider the threat of substitutes as low. Most of the respondents in the excel questionnaire and the survey though, believes the threat of substitutes to be medium.

Buyer bargaining power

There are relatively few customers within the construction industry where the Mother Company operates. Most of the customers are big and purchase large volumes in non-recurring project based sales. The project based sale procedures implies that a few big successful sales actions often have major impact on which customer segment the sales occur in.

The Division's products are considered more or less standardized, and can to some extent be replicated by competitors. Due to this, the switching costs for the customers between the Division and the competitors are low. Thus, it is easy for the customers to change to another constriction equipment supplier if desired. One employee says:

"The Mother Company's products are complex. However, it is easy for the customers to change to competitors' products"

Hence, the customers bargaining power is considered medium. Most of the respondents in the interviews, the excel questionnaire and the survey agrees on that.

Supplier bargaining power

The Mother Company's suppliers of bulk components are not dependent of their sales to the Mother Company, since they serve many industries and plenty of customers. However, when it comes to suppliers of more niched components, fewer suppliers exist. In these cases, the Division is an important customer, and hence these suppliers have more power. For the Division, there are low switching costs for bulk components, compared to the switching costs for more niched components that are higher. On average, the supplier bargaining power is considered medium. Most of the respondents in the interviews, the excel questionnaire and the survey agrees on that. Some of the sales personnel could not answer the question about the Division's supplier bargaining power though.

5.3.4 Porter's Five Forces in Conjunction with Processes

The Mother Company and the Division have solid processes in terms of handling the *supplier bargaining power*. Not only the Group is backing them up, with all pros that come with that in terms of power towards the suppliers - they also have well-established processes when it comes to investigating the best sourcing opportunities. A major part of the Mother Company's' successful cost focus is to have contact with several different suppliers in divergent geographical regions, in order to benchmark and consequently find the best current supplier. In other words, the Mother Company's internal processes, in terms of the right competences on the right place, and the correct organizational structure and managerial actions, are fundamental for the company's relatively low supplier bargaining power.

The Mother Company and the Division can, like many companies within the industry, improve the processes regarding handling *internal rivalry* and *customer bargaining power*. The authors believe the company's organization and management towards the internal rivalry, i.e. the existing competition on the Mother Company's markets, can be improved. More resources can be put on scanning competitors. Concrete example are to expand the personnel working with voice of the customer, marketing and other market related areas, and intertwine the operations closer to the technical functions of the company, and in that way break free from the perceived path dependency. In this way, valuable synergies can be created. Moreover, more clear stated role definitions and incentive structures for the employees could potentially improve this. The processes and mindset within the organization that can be used to avert internal rivalry are also applicable in reducing the powers of *new entrants* and *substitutes*. This since they are closely related in this context.

The customer bargaining power is medium high since the customers easily can change to a competitor. However, a kind of lock in effect is created by the service agreement that the Mother Company offer in combination with their products. By increasing lock in effects, the Mother Company cannot only reduce the customer bargaining power; the potential threat of entrance can also be decreased. The processes that diminish the customer bargaining power can always be improved. Especially in terms of service operations, that despite from locking in the customers generates great profits.

5.3.5 Porter's Generic Strategies in Conjunction with Processes

The Mother Company's cost focus seems to permeate the organization both vertically and horizontally. Naturally, this focus is present in functions such as sourcing, R&D and production, where the right initiatives and resources are allocated to make progress within this area. The processes connected to the cost focus are thoroughly established and explicitly expressed in the corporate culture, which in turn mirrors the management and the competences demanded within the company's managerial functions.

Some of the Division's' products are customized, especially when it comes to the B and C portfolios. This, together with the comprehensive service network offered to the customers, is an effect of the division's well-defined competence processes. The Mother Company strives to position itself in the construction equipment market as a premium brand and price the products accordingly, which also is perceived by the customers. An employee argues:

"The cost focus pervades the whole organization. On the same time, our products are highly customized"

The Mother Company's' cost and differentiation focus can be derived from Group level where both emphasis represent a major part of the overall group strategy according to the annual report (The Group, 2014). Having these two completely different strategic focuses are according to Porter (1980) being "stuck in the middle". The Mother Company's positioning can be seen in figure 22. Regardless of this fact, the strategy has historically been highly successful.

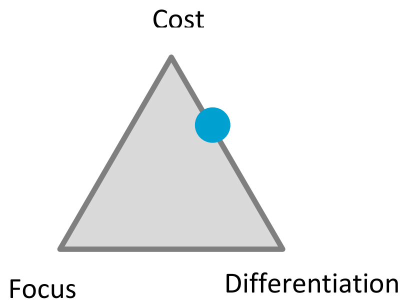

Figure 22. The Mother Company's strategic focus (blue tick) in the context of Porter's generic strategies (Authors' figure).

5.3.6 Resource-Based View in Conjunction with Processes

The employees within the Mother Company have relatively aligned views of which internal resources and capabilities that the Mother Company possesses that create or sustain the company's competitive advantage. Some opinions differ though, and the discrepancy between what actually is a strategic resource or capability, and not, is subtle. None of the identified resources and capabilities is perceived at Division level; instead they are all on Mother Company level (see figure 23).

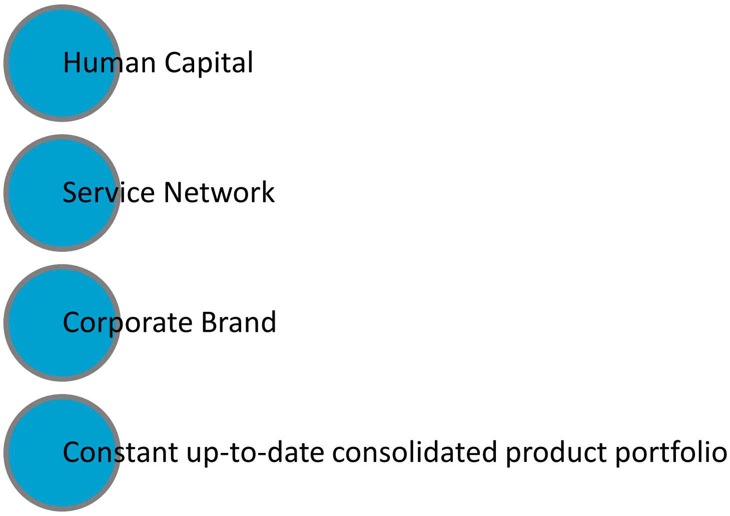

Figure 23. The Mother Company's internal resources/capabilities (Authors' figure).

An important detected strategic resource is the Mother Company's human capital within many parts of the organization, compared to competitors'. Well-experienced sales, sourcing and R&D employees, have unique industry specific know-how, which substantially contributes to the Mother Company's competitive advantage, that fulfill the VRIO requirements (*valuable, rare,* difficult to *imitate* and supported by the *organization*). Another important capability, also fulfilling the VRIO requirements, is the Mother Company's ability to continuously fill the remaining product gaps in their consolidated construction equipment portfolio. This is accomplished by acquisitions of companies possessing the lacking resource or capability demanded, which is supported by well-elaborated management processes. By this, the company is constantly the biggest global player within the construction industry. As of today, the Mother Company has the broadest global product range. The company's corporate culture facilitates this by making the incorporation of the acquisitions profitable in a slick manner. While the competitors in general are more focused on existing and local markets, the Mother Company is more oriented towards a global presence and awareness, which is a part of the company culture. Having the right processes to accomplish the continuing growth is something that creates a competitive advantage for the company.

The authors have detected a potential tradeoff though: the focus on filling the product gaps and the constant global expansion can take resources from the development of the current product mix. This is something that the Mother Company's competitors perform well. A common answer among the respondents was that the Mother Company's economies of scale were a dominant resource/capability. Economies of scale are highly apparent within the industry, especially when it comes to sourcing and production. However, the concept of economies of scale is not an actual resource or capability. Instead, there is a resource or capability behind the generation of the economies of scale, such as management processes. An example of explicit managerial actions that affects cost reductions is KPI's within the sourcing function. The Mother Company's competence resources are facilitating economies of scale within many parts of the company, especially in technological intensive sections. This serves as a solid foundation for the processes behind the company's development of new techniques and products. Especially if combined with more adjacent competences - in this context - commercial ones.

The respondents claim that the well-established network of product service is a resource that, except from creating great profits, generates synergies. The service capability is not considered to fully cover the requirements of VRIO though, since it can be imitated. However, the barriers to imitate a comprehensive service network like the Mother Company's are high, and therefore very resource and know-how demanding.

Many Mother Company employees claim that the local brands and the corporate brand of the Group is a strong resource. The Pre-Mother Company, the start of the Mother Company, is for instance a strong local construction equipment brand in Scandinavia. However, the Group's brand name is at the same time strong within other parts of the construction industry. The Group's corporate brand could potentially be a valuable strategic resource for the Mother Company in line with the VRIO requirements, if the potential would be fully utilized.

5.4 Empirical Conclusions

After a thorough empirical analysis, the most critical findings impacting the Division's portfolio management identified throughout the study are summarized in an empirical framework, see figure 24. Important to note is that despite the Division's three current solid A, B and C product portfolios (both product and technology wise), the portfolio management has improvement potential. This implies the importance of handling corporate activities and processes related to the portfolio management activities when understanding the background to portfolio management problems, which is visualized in the framework. The framework is structured in a way that presents the correlations and interactions of the key features of portfolio management and the content factors.

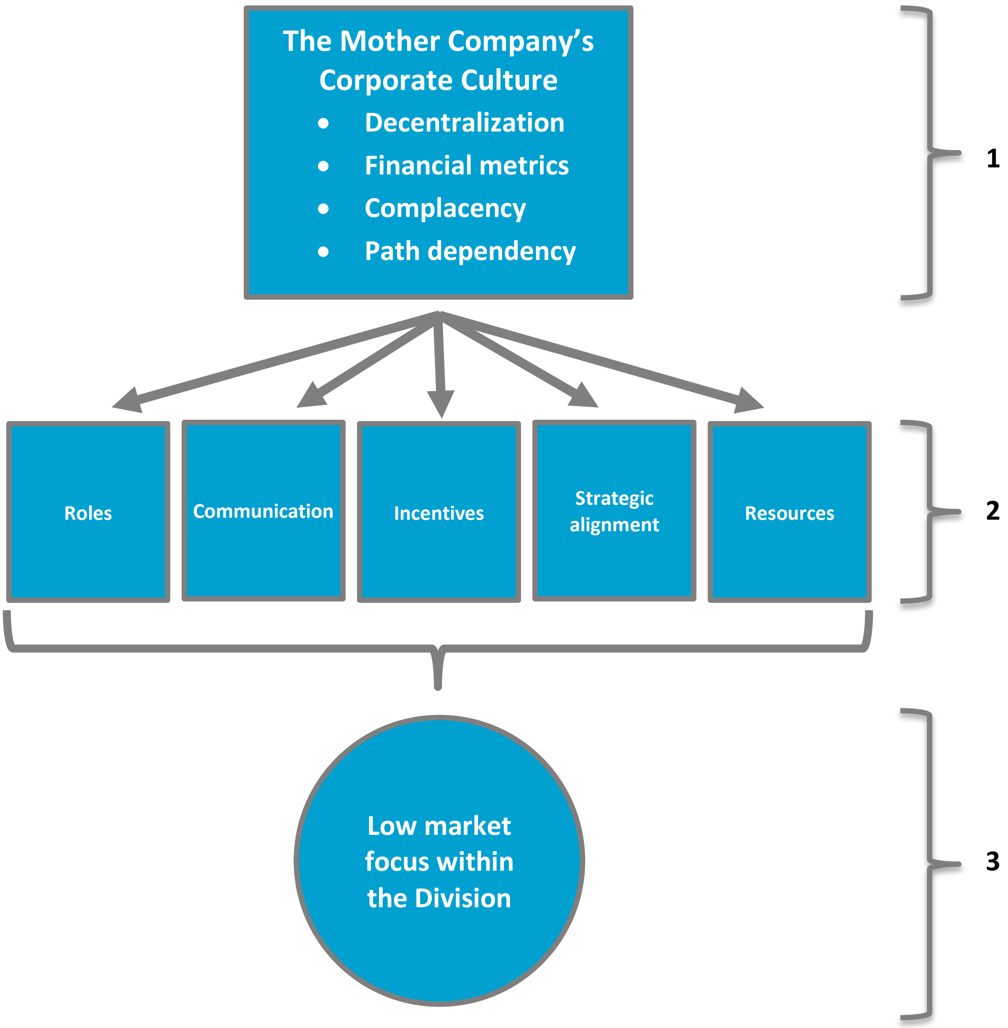

Figure 24. Empirical framework (Authors' figure).

Level one in figure 24 consists of the Mother Company's *corporate culture* impacting the Division's portfolio management, which is permeated by *decentralization*, *financial control*, *complacency* and *path dependency*. All these cultural attributes leads to the detected issues on level two, which in turn leads to a partly neglected market focus, i.e. level three. Below, the figure is analyzed and discussed on the basis of the four cultural attributes in level one.

Decentralization

The Group is decentralized to a high degree, which is explicitly expressed further down in the organization at Mother Company and Division level. The authors argue that the high degree of decentralization has its main roots in the acquisition focus, which for a long time has formed the organizational structure on all levels. When acquiring firms, there is a lot of work to consolidate the operations and now fully treat the newcomers autonomous. The authors see improvement potential regarding this area. With a decentralized approach, communication and knowledge sharing among the different companies and functions is affected. This might has contributed to a strategic nonalignment within the organization as a whole, where the corporate strategy is not unified. All these mentioned parameters with improvement potentials are shown in level two (figure 24).

The authors believe that the Mother Company's historically slickness of the merge of different companies and favorable financial results have resulted in a culture of complacency, which potentially can affect the decision making within the company. This can partly be derived to the decentralized organizational structure. The historical successful way of organizing the company might has led to constraints in terms of managerial and organizational agility, which are signs of path dependency. The fast paced changes in today's competitive landscape and macro-environment demands an approach that looks beyond complacency and path dependency.

The Mother Company's decentralized way of organizing is anchored in the corporate culture. The authors believe the direct and indirect level two parameters (communication and knowledge sharing problems, strategic nonalignment and complacency), to be partly caused by the decentralization. It is important to have a configuring of corporate incentives (level two) in a direction that focuses on aligning the consolidated strategic view, and to consequently strive in the same direction. This in conjunction with the financial control, and to highlight the market focus (level 3) is important in order to enhance the performance of the portfolio management.

When it comes to Porter's five market forces, the strongest identified force is the internal rivalry within the industry. The strong competitive landscape, where the Mother Company strives to be the leader, demands a proactive mindset. Hence, the authors believe there is great improvement potential in this area. To make a valuable change and improve the portfolio management it is important that both the R&D and the market side of the organization do it simultaneously. Moreover, the communication and strategic alignment between the technical and market side must be mutually well-working.

Financial control

Despite the Mother Company's decentralization and the authors experienced freedom of the divisions, financial metrics is something that is controlled by the top management of the Group. The authors perceive the notable financial control to characterize the entire Group. As a consequence, the Division and its operations are influenced by it. The Mother Company and the Division have to create financial value for the top management of the Group. The authors believe that this results in forgetting other important value creating dimensions. The management team seems to prioritize short-term profitability, according to the authors, and do not have a long-term operational perspective in mind, which is paradoxical to the owner's ambitions. It would be beneficial for the Mother Company and the Division to prioritize a long-term perspective. To achieve this, important value creating factors are for instance to take the market and external macro-environment into consideration (level three), such as mapping the competitors and investigate and evaluate customer opinions. The PESTLE analysis helped the authors to realize what external factors that matters in the Mother Company's context when optimizing product portfolios. Today's financial method, the business case template, might not be sufficient. Complementing the business case template with standardized environmental analyzes treating important factors like the society's attitudes and the consumer's behavior, would probably increase the long-term value and profitability of the Division's product portfolios. To conclude, the authors claim that the financial control somewhat inhibits the Division to have a long-term perspective.

Historically, the Division has had a few cash cows, which have generated good profits. The Division has therefore prioritized used and well-proven techniques in their products, instead of focusing on new solutions. As a consequence, the Mother Company has not always been proactive in inventing new products. The company's main strategic focus has been to expand globally and cover a broad product portfolio spectrum, rather than researching and inventing the products of tomorrow. This is something that can be identified in the PESTLE analysis, where factors like technological rate of change and R&D turned out to be improvement areas for the Mother Company as well as for the Division.

The Mother Company's historical success story might have contributed to the fact that some of the functions of the company have been reactive instead of proactive. This is contra dictionary to the stated vision of both the Mother Company and the Group. The strategic alignment of the firm's vision and its actual actions is therefore somewhat inadequate (level two). The authors experience that the vision is not totally implemented in the minds of the employees and therefore not a part of the company culture.

The financial method of controlling affects the Division's personnel in different ways. Their main requirement is to deliver strong financial results, and the employee specifications to achieve this are a bit diffuse. The authors believe that the roles (level two) might be undefined and that this affects the employee's motivation to think outside the box, which potentially could create indirect value for the product portfolios. Further, lack of clear incentives (level two), can possibly contribute to the employees taking the easiest way to achieve the financial goals. Thus, the authors believe that the employees of the Division do not want to do anything they are not required to. If the management would introduce other controlling and managing mechanism than solely financial, the motivation and sense of belonging to a uniform unit would potentially increase among the employees. This would further comply with the third vision of the Mother Company; to offer an attractive company to our employees.

Complacency

The historical complacency of the Mother Company is embedded in the corporate culture and has most probably unknowingly been a part of the organization more or less since the start in 2002. The widespread mentality within the organization of the Pre-Mother Company as a successful player has to a large extent stayed since the start of the Mother Company. This together with the fact that the Group is a multinational, successful and capital intensive firm might has contributed to the Mother Company and the Division possessing complacency. The authors argue that this fact both has been both positive and negative for the Mother Company. The positive side is that there is a great pride and confidence among the employees working at the company, which has contributed to the successful journey. The negative side with complacency on the other hand, is that the company relies on the attributes of the current situation and neglects to look beyond this. The Mother Company seems to be stuck in this way of thinking and it has somewhat become a part of the corporate culture.

The authors experience that the complacency is reflected in every part of the organization and is a reason for the firm path dependency that characterizes all the processes and operations within the Mother Company. A consequence of this, together with the other factors in the empirical framework, is that the Division does not take all relevant market and macro-environmental factors into consideration when operating their business (level three). For instance, the division is lacking a strategy and supporting processes for how to tackle changes in governmental decisions within the Division's markets. Neither does it exist any defined processes regarding the consumers' behavior. The authors claim that the Division may lack the right competences on the right place, to be able to tackle these and many more important impacting environmental factors, which indirectly and directly impact the product portfolio. The Division has not defined the employees' roles enough considering the market and commercial side of the value chain. The authors argue that this fact is much due to the company's complacency.

Other detected improvement parts within the Division, that the Mother Company's culture of complacency has contributed to, is lack of incentives for the employees, communication problems between the different functional areas, and the current resource allocation (level two). The Mother Company's historical reactive way of working might also be a fruit of the complacency.

The company's focus on expansion rather than product development has since the start been a successful strategy. To keep the growth momentum, it is important that the Mother Company keeps the current competence and know-how regarding this (level two). The company's most vital detected strategic resource is the competence of the human capital, i.e. one of the five important processes, which makes it crucial to perpetuate. However, the authors question whether the aggressive expansion strategy is a sustainable strategy for the Mother Company´s portfolio management in the future. The company is already the greatest global player when it comes to a comprehensive product portfolio, and both the Mother Company and the Group strive to be proactive and in the front when it comes to innovation. Therefore, the authors believe a shift in the way of thinking within the Mother Company might be demanded in order to live up to the company's vision and to strengthen the portfolio management. For that to be accomplished, the company needs to proclaim and battle the intrinsic complacency incorporated in their culture.

There is a contradiction between the Mother Company's elaborated cost focus and the simultaneous differentiation focus, i.e. the company's offering of highly customized products. Until today, it has worked out being "stuck in the middle" (Porter's generic strategies). Anyway, the authors claim it is questionable if this strategy is sustainable in the future. The authors believe it is crucial for the Mother Company to choose path and go either way to maintain the strong global position within the construction market.

Path dependency

As mentioned before, the Mother Company is stuck in an intrinsic path dependency, which impacts the company's way of doing operations on all levels within the company. The path dependency means that the Mother Company and the Division are following the same pattern they have been following for a long time without trying to take new circumstances in consideration and change mindset accordingly.

Path dependency can be divided into two types, a *harder* one and a *softer* one. The harder type includes fixed asset costs and longtime commitments, such as production plants and equipment. The Mother Company has since a long time ago invested in several crucial customized buyers and supplier relationships. The assets connected to these relationships have high degree of asset specificity since they cannot create as much value in another context or relationship (Besanko et al., 2010). This locks the Mother Company in, due to the fact that the company cannot simply change to another setting; there are too many obstacles with doing it, and it would result in decreased value creation. Since it is complicated and unprofitable to change to alternative solutions, the Mother Company is somewhat forced to depend on already chosen patterns. This hard part of path dependency is conscious, tangible and known within the organization, unlike the soft part.

The softer part of path dependency is cognitive and concerns how the employees think, act and make decisions. Since cognitive biases influence all levels of decision making, it is vital to not only be aware of them, but also to be able to tackle them. This part of path dependency is of significant importance for the Division’s current portfolio management, why it has a central part in the study. According to Kahneman, Lovallo and Sibony (2011), who is deeply influenced by Simon (1947) and Newell and Simon (1958), there are two modes of thinking; *system one thinking*, which is intuitive, and *system two thinking*, which is reflective. While utilizing system one thinking, people do things without deep focus or afterthought, i.e. the thinking and acting are managed in a sort of autopilot mode. System two on the other hand, is a slower and more effortful way of thinking and is utilized by people in more complex situations where extra brain capacity is required. Knowing in which situations to utilize the most suitable way of thinking, and allocate the brain’s total energy, is often difficult for persons stuck in system one thinking, regardless if it is on individual, group or corporate level. This especially in situations when the cognitive biases influence decision making which consequently contribute to path dependency.

The rationale of the Mother Company’s path dependency has been raised before in the text, and the concept is deeply intertwined with the historical complacency within the corporate culture of the company. The authors claim that it is impossible to detect a *single* reason behind the current emerged path dependency. They argue that it is a result of all the strategic processes that together historically has led to this: cultural-, organizational structure-, management-, communication-, and competence processes. It is like systems thinking; a single component cannot be seen without its context and counteracting components (Eriksson-Zetterquist, Kalling and Styhre, 2012).

The Mother Company’s use of Kahneman, Lovallo and Sibony’s (2011) system one thinking and acting, and moderate system two thinking within the organization, is one among many factors that might has contributed to the path dependency. System one thinking finds expressions in the company’s reactive way of working - both in terms of the technical and commercial side of the portfolio management (level three). This due to the cognitive biases that affect the decision making and hence influence the Mother Company’s operations. Being more susceptible to a system two thinking and acting, and having a corporate infrastructure and culture facilitating it, would according to the authors bridge these issues if managed in a slick manner. This could be concretized in different ways. Incentives (level two) could for instance be used to reward employees that come up with, or execute, ideas or initiatives that counteract the path dependency, independently of how.

Like with the Mother Company's complacency, the fact that the company is stuck in path dependency has, according to the authors, led to undefined roles and incentives, communication problems, lacking strategic alignment and current resource allocation (level two), which all are mentioned above. This has in turn led to poor market and macro-environmental focus (level three), which directly and indirectly has negative impact on the portfolio management within the Division. The market side of the Mother Company's organization has for a long time suffered from cognitive biases, which is a product of a unified system one thinking and acting. Despite the company's exposure to strong competition, the knowledge about the strongest competitors and their market positions within the construction industry are for instance deficient based on cognitive biases. By applying a systematic system two operational thinking within the organization, this could be tackled in an efficient way, and the portfolio management would consequently be more profitable. The same is applicable on the other four market forces: supplier and customer bargaining power, threat of substitutes and new entrants.

6. Analysis

This chapter presents a general portfolio management framework, derived from the theoretical and empirical framework. The framework is then applied on the Division's portfolio management situation.

6.1 Analysis Disposition

The disposition of the chapter can be seen in figure 25.

- **Cheez - General Portfolio Management Framework (6.2)**
  - **Current Situation (6.2.1)**
  - **Desired Situation (6.2.2)**
  - **Linkage Current and Desired Situation (6.2.3)**
- **Implications for the Mother company and the Division (6.3)**
  - **Current Situation (6.3.1)**
  - **Desired Situation (6.3.2)**
  - **Linkage Current and Desired Situation (6.3.3)**

Figure 25. Analysis disposition (Authors' figure).

6.2 Cheez - General Portfolio Management Framework

Through the investigation of the Mother Company, empirical findings were obtained with the intention of generalizing to a wider generic context. The authors used the logic of pattern matching, i.e. a mapping and comparison of the theoretical and the empirical patterns. The theoretical framework was tested against the crafted empirical framework of the Mother Company and the product area the Division (see figure 26). The idea was to find gaps in the theoretical pattern in relation to the empirical pattern with the aim of understanding the mechanisms impacting portfolio management.

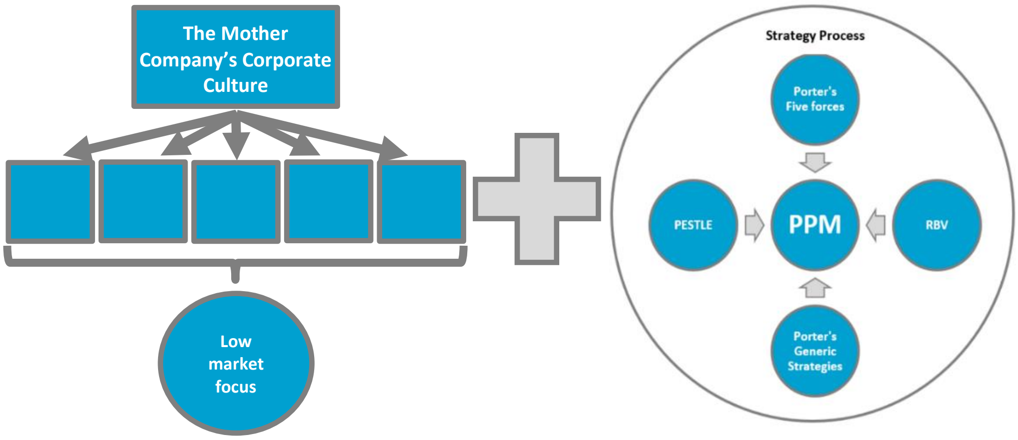

Figure 26. Merge of empirical and theoretical framework (Authors' figure).

After a comparison of the two patterns, theoretical explanations as well as discrepancies were discussed, which in turn generated a research contribution. The study's purpose was to increase the understanding of the mechanisms impacting portfolio management in an increasingly complex competitive and corporate environment, why portfolio management theory was of great importance. The authors did not perceive the studied theoretical pattern to cover this area enough to fulfill the stated purpose. Thus, other complementing theories were added to the theoretical framework. To be able to work efficiently with portfolio management in today's fast moving global business climate, the authors claim that it is of great importance to put everything into a context, taking external and internal market factors and strategy processes into account. As of today, the portfolio management theories do neither take any external or internal market factors nor important strategy processes into pragmatic consideration (Cooper, Edgett, Kleinschmidt, 1999; 2001; Rajegopal, 2013). It is stated in the current theories that the external and internal market factors are of great importance, but despite this fact they do not cover *how* to consider them, *what* factors to consider, or *what is preventing* the factors from being tackled (Cooper, Edgett, Kleinschmidt, 1999; 2001; Gorchels, 2003; 2012). This is where the content theories contribute to the final theoretical framework. Additionally, strategy processes theories are added to support the framework since strategic changes are dependent on soft mechanisms within and outside a company. Stating these processes, and how they impact the portfolio management, is also left out in current portfolio management theories (Cooper, Edgett, Kleinschmidt, 1999; 2001; Gorchels, 2003; 2012; Cantamessa, 2005).

The combination of portfolio management theories accompanied with content and strategy process theories laid the groundwork for the theoretical framework, and the studying of the Mother Company led to the findings visualized in the empirical framework. The utilized theories and the empirical findings were then generalized into a final generic portfolio management framework named Cheez (see figure 27). The Cheez framework takes an increasingly complex competitive and corporate environment into consideration, and is applicable on *acquisition focused, capital and technology intensive industry companies operating within multinational B2B contexts*, in line with the purpose and delimitations of the paper. The generic portfolio management framework is discussed below, step by step. Important to note is that the framework does not give pragmatic hands-on guidance on detailed level, since that is beyond the scope of the study. Instead, a broader perspective is applied, where factors impacting the portfolio management on both close and distant level are covered, such as corporate processes and internal and external market factors. Hence, the drawback with the Cheez framework is the comprehensive approach that omits pragmatism and detail level.

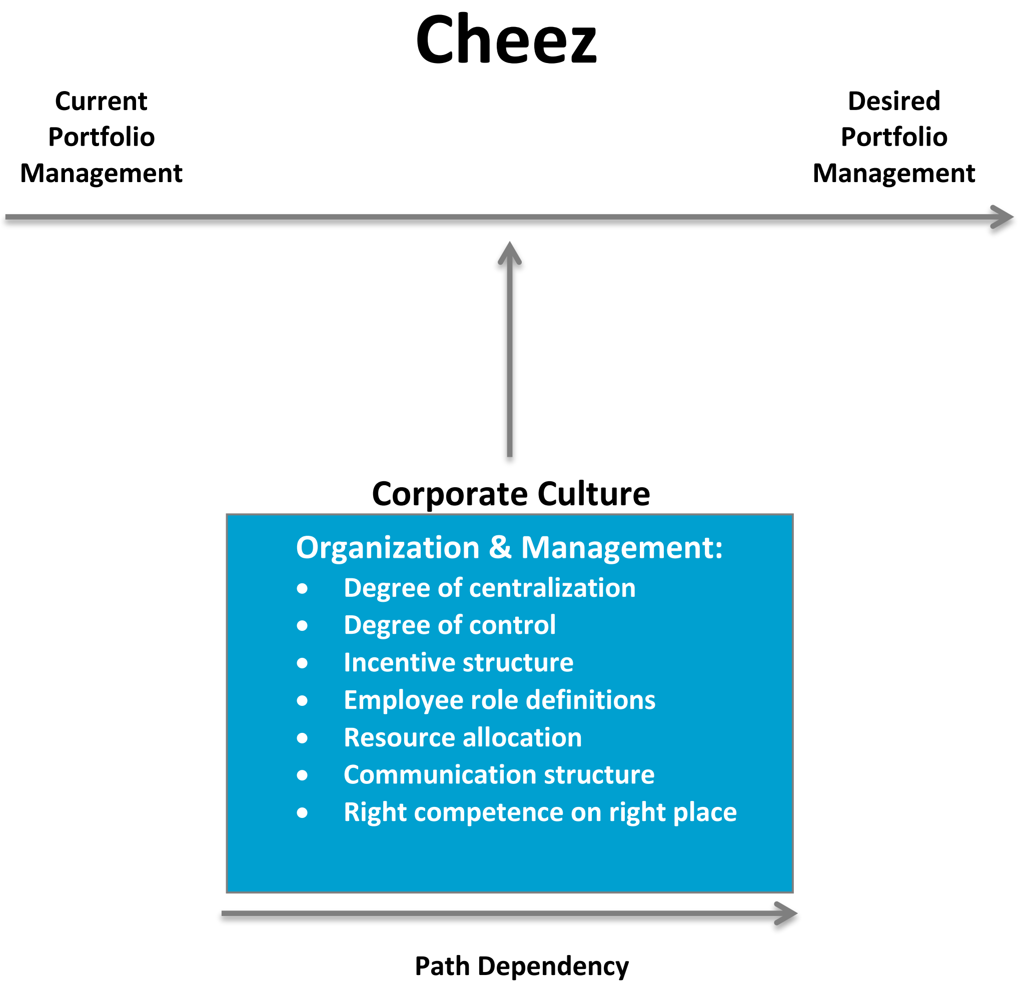

Figure 27. Cheez - Generic portfolio management framework showing the movement towards desired portfolio management (Authors' figure).

6.2.1 Current Situation

Depending of the company's situation and how developed the portfolio management is from an all-around perspective, the current portfolio management status looks different. Hence, the starting point of a potential portfolio management transformation is different from situation to situation.

6.2.2 Desired Situation

Like the current situation (6.2.1), the desired portfolio management situation looks different from company to company. Despite this, the desired situation is in all cases represented as the highest level of optimized and customized portfolio management. To be able to tackle today's emerging importance of multidimensional portfolio management, and move from the current to the desired situation, awareness of the complexity is a must, regardless of company or situation. Further, a clear connection between the company's corporate strategy and portfolio management is demanded to succeed in the best way, and all processes should be permeated by this fact. A company's management of product portfolios has to, in addition to internal processes, consider internal and external market factors to be successful. The whole spectrum of relevant content theories needs to be covered. For instance, to fulfill this, a PESTLE analysis and a Porter's five forces analysis should be conducted and processed. Which external and important market factors that is most important, and to what extent they impact the portfolio management, differ from company to company, depending on the specific prevailing situation. A comprehensive collection of PESTLE factors and market forces can be seen in Appendix 2. After choosing the company-specific relevant factors, a mapping of them and the future strategic objectives has to be done, together with a thorough analysis of how the company currently tackles the factors one by one and interdependently. Important to note is that this is a dynamic process, which implies that the current situation must be revised continuously. The important internal and external market factors of today may not be the most relevant factors of tomorrow. Further, an analysis of what soft or hard organizational and managerial factors that prevent and/or facilitate the tackling of the vital factors is crucial to conduct.

In order to manage a successful portfolio management and be able to make the desired change, it is further vital for the company to understand and utilize its strategic resources and capabilities, in line with the resource-based view, in depth. Possessing self-awareness and insight about the background and origin of the strategic resource and capabilities, is the key for a company to value maximize the utilization of them in relation to the portfolio management. Another element to consider in order achieving portfolio management excellence, is to be aware of how the company positions itself in the market, something that Porter's generic strategy theory treats. The market position should be aligned with the company's external and internal market conditions, strategic resources and capabilities, and overall vision and strategy.

6.2.3 Linkage Current and Desired Situation

A company cannot simply move from the current portfolio management situation to the desired in a jiffy, since the impacting surrounding is so complex and several barriers exist. There are deeply rooted *organizational and managerial processes* within the *corporate culture* on the way to improve the portfolio management, which makes it a complicated matter. Hence, the authors argue that it is essential to be aware of what the company's current corporate culture is characterized by, how it is manifested within the company or not, and how it impacts all cornerstones within the company, and hence the portfolio management. The corporate culture of an acquisition focused, capital and technology intensive industry company operating within a multinational B2B context, is permeated of, and dependent on, following process attributes: *the degrees of centralization and control*, *the incentive and communication structures*, *the employer role definitions*, *the resource allocation*, and *right competences on the right time and place*. These attributes are all vital processes impacting the portfolio management to consider. By adjusting the attribute processes on different dimensions and levels, the best suited situational mix contributes to creating an optimized portfolio management applicable in these specific companies. Further, there are hidden barriers to tackle in the movement towards improved product management, impacting all of the mentioned processes. *Path dependency* is such a barrier, which specifically is believed to impact the portfolio management in the kind of companies addressed in the purpose.

The discrepancies between the authors' portfolio management framework and the existing portfolio management theories can be detected within the "linkage between the current and desired situation", presented above (6.2.3) and visualized in the cultural box influenced by path dependency in figure 28. The states of the current and desired situations are as mentioned before company specific, and are therefore constant or discretionary in both cases. Current portfolio management theories all treat important factors required for a desired management of product portfolios, and why a company should work with it at all. However, the progress from current to desired portfolio management is not treated in depth, why it is hard for a company to know *what* to tackle, and *how* to tackle it, on the journey of progress. A company's corporate culture and organizational and managerial structure hide a lot of barriers and driving forces with different layers of complexity. All these factors are impacting a company's journey from current to desired portfolio management, which the author's framework states.

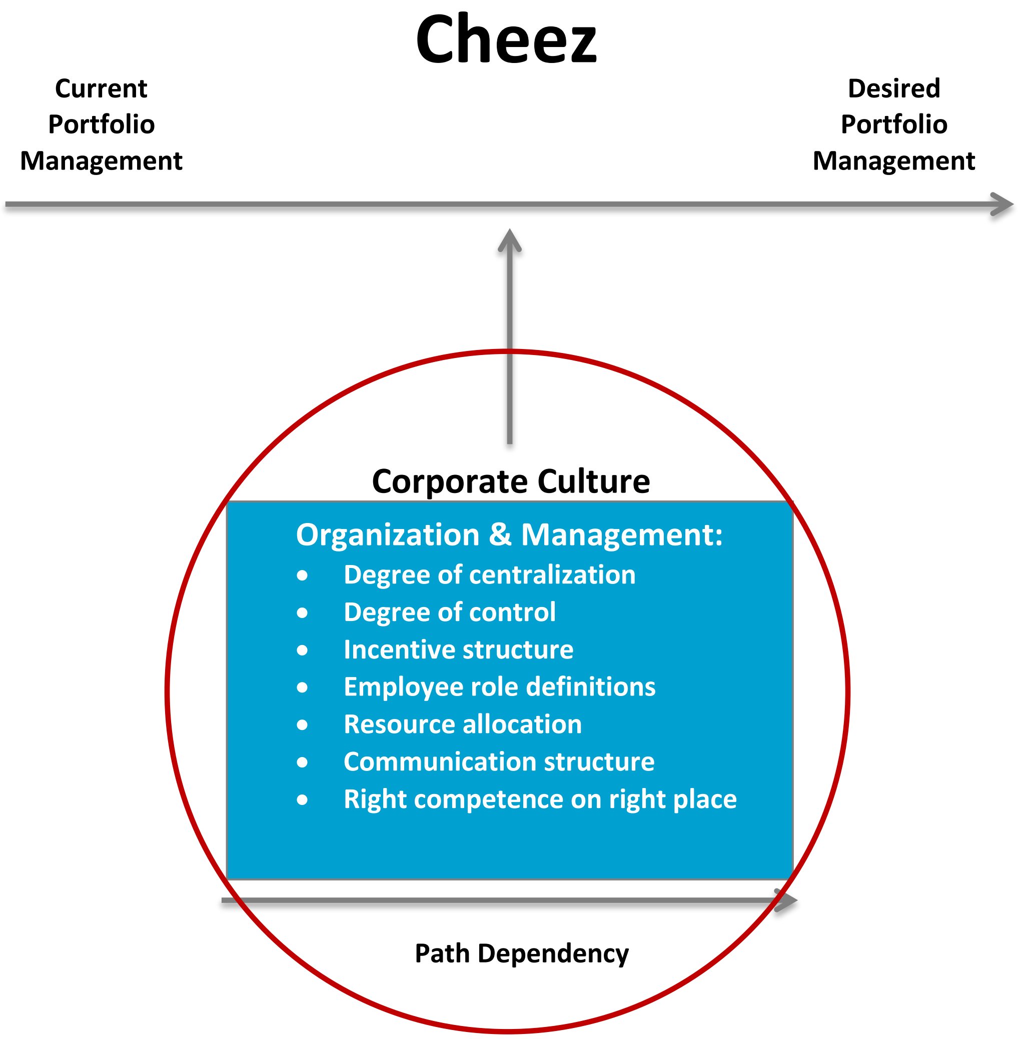

Figure 28. The many parameters blocking and/or facilitating the way towards improved portfolio management (Authors' figure).

6.3 Implications for the Mother Company and the Division

In this section, the general portfolio management framework is applied on the Division's portfolio management by the use of pattern matching. In other words, the authors' detected gaps in the empirical pattern are compared to the theoretical pattern. The developed the Division-specific framework aims to enhance the management of product portfolios within the division, and increase the understanding for how complex this management is, and can be seen in figure 29. The Mother Company's and the Division's current and desired situation are discussed below, followed by vital impacting factors to consider when and while doing this journey. Like with the generic portfolio management framework, this framework does not give pragmatic hands-on guidance on detailed level, due to the restricted scope of the study. Instead, a broader perspective is applied, where factors impacting the Division's portfolio management on both close and distant level are covered.

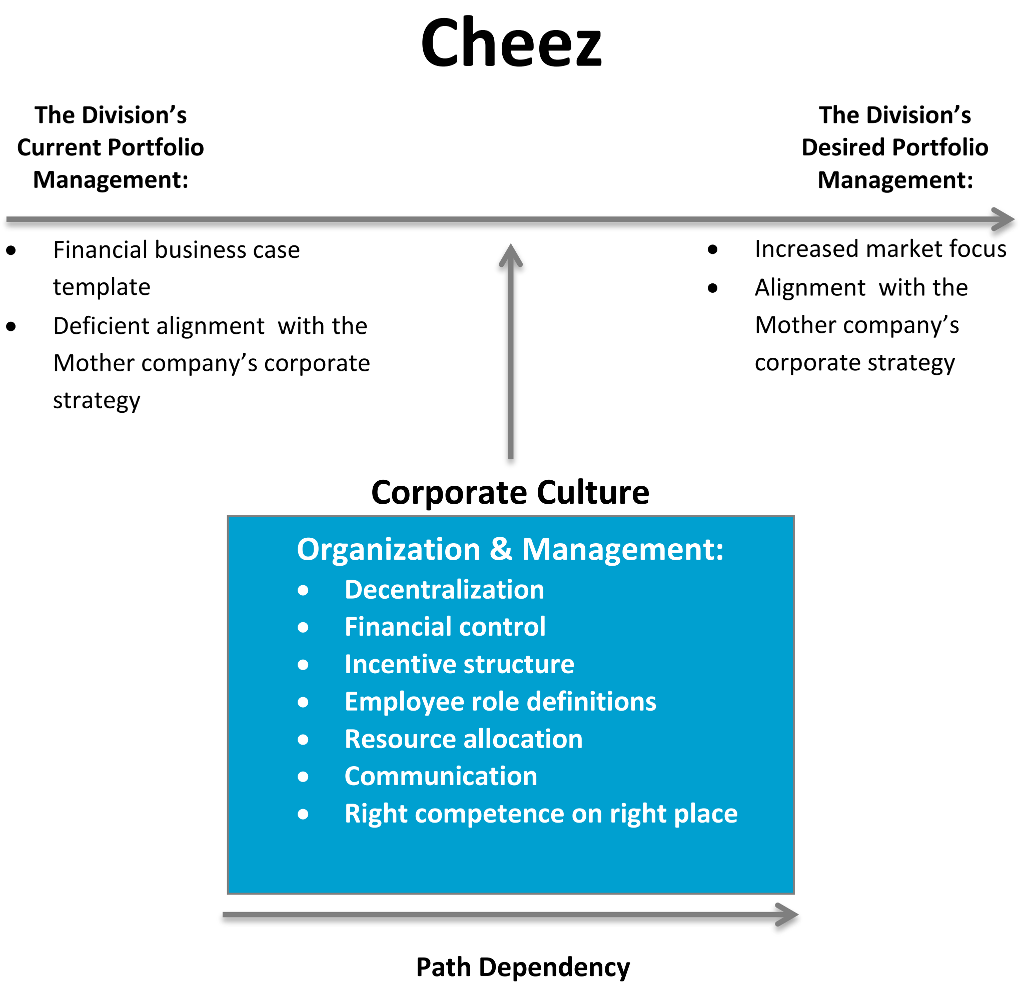

Figure 29. Cheez - general portfolio management framework showing the movement towards desired portfolio management applied on the Mother Company (Authors' figure).

6.3.1 Current Situation

The current state of the Division's portfolio management is predominantly managed by the financial business case template method and lack of explicit strategic alignment, as discussed in the empirical analysis chapter (5.2). The lack of internal and external market awareness is permeating all decisions connected to the product portfolios. Porter's five forces address the internal market factors that are important to focus on in order to stay competitive on the market. Further, external market awareness, the equivalence of macro-environmental knowledge, can be mapped with a PESTLE analysis.

When it comes to the internal market awareness, the Division’s portfolio management is deficient, especially when it comes to *industry rivalry* within the construction industry. The deficiency in this context is also present in terms of *customer bargaining power*, *trend watching*, *hedging against substitutes*, and searching and preparing for *potential new entrants*. Thus, the Division’s ability to tackle *supplier bargaining power* is developed, which the whole division can benefit from.

The Division’s external market awareness in terms of PESTLE factors has improvement potential when it comes to following areas: *government stability*, *consumer behavior*, *welfare*, *age distribution* and *level of globalization*. When it comes to *skill level and availability of expertise*, *technological rate of change*, *R&D*, *ERP and knowledge management systems*, *patent*, *attitudes and beliefs of the society*, and *quality and pricing*, the limitations exceeds to stumbling blocks. However, the Division takes some important PESTLE factors into consideration when operating portfolio management: *product compliance*, *product safety*, *cost savings* and *outsourcing*. PESTLE factors that are important for the portfolio management, but which are indifferent in the Division’s case are *trading regulations* and *taxes*.

6.3.2 Desired Situation

To reach a comprehensive portfolio management, the Division has to strive to be more aware of and susceptible to internal and external market factors impacting the decisions and operations. Furthermore, the portfolio management needs to be in alignment with the Mother Company’s corporate strategy. To increase the performance of the Division’s portfolio management, the vital market factors have been organized into three different levels of importance: low, medium and high (see figure 30). It would be advantageous for the Mother Company to consider these factors in their daily operations in order to keep their leading position on the market. Further, the relevant internal and external market factors needs to continuously be revised in order to stay up to date. An idea for the Division is to introduce a market intelligence unit responsible for collecting, processing and updating this crucial data.

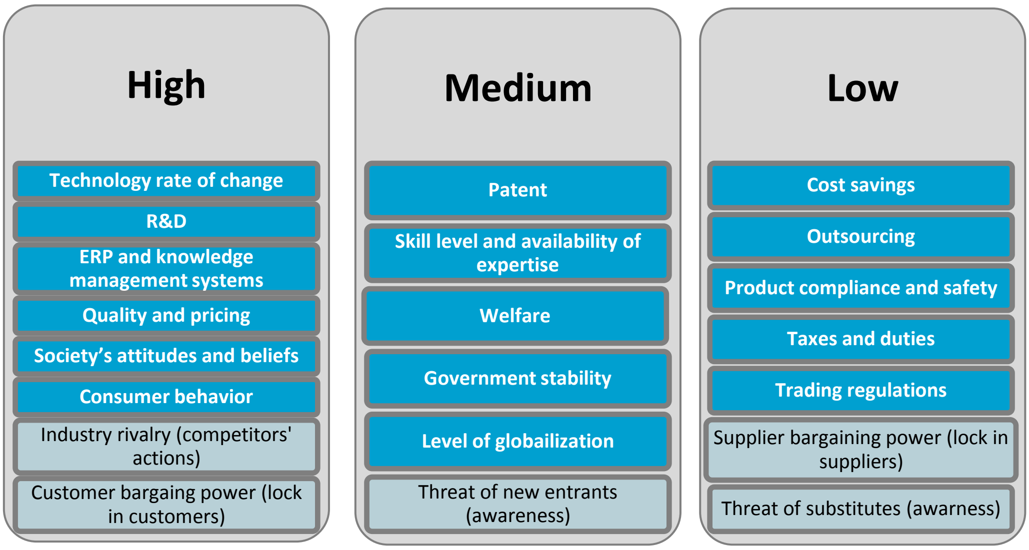

Figure 30. The vital factors to consider when increasing the performance of the Division's portfolio management categorized into three level of importance: low, medium and high. The dark blue indicates PESTLE factors and the light blue Porter's five market forces (Authors' figure).

6.3.3 Linkage Current and Desired Situation

The study has shown that the essence of an efficient portfolio management is hard to boil down to a small number of generic parameters, which can be applied in multiple contexts. It is not a simple task to move from the current portfolio management situation to the desired, where the Division has to particularly overhaul the insufficient handling of market factors. There are many obstacles on the way towards improving the portfolio management, which makes it a complicated and difficult area to navigate within. The core when it comes to understanding the division's portfolio management and how to leverage from it, is to be aware of the processes that permeates all operations, and the softer values that impact the business and block seemingly simple changes.

Corporate culture

To start with, it is vital for the division to establish a facilitating *corporate culture* that supports the strategy and processes in the right direction at the right time. It is further vital for the company to have a deep understanding of how the Mother Company's culture is configured and what is impacting it. The characteristics of the Mother Company's identified corporate culture (decentralization, financial control, complacency and path dependency) are central in the Division's portfolio management. Hence, the authors argue that it is essential to be aware of what the current corporate culture is characterized by, how it is manifested within the company and its' divisions or not, and how it impacts all cornerstones within the company.

The Mother Company's corporate culture is interdependent of several factors, that all have firm impact of the Division's portfolio management and goes hand in hand with the prevailing *path dependency*. The detected culture is permeated of, and dependent on, the Mother Company's *organizational structure and management*, i.e. the company's: high degree of *decentralization*, *financial control*, *unclear incentive structure and employee role definitions*, *distorted resource allocation*, *insufficient communication*, and demand of *right competence on right place*. All these mentioned factors have a strong connection to the Division's portfolio management since they influence and penetrate all portfolio operations. The factors are discussed below, one by one.

Decentralization

In the Mother Company's case, the high level of decentralization has been crucial for the way the company operates on all levels. By changing the organizational structure to be more centralized, the Division's portfolio management could potentially improve. As a result of a more controlled approach throughout the organization than a solely financial, the strategic alignment would increase. Consequently, the communication and incentive structures would be facilitated, which would benefit the portfolio management performance. However, today's strength with the decentralized organizational structure of the Mother Company is that the Division's product managers have high degree of freedom to manage their respective product portfolios. This means that they have free ability to embrace a new increased market oriented approach, without any hindrance from top management. Regardless, whether the decentralization has a negative effect on the Division's product portfolios or not, it is important for the Mother Company to understand and parry the accompanying effects of it. Moreover, even if a more centralized organizational structure would benefit the Division's portfolio management, the centralization might have negative effects on other areas. If transforming the decentralization into a more centralized organizational structure, the Mother Company must be aware of the intrinsic obstacles with the decentralization, like the ingrained path dependency. Such obstacles make the change impossible to achieve without the entire organization facing and combatting it simultaneously.

Financial control

The Mother Company's focused financial control, which goes hand in hand with the decentralized organizational structure, has historically been well-working; a fact when looking at the company's financial results. Despite the great financials the portfolio management may has suffered from this way of working, since the control has limited the desired freedom of the portfolio management. This in term of undefined roles and incentives, which has contributed to the neglecting of commercial market factors. Mixing different types of control methods, without compromising on the high degree of freedom that the employees of today have, would be fruitful for the Division's product portfolio management. For instance, control mechanisms that consider factors such as the Division's human capital's development or market awareness, would be beneficial. Nevertheless, when adding extra control mechanisms on top of the financial control, it is important to make sure that these do not interfere with the existing work environment of today, which is considered to have a high degree of individual freedom. The Mother Company's path dependency is additionally an obstacle towards changing to a more strict management.

The incentive structure

The present incentive structure within the Division has improvement potential when it comes to managing the portfolio management. By introducing a more tailor made and dynamic incentive structure that satisfies the employees involved in the Division's portfolio management, would be valuable both in the short and long run. A change in the incentive structure would not have to burden the Mother Company in a monetary perspective. Instead, working on a uniform corporate culture, where every single employee is committed to deliver excellence, could be managed in a smooth and low cost manner. People are driven by incentives, and an enhanced incentive structure could contribute to aligning the Mother Company as an organization. Further, there is a relationship between the Mother Company's incentive structure and intrinsic path dependency. The path dependency is a barrier of changing the incentive structure within the company, while a revision of the incentive structure would help expose and tackle the path dependency.

The employee role definitions

The role definitions of the employees involved in the Division's portfolio management would gain from being more sharp and clear. The present way of operating is firmly influenced by the decentralized organizational structure and financial control. Uncertain ownership of specific tasks and processes is destructive due to the fact that several crucial parts of the portfolio management are neglected, such as market focus. Hence, it is important for the Mother Company to shape the roles connected to the Division's portfolio management in a mutually exclusive and collectively exhaustive way. Clearer role definitions need to be a part of the corporate culture, and it is vital that the high degree of freedom, which is significant for many of the Mother Company's positions nowadays, is maintained. Synergies can be created if each employee is accountable for specific tasks, but feel personal responsibility for fellow employee's task. Moreover, many employees' motivation is increased when feeling important, which goes hand in hand with the current undefined roles within the Division. Clearer role definitions may enhance the motivation, which is correlated to the incentive concept. However, the Mother Company's path dependency is a barrier from stating the employees' role definitions more clearly.

The resource allocation

Today, the Division's resource allocation is distorted in terms of resources explicitly directed towards the market side of the product portfolio operations. Reallocation of monetary funds is always a sensitive topic for the many stakeholders within an organization, especially when an apparent path dependency impacts. However, the leverage of allocating resources in a way that contributes to increased awareness and understanding of the Division's different markets would exceed the costs of doing it.

Communication

The insufficient communication processes within the Mother Company, which projects on the Division's portfolio management, is an elusive problem that can be detected throughout the organization. In order to maintain the historical growth rate, and at the same time continue to be successful, an improvement of the communication structure is required. The parties involved in the Division's portfolio management do not communicate or learn enough from each other, which is a waste that can be managed. An alignment of the communication between the Division's different operational areas is critical in order to deliver construction equipment excellence. However, a communication structure is not something that can be changed from one day to another. An approach to optimize the communication processes needs to be anchored within the entire organization of the Mother Company - both vertically and horizontally. To obtain penetration throughout the organization, and to minimize the negative impact from the path dependency, the Mother Company's corporate culture needs to embrace and explicitly facilitate potential communication structure changes. Structuring the currently communication between the stakeholders involved in the Division's portfolio management, and making it more frequent apparent and qualitative, would most likely be resource demanding. However, the synergies gained from such changes would offset the extra resources required, and be value creating for the Division's portfolio management operations.

Right competence on right place

Having the right competences on the right place could from a theoretical perspective sound basic. From a practical view though, it is not. The Mother Company possesses valuable competences and know-how when it comes to the technical side of their aggregated product portfolio. However, the Division seems to lack the right competence when it comes to the commercial side. It is arguable if this lack is a matter of deficient resource allocation or incentives, and/or a result of the path dependency. Anyhow, an increased competence base in terms of market knowledge would probably improve the Division's position on the different markets. Like mentioned before, the Division would gain from establishing a market intelligence unit solely focusing on these matters.

To summarize, the most important component for the Division's portfolio management that can be improved is primarily the Mother Company's corporate culture as an overlapping phenomenon. Within the corporate culture, the vital components impacting the portfolio management are all derived from the organizational and managerial structure of the company. These crucial components are as prior mentioned: the high degrees of decentralization and financial control, the unclear incentive structure and role definitions, the current distorted resource allocation, the insufficient communication structure, and the lacking competences on right place. Perceiving the mentioned components as variables that could be tuned in any desired direction, the Division's portfolio management can be enhanced by tackling the relevant market factors described above. However, the intrinsic emerged path dependency is a barrier of doing this in a jiffy. On the other hand, by tuning the different variables in a consolidated thoughtful manner, the impact from the path dependency, which influences all the Mother Company's operations, could be diminished.

7. Discussion

This chapter presents a brief discussion of the study.

The study has treated a vital, complex matter that today is an acknowledged problem, concerning all functions within a company. Tackling the challenges of portfolio management in an optimal way is of relevance for all firms in the globally growing and competition intense world of today. This paper makes a contribution to the research when it comes to *how* to improve a firm's management of product portfolios. The study contributes both to the academia as well as to companies in need of advice regarding how to face with these issues, and what to take into consideration when doing it.

The authors assert the reliability and validity of the developed generic portfolio management framework Cheez to be high, as the collection of data is gathered from different sources by using triangulating. The authors believe the study would have resulted in more or less the same findings and the same final framework independently of who would have conducted the study, since the input parameters are the same, and the methodology used is well described. However, there are intrinsic obstacles with Cheez, the authors' portfolio management framework. If a firm already has a wide and developed market focus in the current state, the desired situation in the framework may look different. If that is the case, the macro-environmental focus in the model loses its' importance, and the market side becomes insignificant. However, the framework's major contribution to the research within the portfolio management field is the linkage part between the current and desired portfolio management situation, which is applicable on all cases. The authors believe the deeply rooted cultural, organizational and managerial processes to be key areas to consider when striving for improving the portfolio management. These processes are impacting under all circumstances and function as both barriers and driving force to strategic changes. These are often intangible and hard for firms to identify and battle. It is all dependent on the correlations and interdependency between the mix of barriers and the adjacent corporate processes.

Path dependency is a phenomenon that can be considered both a barrier and a driving force. The impacts of it often affect a company without the employees being aware of it. Often, the same is applicable on the concept of complacency, which a company unconsciously can suffer from as a consequence of long historical success. The organizational structure and control are other parameters influencing a company's operations, including the management of product portfolios. To diminish or embrace such parameters - barriers or driving forces - well-established processes are required. The complexity of some barriers counteracts the development and implementation of conflicting barriers or processes. However, this catch 22 related challenges can only be tackled with awareness of the intricacy of the situation.

8. Conclusion

This chapter presents the conclusion of the study.

The purpose stated in the beginning of the study was following:

The purpose of the study is to increase the understanding of the mechanisms impacting portfolio management in an increasingly complex competitive and corporate environment.

The study accentuates an amplified importance of internal company-specific processes, intrinsic barriers and driving forces to consider when managing product portfolios in an increasingly complex competitive and corporate environment. Moreover, deep understanding of the company's internal and external market environment is required. Depending on the company's portfolio management prerequisites, different aspects of the environment and the corporate processes have to be considered when striving for enhanced portfolio performance.

To visualize the logic of the mechanisms impacting portfolio management, the generic portfolio management framework Cheez has been developed by the use of pattern matching (figure 31). By utilizing the theoretical framework in conjunction with the empirical case of the Mother Company and the Division, an understanding of the mechanisms impacting portfolio management, in an increasingly complex competitive and corporate environment, was possible. Cheez - the generic portfolio management framework - treats a spectrum of dimensions impacting portfolio management, critical for *acquisition focused, capital and technology intensive industry companies operating within multinational B2B contexts* to consider. There are many potential barriers or driving forces related to the corporate culture and the organizational and managerial structure of such companies that greatly affect desired changes of the current portfolio management. Hence, it is crucial for the targeted companies to be aware of, and possess deep knowledge about their individual processes and impacting barriers and driving forces set by the organizational and managerial structure, embedded in the corporate culture. This in order to tackle them one by one and simultaneously, and thereby achieves portfolio management excellence.

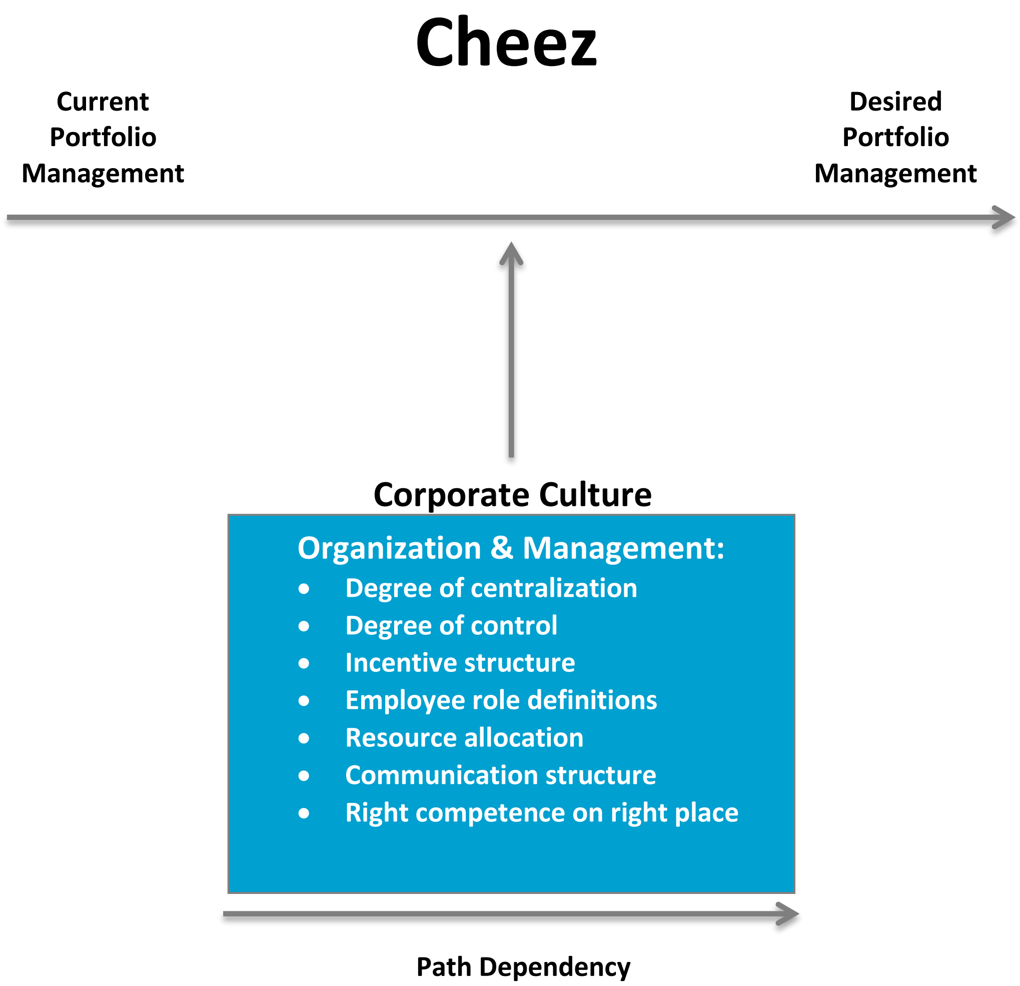

Figure 31. Cheez - Generic portfolio management framework showing the movement towards desired portfolio management (Authors' figure).

9. Further Research

This chapter presents further research material that is not covered in the paper.

The conducted study could have been performed in many different ways. The current scope is wide, and covers a broad spectrum of strategic factors impacting portfolio management. Hence, pragmatism and detail level is left out, which is an area of potential further research. The same applies for the implementation part of the developed portfolio management framework, which is also left out of the scope. Further, when examining strategic changes, it is vital to study the corporate processes over time to achieve a representable picture, reliable results and keep the reliability high. Therefore, the duration of this study would have benefited from being longer. A study of the Mother Company and the Division's portfolio management over a year would have been favorable. If the time frame would have been longer, the same study could further have been done on several companies, either in the same industry as the Mother Company or in different industries, to increase the generalizability of the results. Another thing that would have been intriguing to do, is to change the scope of the chosen case company and study the management of product portfolios at the Mother Company or at Group level instead of solely the Division level. Finally, the data collection could have been performed differently. It would have been interesting to include more quantitative and external data in the study. The above discussed areas are all material for further research within the portfolio management field.

There is further research potential for the Mother Company, i.e. the case company, as well. A next step for the Division is to investigate the mechanisms impacting the portfolio management (visualized in the applied Cheez framework in figure 31), and determine how they intertwine and correlate. The authors recommend the Division to make a prioritization list, where the mechanisms impacting the movement towards enhanced portfolio management the most, are highlighted and tackled first. Another recommendation is to study the applicability of the Cheez framework, applied on the Division, on both Mother Company and Group level. The authors strongly believe that many parts of the Division applied Cheez portfolio management framework are similar in these contexts.

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Appendix 1

All respondents contributing to the empirical analysis of the study are stated below. None of the respondents are mentioned by name, to protect their integrity. The respondents are all working at the Mother Company, and most of them within the Division. Many of the Division's international markets are represented through different respondents.

Interviewees in the formal and informal interviews

Business Controller, the Mother Company. 2015. Sweden. Interview March 24th.

Category Manager Sourcing, the Mother Company. 2015. Sweden. Interview March 20th.

Cost Price Specialist, the Mother Company. 2015. Sweden. Interview March 19th.

Director of Product Development, the Mother Company. 2015. Sweden. Several interviews between February and May.

General Manager Portugal, the Mother Company. 2015. Portugal. Telephone interview May 4th.

Head of Intellectual Property, the Mother Company. 2015. Sweden. Telephone interview March 13th.

Product Manager C, the Mother Company. 2015. Sweden. Several interviews between February and May.

Product Manager B, the Mother Company. 2015. Sweden. Several interviews between February and May.

Product Manager A, the Mother Company. 2015. Sweden. Several interviews between February and May.

Product Safety & Liability Manager, the Mother Company. 2015. Sweden. Several interviews between February and May.

Product Specialist A, the Mother Company. 2015. Sweden. Interview February 2nd.

Sales Director Europe, the Mother Company. 2015. Belgium. Several telephone interviews between February and May.

Sales Manager Sweden, the Mother Company. 2015. Sweden. Interview March 23rd

Service Manager Denmark, the Mother Company. 2015. Denmark. Telephone interview May 5th

Senior Project Manager, the Mother Company. 2015. Sweden. Interview March 19th.

Specification Director UK & IE, the Mother Company. United Kingdom. Telephone interview March 31st.

Vice President Marketing and Communications, the Mother Company. 2015. Sweden. Interview February 9th.

Participants in the first questionnaire (the Excel survey)

Product Manager, the Mother Company. 2015. Sweden. Several interviews between February and May.

Product Manager, the Mother Company. 2015. Sweden. Several interviews between February and May.

Sales Director Europe, the Mother Company. 2015. Belgium. Several interviews between February and May.

Participants in the second questionnaire (the Netigate survey)

40 Mother Company and Division employees participated in the second questionnaire. The origins of the respondents can be seen in chart 1, the positions of the respondents in chart 2, and the respondents' duration of employment within the Mother Company in chart 3.

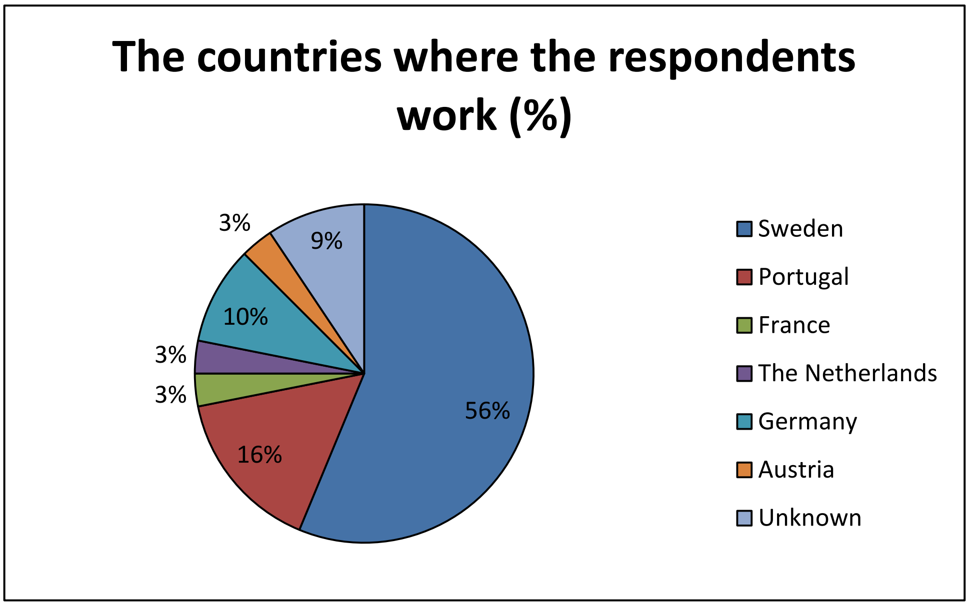

Chart 1. Origin of the respondents (Authors' chart)

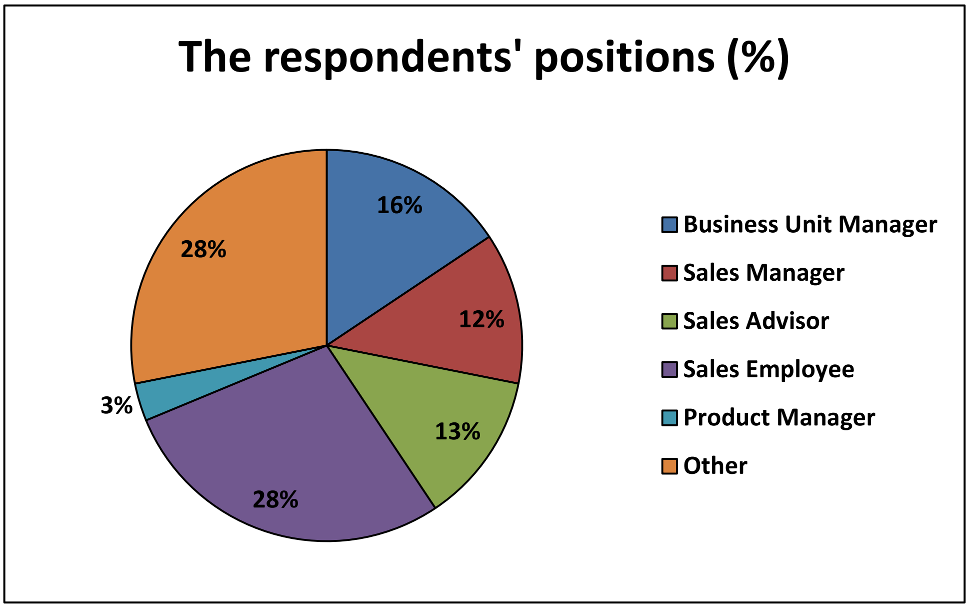

Chart 2. The current positions of the respondents (Author's chart).

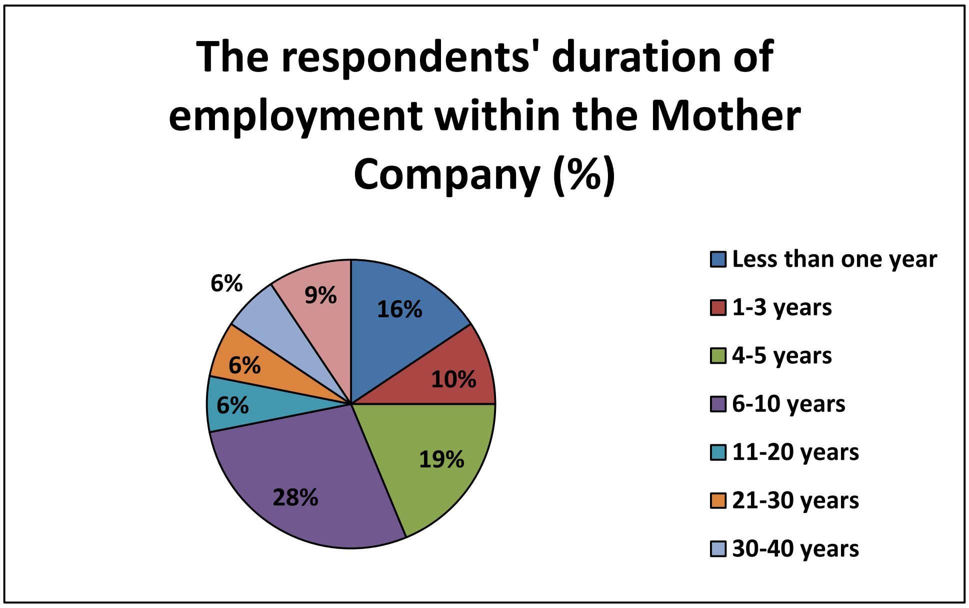

Chart 3. The respondents' duration of employment at the Mother company (Author's chart).

Appendix 2

PESTLE

To what extent do you consider the factors stated below is impacting the A portfolio? Please rank 1-5, where 1 equals "not important at all" and 5 equals "very important". Please comment if you have any additional comments.

Political factors
Factor related to politics can change for example trade regulations or taxation, which can affect a market significantly.

1. Government stability (the stability of the long term rule)
2. Employment & operational laws
3. Trade restrictions or reforms
4. Taxation regulations
5. Corruption levels
6. Bureaucracy issues (issues related to for example getting a certificate or licenses for a product approved)
7. Consumer protection laws (laws which protect the customers, which can have an impact on the company's operations)
8. Health and safety requirements (for example in terms of certificates or licenses related to products or services)

Economic factors
Economic factors can impact a company by potential changes to an economy's business climate.

9. The inflation rate
10. Taxes & duties
11. Interest rates (cost of capital)
12. Trading regulations (the ease and cost of export/import)
13. Finance & credit (availability of finance or credit)
14. Working practices (special characteristics of the working environment)
15. Exchange rates (the volatility of the exchange rates and its impact on the business' financials)
16. Cost of living (the average cost of living for a generic person)
17. GDP (=Gross Domestic Products. A measurement of the economic performance of a whole country)
18. The level of globalization
19. The unemployment rate
20. Skills level (the average skills level of a generic employee)
21. Availability of expertise (the access of expertise or knowledge)

22. Wage patterns (the development and pattern of the average wage)
23. Working practices

Social factors
Factors connected to the social circumstances like health, career and environment can affect the business in a market or country.

24. Lifestyle (specific lifestyle behavior)
25. Attitudes & beliefs
26. Social mobility (the ease of a generic person to change between social stratifications on a given country)
27. Education (general education level)
28. Employment levels (the structure of the employment level, i.e. if a high employment level is temporary or static to its character)
29. Ethics & religion
30. Historical issues (specific historical issues)
31. Cross-cultural communications (the relationships and extent of communications between a given country and its surroundings)
32. Age distribution (the population of a market's age distribution)
33. Population growth rate
34. Income (the average income)

Technological factors
The pace of the technological development is increasing with implications in different dimensions on specific markets as a consequence.

35. Rate of change (the frequency of technology changes and how rapid these changes occur)
36. R&D (the frequency of improvements of quality of product parts, end-products and the development of new features)
37. Knowledge management systems (the ease of knowledge transfer and the ability to handle knowledge)
38. Eliminate bottlenecks (the use of technology to eliminate bottlenecks)
39. Network coverage (coverage of broadband and mobile connection etcetera)
40. Production efficiency (the role of technology in terms of production efficiency and how developed it is)
41. Quality & pricing
42. Patent & licenses
43. Automation (the extent of facilitation that technologies can provide)
44. Significant cost savings (the cost savings that can be derived from use of technologies)
45. Outsourcing (use of outsourcing to control costs and offer greater flexibility)

Legal factors
Legal factors that affect the industry regarding employment, competition, health and safety. Changes of legal factors in adjacent markets and markets with firm impact on the evaluated market should also be considered in this part.

46. Taxation (taxes that derives from country-specific legislations)
47. Employment (employment conditions that are regulated by a specific legislation)
48. Consumer (consumer behavior affected by legal restrictions)
49. Advertising (legal delimitations of how to advertise)
50. Import & export (legal restriction on import & export)
51. Health & safety (legal restriction on health & safety)
52. Compliance (legislation that implies specific handling of compliance)
53. Consumer protection (legislations regarding consumer protection)
54. Employee welfare (legislations regarding employee welfare)
55. Waste disposal (legislations regarding waste disposal)
56. Taxation of earnings and investments (legislations regarding taxation of earnings and investments)

Environmental factors
Nowadays environmental factors play an important role of how to strategically manage a company.

57. Infrastructure (how developed the infrastructure system is)
58. Cyclical weather (specific weather circumstances)
59. Energy availability & cost (ease of access to energy resources and the cost of it)
60. Disposal of materials (ease of taking care of materials derived from business operations)
61. Ecological consequences (the direct and indirect impact from a company's operation on the ecological system)
62. Legislations (common legislations)
63. Contamination (the environmental contamination caused by business' operations)

Porter's Five Forces

To what extent do you consider the factors stated below is being present and impacts the A portfolio? Please rank 1-5 in, where 1 equals "not important at all" and 5 equals "very important". Please comment if you have any additional comments.

Threat of new entrants
New industry entrants will seize market share from existing actors and put pressure on costs, prices and investments rate. The threat of entrants is dependent on:

26. Economies of scale (if high → hard for newcomer to enter the market profitable)
27. Supply-side economies of scale (firms that produce at larger volumes enjoy lower costs per unit since they can spread fixed costs over more units, employ more efficient technology etc.)
28. Demand-side economies of scale (network effects - buyers may trust larger companies more for a crucial product. Discourage entry by limiting the willingness of customers to buy from a newcomer)
29. Product differentiation (makes it costly for customers to switch. But, the differentiation barriers are costly since it is hard to convince consumers of a new brand/product, e.g. cosmetics industry)
30. Capital requirements (important in certain industries such as mining/shipping. Often hard to access externally → barrier to potential market entrance)
31. Customer switching costs (may appear when customers are switching to a new entrant → the higher, the harder for new entrants)
32. Access to distribution channels (potential hard to get access to distribution channels, such as retail stores for a food producer. Hard if existing competitors are tied to their channels, possibly by ownership)
33. Cost disadvantages independent from scale/Incumbency advantages independent of size (regardless of scale advantages, entrants could be at a cost disadvantage as a result of e.g. lacking technology, expertise, raw material etc. → incumbents have advantages regardless of scale)
34. Government policy (some industries are still regulated such as sale of alcohol in Sweden)
35. Expected retaliation (how potential entrants believe incumbents may react will also influence their decision to enter or stay out of an industry. Incumbents often use public statements and responses to one entrant to send a message to other prospective entrants about their commitment to defending market share)

Industry rivalry

The degree to which rivalry drives down an industry's profit potential depends, first, on the intensity with which companies compete and, second, on the basis on which they compete. The intensity of industry rivalry is great if there is/are:

1. Slow industry growth (the slower the industry growth the more intense battle for expansion/more intense competition and vice versa)
2. Exit barriers (if the exit barriers are costly firms stay in business. Example of exit barriers are assets that are specialized, if dismissed employees are to be heavily compensated, if the company have important relations to sister relations, alliance partners etc.)
3. Rivals are highly committed to the business and have aspirations for leadership, especially if they have goals that go beyond economic performance in the particular industry
4. Firms cannot read each other's signals well because of lack of familiarity with one another, diverse approaches to competing, or differing goals

5. High fixed or storage costs and low marginal costs (fixed costs increase if heavy investments in machinery, assets etc., and need to be allocated to maintain profit → more intense competition)
6. Lack of differentiation or switching costs (e.g. commodity products → price service important rather than quality → more intense competition)
7. The need for large capacity expansions (capacity must be expanded in large steps to be efficient. The need for large capacity expansions disrupts the industry's supply demand balance and often leads to long and recurring periods of overcapacity and price cutting)
8. The product is vulnerable (vulnerability/perishability creates a strong temptation to cut prices and sell a product while it still has value)

Threat of substitutes
A substitute to a product is a product that, with a similar function, covers the same customer need; train is for example a substitute to flight. Substitutes that are subject to trends or/and are produced by industries earning high profits are most affected by this force. The substitute power is high if:

24. The substitute offers an attractive price-performance trade-off to the industry's product (the better the relative value of the substitute, the tighter is the lid on an industry's profit potential, e.g. regular telephones vs Skype)
25. The buyer's cost of switching to the substitute is low

Buyer bargaining power
The power of buyers is essential - business cannot exist without customers. Most sources of buyer power apply equally to B2C and B2B. Buyers tend to be powerful when:

9. There are few buyers, or each one purchases in volumes that are large relative to the size of a single vendor
10. The costs for the volume purchased represent a large proportion of the buyer's total costs for goods/services
11. The products are standardized
12. There are few switching costs
13. The customers have low profitability
14. There is threat of backwards integration, i.e. M&A with suppliers by customers
15. The product sold is unimportant in relation to the quality of the buyer's products and services
16. The buyer has full information, such as market prices and cost structure of the offering

Supplier bargaining power
The power of suppliers. The factors that make suppliers powerful are similar to the reverse of those imposed by customers. Suppliers are powerful when:

17. Suppliers are few and more concentrated than the industry they are supplying
18. The supplier group does not depend heavily on the industry for its revenues (suppliers serving many industries will not hesitate to extract maximum profits from each one)
19. There are no relevant substitutes to the products supplied
20. The supplied product is important to the buyer's offering (i.e. there is no substitute for what the supplier group provides)
21. Industry participants face switching costs when changing suppliers
22. Suppliers offer products that are differentiated
23. The supplier group can threaten to integrate forward

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Appendix 3

Welcome to this survey about the [redacted]! It is two pages and will only take a few minutes to conduct.

The objective of our thesis is to develop a strategic analysis tool for assessing the [redacted] portfolio, and this survey is an important part of our research. Hopefully, the analysis tool will be useful also for [redacted]

Thank you very much for participating!

1. General information

Please state your name. ________________________

Please state in which country you are working. ________________________

Are you a customer of [redacted]?

☐ Yes

☐ No

Please state your current position. ________________________

Please state how long you have been working within [redacted]. **Question not applicable for customers.** ________________________

Please state how long you have been working within the [redacted] industry. **Question not applicable for customers.** ________________________

2. Questions

1. The country's welfare (GDP level, employment rate, income level etc.) impact the sales of [redacted] products.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

2. Please explain your answer in question 1.

3. The government's investments connected to construction related industries are impacting the sales of [redacted] products.

- ☐ Agree
- ☐ Somewhat agree
- ☐ Somewhat disagree
- ☐ Disagree
- ☐ I do not know

4. [redacted] follow the rate of change in technology in terms of the technical demand from the customers.

- ☐ Agree
- ☐ Somewhat agree
- ☐ Somewhat disagree
- ☐ Disagree
- ☐ I do not know

5. Please explain your answer in question 4.

6. [redacted] follow the rate of change in technology in terms of staying in the forefront compared to competitors from a technological perspective.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

7 [redacted] R&D investments are allocated in an optimized way.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

8. [redacted] IT systems communicate with each other in an efficient way.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

9. The country's network coverage (broadband, 3/4G connection etc.) have impact on the sales or usage of the [redacted] products.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

10. Potential customers in unexploited [redacted] markets, geographically or product wise, are open-minded towards [redacted].

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

11. The communication within [redacted] international business units, i.e. the headquarter, the sales companies and production etc., is well-working.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

12. [redacted] would benefit from being more quality focused, and hence less cost oriented.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

13 [redacted] customers are price sensitive.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

14. It is important for [redacted] to attract customers and close customer deals.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

15. What do you think about the [redacted] management structure? Please state some pros and cons.

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16. [redacted] is successful compared to competitors in terms of possessing patents.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

17. CRM (customer relationship management) is important for [redacted].

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

18. Except from [redacted], how do you work with CRM (customer relationship management) within [redacted]?

____

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19. Please state [redacted] end-customer segments [redacted]. Start with the most important segment in terms of market share.

20. Please state [redacted] direct customer channels [redacted]. Start with the most important segments in terms of market share.

21. Please rank the strength of each external market force that affect [redacted] business negatively (Porter's five forces).

	No power/threat	Low power/threat	Normal/moderate power/threat	Relatively strong power/threat	Strong power/threat	I do not know
The customer's bargaining power towards [redacted]	☐	☐	☐	☐	☐	☐
The supplier's bargaining power towards [redacted]	☐	☐	☐	☐	☐	☐
Rivalry among [redacted] existing competitors	☐	☐	☐	☐	☐	☐
The threat of substitutes to [redacted] products	☐	☐	☐	☐	☐	☐
The threat of new competitors entering the market	☐	☐	☐	☐	☐	☐

22. Please state which external factor (laws, customers, competitors etc.) has the firmest impact on the [redacted] portfolio? Explain.

____

____

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23. [redacted] encourages you to take your own initiatives in your daily work.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

24. Your daily work is regulated by [redacted], beyond financial goals.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

25. If unexpected changing conditions in your working environment, you a free to adapt your daily work to the new circumstances.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

26. The management expect you to deliver more than only financial results.

☐ Agree

☐ Somewhat agree

☐ Somewhat disagree

☐ Disagree

☐ I do not know

27. Please add any additional comments.

Thank you for your participation!

Best regards,

Elin Skoghagen, Britta Ek and Filip Eliasson

Master Thesis Students
[redacted]