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Industrial Engineering and Management

Global Management of Innovation and Technology

Marko Andersson

Resource-based strategic analysis of a global high-tech manufacturing company

1st Examiner: Associate Professor Lea Hannola
2nd Examiner: Post-doctoral researher Kirsi Kokkonen

ABSTRACT

Author: Marko Andersson	
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Aim of the study is assess the current strategic status of the company, by finding appropriate tools and utilize these chosen tools to get an overview of the current strategic alignment of the company and competitors. The research methodology is mainly qualitative by workshops, Kaizen event and Delphi method exercises, supported by process audits, semi-structured interviews and quantitative data extractions. The study analysed the company from a resource-based view with the chosen strategic tools. Internal status of the case company and process to manage this was developed to fit the existing culture of the case company. Data extractions gave an overview of the structure of the portfolio and divisions between markets. Process audits were used to analyse the existing bridges from strategy to other areas. As a result, an assessment of current situation was made, and a toolset provided for possible future use.

TIIVISTELMÄ

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Professori Kirsi Kokkonen

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Työn tarkoitus on löytää sopivia työkaluja kohdeyrityksen analysoimiseen ja näiden avulla luoda yleiskuva yrityksen, sekä kilpailijoiden strategisesta nykytilasta. Tutkimuksen metodologia on pääosin kvalitatiivinen, mukana myös työtä tukeva kvantitatiivinen osa. Kvalitatiivinen osa toteutettiin Kaizen tapahtuman ja Delphi metodin mukaisten harjoitusten muodossa, sekä prosessi katselmuksilla. Näiden tueksi toteutettiin myös haastatteluja ja kvantitatiivista tiedonkeruuta. Tutkimus analysoi yritystä resurssipohjaisesta näkökulmasta. Sisäisen tilan arviointiin ja hallintaan luotiin yrityksen kulttuuriin sopiva prosessi. Tiedonkeruu antoi yleiskuvan yrityksen portfolion rakenteesta ja jakaumasta eri maantieteellisille markkinoille, sekä loi työkalun analyysin helpottamiseksi. Prosessi katselmuksilla analysoitiin strategian linkit muihin yrityksen osa-alueisiin. Tuloksena saatiin nykytilan kartoitus, sekä työkalu tulevaisuutta varten.

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1 INTRODUCTION

This chapter will briefly explain the backgrounds of the thesis and the research motivation. The scope of the study will also be presented alongside the research objectives. Research methodology and the study process will be explained also in this chapter. The chapter will be closed with an overview of the structure of the thesis.

1.1 Background of the thesis

The thesis is done as an assignment for a global high-tech medical manufacturing company that operates in Europe. This thesis is the final assignment for studies in Industrial Engineering and Management. The study is done as an additional evening and weekend project, while working within the case company as a product manager. The case company will be introduced in the empirical part of the study in chapter 5.1 below.

1.2 Research motivation

In the case of multinational global high-tech manufacturing companies, there is comprehensive amount of strategic literature and frameworks available. Aim of this study is to narrow the strategic analysis and mapping options by adjusting the generic strategic framework to the specific environment. The motivation for this study derives from case company need to simplify and harmonize the strategic guidelines and implementation, as well as the individual authors personal desires to get a more thorough view of strategy work in a company. The case company operates in a global environment with complex organizational structures. Some organizational parts could benefit from a clear strategy and guidelines to steer actions towards the desired direction. Improvements could benefit personnel and operations, both locally and globally. Operating in global environment is challenging as stated also by Philip Kotler in the quotation below.

"*Companies in the global marketplace navigate cultural, language, legal and political differences while deciding which countries to enter, how to enter each, how to adapt product and service features to each country, how to set prices, and how to communicate in different cultures*" (Kotler & Keller, 2015, p. 30) The aim is to get an overview of the case company's current situation and proceed after that to gain insight of potential areas that can be exploited more.

Understanding and managing the external market, internal resources and being able to swiftly react to changes in these areas is found beneficial for a company. This allows flexibility in reconfiguring resources when necessary (Santos-Vijande, López-Sánchez, & Trespalacios, 2012). Clear strategic guidelines and implementation of strategy help compare and justify decisions in all organizational levels. But even the best strategies are useless if they are not executed well, or guiding the company´s development to the wrong direction (Grünig & Kühn, 2015, p. 18). Which is why there is a goal to get a broad overview of the market and the operating environment, to focus on doing the right things, not only doing things right. Especially during the last two decades, global markets change rapidly in technological and social ways that for core competencies to be meaningful they must be aligned with the market demands and create products that bring value for customers (Gupta, 2013, p. 14). The importance of strategy cannot be underestimated as also stated by Botoc, Pirtea, & Nicolescu, 2009, "*What a strategic plan can do is shed light on an organization's unique strengths and relevant weaknesses, enabling it to pinpoint new opportunities or the causes of current or projected problems. If board and staff are committed to its implementation, a strategic plan can provide an invaluable blueprint for growth and revitalization, enabling an organization to take stock of where it is, determine where it wants to go and chart a course to get there.* "

These above arguments give baseline for the rationale and motivation to why this subject was chosen for the study. The aim of the study is also to find possibilities to improve the strategic alignment and communication of strategy in the case company, if possible.

1.3 The scope and research objectives

This study explores existing frameworks and theories about strategy formulation and implementation. The study compares existing solutions and methods from the case company to the ways proposed in the literature. The objective is to explore possible points for improvement in the implementation or strategic decisions, throughout the local organization. The outcome of this thesis is an overview of resource-based analysis of the strategic situation inside the company. The objective of this research is formulated into one main research question and supportive sub-questions.

The main research question for this study is:

- What is the current strategic status of the case company?

The main research question can be divided further into supportive sub-questions:

- How can strategic current status be assessed?
- How is the company and the main competitors positioned from a strategic point-of-view?
- How can company key resources and capabilities be managed and controlled?
- What is the current structure of the company portfolio and target markets?
- What are the links of strategy to other areas of business, especially in product management?

Research questions form the basis for the empirical part of this study. This master´s thesis aims to provide the case company valuable information about the main generic strategies presented in current literature. The possible strategies will be compared to the generic company operating environment, aiming to provide additional value for the company. Interconnections between company strategy, resources, capabilities and external operating environment will be investigated. Internal condition of processes to cascade strategy from planning to execution will also be analysed. As a result of the master´s thesis the case company will have some suggested tools to assess the current status of the company. Also, an overview of current status will be provided by utilizing those identified tools. There will also be a mapping of case company and the main competitors on a chosen strategic map. These key areas of this study are presented in Figure 1, which visualizes the scope of the study.

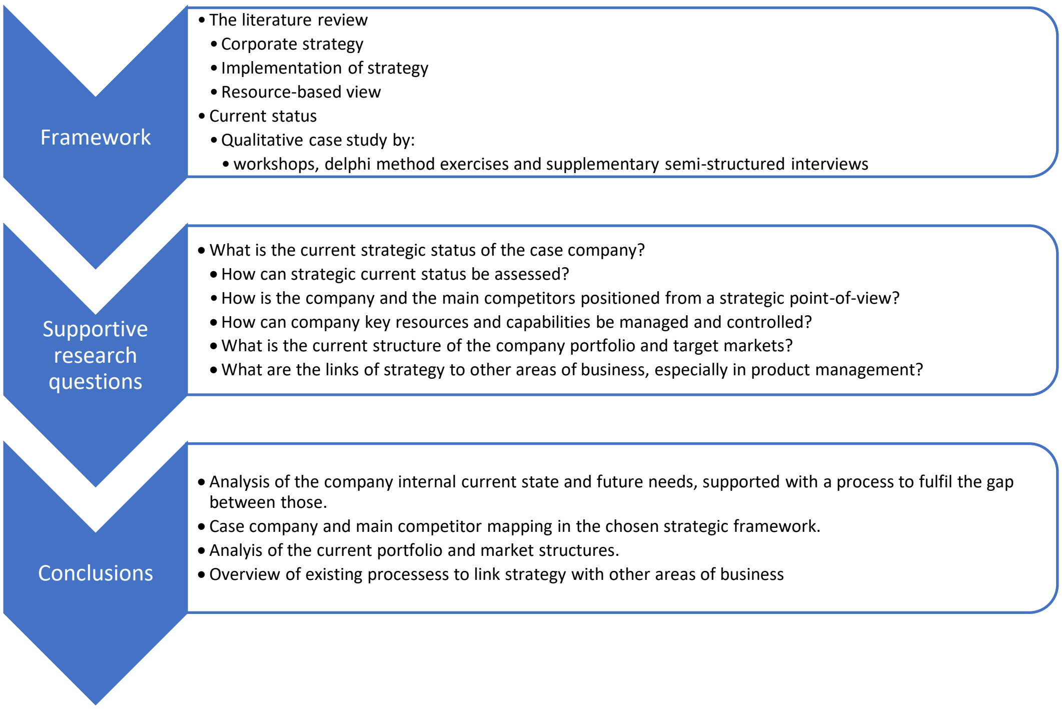


Figure 1 The objective and scope of the study

1.4 Research methodology and process

Using of right techniques for data collection gives credibility and high-quality to research findings by ensuring that data are collected in a standardized and scientific manner (Harrell & Bradley, 2009). The goal of this study is to gain an in-depth understanding of current status of the case company, from a resource-based view. This study was chosen to be completed according to the qualitative research methodology. Qualitative research methods aim to present the actual state of the chosen object and provide a comprehensive description of it (Hirsjärvi, Remes, & Sajavaara, 2009). The empirical part of the study was executed by a Kaizen event workshop, five different semi-structured interviews and five Delphi model exercises with key stakeholders. Specific execution details are elaborated more in the empirical section of the study.

Interviews are usually one-on-one discussions between an individual and the interviewer, which can be executed over the phone or in person. These interviews aim to gather information of specific topics by a loosely structured interaction. (Harrell & Bradley, 2009) The methods were chosen based on the specifications of needed information for the study. Additionally, a small qualitative analysis of current product portfolio lifecycle status was done from a secondary data source, that is an already existing dataset. Extraction is collecting data from records or other archival sources and processing it to find the desired information. (Harrell & Bradley, 2009). By these definitions' extraction method was used to analyse case company cash flow to fulfil the study portfolio and market assessment portion. This used dataset consists of over 50 000 lines.

This study was done according to the Delphi method, where questions are asked individually and then gathered from a selected group. After this initial round the answers are given back and redefined based on other people's answers. The differences between participants then opens for a debate. This method avoids social pressure or group dynamics, but the selection of participants may guide the results. (Mohr, Sengupta, & Slater, 2010) The used methodology for this study is summed in Figure 2.

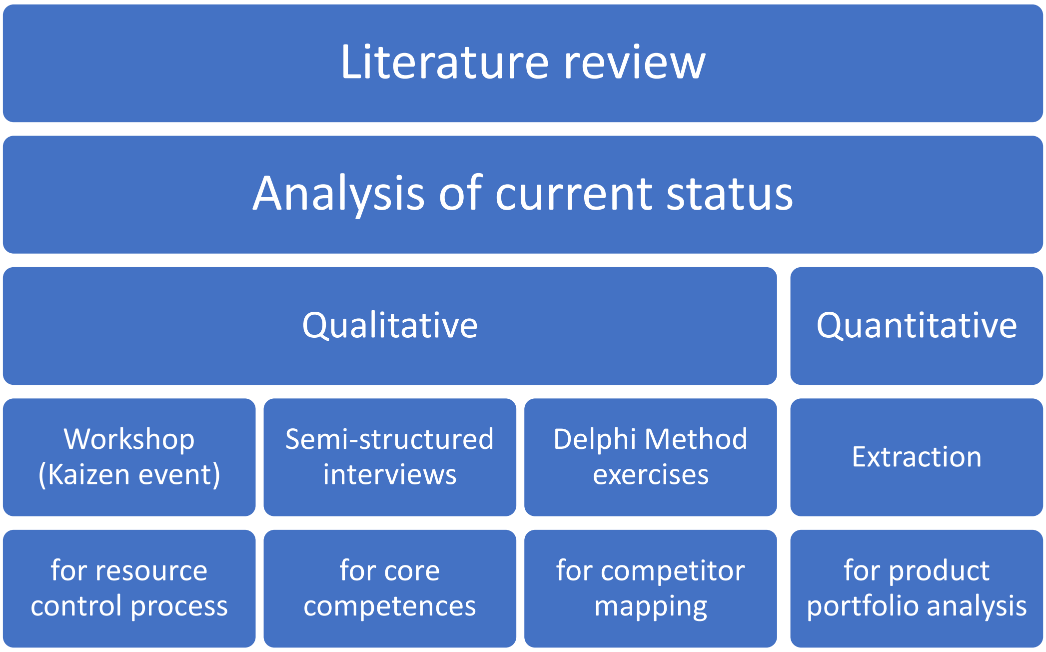


Figure 2 Methodology of the study

As seen above the research is conducted by various methods. Participants are included from different functions of the case company. Product management team and local management team being the main contributors. Roles and the number of participants for each individual exercise are specified later in the empirical part.

1.5 Structure of the thesis

This chapter introduces the structure of this thesis. As seen in Figure 3 Structure of the thesis, the study is separated into 6 chapters: Introduction, Strategic planning, Sources of competitive advantage, Utilizing the framework and additions from case company, Case company analysis & Discussion and recommendations. Each chapter contributes to the study by fulfilling a specific goal.

Figure 3 Structure of the thesis

2 STRATEGIC PLANNING

This chapter will give and overview of the basic environment that companies operate in. The industry specific attributes and competition related aspects that influence strategic decisions are presented. Also, the interconnections between varying company, market or industry specifics and their affects for strategic decisions will be analysed. Chosen market and portfolio assessment tools will also be introduced.

Defining the vision, mission and general principle of a company is helpful before starting to assess the company's situation. For the identity of the company core values should be assessed, as well as mission statement and core principles. Also, field of activity and strategic objectives are important to define. In addition to defining the identity of the company, these will help assess the future direction of the company. (López & Martín, 2013) Company strategies are often formulated by top managers. Implementing strategies and getting them to impart daily life of organization, requires strategic concept to be transformed into social practices. This transformation is often executed and carried out by the middle management's leadership. Søderberg, A. (2014).

Strategic management is a continuous and iterative process, that aims to keep the organization up to date with the environment it operates in. Strategy aims to evaluate the changes in environment and analyse potential possibilities of it. The possibilities for exploiting changes can be obtained by allocation of resources. (Haverila et. al, 2009)

2.1 Company and the high-technology operating environment

According to Latifi & Bouwman (2018), business model of a firm is defined by moderating and mediating variables. Moderating variables consist of firm characteristics, industry characteristics, business model implementation and business model practices. Mediating variables are efficiency growth, revenue growth and organizational capabilities. From these titles, firm characteristics, industry characteristics and organizational capabilities are chosen to work as the ground to analyse the case company briefly and summarize the key characteristics of the operating environment. Firm characteristics include firm size, firm age, advertising expenditure, R&D expenditure and ownership. Industry characteristics include industry sector, industry lifecycle, competitive intensity, environment dynamism and high-tech vs low. Whereas organizational capabilities are innovativeness, entrepreneurial orientation, opportunity recognition, organizational culture and organizational learning. The chose aspects of firm characteristics, industry characteristics and organizational capabilities are summed in Figure 4. These factors are to be used for presenting the case company basic information later in the empirical part of the study. Three main areas were chosen to present case company basic characteristics due to their suitability for this specific company. They were also seen to give the most value in relation to the other areas covered by this study.

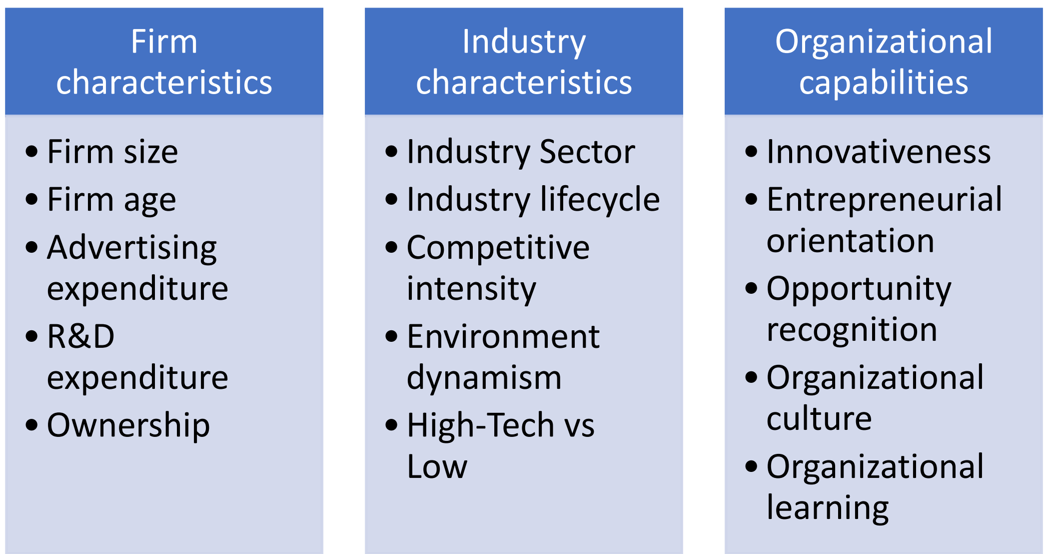


Figure 4 Company characteristics presentation format (Modified from: Latifi Mohammad-Ali & Bouwman Harry, 2018)

High-tech market environment has also the characteristic of rapid pace of change, where lifecycles are shorter, and change is accelerated. There is also high pressure on price/performance ratios and investments are required on R&D, where the production of the first unit is costly. There is uncertainty on the cost/benefit or customer perceived value of new technologies. Backward compatibility of changing products is also a challenge in this environment. Competitions and the evolution and role of internet brings uncertainty to the high-tech environment. (Kotler & Keller, 2015) These findings can be seen in Figure 5.

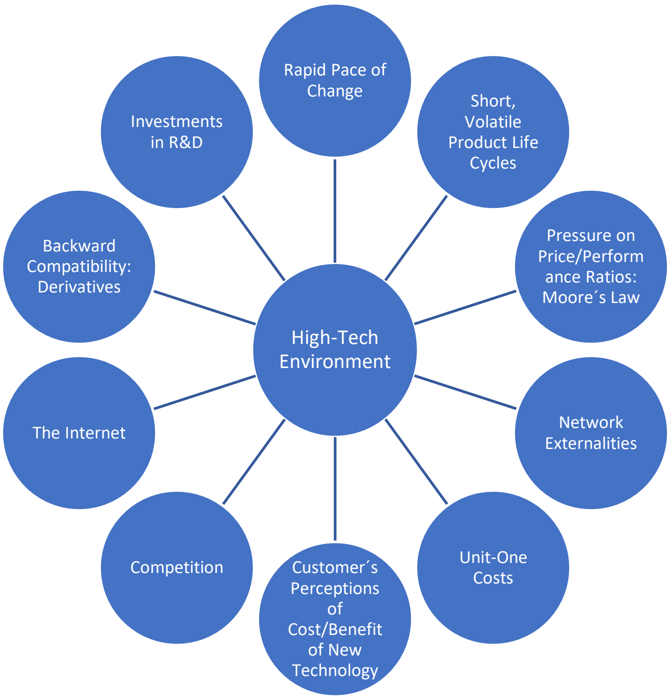


Figure 5 High-Technology Environment. Modified from: (Philip Kotler, Kevin Lane Kelle., 2015, p 408)

Competencies are of even greater importance for high-tech businesses, because high-tech markets are often high-growth markets. Therefore, the profitability and value created by these competencies is magnified by growth. High-tech companies typically experience success through unique technological innovations, which derive from skills and capabilities in research and development. (Mohr, Sengupta, & Slater, 2010)

Marketing of high-technology innovations can be described by three main categories: market, technology and competition. Market factors consist of meeting new customer needs, ability to match new technologies to customer needs, adaptation of industry standards, adaptation of new innovations and evaluations on potential market size. Technological factors are new product functionality, timely delivery of innovation and development projects, quality of vendor services, possible side effects of products and substitution of old products by new technologies. The final area of competition is based on new arrivals and substitute products, varying competitor tactics and strategies and rival or substitute products available on the market. (Mohr, Sengupta, & Slater, 2010) These main areas are gathered and visualised in Figure 6.

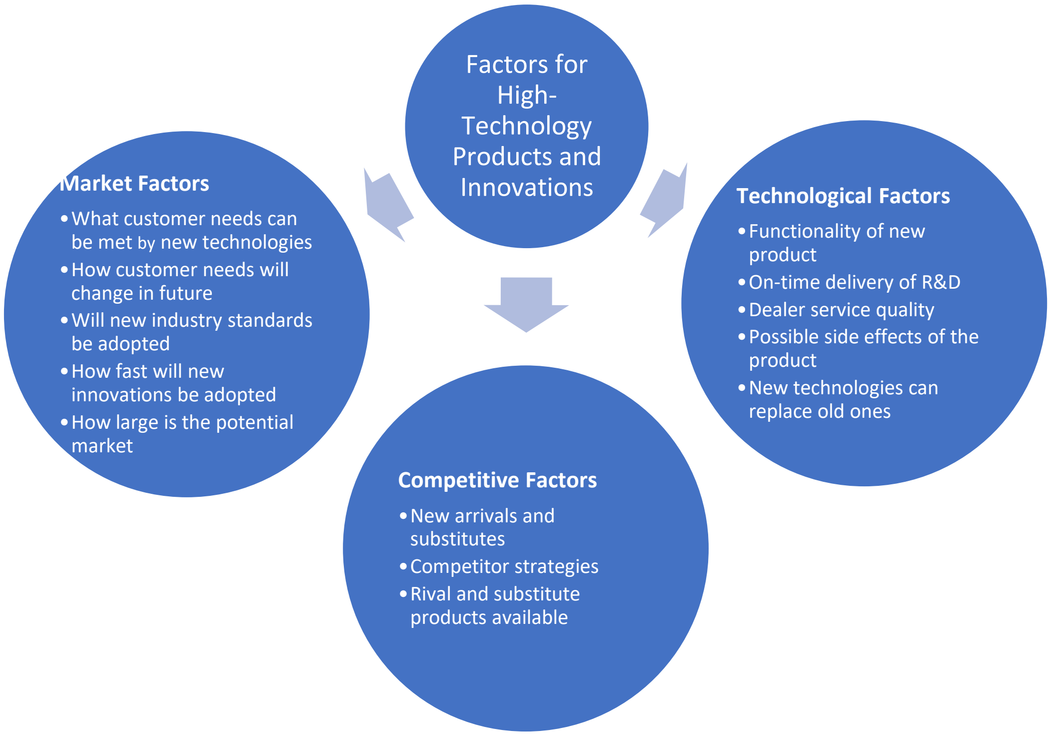


Figure 6 High-Technology Environment 2. (Modified from: Mohr, Sengupta, & Slater, 2010, p. 11)

2.2 Market and portfolio assessment

Strategic options are usually not formulated in sufficient detail to allow reliable estimations or calculations of outcomes, resulting in analysing substitute aspects of options. The main substitutes are the assessment of target position of business and assessment of the target portfolio, as seen in Table 1.

Target business considers the different outcomes from the possible strategic options. This position is separated to two main criteria: market attractiveness and competitive strength. Market attractiveness is mainly potential market growth and the future state of the market in the end of the planned period. Also changes in competitive intensity and estimations for potential margins are evaluated. Competitive intensity leads us to the competitive strength, which refers to the company's strength in comparison to competitors in the market at the end of the planned period. Therefore, giving indication of the potential market share. This market share estimation is highly based on assessing the strengths and weaknesses via a SWOT analysis or other such tools. The implementation and possibilities to enhance strengths and mitigate weaknesses effects the final competitive capabilities in the market. (Grünig & Kühn, 2015)

Assessment of the target portfolio is the second step for comparing strategic options, this is a crucial part of the process and covers three main areas: portfolio balance, potential synergies and worst-case survivability of the company. Portfolio balance looks for the balance between the investment required, there should be a balance of cash flow from mature markets and future cash flow from growing markets that require investments. Also, the potential synergies inside the portfolio shall be analysed, as company performance is directly linked to synergies. Finally, the worst-case scenarios should be run through to guarantee the survival of the company, even if every risk realises. This might be challenging to do thoroughly, but even speculation and discussion about the possible scenarios is often useful. (Grünig & Kühn, 2015) Looking into the aspects of these assessments it could be argued that: the assessment of the target position of each business is a more market based-view and assessment of the target portfolio is a more resource-based view. With this assumption the assessments can be seen in Table 1.

Table 1 Corporate strategy assesment matrix (Modified from: Grünig & Kühn, 2015)

Assessment of the target position of each business (Market-based view)	**Assessment of the target portfolio (Resource-based view)**
• Attractiveness of the market (market growth) • Competitive strength (market share)	• Portfolio balance • Synergies inside portfolio • Robustness

One classic division is the growth-share matrix also known as Boston Consulting Group (BCG), where market growth and market share are the two axes of a four-block. Market share being the horizontal axis and market growth rate the vertical. The four segments are usually referred to as dogs, question marks, stars and cash cows, as seen in Figure 7. Dogs are low on growth rate and market share, which therefore usually have no great future ahead, but may be self-sustaining and provide cashflow. Question marks require investments and cash to increase their market share in a growing market. Cash cows are already up and running, providing cash flow for other and require minimal investments, usually at the end of their lifecycle. Stars are product or businesses with high-growth rate and high market share, that might require investments to keep up with rapid market growth. Generally, the aim is to gain cash flow from Cash Cows that can be used to accelerate the growth for high growth rate markets, also known as Stars and Question Marks. (Kotler & Armstrong, 2017) Question marks need to improve market share to move to the star section or go towards the dog strategy. Starts need to increase or keep the current market share and invest in resources and marketing, even if it creates negative cash flow for a while. Dogs should be treated by minimizing investment and continue as long as positive cash flow keeps coming. Those categorized as cash cows aim to preserve current market share and invest defensively in marketing and resources. These suggested actions are summarized in Figure 7. (Grünig & Kühn, 2015)

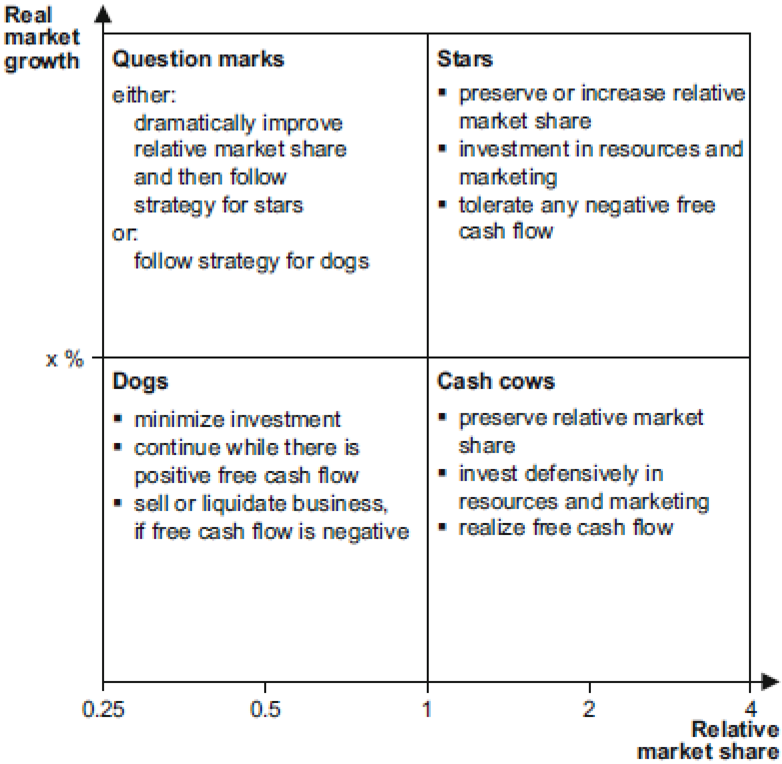


Figure 7 Norm strategies in the Boston Consulting Group approach (Grünig & Kühn, 2015, p. 119)

These similar strategies and categorization will used for a lower scope analysis inside the product portfolio of the case company with slight modifications. The vertical axis will represent growth potential of the product family and horizontal axis the current portion of revenue. The suggestions for action will remain the same. As the focus of this study is on the resource-based view the relative market share in the market was not chosen for an axis, or the global growth potential of different segments.

From a financial point-of-view there is one key metric for the product lifecycle, cash flow. For products there are two kind of cash flow:

- market cash flow from new products
- service cash flow from delivered products.

Below in Figure 8 the generic lifecycle is presented with the vertical axis of cash flow and horizontal axis of time. Companies constantly seek to find ways to grow cash flow by maximizing revenue stream, as this free cash enables new product development and investment in mature markets. For long-term sustainable value-creation the portfolio should have a good balance of low-growth high-volume products that create cash flow and high-growth low-volume products that require inputs to grow. (Saaksvuori & Immonen, 2008)

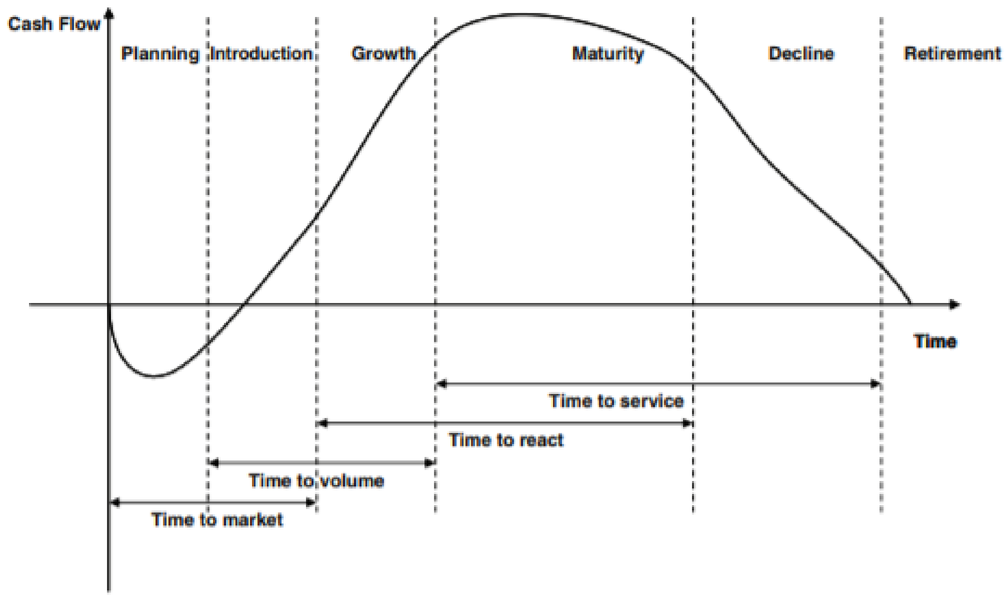


Figure 8 The generic lifecycle model with appropriate PLM metrics for measuring the business performance in each lifecycle phase (Saaksvuori & Immonen, 2008, p. 192)

The above idea can be seen similar to the ideology of the Figure 7, but in a different scope. The analysis of current portfolio cash flow or revenue could thus be used as an indication of the balance inside the portfolio in this thesis. This is used as another resource-based view to analyse the current status of the company.

Even though product lifecycles may shrink in some products, the operating life may lengthen. Companies must consider service lifecycle as well as the market lifecycle. Companies are increasingly optimizing lifecycle revenue and profits through product warranties, spare parts, and upgrade kits. This leads to dividing sales in:

- New product sales
- Upgrade and modernization sales
- Maintenance service sales

As seen in Figure 9, the timeframe of service/operation lifecycle is generally much longer than the time of market lifecycle. (Saaksvuori & Immonen, 2008)

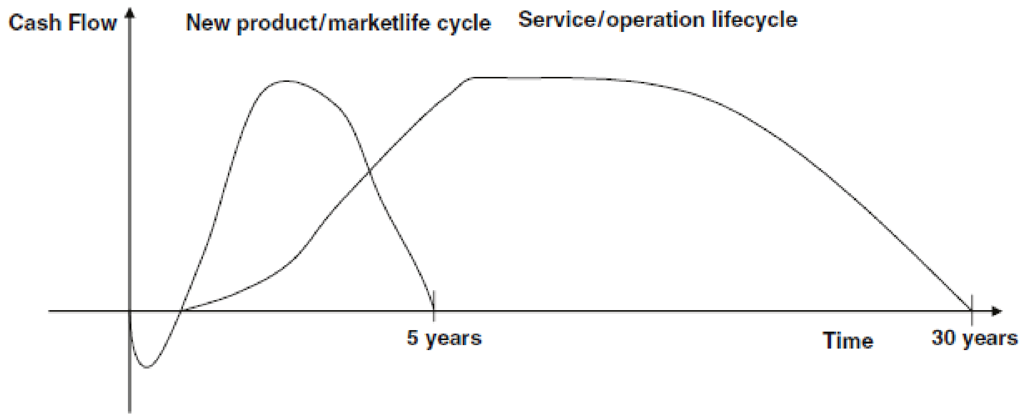


Figure 9 The relation of the new product lifecycle to the service lifecycle of delivered (Saaksvuori & Immonen, 2008, p. 194)

Portfolio analysis is the process by which management evaluates the businesses and products that make up the company. (Kotler & Armstrong, 2017) For this study this is scoped down to only consider the products of the company and not different businesses.

Effective strategy planning consists of five main steps according to Mohr, Sengupta, & Slater, 2010, as can be seen in Figure 10 below. The first step is assessing the resources and competencies of a firm, which is followed by answering the key strategic questions and selecting generic strategy. Creation of organizational structure and processes follows this, and finally the criteria for measurement should be defined. These different phases and areas work as baseline for the structure of the study, represented in Figure 10.

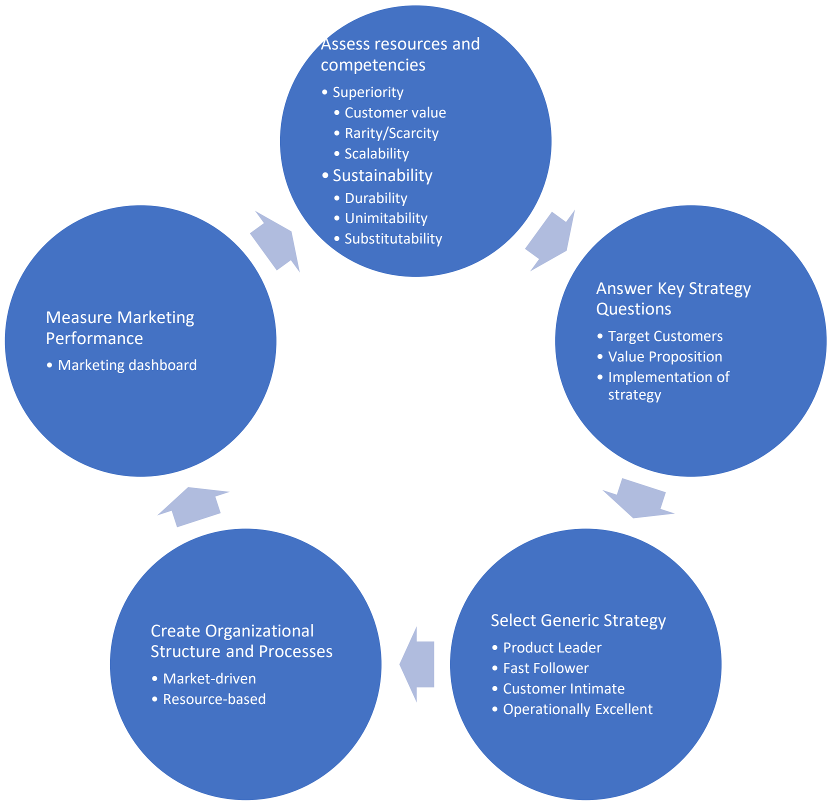


Figure 10 Effective strategy planning in high-tech firms (Modified from: Mohr, Sengupta, & Slater, 2010)

2.3 Areas connected to strategy

To illustrate the overall strategic environment, there are three key elements that form the strategic triangle, which are the customers, the competitors and the corporation (Kenichi Ohmae, 1991). By analysing these three elements it is possible to find key success factors and create a good strategy. This model is illustrated in Figure 11. The framework is used as a base to illustrate the different focus points of this study and how they link to different areas of strategy, especially during the empirical part of the thesis. "*Interestingly, in business-to-business settings, service support, personal interaction, and the ability to improve the customer's operations are more important than product quality, delivery performance, and acquisition spending in helping a firm maintain its key supplier status with customers over the long term.*" (Mohr, Sengupta, & Slater, 2010), which highlights the importance of adding customer value, as also mentioned in Table 2.

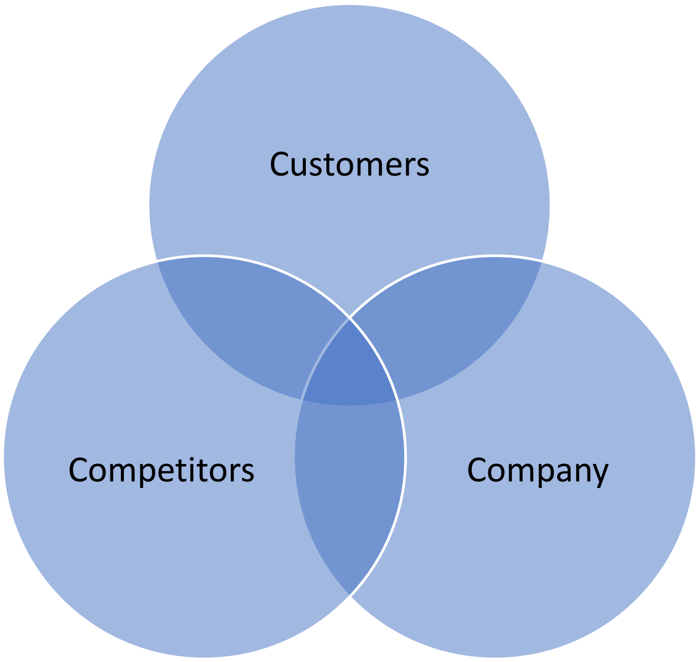


Figure 11 3C´s strategy model (Kenichi Ohmae, 1991)

Table 2 Criteria for assessing success potentials and strategies (Grünig & Kühn, 2015, p. 29)

Types of criteria / Success potentials	**Assessment from market side**	**Assessment from competitors side**
Market positions	Assessment of the market attractiveness of the targeted market	Assessment of the strengths of the attained or attainable market position
Offers	Assessment of the characteristics of the offer to cover customer needs	Assessment of the relative strengths of the offer compared to the competitors
Resources	Assessment of the ability of resources to produce customer value	Assessment of the uniqueness and sustainability of resource advantages

Company strategy and product strategy are closely linked together and affect each other. Current situation of the product portfolio influences the strategy for future business needs, as well as changes in the environment or technologies. Therefore, some companies have even separate technology strategies. Company strategy should be aligned through product strategy and product portfolio, down to the level of product management. Alignment of implementation crosses from product strategy, product portfolio, product roadmap, product business cases, product management and even individual analyses. The different of strategy implementation from product point-of-view are presented in Figure 12. (Saaksvuori & Immonen, 2008)

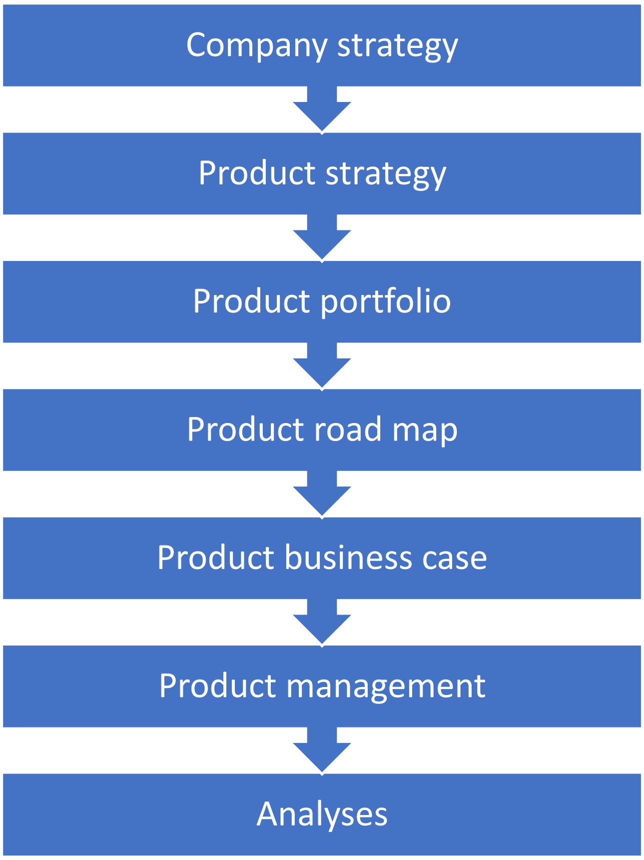


Figure 12 Strategy alignment and correlation (Modified from: Saaksvuori & Immonen, 2008, p. 209)

Agile and quickly adoptive companies with aligned strategies tend to stay ahead of their competition. As companies must react to changes in the environment such as technologies, customer requirements, market and supply-chains. In addition to external changes in the environment, companies should also adapt their strategies based on feedback and analysis of internal performance. Changes in business strategy also effect companies at a lower level. All these changes are initiators of change and need to be implemented throughout the organization from company strategy down to product management analyses. The overall equation and correlation between these variables is presented in Figure 13. (Saaksvuori & Immonen, 2008)

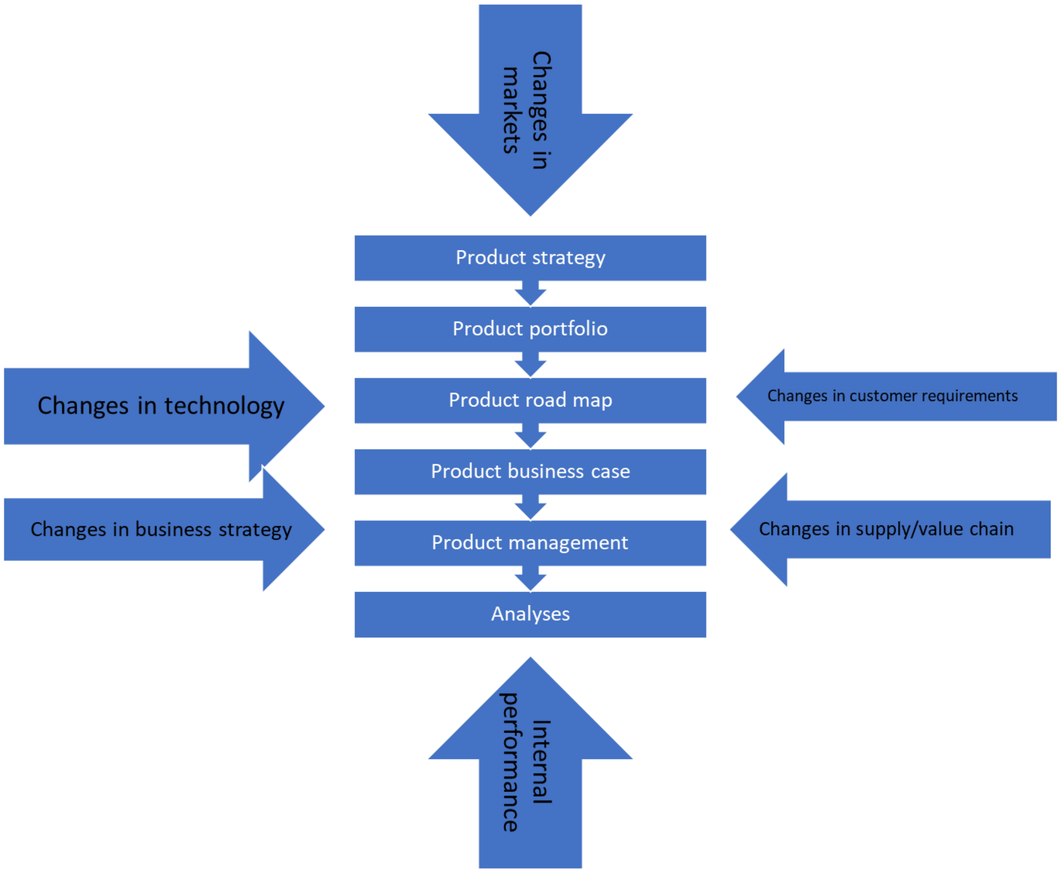


Figure 13 Business environment and strategy impact on product management (Saaksvuori & Immonen, 2008, p. 209)

3 SOURCES OF COMPETITIVE ADVANTAGE

"*The purpose of strategy is to create competitive advantage, a position where a firm is able to create more value for customers than its competitors*" (Mohr, Sengupta, & Slater, 2010, p. 48)

This chapter will go through the different sources of competitive advantage. The basic separation between resource-based and market-based view will be discussed in the beginning, and the chosen approach will be introduced. The generic views to see strategy creation will be discussed and three strategy frameworks will be introduced. From these frameworks two will be chosen for further research. Similarities to the current existing model in the case company and the availability of background information will be assessed. Based on this information there will be a final decision which framework will be utilized in the empirical part.

3.1 Generic strategic views

This chapter will analyse the general frameworks utilized to explain the basic corporate strategy archetypes. The variables and factors that should be considered when making strategic planning and decisions are also investigated and explained. There are many models to divide and describe different basic strategic options. Some divide to four different categories and other to even smaller sub-categories.

There are two basic views for strategic market planning: resource-based view and market-based view. Market-based view operates under trail of structure-conduct-performance and resource-based view operates under the logic of resources-conduct performance. Market-based view assumes that firms choose industries and strategic groups and their success is based on the structure. Firms analyse the possibilities of industries and strategic groups and build up the required offerings and resources. Long-term success is then based on the attractiveness of the chosen industry and strategy group and the level of execution. Resource-based view assumes that companies obtain some resources over time, either systematically or randomly. These resources are the utilized to create offerings for specific markets. Long term success is based on the ability to create offerings that fulfil customer needs. (Grünig & Kühn, 2015) The key differences and structure for market-based and resource-based views are summed in Figure 14.

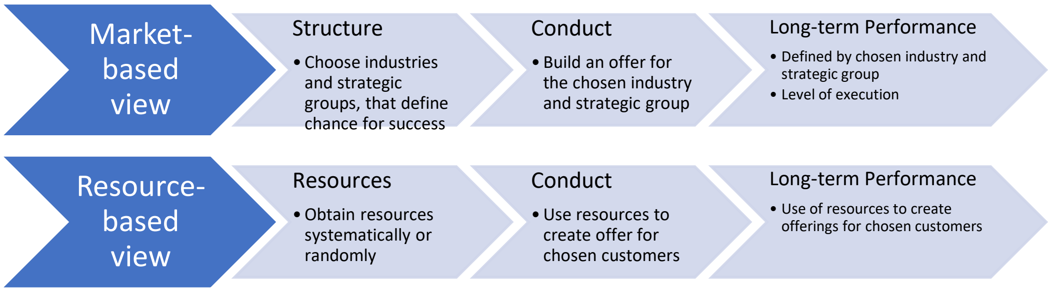


Figure 14 Market-based and Resource-based views (Modified from: Grünig & Kühn, 2015, p. 22)

Strategic planning highlights strength and weaknesses of organizations, this can be used to find out opportunities for growth and predict potential future challenges. It reveals the current status of the company that serves as a baseline for comparison to the desired future state. Strategic planning aligns short-term goals that will, with proper execution and implementation, also fulfil long-term goals. “Check-the-box” attitude and too strict process leading to bureaucracy should be avoided. Strategic planning is aligning the goals from different timeframes together and guiding the organization towards the chosen direction. The focus is internal alignment and development of the company desired future state. (Botoc, Pirtea, & Nicolescu, 2009). This quotation brings to point the scoping of this study to focus more on the resource-based view or the company point-of-view.

Firms differ from each other by their varying resources and capabilities. Therefore, three aspects are essential to be covered when creating firm’s internal analysis and strategy. To begin with the first thing is identifying and measuring resources and capabilities. Secondly these capabilities and resources analysed to evaluate their value and usefulness. Finally, these capabilities and resources need to be obtained and exploited in the company strategy. (López & Martin, 2013) This process of linking capabilities and resources to competitive advantage and strategy can be seen in Figure 15. Identifying current status of existing resources and capabilities is as important as realizing the lack of those (Mohr, Sengupta, & Slater, 2010).

From resource-based view the company's strategic success if defined by its resources, that have been built up on purpose or developed over a long time period. A company's resources constitute the basis of its strategic success. Advantageous market positions are enabled by outstanding product and service offering the are created by these resources. Competitive advantage on offer and resource level creates success for a company. (Grünig & Kühn, 2015) Successful identification and implementation of firms resources and skills provide a set of firm specific competencies that support and advance superior performance. (Powers & Hahn, 2002). By summarizing the above finding the chain from could be interpreted to go as follows: identify and measure resources and capabilities, evaluate these resources and capabilities, obtain and exploit these resources and capabilities in strategy and gain competitive advantage. This chain is visualized in Figure 15.

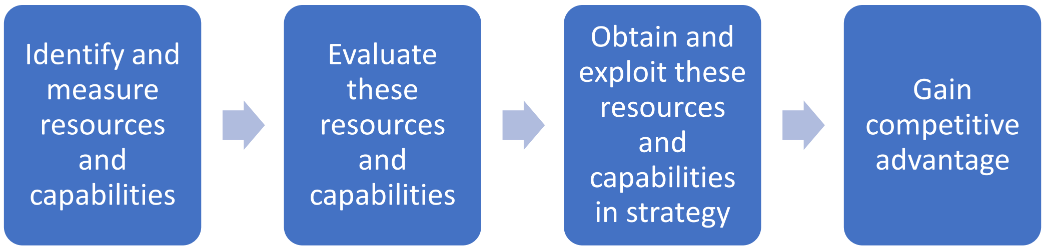


Figure 15 Resources and capabilities to competitive advantage process

Resources

The foundation for creating superior customer value are the firm's resources, as seen also from the Figure 15. Resources are divided into physical assets also called tangible assets and intangible assets. Tangible assets are material and financial resources, such as, manufacturing plants, information systems, distribution facilities, and products. While brand equity, customer loyalty, market knowledge, distribution channels and customer knowledge are intangible assets. Intangible resources can further be divided into non-human and human resources, where patent portfolio, reputation of the firm, well developed partnerships or network are non-human. Intangible human resources are for example knowledge and skills of workforce. (Mohr, Sengupta, & Slater, 2010, 2010; López & Martin, 2013) Specific scarce and unique resource hold high strategic value (Grünig & Kühn, 2015). The division of resources into intangible and tangible, as well as, non-human and human, can be seen in Figure 16 below.

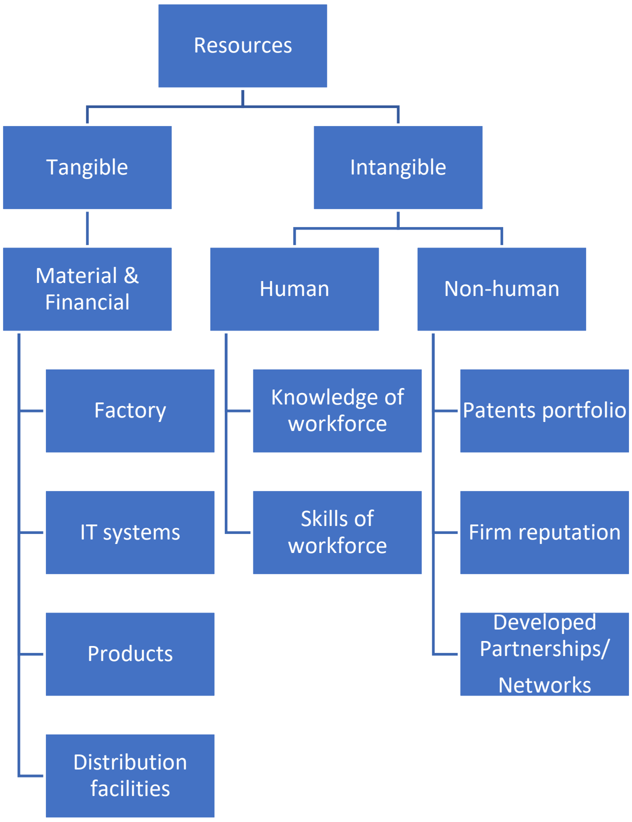


Figure 16 Categories of resources

Capabilities

Corporate strategy needs to be suitably managed to implement resources and capabilities. Management can be either improved availability of resources and capabilities, or by more efficient strategic exploitation of resources and capabilities. Availability of resources and capabilities can be done by developing and improving current or by acquiring new from outside. The other way is improving outputs by more efficient use of resources. (López & Martin, 2013)

Capabilities have varying definitions; it is defined to have a dynamic nature and to be the ability to perform a task or activity. Company capabilities can be divided into operational groups, such as, purchasing & sourcing, manufacturing, sales & marketing, research and development (R&D) and performance management, that have capabilities linked to them. Purchasing & souring have capabilities of defining specifications and obtaining price quotations. Manufacturing has capabilities of tool engineering, process technology, assembling, testing and economies of scale. Sales & marketing might have capacity to product management, promotion, distribution, service and pricing. Research, experiment, product development and design & engineering are the capabilities of R&D. Performance management consists of the capabilities like performance review, performance reward system and information processing. (Hafeez, Zhang & Malak, 2002)

Sales promotion are short-term incentives to encourage the purchase or sale of a product or a service (Kotler & Armstrong, 2017). Opportunity recognition, organizational culture, organizational learning and innovativeness can be seen as Organizational capabilities (Latifi & Bouwman, 2018). The above-mentioned capabilities are presented in Figure 17 as an illustration of the framework to be used in the case study.

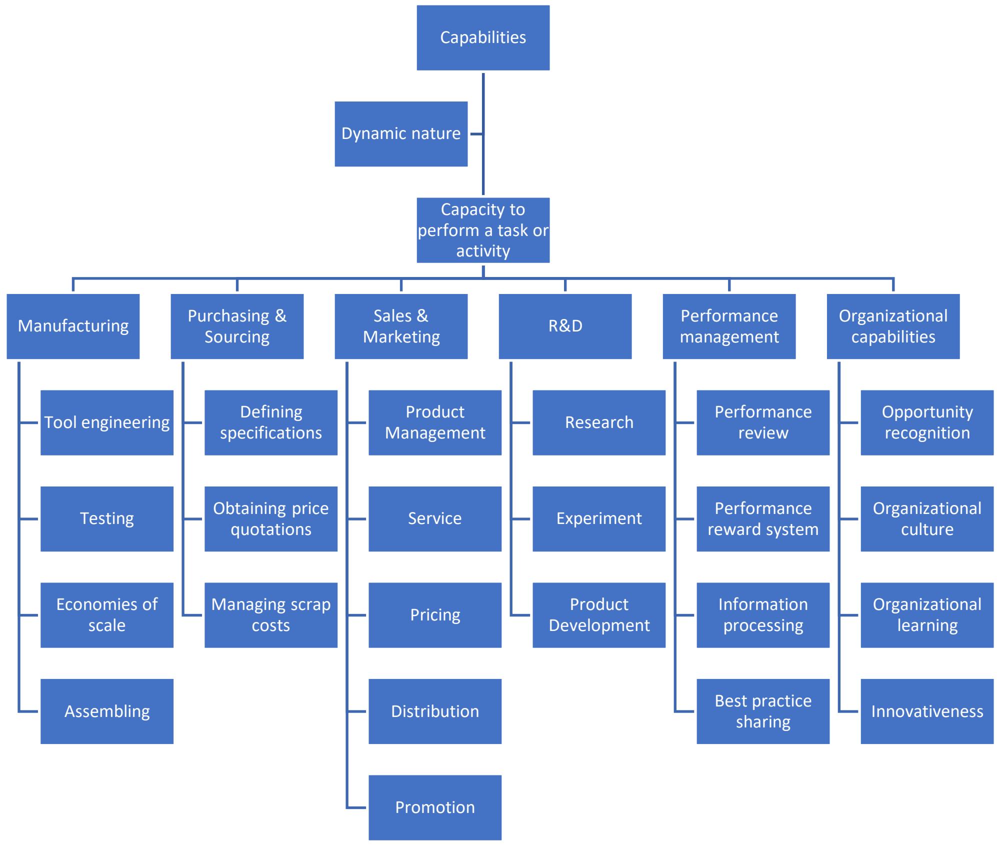


Figure 17 Organizational capability examples from case company

Core Competences

Competence is a suite of skills that enable a firm to achieve new resources configurations as markets, environment and the company evolves. Competences include market information gathering, interpretation and use, customer, supplier and distributor relationship management and product development for new and existing products. (Mohr, Sengupta, & Slater, 2010; Gupta, 2013)

Core competences are the section of competences possessed that differ from competitors and are the main driver for competitive advantage. Core competences have three characteristics: they are difficult to imitate, are highly related to benefits customers seek, and enable scalability of these competences to new product markets. Competences are not ordinary skills that can be acquired easily, but unique skill-based sets that are hard or impossible to copy by competitors in short-terms. Beneficial competences work as order winners for customers, not as order qualifiers. If competitors are up to date with competences, they become qualifiers, and no longer separate companies from each other. Core competences will rot away in time if it not constantly maintained, as customers will get used to the current status and demand more. This forces companies to constantly improve to maintain their core competences and gain competitive advantage from them. (Mohr, Sengupta, & Slater, 2010; Gupta, 2013)

According to Grünig and Kühn, valuable resource that contribute to gaining competitive advantage are able to create customer value, rare and hard to imitate or substitute. The same criteria of rare, imperfectly imitable and non-substitutable are also presented by Barney, 1991. Core competences also have the characteristic of durability (Mohr, Sengupta, & Slater, 2010). The same subjects are clear from different sources, and main criteria for core competences are summed in Figure 18.

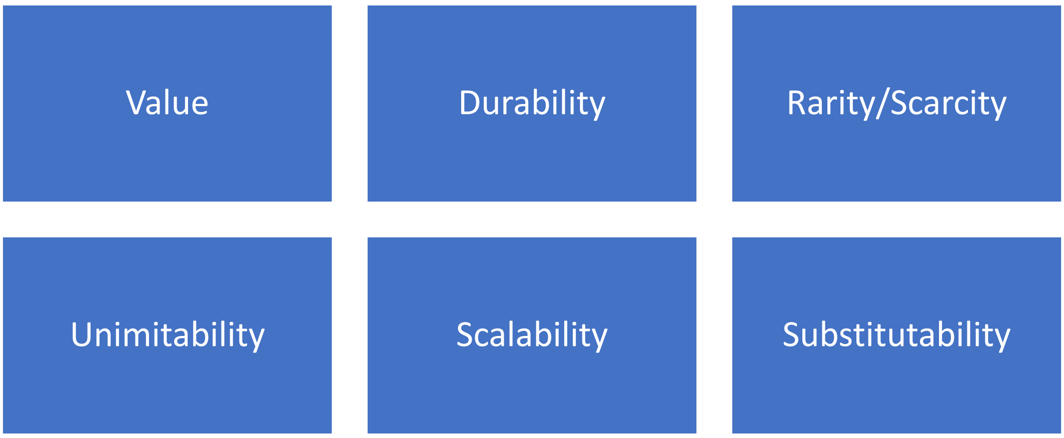


Figure 18 Identified characteristics of core competences

The importance of above discussed core competences is summed up on the below quote:

"*World Class Organizations have to build sustainable competitive advantage through core competencies. A firm's existing core competencies reflect the fundamental skills and knowledge behind its successful products. They may relate to world leadership in specific technologies or they may be related to particular organizational or managerial skills.*" (Gupta, 2013, p. 12)

Competitive advantage is implementing a value creating strategy that is not implemented by any of its current of potential competitors (Barney, 1991). Sustainability of competitive advantage can be tested with four aspect, which are: customer value, resource rareness, durability & inimitability (Mohr, Sengupta, &

Slater, 2010). With the previously mentioned rotting of core competences and sustainability of competitive advantages bring us to the core competency of future. Competence based strategy is part of overall strategy, that integrates current and future competences to build a suit that greatest superior value for customers (Gupta, 2013). The current state of core competences might be rather different than what the future brings. Sustained competitive advantage is implementing a value creating strategy not implemented by any current or potential competitors, that has benefits competitors are unable to duplicate (Barney, 1991).

For the whole resource-based view, there seems to be a clear chain from the literature. Intangible and tangible resources found in Figure 16 Categories of resources, are utilized to form capabilities explained in Figure 17 Organizational capabilit. These capabilities together form a higher group of competences, which can be evaluated against criteria found in Figure 18 Identified characteristics of core competences, to find the core competences. The core competences should be exploited in strategy to gain competitive advantage or put effort to obtain missing core competences. Therefore, it seems that there is a clear link and connection throughout the chain from resources to competitive advantage. For the analysis and empirical part of this study, this connection will be analysed for an audit-trail that connects both ends to each other. Searching for the trail from strategy to resources, and resources to strategy. These connections visualized in Figure 19.

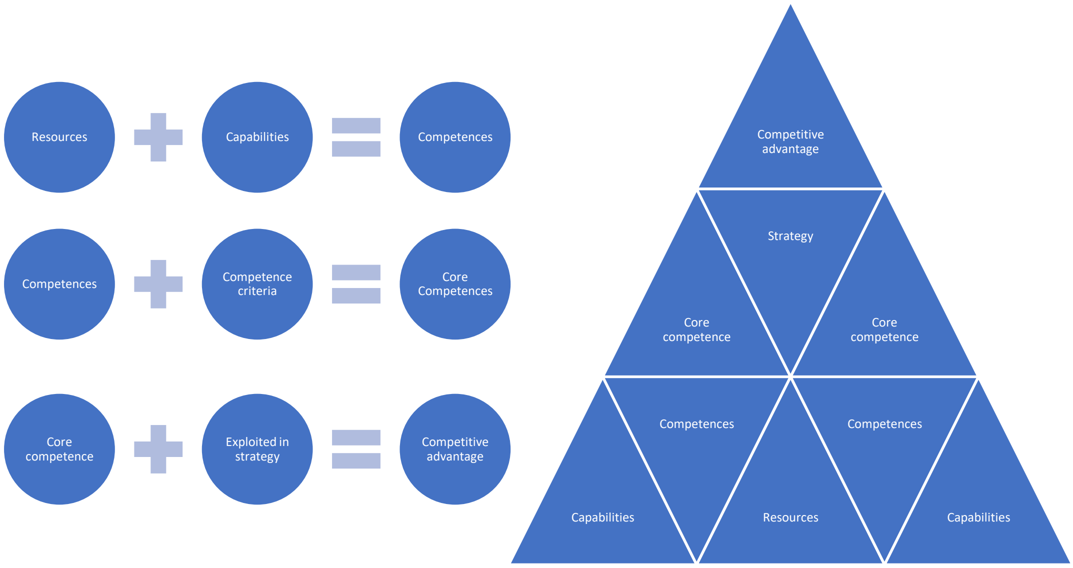


Figure 19 Resource-based view audit-trail formation

"Unless the core competency, tied to the portfolio of firm's products, can offer the Organization dominance in its industry, it is irrelevant" (Gupta, 2013, p. 14). This citation of Gupta pulls together the audit-trail of the resource-based view and enhances the need of understanding the system as a whole.

Unique selling proposition is a positive difference in the product offering for the customer, which might be in the product itself or the service provided. This leads to favourable actions of the customer towards this company instead of competitors. Unique advertising proposition is the communication part of the offering that affects the customer perceptions regardless of the actual offering. This is usually a combination of correct communication and communication intensity. (Grünig & Kühn, 2015)

Summing up the previous findings, customer perceived value could be illustrated as a function where the actual product summed with communication results as the customer perceived value, as seen in Figure 20. This applies to all situations regardless of the utilized strategy framework.

Figure 20 Customer perceived value

Therefore, it might be argued that company image and marketing can also be seen as a way to affect the customer perception. This could apply either to individual products or services, as well as the whole company image and the assessment of actions. There might be a difference in the customer perception and the company´s own perception.

3.2 Strategy analysis frameworks

The generic strategy types are based on the assumption that sustainable competitive advantage can be based only on low cost or different offering, thereby resulting in cost leadership, differentiation and focus strategies as three generic options (Porter ME, 1980). When taking into account the scope or target markets, these same main types can also be divided resulting in whole market price strategy, whole market differentiation strategy, submarket price strategy and submarket differentiation strategy (Grünig & Kühn, 2015).

Depending on the sources and literature, there are some main elements that remain similar, even though they might have different names. So, as the words of Armajani Babak "*...elements are important; what you call them is not.*" (Armajani, 2012) There is discussion and controversial opinions whether these strategies can be implemented simultaneously or not, for example by means of high differentiation leading to growth in market share that leads to higher volumes, therefore decreasing costs (Yamin, Gunasekaran, & Mavondo, 1999).

Aligned with Armajanis saying, for clarification these generic strategy types will be further discussed with the latter names that are shown in Figure 21, assuming that there is no simultaneous existence of strategic options available.

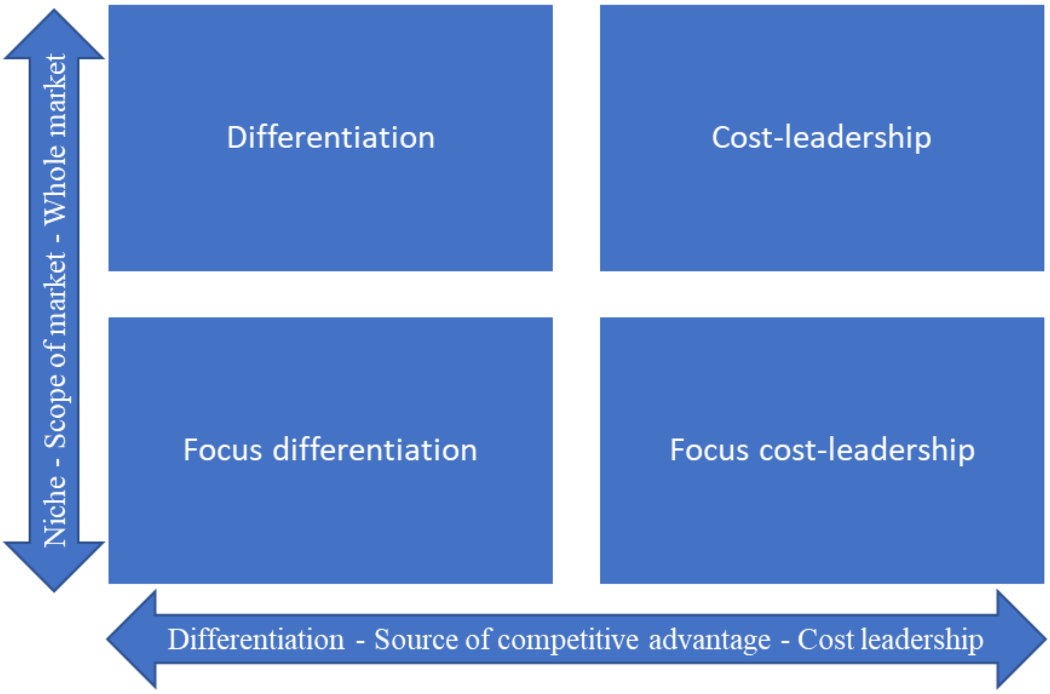


Figure 21 Generic strategies (Adapted from: Porter 1980, p. 39 & Grünig & Kühn 2015, p. 188)

Another way of analysing strategies is the Strategy clock, which is a way to define different strategies and map them based on their customer perceived value and price. This is separated into 8 different sections, as opposed to the previously mentioned four blocker. Resulting in the following strategies: low price & low added value, low price, hybrid, differentiation, focused differentiation, risky high margins, monopoly pricing and loss of market share. These different strategies and their positions on the strategy clock can be seen on Figure 22

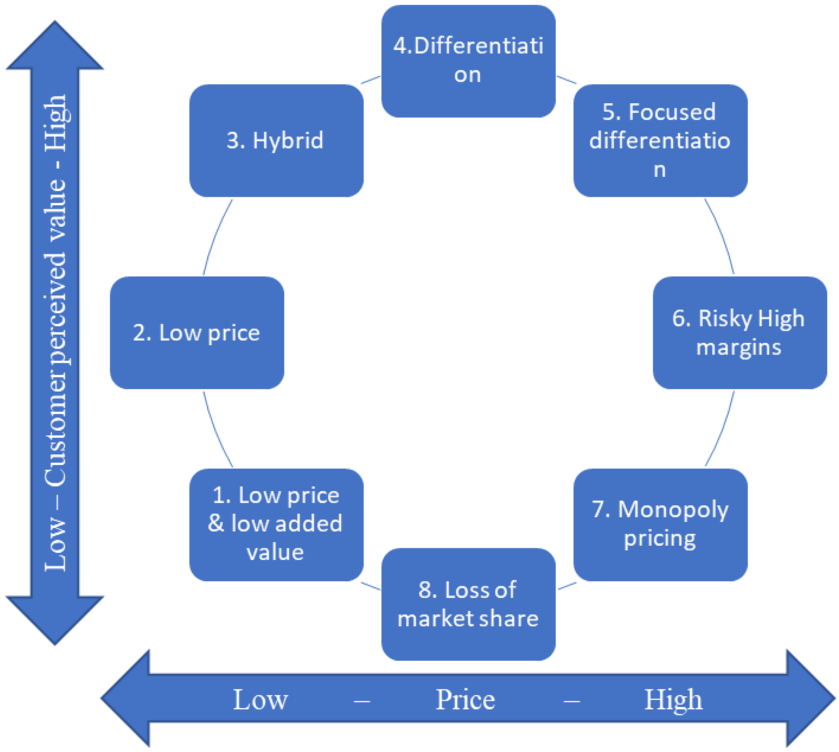


Figure 22 Strategy clock (Bowman & Faulkner, 1996)

This more detailed separation of strategies is another model that could be utilized to map the different strategy types, but due to simplicity and the suitability of existing literature related to Porters generic strategies, this is scoped out of this study. The linkage of success conditions for the strategy clock locations is a place for future research.

Another separation of generic strategy archetypes is the division to the following four groups: Product Leader, Fast follower, Customer intimate and Operationally Excellent. Product leader tend to target the innovators and early adopters with new innovative products to "skim off" the markets. For Product Leaders the key thing is speed of commercialization and is an inherently risky strategy to go with. There is a clear trade-off among time to market, product innovativeness and development costs. Pioneering has great development costs and high uncertainty. For long-term the product pioneers tend to be less profitable than later entrants. (Mohr, Sengupta, & Slater, 2010)

Fast Followers essentially imitate the Product Leaders successful products and improve that offering in some way. Points of difference to Product Leaders, superior product, lower price, excelling in advertising or distribution, and different business models or strategies of execution. Most successful Fast Followers target early adopter and early majority customers. Late Entrants tend to grow faster and have higher market potential. (Mohr, Sengupta, & Slater, 2010)

Customer Intimate are focused on delivering something for a specific customer groups or individuals. The focus is on relationships, not just individual transactions. Customer Intimates are often successful with targeting early majority and late majority of market customers. As product and technologies become more commoditized, there is less room for differentiation and customer intimacy and service can easily become the differentiating factor between competitors. With great value added for the customers through service and precise matching to customer wants, Customer Intimates can often reach high margins. (Mohr, Sengupta, & Slater, 2010)

Operationally Excellent strategy focuses on technological, production and distribution efficiency, to achieve cost leadership position. By efficiency in operations they can position themselves in the market with lower prices. The target customers are early and late majority customers, with the offering of excellent combination of quality, price and ease of access. (Mohr, Sengupta, & Slater, 2010)

These four archetypes are show in Figure 23. For the strategic planning process, there are some tendencies and differences between these strategy archetypes, from the point-of-view of formal vs emergent strategy formation. As these both ways of formatting strategy are supplementing and supporting each other, for product leaders there is more emphasis on the emergent strategy formation, due to the more dynamic conditions and high focus on innovation. As on the other end of the spectrum the Operationally Excellent operate in a more stable environment and can emphasize the formal strategy formation over a formal one.

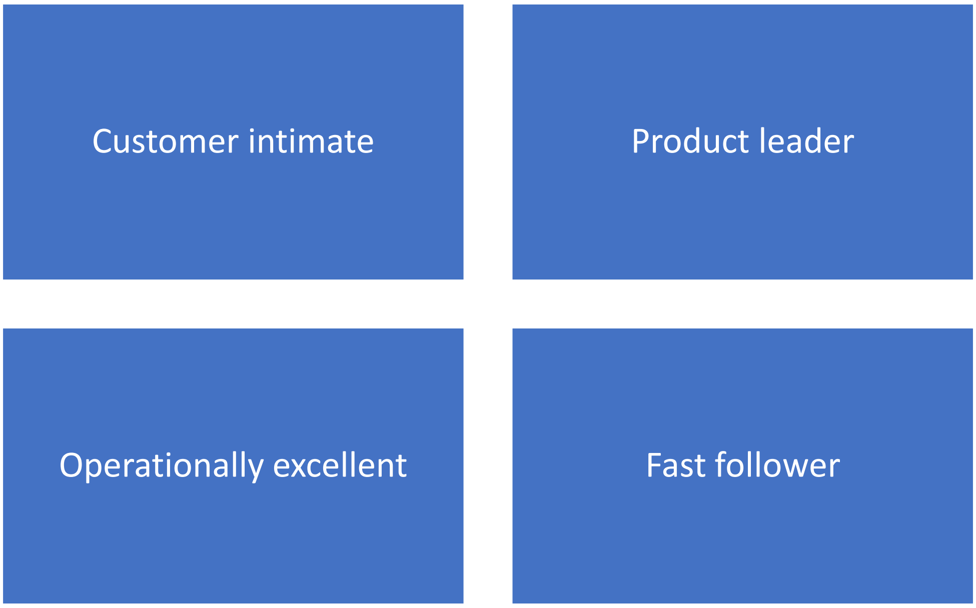


Figure 23 Strategy archetypes (Mohr, Sengupta, & Slater, 2010)

Summing up the findings of this strategic options analysis, there were three main candidates to be used in this thesis. Generic strategies (Porter 1980; Grünig & Kühn, 2015), Strategy clock (Bowman & Faulkner, 1996) and Strategy archetypes (Mohr, Sengupta, & Slater, 2010), already presented above, which are summed in Figure 24. The chose strategic framework to further analysis were the Strategy archetypes (Mohr, Sengupta, & Slater, 2010) and Generic strategies (Adapted from: Porter 1980, p. 39 & Grünig & Kühn 2015, p. 188) due to the similarities to the case company's existing way of analysing strategies and recommendations of the target interviewees.

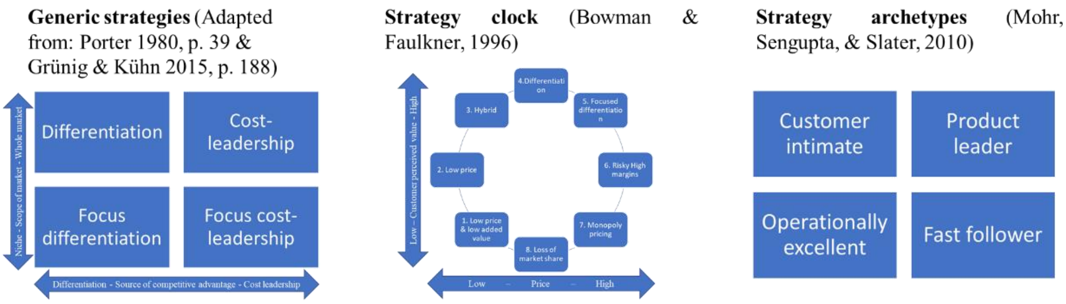


Figure 24 Summary of strategy theories

3.3 Characteristics available for frameworks

This chapter will look into the characteristics linked to two chosen strategy analysis frameworks above. The aim is to have a more thorough look at these frameworks and decide which of them is more suitable for this case company. Decision will be based on available characteristics and relations to the existing frameworks utilized by the case company.

Characteristics for Generic strategies (Adapted from: Porter 1980, p. 39 & Grünig & Kühn 2015, p. 188)

With Price strategy the company seeks to target the entire market and distinguish from other competitors by lowest price. This would ideally require a noticeable difference in price, for high volume products. Low fixed and variable cost from efficient operations are usually a key prerequisite for this strategy. However, the product should be from quality perspective at a decent level. (Grünig & Kühn, 2015).

Price strategy is divided to more detail elements of cost leadership items that are: supplier logistics, inventory management, human capital development, efficiency improvement and value chain. Supplier logistics can be measured by performance in cost control, quality and delivery and effectiveness of value-added products. Inventory management can be measured by inventory turnover of raw materials, work in progress and finished products. Human capital development is measured by improvement in supervisor, management and shopfloor skills. Efficiency improvement was measured on utilisation and improvement of software technologies. (Yamin, Gunasekaran, & Mavondo, 1999)

High-tech companies are recommended to clearly highlight the superiority in value proposition and not pricing. Modest price inducements for switching clients and trial periods are seen beneficial, but heavy focus on price may be accounted for lower quality that needs to be compensated with pricing. Extreme pricing attracts mostly price-sensitive customer who are often less profitable and have lower customer loyalty. Customers who operate mostly when deep discounts are offered buy smaller quantities than average and waiting for next company to give discounts are often referred to as “price butterflies” (Mohr, Sengupta, & Slater, 2010).

Differentiation strategy is divided by critical components to customer service, technology leadership, product differentiation and logistic differentiation. Customer service have components of effective and fast decision making, customer service superiority, price difference, high quality and trust on service and product quality accompanied with human resource management. Technology leadership consist of critical components of uniqueness in technology, assets, product and skills. Product innovation have characteristics of product or brand image, and innovation in marketing techniques. Whereas the final differentiation strategy group logistic differentiation is about flexibility in volume of production and the product mix. (Yamin, Gunasekaran, & Mavondo, 1999)

For full benefits on customer acquisition investments the offered products must fulfil target market and customer needs. Personal connecting and service support combined with sales expertise help provide improved workflow efficiency and effectiveness for the customer, and maximize the customer value (Mohr, Sengupta, & Slater, 2010). In a differentiation strategy the offering is distinguished from competitors by a unique selling proposition, which should be perceived by the customer as a valuable addition. Therefore, increasing the customer perceived value and enhancing the company’s competitive strength. (Grünig & Kühn, 2015).

Focus strategies are divided to product-based niche markets and customer-based niche markets. Targeting product niche markets require segmentation, specialist products with varying needs and alignment of resources to fulfil those needs. Customer niche markets have critical components of customer group sizes, different customer types and breath of product lines. (Yamin, Gunasekaran, & Mavondo, 1999)

Focused price strategy and focused differentiation strategy are different from the market scope, as they only target a smaller submarket or niche. These smaller niches often have specific needs that can be targeted. (Grünig & Kühn, 2015). So, there is a need for heterogenous markets with customer characteristics, such as personalities, or different customer needs, in order to apply a focus strategy to a niche market. All of the above mentioned critical components are compiled in Table 3.

Table 3 Components for Generic strategies. Modified from: (Yamin, Gunasekaran, & Mavondo, 1999)

PRICE STRATEGY CRITICAL COMPONENTS	DIFFERENTIATION STRATEGY CRITICAL COMPONENTS	FOCUS STRATEGIES CRITICAL COMPONENTS
Supplier Logistics (SL) • Supplier–vendor performance in cost control • Supplier–vendor performance in quality • Supplier–vendor performance in delivery • Effectiveness of value-added products	**Customer Service (CS)** • Speed and effectiveness of decision-making systems • Customer service • Price difference • Dependability of delivery • Quality of product and services • Human resource management	**Product Niche Markets** • Market segmentation • Specialist product • Resource alignment
Inventory Management (IM) • Inventory turnover of finished products • Inventory turnover of raw material • Inventory turnover of work in progress	**Technology Leadership (TL)** • Unique technology • Unique assets • Unique product • Unique skills	**Customer Niche Markets** • Size of customer groups • Customer types • Product line breath
Human Capital Development (HCD) • Continuous improvement in supervisor skills • Continuous improvement in shopfloor skills • Continuous improvement in management skills	**Product Differentiation (PD)** • Product image • Innovation in marketing techniques	
Efficiency Improvement (EI) • Utilisation of software technologies • Improvement of software technologies	**Logistic Differentiation (LD)** • Flexibility in volume mix • Flexibility in product mix	

When analysing the differences of generic strategies on the banking industry, Hahn & Power, 2010, found that pursuing a cost leadership strategy exceeded all other strategic options, with most significant superiority to the stuck-in-the-middle group, where there were no clear strategic priorities. The study also found that high emphasis on highly trained and skilled workforce, was a common characteristic for well performing companies.

Essentially, core competency is the resources that you have to carve out a unique strategy, and core capability is what key functions you can perform on your own, or in conjunction with your value chain partners. Both are important during different phases of the lifecycle, but core competencies come to the fore once the value chain takes shape. An important observation to make is that transition from core competencies to capabilities slows clock speed, as at the core of capabilities are processes which take time to master and perfect, often in conjunction with the cooperation of partners. As an example, total quality management (TQM) is only possible if your suppliers and distributors are congruent with your practices, hence the frequently demanded ISO certification in searching for suppliers. As the firm travels along its lifecycle in the market, core competencies yield to core capabilities in importance for strategy making and implementation. As the market relentlessly moves towards maturity, the strategic options get limited both by the value chain partner drag, and the choices left in the market. For mass market players, the complexity of competition is reduced, within small windows of mass customization, to one of a price taker. Hence the only way to generate a profit is to bring down costs and thereby increase margins and profits. The generic strategy choice distils down to just one: cost. (Koplyay, Lloyd, Sanchez, & Paquin, 2012)

The identification of resources and skill does not automatically give the company competitive advantage but provide the possibility and opportunity to exploit these resources and skills to gain cost or differentiation advantages. (Powers & Hahn, 2002) The strategies for exploiting and gaining the most out of the found company specific resources and capabilities are analysed in this chapter.

For the generic price strategy, low price is an important factor. Narrow portfolio and high volumes combined with production efficiency are the key elements for this strategy (Saaksvuori & Immonen, 2008). The company needs adequate resources to be able to target the whole market, capabilities for low cost production, R&D and marketing, as well as a cost-conscious culture in general (Grünig & Kühn, 2015, p. 190). Value chain efficiency can also be seen as playing a major role in creating value with price strategy (Mohr, Sengupta, & Slater, 2010), also found in the form of lending capacity and flexibility by Powers & Hahn, 2004. Expenditures and existence of technology-based delivery systems lower costs and is linked to price strategy, as well as, institutional learning and trained workforce (Powers & Hahn, 2004).

Differentiation strategy is highly based on some aspect of differentiation, this can be done by selecting and responding uniquely to one or more attributes that many buyers perceive as important. For service differentiation this would include a comprehensive service portfolio, high level of service quality of customer value services (Saaksvuori & Immonen, 2008). The implementation of this strategy requires the competence to identify and target specific value adding advantages and resources to be able to target the whole market (Grünig & Kühn, 2015, p. 190). For differentiated strategies the customer knowledge gained from intimate relationships are the key creators of value (Mohr, Sengupta, & Slater, 2010). Promotion resources, broad service/product range, strong branch network and new product development are also associated with this strategy type (Powers & Hahn, 2004).

Focused price strategy relies on competing with a specific niche on a narrow market segment. The important factors are collaboration and design for a specific and matching supply chain, as well as process efficiency (Saaksvuori & Immonen, 2008). Cost-conscious culture, more specifically low-cost production, R&D and marketing are capabilities related to price strategies (Grünig & Kühn, 2015, p. 190). Value chain efficiency can also be seen as playing a major role in creating value with price strategy (Mohr, Sengupta, & Slater, 2010).

Focused differentiation relies on unique value proposition for a narrowed market, by superior products created with best technology and most wanted features (Saaksvuori & Immonen, 2008). Focused differentiation, similar to whole market differentiation is associated with the competence to identify and target specific value adding advantages (Grünig & Kühn, 2015, p. 190). The importance of customer knowledge from intimate relationships defined for differentiation also applies for focused differentiation. Capabilities to market specialty products is linked to focused differentiation strategy (Powers & Hahn, 2004).

There are varying requirements for all of the generic strategies, in terms of resources and capabilities that link to certain core competences. These relations are combined in Table 4.

Table 4 Company related conditions for success with Generic strategies

Generic strategy	Company conditions	Core competence	Capabilities	Resources
Price strategy	• Low Price • High volumes • Economies of scale • Narrow portfolio • Production efficiency	• Cost conscious culture • Institutional learning	• Low cost production, R&D and marketing • Value chain efficiency • Developing and refining offerings • Flexibility and lending capacity	• Financial to target whole market • Technology based delivery systems to lower costs • Trained workforce
Differentiation strategy	• Service portfolio • Customer valued services • Level of service quality • Broad service/product range	• Competence to target advantages • New product/service development	• Intimate customer relationships • Gain customer knowledge	• Financials to serve whole market • Resources to defend differentiation • Promotion expenditures above industry average
Focused price strategy	• Collaboration • Design for supply chain • Process efficiency • Limited range of products	• Cost conscious culture	• Low cost production, R&D and marketing • Value chain efficiency	
Focused differentiation strategy	• Superior product • Best Technology • Most wanted features • Limited range of products	• Competence to target advantages	• Intimate customer relationships • Gain customer knowledge • Marketing of specialty products	

Characteristics for Strategy archetypes (Mohr, Sengupta, & Slater, 2010)

The different customer groups are often linked to certain customers, value proposition and ways to deliver value, as well as, pros and cons. Customer groups of given strategy archetypes are divided according to the diffusion theory and the Bass model, where consumer product adoption is divided based on their relative adoption time. This division leads in the order of adoption, to the following groups: Innovators, Early Adopters, Early Majority, Late Majority and Laggards. (Mohr, Sengupta, & Slater, 2010)

These different variables are presented in Figure 25.

	Who are Customers?	What value?	How is value Created/Delivered?	Pros/Cons
Product Leader (Prospector, Pioneer, First Mover)	Innovators Early adopters	Innovative new products →Incremental innovations have are less risky than breakthrough	Focus on speed, quick commercializing	Pros: • Entry Barriers • Higher profits • Define ideal attributes Cons: • Risky • High failure rate • High R&D costs
Fast Follower (Analyzer)	Early adopters Early majority	Superior products Lower prices New business models	Focus on cost & distribution	Pros: • Innovative late entrants grow faster
Customer intimate (Differentiated Defender)	Early and late majority • Narrow niches • Specific customers	Customized solutions Superior service	Relationship marketing Intimate customer knowledge	Pros: • High margins • Repeat business leads to high customer lifetime value
Operationally Excellent (Low-Cost Defender)	Early and late majority • Mass Market • Price-sensitive customers	Superior combination of quality, price and ease of purchase Cost leadership	Value Chain efficiency	Pros: • High asset turnover rates and asset return rates

Figure 25 Typical characteristics of Strategy archetypes (Modified from: Mohr, Sengupta, & Slater, 2010)

4 UTILIZING THE FRAMEWORK AND ADDITIONS FROM CASE COMPANY

This chapter will utilize the above-mentioned framework to analyse ten companies competing with the case company. Supplementary empirical additions to the characteristics of the strategy framework will also be made from comments based on the case company personnel. This portion of the study is executed as presented in Figure 2 Methodology of the study.

4.1 Additions to the strategic framework

Another point of view with the evolving of the industry and adoption of new technologies is the hype cycle. Presented by Gartner. New innovations and technologies tend to follow traditional cycle kind of nature, where overextension with the hype tend to happen, which results in a drop. The hype cycle represents technology evolving with a figure consisting of two axes, the expectations and time. There are five key phases, Innovation Trigger, Peak of Inflated Expectations, Trough of Disillusionment, Slope of Enlightenment and Plateau of Productivity. The methodology helps separate hype from real drivers and commercial promises, therefore reducing technology risk. (Gartner, 2019)

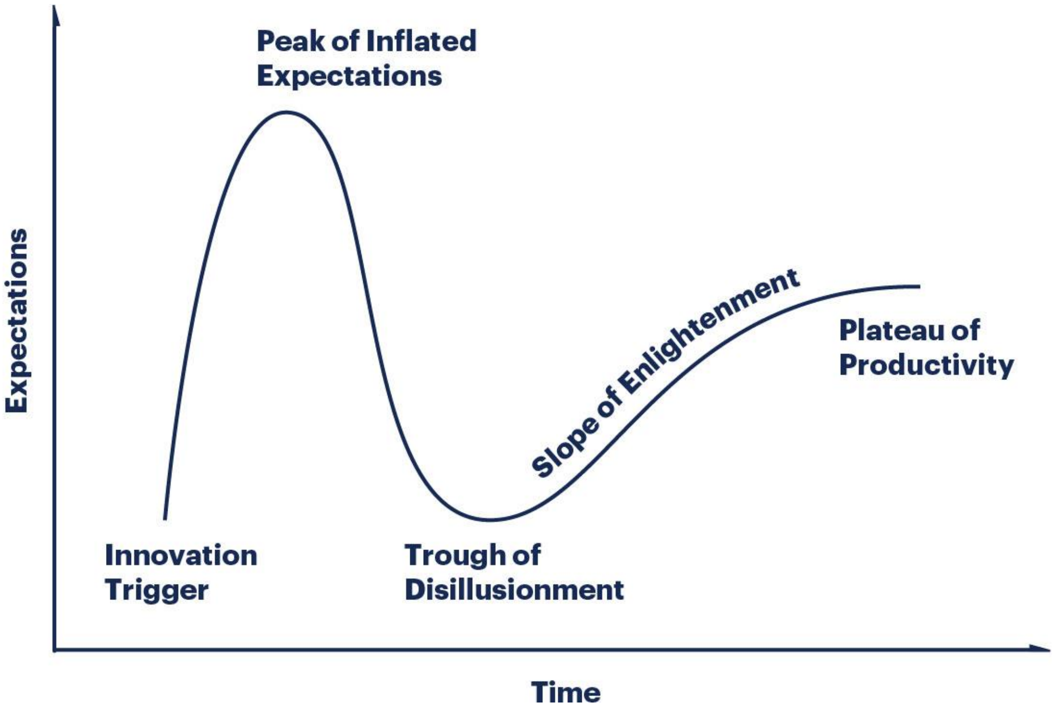


Figure 26 Hype Cycle (Gartner Inc, 2019)

Combining the previous knowledge with the general knowledge and theory about the volume separation presented in the, between Innovators, Early Adopter, Early Majority, Late Majority and Laggards will give insight on the customer volumes associated with each strategic option.

- Innovators (Technology Enthusiasts) 2,5%
- Early Adopters (Visionaries)13,5%
- Early Majority (Pragmatists) 34%
- Late Majority (Conservatives) 34%
- Laggards (Skeptics) 16%

(Mohr, Sengupta, & Slater, 2010; Rogers, 2003)

This combination curve shall be referred to as Hype Customer combination curve, which is presented in Figure 27. The theoretical background for this is shallow and more based on the empirical thoughts from the case company.

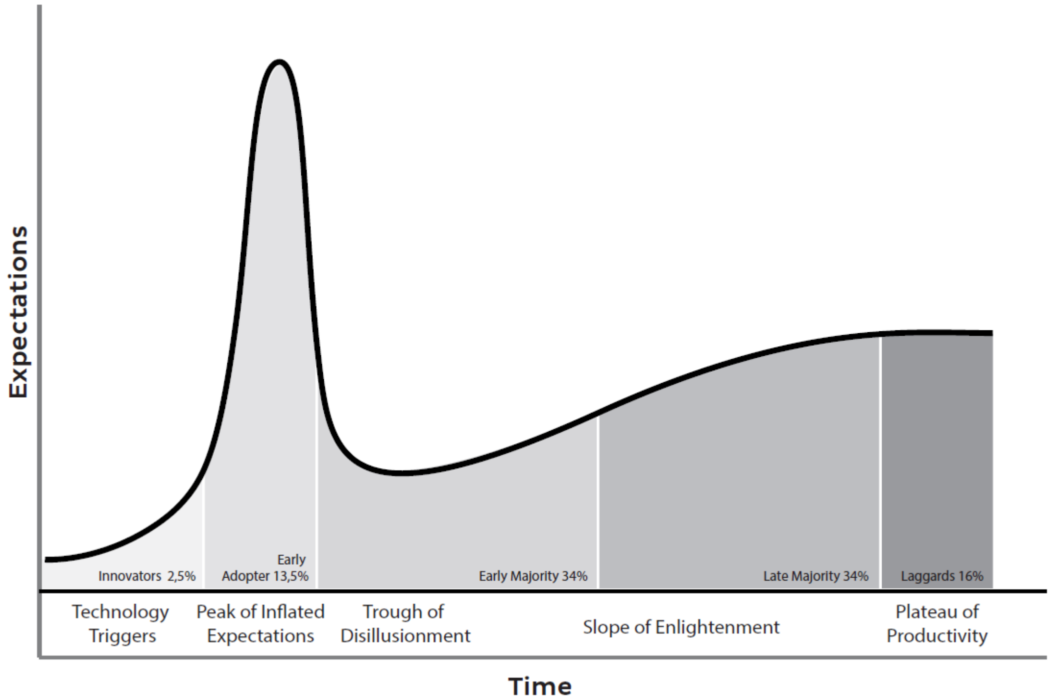


Figure 27 Hype Customer combination curve

According through workshops done in the case company, the Hype Customer combination curve was combined with the strategy archetypes. After thorough discussion the final results was a hypothesis how different strategy types would end up in the combination curve presented in Figure 28. The clouds representing the strategy types illustrate the time of entry for a given technology or aspect in the markets. These strategy types are not only limited to selling at the time period pointed in visually in the matrix, but merely illustrate the typical point of entry. The aim is to visualize and realize the order of magnitude for the timing and expectations, not precise and accurate data.

The results are not precise and have great gaps in the logic of their foundation, however they were found to be a good presentation and illustration of the several aspects in one figure. This served as a base for further conversation on the matter.

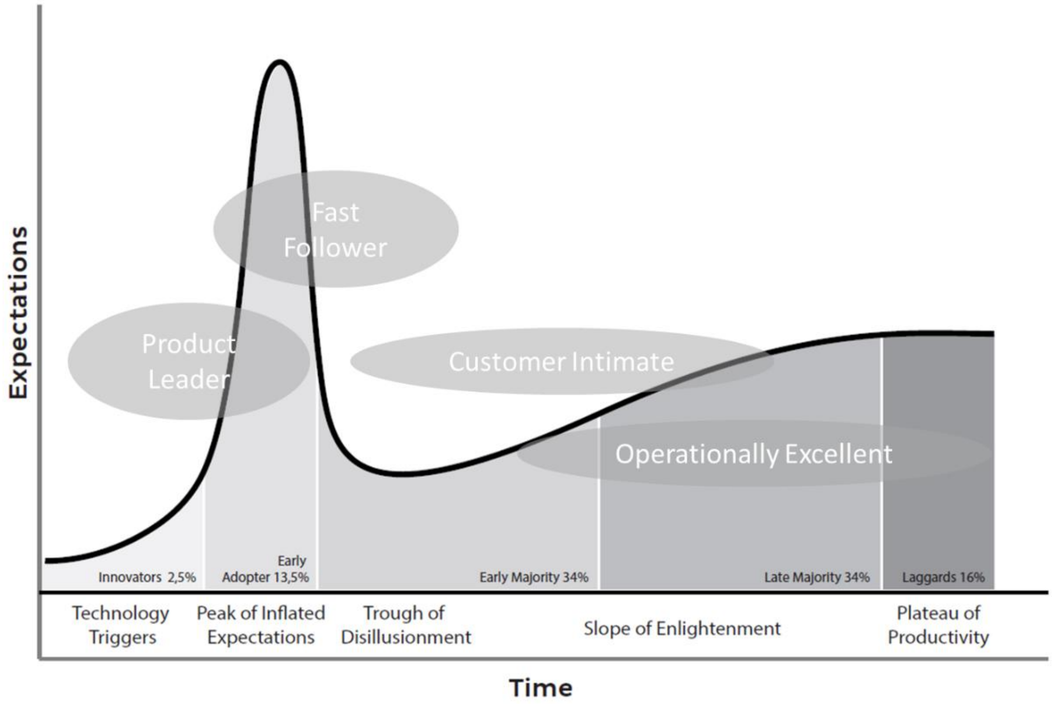


Figure 28 Hype Customer combination curve combined with strategy archetypes

This model was created for product development purposes to combine and analyze future target customers. Another suggestion was the combination of Gartner Hype Cycle and Limbic Mapping.

As presented in Figure 25 on page 49, basic characteristics of customers, value and delivery of value are linked to certain strategy types. In conjunction with the product management team and other relevant stakeholders, the current comparison and positioning to the Figure 23 on page 42 was done according to the Delphi method, where questions are asked individually and then gathered from a selected group. After this initial round the answers are given back and redefined based on other people's answers. The differences between participants then opens for a debate. This method avoids social pressure or group dynamics, but the selection of participants may guide the results. (Mohr, Sengupta, & Slater, 2010)

Following additions were made to the Figure 25 on page 49:

1. Who are Customers?
   a. Limbic Mapping suggested as an alternative way to separate customer groups.

2. What value?
    a. Bullet point added to simplify the essence of value for this strategy type
3. How is value Created/Delivered?
    a. New aspects of Information Technology (IT) role in creating and delivering value was added to each strategy type.
    b. The main focus area and golden priority for value was found useful to have in the table.

After these empirical additions and suggestion the final result is as shown in Figure 29 below.

	Who are Customers?	What value?	How is value Created/Delivered?	Pros/Cons
Product Leader (Prospector, Pioneer, First Mover)	Innovators (2,5%) Early adopters (13,5%)	Innovative new products →Incremental innovations are less risky than breakthrough • Best product	Focus on speed, quick commercializing • Cannibalizing own products IT: Awareness and information management	Pros: • Entry Barriers • Higher profits • Define ideal attributes Cons: • Risky • High failure rate • High R&D costs
Fast Follower (Analyzer)	Early adopters (13,5%) Early majority (34%)	Superior products Lower prices New business models • Best product with lessons learned	Focus on cost & distribution • Capture marketshare from product leader IT: Market feedback for incremental changes	Pros: • Innovative late entrants grow faster • Less risky
Customer intimate (Differentiated Defender)	Early majority (34%) Late majority (34%) • Narrow niches • Specific customers	Customized solutions Superior service • Best total solution • Creation of trust	Relationship marketing Intimate customer knowledge • Solve broad problem IT: Customization & relationship management	Pros: • High margins • Repeat business leads to high customer lifetime value
Operationally Excellent (Low-Cost Defender)	Early majority (34%) Late majority (34%) • Mass Market • Price-sensitive customers	Superior combination of quality, price and ease of purchase Cost leadership • Best total cost	Value Chain efficiency • Variety kills efficiency IT: Automation & integration of supply chain	Pros: • High asset turnover rates and asset return rates

Figure 29 Characteristics of strategy archetypes after empirical additions

4.2 Mapping out companies to the strategic framework

Between interviewed individuals, there were some changes in the positioning of some companies, but the location of case company was rather set and similar independent of the individual, as well as the main competitors. Most changes were a result of persons more closely working with some certain product groups and the competitors having different positions between the product groups. This was a known variable prior to the workshops and would require further investigation to get similar mappings for the set product groups.

The following companies were identified as the main 10 competitors in the industry, in no particular order:

1. Company A
2. Company B
3. Company C
4. Company D
5. Company E
6. Company F
7. Company G
8. Company H
9. Company I
10. Company J

The competitors were analysed on their previous behaviour on the markets, for the time period of 5-10 years. Limitations were found as many of these companies have different product families and platforms that might drop into slightly different areas of the strategy mapping. However, for the rough and general view from competitors, this mapping can be seen as a good baseline to operate on. More in-depth analysis would be useful for a precise understanding of the situation.

Customer Intimate	Product Leader
Operationally Excellent	Fast Follower

3 members of the senior management team and one product manager were interviewed, and the industry main players were mapped to the following map. The involved persons were justified by their expertise and job description being closely linked to the discussed topic. The titles of the persons were following, two Director of Product Management, R&D Director and one Product Manager. The product manager was chosen because of responsibilities in new product development and analysis of customer needs and competitor offerings. The final results of the workshops after combining are presented in Figure 30, where the size of the coloured area represents the separation between answers, larger are indicated more divided answers. All of the answers were nevertheless inside the indicative area.

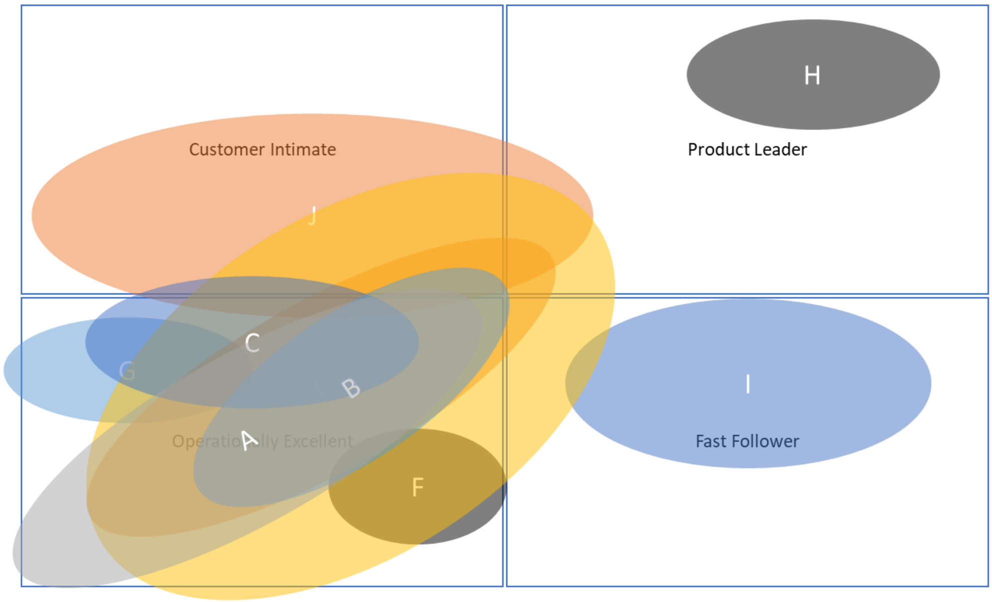


Figure 30 Anonymous summary of competitor mapping

Company H was clearly identified to be a Product Leader by all of the participants. Company I was also identified by all the participants to operate with a Fast Follower strategy. Company J was seen as the sole operator in the Customer Intimate section. The 7 other companies, from A to G, were more or less operating in the Operationally Excellent strategy section. Company D spread also towards Customer Intimate and Fast Follower. Clearly there is large amount of companies operating within the Operationally Excellent area, which might indicate the less risky characteristics of this selected strategy. Also, this indicates that there is less competition in other strategies. According to the results from this study, Fast Followers and Product Leaders were crowded only by one of the chosen companies. Therefore, these strategies and the customer groups accustomed to them, might be profitable.

5 CASE COMPANY ANALYSIS

This chapter will introduce the findings of the empirical part of the study. Main characteristics of the firm will be presented in the previously defined model. The company evaluation for resource-based view execution of gap fulfilment will be discussed. The chapter will be finalized with a company positioning and competitor positioning in the chosen strategic framework. The current Portfolio structure and Markets will be assessed. The methodology follows the principles presented above in Research methodology and process .

5.1 Basic characteristics of the case company

The case company operates in global markets with products at the chosen manufacturing site. The site contains functions of manufacturing, marketing, sourcing, purchasing, logistics, research & development, human resources, service and general management. The basic characteristics and capabilities of the case company are presented in Figure 31, which is fulfilled according to empirical research results to the model Modified from the Latifi & Bouwman, 2018, presented in Figure 4. The information was collected in conjunction with the Top management, Finance department and Product Management team.

Firm characteristics

- **Firm size**: 100-750+ employees
- **Revenue:** 25-750 milj. USD
- **Firm age:** 50+ years
- **Advertising expenditure:** 1-50 milj. USD
- **R&D expenditure:** 1-50 milj. USD
- **Ownership:** US Stock-market

Industry characteristics

- **Industry Sector:** Secondary (Manufacturing) / Tertiary (Services). Goal towards Tertiary.
- **Field:** Health Care
- **Industry lifecycle:** 50+ years, close to maturity
- **Competitive intensity:** Increasing competition with commoditized basic offerings
- **Environment dynamism:** Fairly stable, consolidation of customers taking place in most markets
- **High-Tech vs Low:** High-Tech

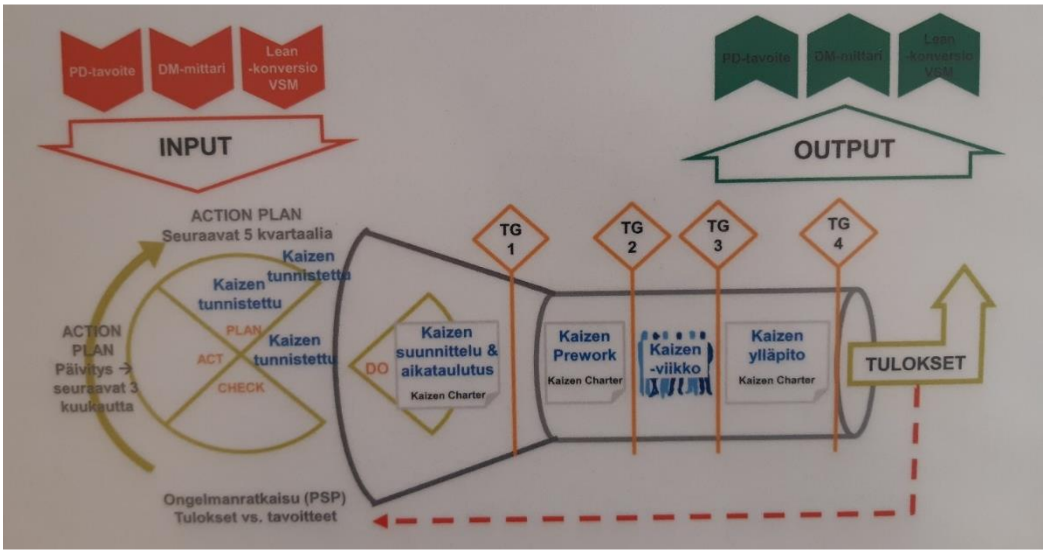
Organizational Capabilities

- **Innovativeness:** Highly innovative past in technology, now more incremental process innovation
- **Entrepreneurial orientation:** Specific department with Lean entrepreneur philosophy to prototype
- **Opportunity recognition:** Dedicated team working on these issues outside of this site
- **Organizational culture:** Good organizational culture with commitment and constant improvement
- **Organizational learning:** Organization adapts and evolves quickly for its size through Lean principles and leadership

Figure 31 Case company basic characteristics

The empirical part of the study found out that the company has a great structure in place to handle with the development of resources, capabilities and even competences. High level of Lean (Womack, Jones, & Roos, 2007) leadership and tools allow the teams to suggest Kaizen events for the identified gaps in their processes. These Kaizen events take regularly place in the company and are part of the company culture. Dedicated Kaizen leaders help facilitate these events and guide the participant team towards the desired results.

These Kaizens have a strict process for preparation, execution and sustainment of the results. Management team accompanied with additional core people audit the results of each Kaizen for at least 90 days, to ensure the new practices are staying in use. This thorough process takes care of filling any identified gaps in the resources and capabilities pool.



Picture 1 Kaizen funnel Process of the case company

For the overall process of development through Kaizens, the following steps are required. The initiation is done by anyone in the company who identifies a gap, evaluation and preparation is done by Kaizen leaders and management teams support. The overall process of development initiatives is summarized below, in Figure 32. The company has a comprehensive toolkit of different methods for varying needs and situations. Some tools are used to map out and analyse the current situation to identify gaps.

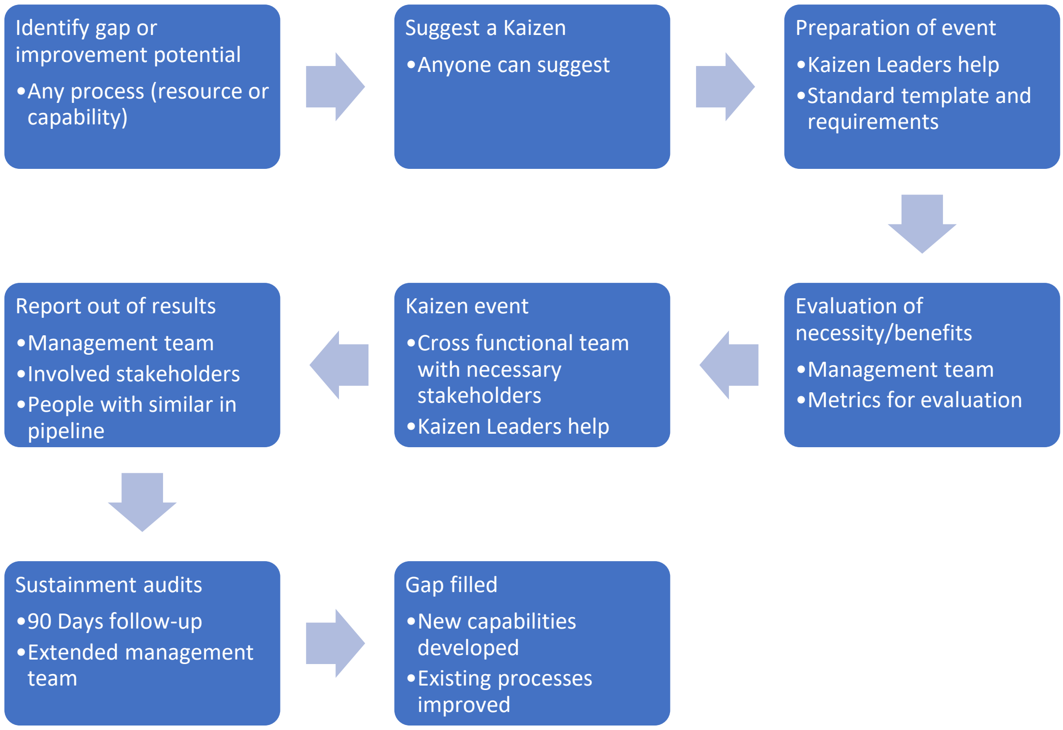


Figure 32 Case Company development initiative process

5.2 Workshop to manage and control resource and capabilities

"*Company should leverage on what it is best in doing and should keep improving this capability further to remain in leadership in industry in future. Companies have to ensure that they become innovative, flexible, quick response organization and synergize product-market strategy with their Core competencies. It appears core competencies face threat more in new technology industries rather than those in fairly stable industries*" (Gupta, 2013, p. 14)

This points out the general ideology of this exercise, to find out the things the company is doing best and be able to leverage those. By these means the process was planned out to start with mapping of current status. Then realizing the future state from business needs and comparing matching these both to a comparable form. Then the current status and future needs can be evaluated, and possible gaps identified. After the identification of gaps, a process needs to take place to execute action plans for filling these gaps. The finishing part will be creating a sustainment plan and necessary metrics to follow up on the progress. All of these steps will then be visualized to an easily auditable form that provides information to relevant stakeholders.

"*Core competency is not what is lying buried in past of organization or past success. It is a decision what company thinks about being its core competency with a view on future challenges. It has to add value for customers in future.*" (Gupta, 2013, p. 14). Based on this and the empirical discussion made within the workshop, the future business needs were identified as the measuring point for the current capabilities and resources. By this basis there was clear need to create a process to fulfil any gaps found from the assessments. The Kaizen workshop followed the structure from in Figure 33.

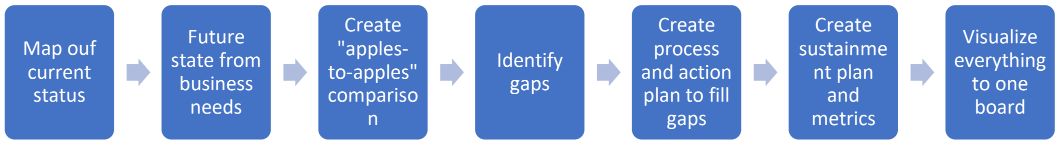


Figure 33 Process steps used in the Kaizen Workshop

The different resources consist of 65 tools or processes from the organization, each designed for a specific purpose. These tools are divided to 3 categories: Growth, Lea

n & Leadership. Growth has 19 tools and is divided to sub-categories of Innovation and Commercial. These sub-categories fill the areas of Strategy, Execution, Marketing, Sales and Service & Customer Experience. Lean has 24 tools, and is divided to sub-categories of Reliability, Operations, Procurement and Materials. Leadership has 22 tools inside of it with sub-categories of Organizations, Others and Self leadership. There is also a pool of eight Fundamental tools for generic basics, such as visualization, problem-solving, standardizing work and simplification. The individual tools for case company are not presented in this study.

Based on this division the cross-functional Kaizen group operated for three days to create a standardized process on how to measure the current state, visualize gaps in business needs and existing resources and capabilities. Also, a process was created to fill in the gaps of business needs and current situation through a standardized training protocol. All these elements are visualized on a visual management board in the company wall. The current status is indicated in different colours depending if there is a gap that needs to be filled or not, and whether there is already development in process to fill that gap.

Sustainment process was also created to keep the wall updated and follow the situation regularly with the extended management team. A year clock was visualized to the board that indicates the annual actions necessary for each month. The team will update changes to the business needs, and also check the status and use of capabilities and resources. Standard procedure was set up for the use of the acquired capabilities, to keep them valid and in active use.

Metrics was also set to follow-up on the development of the capabilities, accuracy of the new capability development time, as well as the use of this board by the extended management team. The current status of capabilities and the connection to individual persons who responsible was also visualized, for company to easily find the right person if in need of assistance in a particular matter. In other words there is a clear “who-knows-what”-list available for all employees.

Specific cards were created for individuals participating in the training to fil identified gaps, so that they can be easily tracked in regard to the planned progress. The overall outcome and the visual management board can be seen in Picture 2.

Picture 2 Final result of the Kaizen event: Visual management board

This event was focused and executed from the point of the toolkit tools, and which of those should be learned and implemented into the daily operations of the case company. There is no clear indication to further investigate this matter in any additional way for the time being. This way covers the big portion of the needs and the benefits of analysing the situation in a different way does not seem profitable from the benefit-effort point of view.

5.3 Semi-structured interviews for case company core competences and competitive advantage

Disruptive innovations in technology, product assembly and marketing are a risk for the importance of current core competencies that work as differentiators. Core competency is not what is lying buried in past of organization or past success. It is the company perception about core competency with a view on future challenges. It must add value for customers also in the future. (Gupta, 2013)

Aligned with this quote, the analysis from the previous work and these interviews highlighted the essence of long-term competitive advantage and the ability to react to changes and adapt according to the customers and competitors was found important. Additional work was done to supplement the researched resources and capabilities. Case company core competence and competitive advantage was done by information gathered from product management team, supplemented by interviews of the management team. Titles involved in the discussions are following: R&D Director, Director of Product Management, Site Leader, Product Manager, Senior Industrial Design Manager.

The additional work with semi-structured interviews brought out the following findings: Company culture is a key core competence of the company, as the organization is accustomed to change and has developed an eye to detect and work on continuous improvement. The company was also found to be highly adaptive and great at managing change through experience in process management and creation, which was a key element to survive and thrive in the changing environment. The low hierarchy of the organization and high integration of workforce that leads to involvement and good spirit was praised especially by the site leader. In addition to the low hierarchy the continuous cross-functional operations face-to-face due to the fact that all different functions operate in the same site was highlighted. Knowledgeable workforce and a long history in the industry as a trendsetter, was also found as a key element for future sustainable success and competitive advantage. This was also seen to accompany with the long history of doing business and highly developed and effective ways of gathering the voice of customer and voice of sales.

Supporting the previous finding, as stated by Kotler & Armstrong, 2017, consumers will favour products that offer the most quality, performance, and features; therefore, the organization should devote its energy to making continuous product improvements. The focus on generic capabilities and processes that can be easily scaled was also emphasized as a key element for the case company, due to their ability to create sustainable competitive advantage that will stand the test of time. This aspect is also highly supported by the theoretical findings.

A more clearly communicated strategic alignment throughout the organization was seen as a place for improvement, which clears towards the theory behind Figure 12, on page 27. The issue of clear brand identity and positioning against our competitors in the mind of the customer was also raised as something that could be improved. As part of the company image this is an intangible non-human resource that would require further investigation. This also interrelates to the near past events of brand changes in the case company, that according to some of the interviews was not fully utilized to enhance the company and brand identity and image.

"one has to go beyond current core competencies and products and think not what is best but think what is next? This ability itself is a new core competence of the firms" (Gupta, 2013, p. 14). As also recognized by the interviewed team, the key thing for a changing environment is to be able to adapt to change and react to changes in the market or industry. Organizational culture was seen to play a key role in the long-term success of a company.

5.4 Data extraction for portfolio structure and market assessment

To analyse the current situation of the company, a breakdown of current market situations is done. According to the Norm strategies in the Boston Consulting Group approach (Grünig & Kühn, 2015, p. 119), the geographic markets are analysed based on their current market share and potential market growth. Due to limitations to accessible and valid data, this analysis is done purely based on case company sales data and estimation of the product cash flow sources. Also, the study is focused on the resource-based view instead of the market-based view, which justifies the limitations. As presented in Figure 8 The generic lifecycle model with appropriate PLM metrics for measuring the business performance in each lifecycle phase (Saaksvuori & Immonen, 2008, p. 192). Additionally, based on Corporate strategy assesment matrix (Modified from: Grünig & Kühn, 2015), the resource-based view of the assessment of the target portfolio balance is done as a extraction based analysis.

The division between the following two different sales groups will be analysed:

- Market cash flow – New products
    - Equipment
- Service cash flow – Delivered products
    - Accessories & Spares
    - Modernization kits

  - Software
  - Services & Service level agreements

As these can be seen to somewhat represent the status of maturity of the current portfolio, where services and spares sales tend to be a results of increased product portfolio maturity and installed-base growth.

Separation inside the product portfolio

For the extraction part the sales figures from previous two years were analysed to get an estimation of the separation of different cash flow sources inside the portfolio. The case company sales were categorized into the groups of: Equipment (EQP), Service level agreements (SLA), Spare parts (PART), Accessories (ACC), Software (SW), Upgrade and modernization kits (UPGR), services (SER). Manual adjustments (adj) and subcategory spare parts (SUB PART), were also grouped for data validity reasons but do not have an effect on the analysis. These groups were categorized in the following way:

- Market cash flow
  - EQP
- Service cash flow
  - ACC
  - SW
  - PART
  - UPGR
  - SLA
  - SER

The position of software is debatable as it is often sold with the equipment, but can be also sold separately, therefore is was categorized as service cash flow. More detailed analysis of the separation can be found from Appendix 1. This will include separation revenue between above defined lifecycle groups and geographics. Future analysis tools, marketing dashboard and synergies inside the portfolio are also discussed in Appendix 1.

5.5 Process audits for strategy cascade and influencers

According to the model of Figure 13 on page 28 the company was assessed with process audits, to determine the current state of existing processes. The given links between the external environment from changes in markets, customer requirements, supply/value chain, technology and business strategy were audited. Internal implementation and alignment from product strategy to individual analyses was also examined. As a result of these audits the overall status of processes inside of the company were compressed to the below Figure 34. Areas where processes exist and are in good shape are presented with green color, parts with areas for improvement or with partial coverage are marked with yellow, and areas with no current process are expressed with red color. For simplification reasons the processes per se are not listed or visualized in the figure, but merely the status of the given area.

Business environment or external sources had four areas in great condition: Changes in markets, technology, business strategy and internal performance. Internal performance was highlighted and found to be in extreme focus in the case company. All of these areas had processes in place to manage possible changes in these areas. Customer requirements and changes in value and supply chain were identified and managed to some point but could benefit from improvements. Customer requirements were identified to be linked to new product development and have more of a project nature than a continuous process.

Internal product management areas of product strategy, portfolio, road map, business cases, product management and individual analyses were identified to work in harmony and be interconnected with each other. Clear alignment from product strategy all the way down to individual analyses was presented to exist. Notifications were made about the theoretical model simplifying things and making them more straight-forward than things are in real life, but the model was seen to have all the key elements in place. The study was rather one-sided and focused on the upper management insight about the topic and could have varying results if a larger base, for example whole product management team, was included.

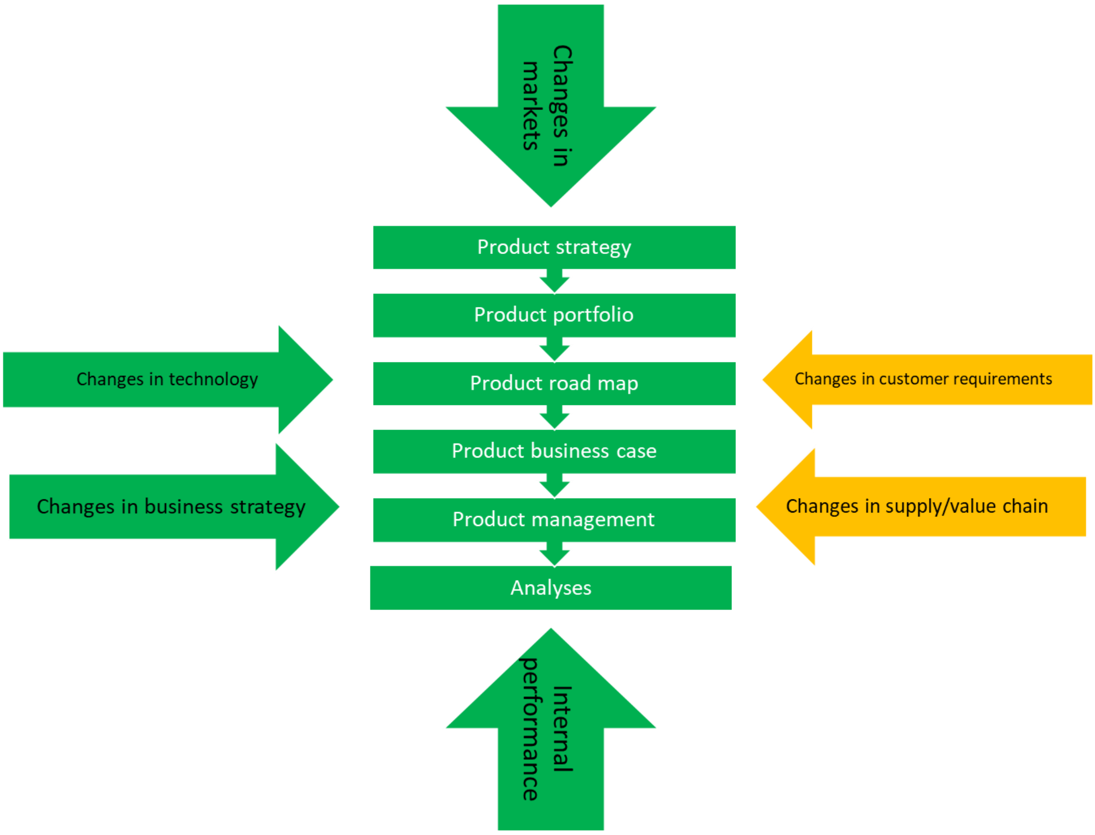


Figure 34 Business environment and strategy impact on product management: Case company current status

To get a more reliable overview of the current status, also the product management team which is closely related to these areas and more on the executional side was interviewed with the same tools. These different opinions can then be assessed and compared to get a realistic view and pinpoint any possible areas of improvement.

6 DISCUSSION AND RECOMMENDATIONS

This chapter discusses the results and findings of this study. First, an overview and summary of research questions and answers is provided. This is followed by limitations of this study. In the end, identified possible future research topics for this area will be pointed out.

6.1 Discussion and limitations

Discussion

Overall the company has a good background and groundwork done to realize and analyse the resources and business needs for the future. The case company organizational culture and knowledge of organizing workshop is at a high level and well facilitated. Personnel is accustomed with working on teamwork and problem-solving tools in their daily work. The importance of strategy and strategic alignment is clear. Clear links between theoretical core competences and empirical findings were found, such as organisational culture and ability to learn and adapt to change. This increased the value and necessity of the existing Lean leadership and methods utilized by the case company.

During the semi-structured interviews there were slightly varying opinions about the strategic position of the case company and competitors. Some interesting conversations about these topics came up. Overall the chosen framework seemed to be effective and most of the participants understood the concept, some questions and challenges came up with the axis. Many of the answers were aligned between the participants, and one company was seen by all participants to locate in the exact same position. All areas of the framework strategy archetypes got coverage from the chosen pool of companies, but the most occupied area was clearly the Operationally Excellent.

Data extractions from company financials required some datamining work to be able to separate and dig out the necessary information for this study. Deeper analysis of these areas is clearly possible with reasonable amounts of work and might provide additional value for the case company. High percent of annual revenue was coming from Market cash flow and some also from Service cash flow. This clearly indicates that the service lifecycle and cash flow generated from it, is a relevant part of the overall cash flow. The division of profits for the selected cash flow sources was not analysed, which might provide another view of importance.

Limitations

A clear limitation of this study is the narrow empirical data only from one company. Also, the number of persons involved in the process is quite limited and does not quite give a comprehensive overlook in terms of volume. However, the selected persons heavily affect and work with the subjects studied in this thesis. Also, the scope of competitor mapping was narrowed to the operating company level. This places some limitations as many of the companies operate in different segments, where their strategies and offerings vary quite a lot.

Portfolio analysis was focused only on the current internal situation as scoped, which leaves room for speculation and does not provide answers on the potential growth of different segments. Market research was not only zoomed into specific countries but executed at a much higher level. This leaves room for speculation and averages out specific countries. Also, the external market assessment and business attractiveness is limited because of limited access to reliable market and product segment growth estimations. The profit separation between different cash flow sources and markets was not analysed in this study.

Process-audits for the internal strategic alignment and management of business environment were quite narrow and focused on the current status. Future development points and results from these areas could be investigated more thoroughly to get better insights of this area. The processes were also found to be quite informal and the status should be also checked with product management team members.

6.2 Recommendations and future research

Case company recommendations

Several things can be recommended for the case company. One useful mapping for product portfolio control would be mapping out the current lifecycle status of each product family to the lifecycle curve. This would provide and easily usable visual tool to analyse the status of each product family and help prioritize development projects. Supporting resource-based view analysis with market-based analysis to get a more complete understanding about the situation is highly recommended.

Analysis on geographic and segment growth estimates would provide additional information and depth to the portfolio structure and market assessments. This could support priorities between different product segment, product families and geographic markets. These estimations could be either acquired from iData or other reliable estimations of future or generated internally. Easier access and analysis to information on the separation of profits from different markets, segments and cash flow sources was also noticed to add value. This additional information could provide valuable insight for decision making. Future work could implement also the different product offerings for the strategic mapping on a more detailed level and separate the offering to different target customer groups.

The future of the company from a strategic position could benefit from having a clear future state to aim for, which can be provided by this framework. However, the case company has a clear and visual way of aligning the strategic goals for the next five years, which is available for all employees at the company. This is a clear positive indication as it was found crucial to not only create a strategy but also to implement it. There might be potential to leverage current existing resources even more and get all the benefits out of them by scaling them or adjusting to different areas, but this would require additional research.

From the process audits the internal alignment of strategy was found to be in good condition, as well as, the observation of the business environment. However, small areas of improvement were identified from the management of changes in supply and value chain. Also, customer requirements were identified to be done as projects, which should be changed to be more process oriented.

Future research topics

Future research could focus on the linkage of success conditions for the strategy clock locations. Empirical support for high-tech operating environment characteristics would strengthen the theoretical environmental factors used in this study. More research strategy cascade with different levels of the organization would give a more comprehensive view of the situation, as the current scope of participants was quite narrow.

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8 APPENDICES

Appendix 1. Case company data extraction and analysis report