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Developing Value-Based Pricing for A New Product-Service System

Master's thesis in Management and Economics of Innovation

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CHALMERS UNIVERSITY OF TECHNOLOGY
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ABSTRACT

Based on current research, there are three common pricing strategies used by companies: cost-based pricing, competition-based pricing, and value-based pricing. The latter is considered, by literature, to be the optimal strategy to reach long-term profitability, mainly because of its focus on customer value. Still, most companies struggle with the development and implementation of a value-based pricing and primarily base their prices on costs and competitors' prices. Product-service systems (PSS), which is an integration between products and services, is a topic that has gotten increased attention from both academia and companies in recent years. Even though the research on PSS has increased in recent years, there is little written about choosing and developing pricing strategies related to a PSS, especially regarding value-based pricing of a new PSS. Therefore, this thesis will investigate how companies are developing value-based pricing strategies for new PSS and what role involved actors play in the process.

This will be done through an inductive case study at company X who are developing a value-based pricing strategy for a new type of PSS that they will take to the market. The primary data consists of semi-structured interviews with employees at company X who are relevant to the development of the pricing strategy. Furthermore, meetings and secondary data, in the form of company documents, are used as well.

The results show that the company conducts six main activities in their pricing strategy development: setting objectives, customer analysis, analyse cost of goods sold (COGS) and profitability, competition analysis, setting price corridors, and finally go-to-market. The involved actors in the pricing strategy development are mainly division Y, who is responsible for developing and managing the PSS, local markets, business units, the central intelligence unit, sales teams, commercial teams, and innovation teams.

The results are mostly in line with existing literature regarding factors that affect the pricing strategy and the activities that are included in the development. However, there are some differences when it comes to the execution of the activities. Another finding is that the results indicate that cost and competition are still considered even though customer value is the main focus in a value-based pricing strategy. Thus, it might not be wise to consider three main pricing strategies as stand-alone strategies but instead consider all of them combined, which is also supported by Hinterhuber (2003). Furthermore, the results indicate that it does not seem to matter much that the offering is a PSS, and not a product or service, when developing the pricing strategy. Instead, it is the novelty of the PSS that makes a difference.

The results indicate two themes of challenges related to the pricing strategy development. The first is the novelty of the PSS and the market which causes uncertainties and a lack of data. The second is “the chicken or the egg” problem that is discussed throughout the thesis. This challenge has its root in that the variables in the strategy are interconnected and depend on each other.

Keywords: value-based pricing, pricing strategy development, product-service system

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LIST OF ABBREVIATIONS

COGS – Cost of goods sold

WTP – Willingness to pay

VP – Vice president

PSS – Product-service system

B2B – Business to business

B2C – Business to consumers

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1 Introduction

This chapter provides an introduction to the thesis. The chapter starts with a background about the importance of pricing and three common pricing strategies with a certain focus on value-based pricing. Furthermore, it includes a short description of product-service systems. Thereafter, the problem statement will be described followed by the purpose of the thesis, and the corresponding research questions. Limitations are described at the end of the chapter.

1.1 Background

1.1.1 The importance of pricing

Intelligent and strategic pricing has a direct impact on the success of a company, where success is, according to many academics, defined as long-term profitability (Nagle et al., 2011; Cant et al., 2016). Excellence in pricing is about managing the product, company objectives, strategy, governance, and culture, but also the value delivered to the customer. All these factors have a direct impact on the final price of the product (Simon Kucher, 2019). Price is often neglected when compared with the other “P’s” in marketing i.e. product, place, and promotion (Cant et al., 2016). According to Diamantopoulos (1991), this is because the price is the most flexible “P” in marketing, pricing decisions can be determined and implemented relatively quickly compared to the other “P’s”. Spending less time on pricing could have a negative impact on a company's profitability since customers use price as a tool to evaluate the complete offering of the service (Nagle et al., 2011). Furthermore, price is the only component of the four “P’s” that drives profit, the other “P’s” mainly drive costs and volume (Nagle et al., 2011). According to Hinterhuber (2003), a 5% improvement in pricing can result in an EBIT-margin boost of 22% on average. Despite the clear importance of pricing, there is a lack of interest among academics to investigate the topic further (Nagle et al., 2011).

1.1.2 Three common pricing strategies

Based on current research, there are three common pricing strategies used by companies (Hinterhuber, 2008). Cost-based pricing; the price is determined by adding a profit element on top of the cost of making the product or service. Either a fixed amount or a percentage of the total cost

is added as profit to the cost in order to determine the price of the product. Competitor-based pricing; the price is determined by using competitors' prices as a benchmark rather than setting a price based on company costs or customer value. Value-based pricing; the price of the product or service is based on the actual or the expected value to the customer. An overview of the three pricing strategies is presented in *figure 1*.

| | <i>Cost-based pricing</i> | <i>Competition-based pricing</i> | <i>Customer value-based pricing</i> |
|--------------------|--|--|---|
| Definition | Cost based-pricing approaches determine prices primarily with data from cost accounting | Competition-based pricing approaches use anticipated or observed price levels of competitors as primary source for setting prices | Customer value-based pricing approaches use the value a product or service delivers to a predefined segment of customers as the main factor for setting prices |
| Examples | Cost-plus pricing, mark-up pricing, target-return pricing | Parallel pricing, umbrella pricing, penetration/skim pricing Pricing according to average market prices | Perceived value pricing MPerformance pricing |
| Main strength | Data readily available | Data readily available | Does take customer perspective into account |
| Main weaknesses | Does not take competition into account Does not take customers (and customer willingness to pay) into account | Does not take customers (and customer willingness to pay) into account | Data are difficult to obtain and to interpret Customer value-driven pricing approach may lead to relatively high prices – need to take long-term profitability into account Customer value is not a given, but needs to be communicated |
| Overall evaluation | Overall weakest approach | Sub-optimal approach for setting prices; appropriate for commodities (if – and only if – products/services in question cannot be differentiated) | Overall best approach, direct link to customer needs |

Figure 1- Three common pricing strategies (Hinterhuber, 2008)

Value-based pricing is considered, in the literature, to be the most appealing pricing strategy among the three (Ingenbleek et al., 2003). Furthermore, Hinterhuber (2008) and Cannon & Morgan (1990) claims that value-based pricing is the most suitable pricing strategy for long-term profits. This is because the value-based pricing strategy is the only strategy, among the three, that focuses on designing offerings that considers customers' needs and sets a price based on customer value (Hinterhuber, 2008).

1.1.3 Value-based pricing

According to Harvard Business Review (2016, para.2), one definition of value-based pricing is:

“Value-based pricing is the method of setting a price by which a company calculates and tries to earn the differentiated worth of its product for a particular customer segment when compared to its competitor.”

If a company were to develop a value-based pricing strategy, a good start would be to break down the definition into four smaller parts (Harvard Business Review, 2016). Firstly, the company should identify a target segment. If a company has several segments, there must be one value-based price for each segment. Secondly, the company should compare its product/service with the best competing alternative on the market. A value-based pricing strategy must consider competitive products that the target segment may buy. Thirdly, the company should identify which product/service characteristics that are unique and differentiated from the best competing alternative on the market. Finally, the company should put a price on these unique characteristics. Adding the “prices” together leads to the value-based price.

Hinterhuber (2003) has designed a more extensive framework for companies that would like to develop a value-based pricing strategy for their products or services. It has many similarities with the ideas proposed by Harvard Business Review (2016), especially regarding the activity of determining customer value based on the best competing alternative. Hinterhuber’s framework is visualized in *figure 2*.

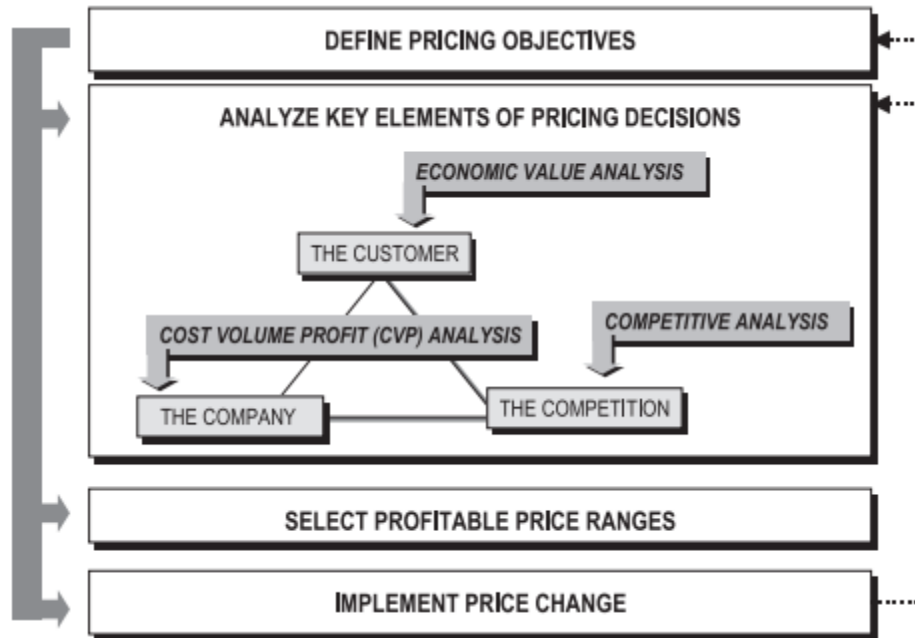


Figure 2 - Value-based pricing framework (Hinterhuber, 2003)

Defining the pricing objectives is the first step for companies to consider when implementing a value-based pricing strategy. Cant et al. (2016) also highlight the importance of pricing objectives. Secondly, companies have to analyse the key elements of pricing decisions. It includes key elements in three categories, the customer, the company, and the competition. Thirdly, price ranges must be selected, they should be set in a way so that long-term profits could be generated. Finally, the companies should implement a pricing strategy based on the findings from the framework.

1.1.4 Product-service systems

Product-service systems (PSS) is a topic that has gotten increased attention from both academia and companies in recent years, but there is still much to learn (Reim et al., 2015). PSS is an integration between products and services, which together deliver value to customers. The initiatives of PSS come from companies finding it difficult to stay competitive while just selling products alone (Hänsch et al., 2013). Adding services create a closer relationship with customers, which increases loyalty and the opportunity for gathering information to further improve the offering. In addition to delivering value to the customer, a PSS often delivers positive environmental factors through the use of the product like repairs, maintenance, etc. (Reim et al.,

2015). Current research distinguishes between three types of PSS; product-oriented PSS, use-oriented PSS, and result-oriented PSS.

Product-oriented PSS revolves around the customer taking ownership of the product and the seller commits to providing services connected to the product (Reim et al., 2015). The customer pays for both product and services provided. User-oriented PSS takes a different stance where the seller is focused on providing usability of the product and service. This means that the seller takes on a responsibility to make sure that the products and services are available and working. In this case, customers do not take over ownership of the product. Result-oriented PSS puts even more responsibility on the seller, who will provide the actual results of the PSS. Instead of buying a product or paying for the availability of it, the customer pays for the outcome of the PSS.

1.2 Problem statement

The value-based pricing approach is increasingly recognized in the literature as the most prominent pricing strategy for long-term profits (Hinterhuber, 2008). The principle of value-based pricing, which was new to many companies just three decades ago, is now more acceptable (Nagle et al., 2011). Still, most companies struggle with the development and implementation of a value-based pricing and primarily base their prices on costs and competitors' prices (Hinterhuber & Liozu, 2012; Nagle et al., 2011). Hence, the conclusion can be made that there are challenges in developing a value-based pricing strategy. Many companies are probably asking themselves "How should we develop a value-based pricing strategy? How are other companies developing value-based pricing strategies?".

Even though the research on PSS has increased in recent years, there is little written about the choosing and development of pricing strategies related to a PSS. Pricing strategy is an important factor and a challenge that must be managed if a company wants to succeed with a PSS (Sundin et al., 2009). There are indications that value-based pricing strategies are suitable but that these might have to be adjusted to fit the PSS context (Grönroos, 2011). Furthermore, there is no literature covering the development of value-based pricing when introducing a new PSS to the market. By combining what is written in the literature about value-based pricing and PSS together with results

from a case study, this thesis will provide a deeper understanding of how companies develop a value-based pricing strategy when introducing new PSS to the market.

1.3 Purpose & research questions

The purpose of this master thesis is to provide a deeper understanding of how companies develop a value-based pricing strategy when introducing a new PSS to the market. Company X, with their new PSS launch, acts as a case company in this thesis and will provide insight into how they currently develop their value-based pricing strategy. The purpose will be fulfilled by answering the following research questions:

RQ 1: How do companies develop a value-based pricing strategy when introducing a new PSS to the market?

RQ 2: What role do different actors, both within the company and external to the company, play in this pricing strategy process?

1.4 Limitations

This thesis will investigate how companies develop a value-based pricing strategy when introducing a new PSS to the market. Therefore, the thesis will put an extra focus on value-based pricing and PSS. Other pricing strategies such as cost-based and competitor-based will be less prioritized. Furthermore, products and services that are not defined as PSS will be less prioritized. Still, other types of pricing strategies and other types of products and services will be discussed and used for comparative purposes.

Company X's new PSS is aimed towards the B2C segment, the results from this thesis will therefore have a certain focus towards B2C. Readers who might use results and findings in this thesis should be aware before applying any knowledge to other segments, such as B2B. With that said, findings within the B2C segments may be important for other segments as well. Furthermore, company X's PSS is a product-oriented PSS and therefore other types of PSS will be less prioritized. Therefore, the findings should be handled with care if applied to other types of PSS.

The case company has not yet finished its PSS. Given the limited literature regarding PSS development, it would be interesting to investigate this aspect. However, the focus of this thesis is

the development of the pricing strategy and focus on the development of the PSS will therefore be limited.

Due to the fact that it is a single case study, most of the results and the answers to the research questions will come from company X. Given that pricing could be a rather sensitive and strategic subject, to protect the company, it will go under the name company X. For the same reason, interviewee's names will also be anonymized.

Company X sells a wide assortment of offerings. The offering in focus of this thesis is a new PSS and how its pricing strategy is developed. This means that the process of pricing strategy development is not necessarily representative for company X's other products and services.

2 Theoretical background

This chapter constitutes the theoretical foundation for this thesis. The chapter starts with a section that describes internal and external factors that affect pricing strategies. The next section includes theory about the three main pricing strategies. Thereafter, the procedure of developing a value-based pricing strategy is described and divided into activities. This will be followed by an introduction of what a PSS is and the factors that could be different from selling conventional products. Then, the three main types of PSS will be described and finally there will be a section regarding the effects of developing a PSS.

2.1 Factors affecting the pricing strategy

Any company that is developing a pricing strategy might be interested in the factors affecting this process. By understanding the underlying factors, companies could make more informed decisions and avoid pitfalls when developing a pricing strategy. Several of the factors mentioned under sections 2.1.1, 2.1.2, and 2.1.3 are used as main parameters in the three most common pricing strategies used by companies i.e. the cost-based, competition-based, and value-based approach.

Brassington & Pettitt (2013) have proposed a framework that describes internal and external factors that affect the pricing strategy, visualized in *figure 3*.

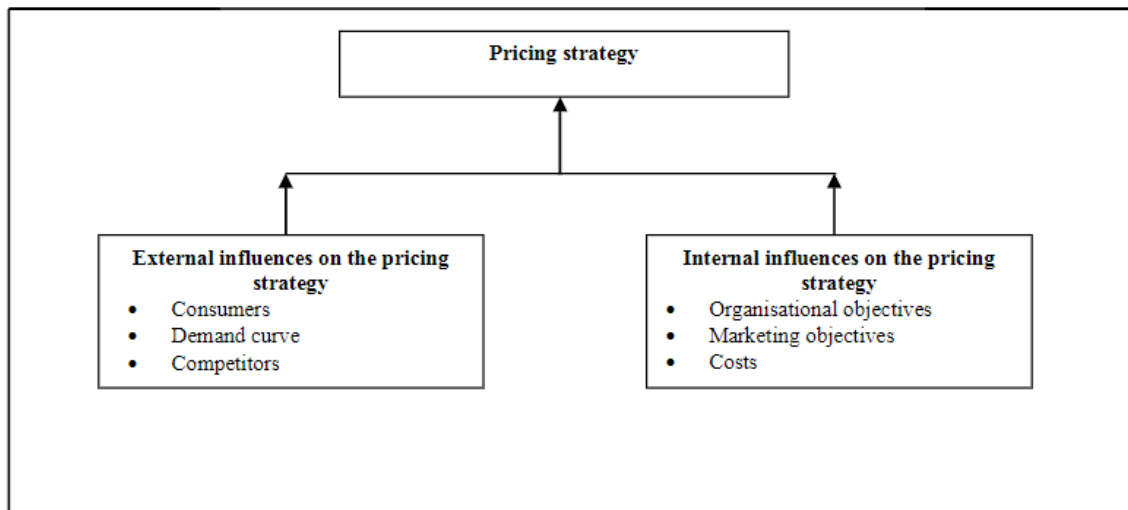


Figure 3. External and internal factors influencing pricing strategy (Brassington & Pettitt, 2013)

The individual factors will be described briefly in the following sections, divided into internal and external factors like the framework suggests.

2.1.1 Internal factors

Organizational Objectives

The first internal factor in the framework is organizational objectives (Brassington & Pettitt, 2013). A clear and consistent definition of organizational objectives has been hard to find in research. However, BusinessDictionary (2020) proposes the following definition:

“The overall goals, purpose, and mission of a business that has been established by its management and communicated to its employees. The organizational objectives of a company typically focus on its long-range intentions for operating and its overall business philosophy that can provide useful guidance for employees seeking to please their managers.”.

A pricing strategy should support the organizational objectives of the company (Brassington & Pettitt, 2013). Besides supporting the organizational objectives, a properly designed pricing strategy could be used to signal the leadership direction of the company and increase the strength of the company's brand. Companies that would like to be successful in an existing or new niche market must put an extra focus on the connection between pricing strategy and organizational objectives. Two examples that illustrate the connection between organizational objectives and pricing strategy are Ryanair and Louis Vuitton (Cant et al., 2016). Ryanair wants to be a leading low fare airline and has therefore developed a low-price strategy. Louis Vuitton wants to protect its corporate strategy and exclusiveness and has developed a premium price strategy.

Marketing objectives

While organizational objectives focus on a company's overall objectives, marketing objectives focus on the detailed objectives for a specific market and/or specific product or service (Brassington & Pettitt, 2013). Hence, the marketing objectives need to complement the organizational objectives but at the same time be adjusted to a certain scope. Brassington & Pettitt (2013) use Woolworth as an example, a company known for its high-quality products. They always target customers with a higher income to extract full value from their high-quality products, independently of the market.

Cost

Choosing a pricing strategy that can maintain customers at a profitable level is critical for long-term profitability (Brassington & Pettitt, 2013). To manage that, the pricing strategy must have some metrics based on costs. Cost is typically divided into fixed and variable costs (Nagle et al., 2011). Fixed cost does not change with an increase or decrease in the number of products sold. Variable cost on the other hand, changes in proportion to the number of products sold. Estimates for fixed and variable costs are often dependent on sales volume which must be estimated beforehand (Harvard Business Review, 2018). The fixed costs are thereafter allocated to each unit based on that estimate. With that many different estimates it is easy to set a cost-based price either too high or too low, resulting in miscalculations. Even if a company manages to estimate total costs, the pricing strategy might price the product/service differently through the product life cycle (Brassington & Pettitt, 2013). Therefore, it's hard to predict when costs will be covered, both variable and fixed. All costs must be covered in the long run to reach profitability.

2.1.2 External factors

Customer

The first and perhaps the most important external factor that affects pricing is the customer, independently of industry (Brassington & Pettitt, 2013). Companies must provide a product/service that covers the identified needs of the customers. Furthermore, the price needs to be fair in contrast to the perceived value of the service and the price needs to be related to the customers' willingness to pay (WTP) (Schuler, not dated). Companies need to identify a target customer group and adopt a pricing strategy to attract and retain these consumers (Cant et al., 2016).

Demand curve

The demand curve illustrates the relationship between the price and the demand for the product/service (Cant et al., 2016). Demand and price tend to be inversely correlated i.e. higher price implies lower demand (Kotler & Armstrong, 2010). There are exceptions, luxury goods for example, where a higher price can trigger demand due to the higher quality of a product (Cant et al., 2016). Therefore, organizations need to understand the relationship between quality and price. Another important aspect for organizations to consider and fully grasp is the impact of price

elasticity. This describes how the consumers' demand for a product/service change with an increase/or decrease in price (Kotler & Armstrong, 2010). Elastic demand implies a significant change in demand when there is a small change in price. Inelastic demand means that the demand barely changes when there is a small change in price (Kotler & Armstrong, 2010). By understanding price elasticity of demand, organizations can predict how consumer demand will be affected by price changes, but also in what price ranges a new product/service should be in order to attract consumers (Kotler & Armstrong, 2010). Consumers are in general less price-sensitive when the service is unique with few substitutes and/or considered to be prestigious.

Competitors

Companies should analyse the competitive landscape when setting their prices (Cant et al., 2016). For existing products companies have to anticipate and analyse how competitors could respond to the company's potential price change. For new products, companies should consider what effects a low/high introduction price will have on potential competitors. Setting an initial high price might send signals that it is a high-margin business and encourage competitors to enter the market. By identifying key competitors within their industry and analyse how they react to price changes, companies could gather valuable information. The information could be used to set more accurate prices in relation to market dynamics (Brassington & Pettitt, 2013). A company that manages to foresee competitive moves gains a competitive advantage.

2.1.3 Technologies effect on pricing strategies

Even though Brassington & Pettitt's framework does not consider technology as a factor that affects pricing. Technology is a central part of society and companies today, enabling innovations and improving everyday life. Furthermore, technology changes and the digitization of the economy directly affects how organizations determine price (Krämer & Kalka, 2017). This section will describe how technology affects companies' pricing strategies to augment the above-described framework.

Information technology has created an environment with good availability of data and information (Krämer & Kalka, 2017). Digitization of production, data gathering processes and analytical tools have provided organizations with a solid base of decision material. Today, it is easier for

organizations to make informed decisions to optimize their pricing strategies (Krämer & Kalka, 2017). However, customers also have access to more information i.e. search engines and price comparison sites which change their purchasing behaviour. They can also make more informed decisions and easily switch between services and products. The information revolution has increased price transparency, making customers more price sensitive (Nagle et al., 2011). Furthermore, the globalization of markets has increased the number of competitors and enabled lower cost of production, resulting in price pressure. The competitive pressure is increasing and the pursuit of “owning the consumer relationship” intensifies. Thus, it is fair to say that technology improvements are beneficial for companies while at the same time they increase the competition among companies, especially regarding the customer relationship (Krämer & Kalka, 2017).

2.2 Three common pricing strategies

The previous chapter described several factors that affect pricing. By understanding the underlying factors that affect pricing, it might be easier for companies to develop a pricing strategy. However, there are many different pricing strategies that a company can develop today. Thus, it could be of importance for companies to get a deeper understanding of the most common pricing strategies. Cost-based, competitor-based, and value-based are the three main pricing strategies used by companies (Hinterhuber, 2008). There are connections between the three most common pricing strategies and the internal and external factors that are mentioned in the framework proposed by Brassington & Pettitt (2013). It seems that companies focus on one factor in particular when deciding on pricing strategy i.e. cost, competition, or customer value. This thesis has previously highlighted that value-based pricing is the superior strategy among the three. Even if companies are recommended to develop a value-based pricing strategy, it could be useful to have a deeper knowledge about other options as well. By describing all three pricing strategies it is also easier to make comparisons and make the discussion more nuanced. Therefore, this chapter will describe cost-based, competition-based, and value-based pricing and highlight the pros and cons of each pricing strategy.

2.2.1 Cost-based pricing

Cost-based pricing has been a popular pricing strategy for companies to use and it still is. The strategy is based on a rather simple idea. First, the company calculates all the costs, both fixed and variable, related to the product or the service (Nagle et al., 2011). Thereafter, the company adds a mark-up, usually a percentage, on top of these costs in order to determine the final selling price. The mark-up can vary between industries and companies, according to Harvard Business Review (2018), companies can use mark-ups between 5% and 800%. The popularity of cost-based pricing could be explained by a companies' tendency to seek financial prudence (Nagle et al., 2011). Because if everything goes according to the plan, a cost-based pricing strategy should generate a certain rate of return that companies can anticipate beforehand.

Cost-based pricing is an easy guide to profitability in theory, but in practice, it tends to generate mediocre long-term profitability (Nagle et al., 2011). One of the fundamental problems with cost-based pricing is that it tends to be difficult to determine the cost per unit before determining the price (Nagle et al., 2011). Cost per unit is dependent on sales volume because fixed costs are distributed over the number of units sold. Sales volume is dependent on the price, resulting in that cost per unit is dependent on the price. Hence, if the price is set too high, leading to a low sales volume, the cost per unit will probably be high (Nagle et al., 2011). Then there is no guarantee that costs will be covered and therefore no guarantee that the company will make a profit (Harvard Business Review, 2018). To counter the potentially low sales volume, companies tend to make rather absurd assumptions when setting prices (Nagle et al., 2011). If the price leads to lower sales volume than estimated, cost-based practitioners would then increase the price even more to "cover" the extra cost per unit that the lower sales volume generates. In the opposite situation, where sales volume increases more than estimated, the price would be set lower and lower since economics of scale decrease cost per unit. The result could be over-pricing in weak markets and under-pricing in strong markets (Nagle et al., 2011).

Another dilemma with cost-based pricing is that external factors such as customers and competitor prices are ignored (Hinterhuber, 2008). Hence, the price that a company decided to charge for its product or service could be far from realistic. With a high WTP, a cost-based approach could lead to a price below the WTP and thus uncaptured profits. If the WTP is high but a competitor has

cost-leadership and offer a similar product at a lower price, there may be no profits at all (Harvard Business Review, 2018).

There are several benefits of applying a cost-based pricing strategy. Firstly, it is very transparent and easy to communicate with customers (Harvard Business Review, 2018). If costs increase with 5% the company must increase the price with 5%, customers tend to have an understanding for these types of price increases (Harvard Business Review, 2018). Secondly, the data collection and the implementation of a cost-based pricing strategy is relatively easy (Hinterhuber, 2008). Even though companies might not have full insight into the final cost of the product, they could at least estimate a narrow cost interval. A company with good knowledge about its market tends to make accurate estimates for sales volume and costs (Brooks, 1975). Thirdly, cost-based pricing does not take advantage of extraordinary situations that value-based pricing tends to do (e.g. Uber charging 3x ordinary fee due to a high demand on a New Year's Eve) (Harvard Business Review, 2018). In this case, a cost-based strategy might be more appreciated for customers compared to the value-based pricing option (i.e. Uber pricing).

Academics within the field of pricing consider cost-based pricing to be the overall weakest approach (Hinterhuber, 2008; Nagle et al., 2011). However, for the companies with cost leadership, a cost-based pricing approach is a good option. One example is Saudi Arabia's oil company, Aramco, whose low-cost oil field gives them a cost-leadership advantage.

2.2.2 Competition-based pricing

Companies that use competition-based pricing observe and use competitors' price levels as a benchmark when setting their prices (Hinterhuber, 2008). According to Hinterhuber (2008), it is also important to anticipate the actions of current and potential competitors in order to stay ahead. In markets where a company has few or no competitors, price focus should be on customers instead (Nagle et al., 2011). Furthermore, competition pricing is preferably implemented in an industry with similar goods. It is much more complicated in an industry with congruent goods, which is often the case with software, biotech, or other tech-sectors.

The main advantage of the competition-based strategy is its focus on the external factor competitors (Hinterhuber & Liozu, 2012). Practitioners and academia often justify the

competition-based strategy by claiming that price is the main purchase criteria for customers, hence it is important to compete on price (Hinterhuber & Liozu, 2012). Competition-based pricing is somewhat easy to implement as well, letting the competitors do the work and then adjust prices accordingly.

One disadvantage is that customer value and WTP is ignored, competition-based pricing could lead to a price below the WTP and thus uncaptured profits, same as for cost-based pricing (Hinterhuber & Liozu, 2012). Furthermore, competition pricing can result in a price war, leading to a price below costs and many companies would, therefore, make a loss.

Another downside with competition-based pricing is that it is a negative-sum game where competition imposes costs on players and can sometimes lead to bankruptcies (Nagle et al., 2011). The losers in a pricing-game never benefit from participating. In a positive-sum game (e.g. sports) competition tends to generate positive effects, e.g. the competitive intensity in football increase the number of viewers which generates income for both teams. One team does not go bankrupt because they participated in a game.

A common misinterpretation is that competitive success is measured in high market-share (Nagle et al., 2011). If all competitors base their strategy on market-share maximization, the negative-sum can ultimately undermine the industry profitability (Nagle et al., 2011). Furthermore, competition-based pricing operates on the assumption that competitors have the correct answer and that every decision competitors make is intelligent. However, if all companies follow this strategy, over time, the entire industry pricing could slide to far away from the demand (Nagle et al., 2011).

Competition-based pricing is suitable for companies that continuously develop sustainable competitive advantages (Nagle et al., 2011). Sustainable competitive advantages are something that competitors can not directly duplicate. Brand, cost-leadership, strategic assets, barriers to entry are examples of sustainable competitive advantages (Nagle et al., 2011). For example, Amazon's e-commerce platform benefits from a high level of scale and efficiency that competitors can not directly replicate.

2.2.3 Value-based pricing

A value-based pricing strategy determines price by analyzing the actual and the perceived customer value of a product (Hinterhuber & Liozu, 2012). In order to develop a value-based pricing strategy, a company must understand and manage customers' perceptions of value and their WTP (Hinterhuber & Liozu, 2012). The customer value of a product or service can be defined as:

“The relationships between the performance of the product, the fulfilment of the customer's needs, and the total cost to the customer over the customer relationship life cycle.” (Payne & Frow, 2005, p. 172).

Companies need to be aware that value to the customer can change over time (Nagle et al., 2011). Since value to customers is an external factor that affects price, prices should also change over time. This should be reflected in a value-based pricing strategy.

One dimension of the customer value is the economic value. Smith and Nagle (2005, p.41) defines economic value as:

“The price of the customer's best competing alternative plus the value of the supplier's incremental offering over and above the best alternative”.

Offering a higher value to customers compared to competitors motivates a higher price. The quote also indicates that a value-based pricing strategy considers customers as well as the competitors. Calculating the economic value is an important activity in the development of a value-based pricing strategy, a topic that will be described in detail later in this thesis under section 2.3.1.

The main advantage with the value-based pricing is the heavy focus on the external factor; the customer (Hinterhuber, 2008). Cost-based and competition-based pricing strategies do not base their price on the value delivered to customers.

“The increasing endorsement of value-based strategies among academics and practitioners is based on a general recognition that the keys to sustained profitability lie in the essential features of value-based pricing, including understanding the sources of value for customers; designing

products, services, and solutions that meet customers' needs; setting prices as a function of value; and implementing consistent pricing policies." (Hinterhuber, 2008, p.41).

Cannon & Morgan (1990) are in line with Hinterhuber (2008) and claim that value-based pricing is the most suitable pricing strategy for long-term profits. In terms of value creation, value-based pricing (customer-led) is the opposite of cost-based pricing (product-led), visualized in *figure 4*.

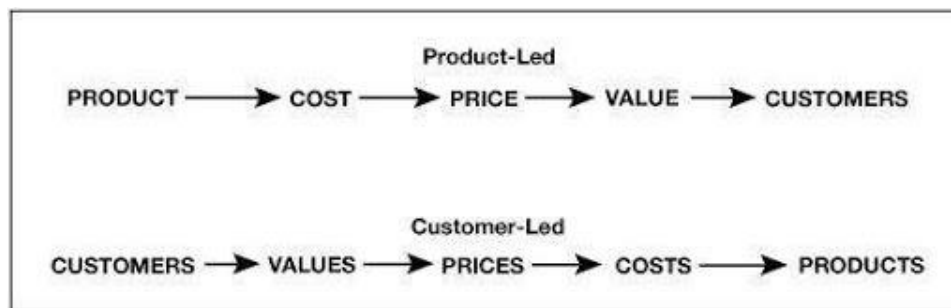


Figure 4. Alternative approaches to value creation (Nagle et al., 2011)

By developing a value-based strategy, companies can set a price that fully reflects the market conditions and in turn extract maximum value. According to Nagle et al. (2011), this implies the maximization of long-term profitability. Companies that have the knowledge and capability to build pricing strategies that identify, and extract value tends to be rewarded (Nagle et al., 2011). This is especially important in an era of increased competitive pressure, accelerated by globalization and technology as described in section 2.1.3. According to Nagle et al. (2011) companies that use a value-based pricing strategy earn 31% higher operating income compared to companies that develop other types of pricing strategies e.g. cost-based or competition-based.

Despite its popularity and benefits there are some obstacles with the development of value-based pricing. To identify and analyse data on customers and their WTP tends to be complex (Hinterhuber & Liozu, 2012). Customers are rarely aware of their WTP until they have tried the product for a while, making it hard for companies to build a clear picture of the WTP before the product launch (Nagle et al., 2011). Furthermore, companies must communicate superior value to customers and educate customers about the values in order to motivate a fair WTP. Sophisticated buyers could sometimes conceal their true WTP, knowing that the provider might change the price (preferably lower) depending on their answer (Nagle et al., 2011). There is a risk that value-based pricing leads to initially high prices, especially for niche products. Because of the initial high price,

new entrants are drawn to the market, offering comparable products at a lower price, outcompeting the incumbent company (Hinterhuber & Liozu, 2012).

2.3 Developing value-based pricing strategies

Based on the literature review and the discussion in the previous section, the value-based pricing strategy seems to be a superior strategy to the two other strategies. The principle of value-based pricing, which was new to many companies just three decades ago, is now more acceptable (Nagle et al., 2011). Still, most companies struggle with the development and implementation of value-based pricing and primarily base their price on costs and competitors prices (Hinterhuber & Liozu, 2012; Nagle et al., 2011). Hence, there are challenges in developing a value-based pricing strategy. Therefore, this section describes different activities that companies should consider when developing a value-based pricing strategy.

2.3.1 Activities

As mentioned previously in this thesis under section 1.1.3, Hinterhuber (2003) has designed a framework for the companies that would like to develop a value-based pricing strategy. The framework is visualized in *figure 5*.

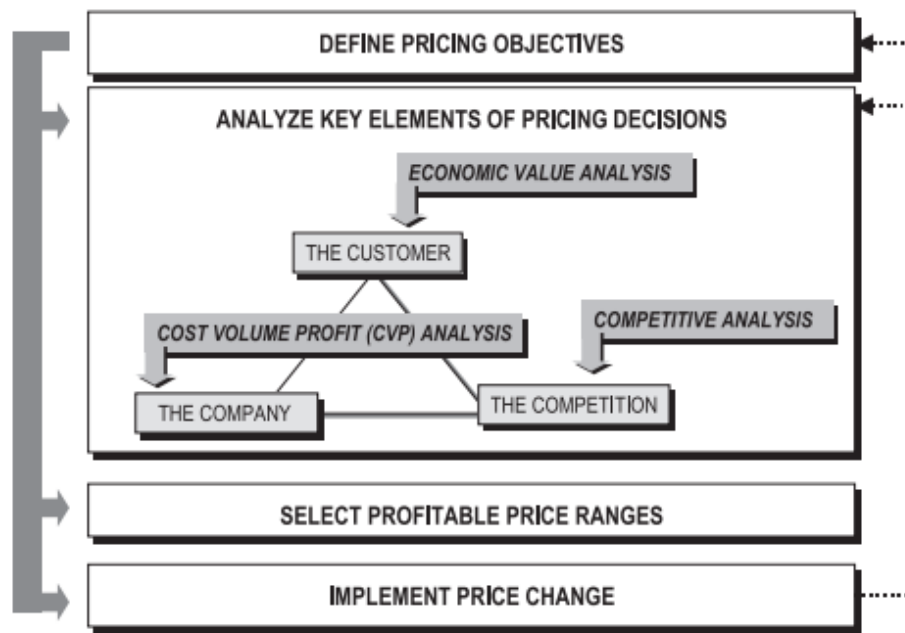


Figure 5. Value-based pricing framework (Hinterhuber, 2003)

Through both the method of reading top-rated journals as well as through chain search, it became evident that Hinterhuber is one of the leading researchers in the field. Hinterhuber has published several, highly cited, articles in the top journals, and chain search often leads to articles written by Hinterhuber. Therefore, the focal point of the literature used in the following sections is the framework proposed by Hinterhuber (2003). This framework is also at the centre of the theoretical background of this thesis.

2.3.1.1 Define pricing objective

Defining pricing objectives is a good start for companies that want to develop value-based pricing (Hinterhuber, 2003). According to Shipley & Jobber (2001), the pricing objective should have a clear connection to the overall organizational objectives for the companies. This is in line with what Brassington & Petit (2013) recommends in their framework described under section 2.1.1. Suppose that a company's overall goal is to increase market share, then the pricing objectives could be designed to set prices that generate high market penetration (Hinterhuber, 2003). If the overall goal is to be profitable, another pricing objective might be more suitable. There are three types of pricing objectives according to Cant et al. (2016), profit-oriented, sales-oriented, and status quo-oriented. An explanation of the three pricing objectives is visualized in *figure 6*.

| Profit orientated | Sales orientated | Status quo orientated |
|---|--|--|
| Organisations may aim to set prices that will maximise their current profits. In this attempt they evaluate demand and costs accompanying the alternate prices and choose the price that will maximise profits, income or rate of return on investment. | Sales objectives are essentially expressed in terms of sales volume or market share. The motivation for setting sales volume objectives is to create growth in sales or to sustain current sales levels. | Sales quo objectives are tactical goals that encourage competition on factors other than price. Organisations that base their pricing strategy on this employ such an orientation in order to remain competitive or to avoid price battles with their competitors. |

Figure 6. Different types of pricing objectives (Cant et al., 2016)

There is no “one fits all” when it comes to pricing objectives, they are bound to vary by type of product and over time (Hinterhuber, 2003). Different divisions within a company could, therefore, have different pricing objectives. The end goal with defining and setting pricing objectives is to build a foundation for the pricing strategy. Companies should have in mind that pricing strategies are context-specific and could, therefore, change over time.

2.3.1.2 Economic value analysis

The next activity is to calculate the economic value for customers (Hinterhuber, 2003). There are different views and ideas on how to calculate the economic value. Harvard Business Review (2016) suggest the following procedure: Firstly, identify the target segment. Secondly, compare the company's product/service with the next best alternative on the market. Thirdly, identify which product/service characteristics that are unique and differentiated from the next best alternative. Finally, put a price on these unique characteristics and add them together to quantify the economic value.

Hinterhuber's (2003) framework suggests a six-step model to calculate the economic value to customers. It has many similarities with the ideas proposed by Harvard Business Review (2016).

1. *"Identify the cost of the competitive product and process that consumers views as best alternative."* – (Hinterhuber, 2003, p.769). The purpose of this step is to identify and analyse any type of reference product that customers could view as the best competitive alternative to the product in question. A reference product could be a product, service, activity, or process, it does not need to be a physically similar product. Since there can be several competing alternatives, companies are recommended to calculate the economic value in relation to the top three competing alternatives.
2. *"Segment the market."* – (Hinterhuber, 2003, p.769). Different customer segments put different economic values on the company's product and competing reference products. Therefore, it is critical to segment the market into different customer groups and choose a target customer group.
3. *"Identify all factors that differentiate the product from the competitive product and process."* – (Hinterhuber, 2003, p.770). Customer value can appear in various forms e.g. flexibility, quality, brand prestige, and so on. Companies should view their products from a customer perspective and figure out what factors are unique compared to the reference products.
4. *"Determine the value to the customer of these differentiating factors."* – (Hinterhuber, 2003, p.770). When the company has identified the differentiating factors, monetary values should be calculated for each of the factors for each of the target customer segments. A useful tool for this step is conjoint analysis. The purpose of conjoint analysis is to assign

monetary values to certain attributes like the differentiating factors. It could also be used to analyse customer trade-offs e.g. which factors that customers value higher compared to other factors.

5. *“Sum the reference value and the differentiation value to determine the total economic value.”* – (Hinterhuber, 2003, p.770). The next step is simply to add all the monetary values together. Thereafter, calculate the total economic value by adding together the price of the reference product and the sum of monetary values for the differentiating factors.
6. *“Use the value pool to estimate future sales at specific price points.”* – (Hinterhuber, 2003, p.770). The final step of the process is to use the calculated economic value to set different price levels and estimate sales volume ranges for each price level.

2.3.1.3 Cost-volume-profit analysis

An important part of the pricing strategy is to have control over the company's cost structure, companies should also be aware of how cost, sales volume, and profitability are connected (Hinterhuber, 2003). The next activity is therefore to do a cost-volume-profit (CVP) analysis. The purpose of CVP analysis is to assist companies in answering questions such as: “If the price of a product increases by 20%, how much will sales volume decrease? How much sales volume do we afford to lose? Will the price increase lead to increased/decreased profits?”. Smith & Nagle (1994) propose the following formula for CVP analysis:

$$\text{Break even sales change (\%)} = - (\% \text{ Price change}) / (\% \text{ Contribution margin} + (\% \text{ Price change}))$$

For example, if a product has a contribution margin of 20% and prices are increased by 10%, it is profitable for the company if sales do not decrease by more than 33%.

Nagle et al. (2011) highlights the importance of a CVP analysis and claim that CVP analysis is one of the first important steps towards effective strategic pricing. Furthermore, CVP analysis has several similarities with the external factor; demand curve, mentioned by Brassington & Petit (2013) in their framework. Both seek to investigate questions such as “How will the consumers demand for a product/service change with an increase/or decrease in price?”. However, CVP analysis is taking it one step further and look at how it will affect a company's profitability.

2.3.1.4 Competition analysis

The main focus of a value-based pricing strategy is customer value but customer value is very dependent on what “the next best alternative” to the company's product is (Hinterhuber, 2003: Harvard Business Review, 2016). Consequently, companies have to consider the competitive landscape when they develop a value-based pricing strategy. Therefore, the next activity is to do a competition analysis.

Threat of new entrants is one aspect to consider as mentioned by many academics in the field of competition analysis, Michael Porter (1979) for example. Companies must analyse and try to anticipate what types of new competitors that might enter the market (Hinterhuber, 2003). If prices are set high to ensure high margins, new entrants might launch competing products at lower prices and take market shares. The intensity of new entrants depends on factors such as barriers to entry, customer lock-in effects, and access to raw materials (Hinterhuber, 2003). Companies shall also monitor the price trends in the existing market, what the current situation looks like, and how it can develop in the future. By doing so, it will be easier for companies to set better prices. In addition, competitors' actions to price changes should be analysed and tested. As mentioned earlier in this thesis under section 2.1.2, a company that can anticipate likely outcomes of a price increase/decrease has a competitive advantage (Nagle et al., 2011).

Another important part of the competition analysis is to identify and monitor competitor strategies in different market segments (Hinterhuber, 2003). Segments should also be analysed on factors such as profitability, product category, strengths, and weakness within the segment. Companies should also try to anticipate future competition within each segment. The accumulated information should be used to answer questions like: “Which of the current market segments are most profitable? Are any of them threatened by the strategies of competitors?”.

For those companies that use distributors it is important to monitor the competition within distribution channels (Hinterhuber, 2003). It includes identification of market shares within different channels, pricing policies, and incentive schemes of distributors, how competitors work with distributors among other things.

Similar to what Harvard Business Review (2016) describes as the next best alternative in their framework, Hinterhuber (2003) mentions that companies must identify and analyse reference value for customer groups. Hinterhuber (p.776, 2003) defines the reference value as:

“The customer’s best alternative to the product being acquired”.

Reference value can differ between customer groups and the reference value can change over time. Therefore, it is critical to monitor reference values for each related competitive product. The information should be reflected in the pricing strategy. This activity has many similarities with step 1 in the economic value analysis described under section 2.3.1.2.

2.3.1.5 Determine profitable price levels

Based on the information provided by the previous activities (Economic value analysis, CVP analysis, and competition analysis) profitable price levels should be determined (Hinterhuber, 2003). Before setting these price levels, it is recommended to reach out to sales and marketing divisions and collect additional information as a sanity check. Suppose that previous activities suggest a price at 30 \$ but the sales division considers it to be unrealistically high, this information must be considered before the pricing strategy is implemented.

2.3.1.6 Implement price strategy

The final activity is to implement the value-based pricing strategy (Hinterhuber, 2003). This activity includes involvement from several stakeholders. It is especially important to have sales and marketing divisions on board with the pricing strategy since they are the ones communicating with customers. They are the ones that will enforce the pricing strategy and therefore, they should be included in the development of the strategy and decisions on pricing. Without support from sales personnel, it is hard to be successful with any pricing strategy. Furthermore, since the sales force are the ones talking with customers, they will have valuable information regarding customers' needs and how they reason. This could be helpful when developing a pricing strategy.

For a company that has a value-based pricing strategy, it is important that marketing and sales personnel sell on value instead of price (Hinterhuber, 2003). In order to do this, companies could implement fixed price policies. This means that there will be less wiggle room on price when

selling and focus will instead be on the value. It is also important that the incentive structure for the sales force is aligned with the strategy. One way of doing this is to reward based on profit instead of revenue, which is the more common factor. Furthermore, marketing employees must communicate the right values to customers in order to support the value-based price and they should be creative in doing so.

2.4 Product-service systems

In order to understand how or if the development of a pricing strategy for a PSS differs from developing pricing strategies for products or services, there must be an understanding of what a PSS is. Therefore, this chapter describes the different factors of a PSS, the three main types of PSS, and what the potential effects are from developing it.

PSS is an integration between products and services which together delivers value to customers (Reim et al., 2015). This integration enables an increased efficiency which can result in economic and environmental improvements (Mont et al., 2006). Developing PSS is a strategy that is increasingly being implemented by companies around the world (Mont, 2002). This initiative comes from companies finding it difficult to stay competitive, while just selling products alone, in the increasingly competitive market (Tukker, 2004). Thus, integrating products and services creates an opportunity for companies to differentiate their offering and avoid commoditization (Annarelli et al., 2019). The whole idea rests on increasing the value delivered to the customer through the integration of products and services and thus the pricing strategy of such an offer might differ from selling products or services alone.

2.4.1 Factors of a product-service system

When developing a PSS there are several things to consider that could differ from offering products in a conventional way. These factors could have an impact on the development of the pricing strategy for the PSS. Lay et al. (2009) propose five key elements to understanding PSS; ownership, personnel, location of operation, single/multiple customer operation, and payment model. *Figure 7* exhibits an overview of these elements.

| Characteristic Features | | Options | | | |
|---|----------------------------|--|--|---------------------------------|-------------------|
| Ownership | <i>during phase of use</i> | Equipment producer | Leasing bank | Operating joint venture | Customer |
| | <i>after phase of use</i> | Equipment producer | Leasing bank | Operating joint venture | Customer |
| Personnel | <i>Manufacturing</i> | Equipment producer | Operating joint venture | Customer | |
| | <i>Maintenance</i> | Equipment producer | Operating joint venture | Customer | |
| Location of operation | | Equipment producer's establishment | Establishment "fence to fence" to the customer | Customer's establishment | |
| Single / multiple customer operation | | In parallel operation for multiple customers | | Operation for a single customer | |
| Payment model | | pay per unit | pay for availability | fixed rate | pay for equipment |

Figure 7 - Factors to understand with PSS (Lay et al. 2009)

There are two factors to consider when it comes to ownership of the product: ownership during the use-phase and ownership after the use-phase (Lay et al., 2009). During both phases, the ownership can stay with the provider or get transferred to the customer. There are also other options to handle the financing where the product is sold to a leasing bank or where joint ventures are set up. Ownership after use is an important aspect since someone has to handle the disposal of the product but there can also be an opportunity for value in the form of recycling and remanufacturing. Thus, the ownership does not necessarily have to be at the same actor in the use phase and after the use phase.

With the existence of both manufacturing and maintenance/services, there must be a consideration of how to provide personnel for these activities (Lay et al., 2009). Depending on the structure of the PSS, this responsibility can fall on either provider, customer, or joint venture. The operation can be located either at the provider's facilities or the customer, but there can also be a situation where the provider establishes operations at the customer's facilities. Depending on the character of a product, there are possibilities to serve one or several customers with the same product. The final aspect is the payment model. The most common model is the pay for equipment option, but several possibilities can be more desirable for the customer such as paying for usage time, availability, or even paying per unit of output. These features can be combined in different ways and they are usually categorized into three main types that are described in the next section.

2.4.2 Types of product service systems

The integration of products and services allows many different structures of PSS and research generally divide these into three categories: product-oriented PSS, user-oriented PSS, and result-oriented PSS (Tukker, 2004).

2.4.2.1 *Product-oriented PSS*

Product-oriented PSS is the category which is the most similar to conventional selling of products (Annarelli et al., 2019). The focus lies on the product itself and the ownership is transferred to the customer. An example of a product-oriented PSS would be to include yearly maintenance when selling a car (Mustonen et al., 2019). With the offering comes additional services that can be categorized in two ways: product-related services and advice and consultancy services (Tukker, 2004). The product-related services focus on things necessary for the use of the product. This can be things like maintenance and refill of consumables but also financing and end of product life services. Advice and consultancy services are instead focused on the efficient use of the product.

2.4.2.2 *Use-oriented PSS*

Use-oriented PSS is vastly different from conventional selling of products in the sense that ownership is never transferred to the customer (Annarelli et al., 2019). Instead, the focus lies on providing access to the use of the product. Examples of use-oriented PSS are car leasing and car-sharing platforms (Mustonen et al., 2019). Services come in the form of leasing, renting, or pooling of the product (Tukker, 2004). By leasing the product, the customer gets unlimited and sole access to the product for a certain amount of time. Product renting is similar to product leasing but the difference is that the product is accessed sequentially, thus the product can be accessed by other customers between uses. Product pooling is similar to both product leasing and product renting but can be accessed by several customers at the same time. For all these categories, the provider has the responsibility to keep the product in good condition through control, maintenance, and repair.

2.4.2.3 *Result-oriented PSS*

The result-oriented PSS is the PSS that is most similar to selling conventional services (Annarelli et al., 2019). Instead of focusing on the product or accessibility, the result-oriented PSS focus on

the outcome. The ownership of the product remains with the provider. Following the earlier car examples, result-oriented PSS would be a taxi ride (Mustonen et al., 2019). Services can be categorized as activity management/outsourcing, pay per service unit, or functional result (Tukker, 2004). Activity management/outsourcing means that a customer's activity is outsourced and the provider will fulfil the activity according to a certain result and quality. Pay per service unit means that the customer pays per output and thus payment is directly related to the amount of usage. Functional result service means that the provider agrees to deliver a result that is abstract. How the provider delivers this result is more up to them and thus they are not limited to a specific technology in doing so.

2.4.3 Effects of implementing product-service systems

Given the description above, it is clear that PSS can be formed in vastly different ways. However, they have in common the potential for increased value for customer and benefits for the company providing the PSS. Moving away from conventional selling of products towards an integration of products and services potentially comes with both economic and environmental benefits (Annarelli et al., 2019).

A product sale entails a short interaction with the consumer whereas services entail a continuous interaction (Annarelli et al., 2019). Thus, by incorporating services to the offering, the interaction with customer increases. This builds stronger relationships with customers and increases retention which is increasingly important as discussed under section 2.1.3. Furthermore, a closer relationship with customers enables information exchange. Information can be used to understand how the customers use the product which can lead to product improvement, but the information can also let the provider understand other customer needs so new offerings can be developed.

Integrating services allows companies to decouple economic performance with material consumption which can be both economically and environmentally beneficial (Annarelli et al., 2019). It can be done by an increased product lifetime or product performance through repair, maintenance and consultation. This can reduce input consumables and prolong the products lifetime. Also, some PSS enables multiple users for the same product which increases the utility of the products.

3 Methodology

This chapter will present how the study was conducted and provide motivations as to why it was done this way. The chapter starts with an introduction and a description of the case. Then the literature review process is described followed by descriptions of the research design which includes the data that has been used and how it has been analysed. Finally, research quality and research ethics are described.

3.1 Introduction

This thesis was written during the spring semester of 2020. However, the contact with company X started with an initial meeting in October 2019 where the manager of one of company X's innovation division, division Y, described what they were working on. This is when a broad scope of the project started to take form and several meetings with company X followed during the fall of 2019. The actual work began in January at the same time as the thesis was assigned a supervisor from Chalmers. Relevant literature was reviewed, and research questions and the design of the thesis were finalized at the end of March. Shortly after, the collection of data was initiated and was finished at the end of April.

3.1.1 The case – PSS launch at company X

Company X is a global player in the health industry. They have so far mostly focused on simpler products with no digital aspects involved. As a part of a new strategic initiative, the company is launching a new PSS directed to home care for patients. The new PSS provides caregivers with information regarding the loved one's need for care. The PSS consists of a sensor device, which sends information about the care status of the patient to the caregiver. This is a completely new PSS for the company and a fairly new concept within the industry. Company X is currently developing a value-based pricing strategy for their new PSS. Hence, company X's situation is a suitable case in regard to the purpose and research questions.

3.2 Research Design

Research can be divided into two main ways of using theory and empirical data (Bryman & Bell, 2015). The inductive approach sets out from observations and tries to understand these in order to end up with a theory to explain these observations. The deductive approach, on the other hand, starts with a theory and builds hypotheses and uses observations to test these. Since this thesis aimed to understand the activities taken when companies develop value-based pricing for a PSS, an inductive approach was chosen.

In order to evaluate how companies develop value-based pricing strategies for new product-oriented PSS, a case study was conducted. According to Bryman & Bell (2015), a case study is a good way to get an in-depth understanding of a situation. Since both PSS and value-based pricing are rather complex topics and quite unexplored both in practice and literature, an in-depth case study analysis was seen as necessary. The case study was based on primary data collected through interviews and meetings, and secondary data collected from company X's internal database. The data collection and analysis are described later in this chapter.

There are two main ways to conduct research, either through a quantitative or a qualitative approach (Bryman & Bell, 2015). The quantitative approach means that there is one way of looking at the world and therefore it can be described and understood through statistical analysis of large amounts of data. The qualitative approach, on the other hand, takes a more subjective stance. The focus lies instead on the interpretation and analysis of words from different individuals and their views. Given that both value-based pricing and PSS involves many actors in a company who can view the situation differently but still correct, a qualitative approach was seen to be suitable. In addition, given the explorative and descriptive manner of the thesis's purpose, a qualitative approach is necessary.

Furthermore, a qualitative approach is suitable when data collection and analysis happen iteratively whereas a quantitative approach entails more of a structured way of working with data collection first, followed by data analysis (Holme & Solvang, 1991). Because of the exploratory and understanding manner of the thesis, data was iteratively collected and analysed to guide the work forward which further supports a qualitative approach.

3.3 Literature review

The thesis began with a literature review to understand what value-based pricing is and how companies should develop it. Furthermore, the theoretical background also laid the base for the interview questions by identifying overarching themes and factors that affect the development of value-based pricing strategies. Since there is a vast amount of literature available, in particular for a value-based pricing strategy, it is important to choose sources of high quality (Bryman & Bell, 2015). The literature was mainly chosen from Chartered Association of Business Schools top-rated journals within the fields of Marketing, Innovation, Psychology, and Strategy, and then searched by relevant keywords in google scholar. Furthermore, a chain search method has also been applied to access relevant sources by letting one source lead to several others (Bryman & Bell, 2015).

3.4 Data collection

3.4.1 Primary data

The primary data was collected through qualitative semi-structured interviews with company X employees. The outcome of the interviews was a description of the work done as well as reflections and challenges. The interviewed employees had knowledge of strategy, costs, markets, sales, and other functions connected to the development of the pricing strategy for the PSS. The interviewees were chosen in discussions between the authors and the company X supervisor. The selection criteria were that the interviewees should have been involved in the development of the pricing strategy for the PSS. *Table 1* shows a list of the interviewees, their respective role, number of interviews, and approximate length of the interviews.

| Interviews | | | |
|-------------|---------------------|----------------------|-----------|
| Interviewee | Area | Number of interviews | Duration |
| Employee 1 | Division Y | 4 | 40-50 min |
| Employee 2 | Division Y | 3 | 45-55 min |
| Employee 3 | Division Y | 3 | 40-50 min |
| Employee 4 | Division Y | 1 | 1 hour |
| Employee 5 | Division Y | 1 | 1 hour |
| Employee 6 | Division Y | 1 | 1 hour |
| Employee 7 | Intelligence unit | 1 | 1 hour |
| Employee 8 | Market & Sales unit | 1 | 1 hour |
| Employee 9 | Market & Sales unit | 1 | 1 hour |

Table 1: A list of the interviewees, their role, number of interviews, and approximate length of the interviews.

The interviews were semi-structured to ensure that the interviews followed specific topics but at the same time give room for the interviewee to answer in a way they seem fit and to start interesting discussions (Bryman & Bell, 2015). Overarching interview topics were created based on pricing strategy development activities found in the theoretical background. These topics formed a topic guide which was the foundation of the interviews, it can be found in *appendix A*. The topic guide made sure that interview discussions stayed relevant and to the area of interest. The interview questions were open-ended and non-leading in order to receive answers that are not biased or affected by the way the questions were phrased (Easterby-Smith et al., 2015). Topic guides should be formed in three categories; opening questions, questions on certain topics and finally closing questions (Easterby-Smith et al., 2015). The opening questions were focused on the interviewee and fulfilled two purposes. They acted as an icebreaker to get the conversations to feel more natural and also gave the interviewers a better picture of the interviewees' background. The closing questions gave the interviewee the opportunity to add additional information that they deemed relevant to the interviewers' project which turned out to be valuable.

Before each interview, the interviewee was notified about the purpose of the thesis as well as the topics that would be covered during the interview. This was done so that the interviewee could prepare for the topics of discussion but also give the interviewee the opportunity to decline the interview if they felt that they were the wrong person to talk to. Recording interviews is a good way to make sure that the information collected is accurate to what actually was said during the interview (Easterby-Smith et al., 2015). Therefore, during each interview, consent was asked to record the interview. One issue with recording interviews is that interviewees can be more restrictive with giving information for confidentiality reasons (Easterby-Smith et al., 2015). This was not an issue in this case since the interviewers had signed a non-disclosure agreement at the beginning of the project. This meant that company X had the right to review the information included in this thesis before it was submitted.

The plan from the start was to conduct all interviews at company X's office with exceptions for the interviews with employees abroad. The latter would be conducted through Skype. However, after a few face-to-face interviews at the office, the COVID 19 outbreak made it necessary to conduct the remaining interviews on Skype in order to comply with company rules. The COVID 19 outbreak also made interviewees less available for interviews due to an increased workload for

the interviewees. Furthermore, the COVID 19 situation created delays in the feedback loop between the authors, Chalmers and company X. Still, considering the circumstances, the process has been handled well by all parties involved.

Apart from conducting interviews, the authors spent most of their time, in February and Mars, at company X's office in order to get a good picture of the company. During this period, several meetings were held with employees of company X. The purpose of these meetings was mainly to introduce the PSS, company X, and their employees to the authors in order to give context and an outline of the company, structure, offerings etc. In addition, several "chats" by the coffee machine occurred during this time. Notes were taken during and after the meetings and coffee "chats". These notes helped the authors to understand the situation and were also used, to a certain extent, to support the data collected from the interviews. *Table 9* shows a list of the employees, their area, number of meetings and approximate duration of the meetings.

| Introduction meetings | | | |
|-----------------------|------------|----------------------|-----------|
| Interviewee | Area | Number of interviews | Duration |
| Employee 1 | Division Y | 8 | 30-45 min |
| Employee 2 | Division Y | 4 | 45-55 min |
| Employee 3 | Division Y | 3 | 45-55 min |

Table 2. A list of the employees, their role, number of meetings, and approximate length of the introduction meetings.

3.4.2 Secondary data

Data collected by someone else is called secondary data. It is important to handle secondary data critically since it has been collected for a different purpose and it is possible to misinterpret. (Bryman & Bell, 2015). In this case, the secondary data came in the form of internal company X documents containing insights, market research, strategy, etc. This made it possible for the authors to talk to the people who collected the data in order to fully understand it and why it was collected. The secondary data was accessed through company X's database. The data came in the form of market studies, project plans, solution presentations, etc. The documents were initially collected based on recommendations from the company X supervisor to get a basic idea of what has been done in connection to the PSS. Documents were also collected based on recommendations or references from the interviewees for further information.

3.5 Data analysis

As mentioned, secondary internal data was used for two main purposes. Firstly, it gave a background to the situation at company X and things they have done such as market studies, etc. This was necessary in order to have productive and relevant interviews. Secondly, some interviewees referred to documents for more detailed information which saved time during the interviews. Information from these documents was included in the data analysis.

The transcribed interviews were continuously read through to see if something needed to be further investigated or explained. When this was the case, a follow-up interview was conducted.

When the interview phase was finished and the complementary information from meetings and internal documents had been extracted, the main analysis began. It was done by following the inductive analysis method proposed by Gioia et al. (2012). According to Gioia et al. (2012), the data should first be coded into first-order concepts based on similarities and differences. Secondly, these concepts are further analysed and grouped into second-order themes and investigated how and if the concepts relate to existing theory in this new context. Thirdly, the themes are grouped into aggregate dimensions which explains the themes on an aggregated level.

The raw data was displayed as quotes from the transcribed interviews or the internal documents. Only data that had a connection to the PSS or the development of the pricing strategy were included to make the analysis relevant and more manageable. The raw data was initially sorted based on which interview question it came from, this made it easier to get an overview of the data. Furthermore, the quotes were colour-coded with one colour per interviewee. This made it possible to go back to the transcription in case the quote referred to something said earlier in the interview. The process then followed the Gioia method as described above and the outcome was a structured description of the pricing strategy development and its included actors. See *appendix B* for the codes.

3.6 Research quality

In order for research to be useful, it has to be of good quality (Easterby-Smith et al., 2015). According to Tracy (2010), there are eight criteria that need to be considered to achieve good quality in qualitative research; worthy topic, rigour, sincerity, credibility, resonance, contribution,

ethics, and meaningful coherence. A worthy topic means that the research must be relevant. The worthiness of this project's topic comes from the authors finding limited research on the relevant topics value-based pricing development and PSS in combination as well as the value-based pricing of a new PSS in particular. Rigour is about the choices made regarding how the research was conducted (Tracy, 2010). The authors have read methodological theory as well as have had discussions with their supervisor in order to conduct the research in a fitting way. Furthermore, the data were analysed by using the structured analysis method proposed by Gioia et al. (2012). Sincerity is about the authenticity and genuineness in which the research has been conducted (Tracy, 2010). The project is clearly stated to be in collaboration with company X and the project has been written with an objective view. In order to avoid unconscious bias, the interviews were recorded and thoroughly transcribed to decrease the risk of only taking notes of things that the authors find interesting at that time. The credibility of the project was pursued by recording the interview in order to get as detailed descriptions as possible. One method of increasing the validity is to use triangulation by collecting data through several sources and methods (Creswell, 2007). The data in this thesis was to a large extent validated by secondary internal data, and notes from meetings and conversations. Asking the same questions and receiving supporting answers from several interviewees can increase the reliability of the collected data (Voss et al., 2002). This was done in the data collection which further supports the credibility. Furthermore, as mentioned under section 3.5, when there was confusion regarding the collected data, follow up interviews were held to ensure that there were no misunderstandings. Finally, all the collected data was reviewed by company X for two purposes; to make sure that no sensitive information was included and to ensure no data were misunderstood.

| Criterion | Questions to consider |
|----------------------|--|
| Worthy topic | Is the research topic relevant, original, timely, significant and/or interesting? |
| Rigour | Does the study use appropriate data, concepts and methods? |
| Sincerity | Is the study characterized by (self-)reflexivity and transparency? Does it provide me with the information I need to evaluate the study? |
| Credibility | Is the study marked by detailed descriptions, the explication of tacit knowledge, and triangulation? |
| Resonance | Does the research affect readers/audiences through evocative representations, appropriate generalizations, and transferable findings? |
| Contribution | Does the research make a significant contribution in one or more of the following areas: theory/concepts, methodology/ methods and practical impact? |
| Ethics | Does the research consider ethical issues? |
| Meaningful coherence | Does the study fulfil its aims? Do the methods and techniques used fit with the stated aims? Does the research meaningfully connect literature, research questions and findings? |

Figure 8 - Eight criteria for good research quality (Easterby-Smith et al., 2015)

Resonance is about how the thesis is aesthetically presented and in what way the findings can be useful in regards to transferability (Tracy, 2010). The thesis was written with introductions to each section in order to create bridges that make it easier to follow how everything is connected. Case study research has a weakness when it comes to transferability (Hoorani et al., 2019). However, by providing a detailed description of the findings and the context, it is possible for the reader to determine if the findings are transferable to their situation (Creswell, 2007). The contribution is assessed based on whether the thesis contributes to the current knowledge available (Tracy, 2010). The thesis was initiated by a literature review where the conclusion was that the available research on development of value-based pricing and PSS was limited, especially for new PSS. The ethical aspects are described under the section research ethics. Finally, meaningful coherence refers to if the study achieves what it aimed to and if there is an appropriate use of methods and literature (Tracy, 2010). The theoretical background and the interview questions have all been developed with the research questions in mind in order to make sure that work proceeds in the right direction and fulfils the purpose of the thesis.

3.7 Research ethics

Ethics within the medical sciences have a long history (Easterby-Smith et al., 2015). This is mainly because of the direct risk of harming participants in studies through experimentation. However, ethics within management and business research has more developed in recent years. Even though management and business research do not pose a direct threat to people's health, the results can have economic effects on people. Bryman & Bell (2007) propose ten principles of ethics within the social sciences which also apply for sciences in management and business with some small adjustment from Easterby-Smith et al. (2015). These principles are displayed in *figure 9*.

| | | | |
|----|--|---|-------|
| 1 | Ensuring that no harm comes to participants. | } Protection of research participants | _____ |
| 2 | Respecting the dignity of research participants. | | |
| 3 | Ensuring a fully informed consent of research participants. | | |
| 4 | Protecting the privacy of research participants. | | |
| 5 | Ensuring the confidentiality of research data. | | |
| 6 | Protecting the anonymity of individuals or organizations. | | |
| 7 | Avoiding deception about the nature or aims of the research. | } Protection of integrity of research community | _____ |
| 8 | Declaration of affiliations, funding sources and conflicts of interest. | | |
| 9 | Honesty and transparency in communicating about the research. | | |
| 10 | Avoidance of any misleading or false reporting of research findings. | | |

Figure 9 - Ten principles of research ethics (Easterby-Smith et al., 2015).

This research project has taken actions to make sure that all these principles are taken into account. Item one to six are considering the protection of participants in the research project (Easterby-Smith et al., 2015). This is considered through several actions. First of all, the company and the interviewees were anonymized. In addition, the purpose of the project has been clearly communicated to company X. Furthermore, in advance of the interviews, all interviewees are informed about the purpose of the project and the topics that will be covered in the interview. The interviewees are asked for approval to record the interview and all participants are anonymized. In order to protect the company, the authors have signed non-disclosure agreements, giving company X the right to exclude sensitive information, that could harm the company, from the thesis. The last four items are aimed towards the integrity of the research community (Easterby-Smith et al.,

2015). To stay in line with these items, the cooperation with company X is disclosed and the thesis follows academic guidelines. This is more described in the section *Research quality*.

4 Results

The following chapter describes the results from the case study at company X. The chapter consists of eight sections, where the first two introduce the reader to the results. In the first section, the relation between company X, division Y, and the PSS is briefly described. The second section provides a summary of how the pricing strategy is developed, including an overview of the process and the six ingoing activities. The other six sections correspond to the six activities that division Y conduct when developing their pricing strategy for the PSS. Each section describes the activity in detail, highlights the involved actors, and explains challenges related to the activity. All information presented in this chapter has mainly been obtained through interviews with employees at company X. Some secondary data provided by company X and notes from meetings have been used to support the interview data and to fill gaps or provide further details.

4.1 Company X, division Y and the product-service system

This section is an introduction to company X and division Y and how they are connected. It also contains a description of the PSS. This section is based on the introductory meetings with employees 1, 2, and 3.

Company X is a health company with a global presence. The company has several brands and has historically produced disposable products. These are mature markets with rather low technology products. Even though company X is offering high-quality products, the product types are moving towards becoming commodities and thus the margins are being pressured. To deliver increased value to their customers and to differentiate, the company is developing digital solutions which would enable the company to protect their margins. This is done by an innovation division called division Y, they are a branch within one of company X's global innovation units. One of the solutions they are working on is the PSS in focus of this thesis. Division Y is not only responsible for developing solutions but also to develop a pricing strategy, get it out on the market, and follow the performance.



Figure 10 - Simplified organizational chart of company X

The PSS is a solution that aims to help caregivers in their quest to provide good care to their loved ones. The solution is accessed through a mobile application. There are three main features in the solution which are educational content, communication between caregivers, and patient care status. The educational content is supplying caregivers with information on how to give quality care to a loved one. The communication feature is a chat where the patient's caregivers can organize the care and it comes with a scheduling function where events like medical appointments, patient care events, etc. can be added. The patient care status is the main feature. It is a device that notifies the caregivers when the patient needs care. The device contains a few parts that must be replaced at different time intervals. This replacement will be handled by company X. The shipments are sent out automatically to the address given by the customer. The PSS is obtained by a subscription. The instructions are given in the package but there will also be educational content in the PSS application that helps the caregivers with the use of the PSS.

4.2 Developing the pricing strategy

This section is an overview of the pricing strategy development process. It will help the reader to follow the process in the following sections. The information is based on the following sections. The process of developing a pricing strategy could be different between divisions in company X, this is because different divisions are responsible for different products, services, and markets,

etc. Regarding division Y, which is responsible for the PSS in focus, they are developing their pricing strategy through a process visualized in *figure 11*.

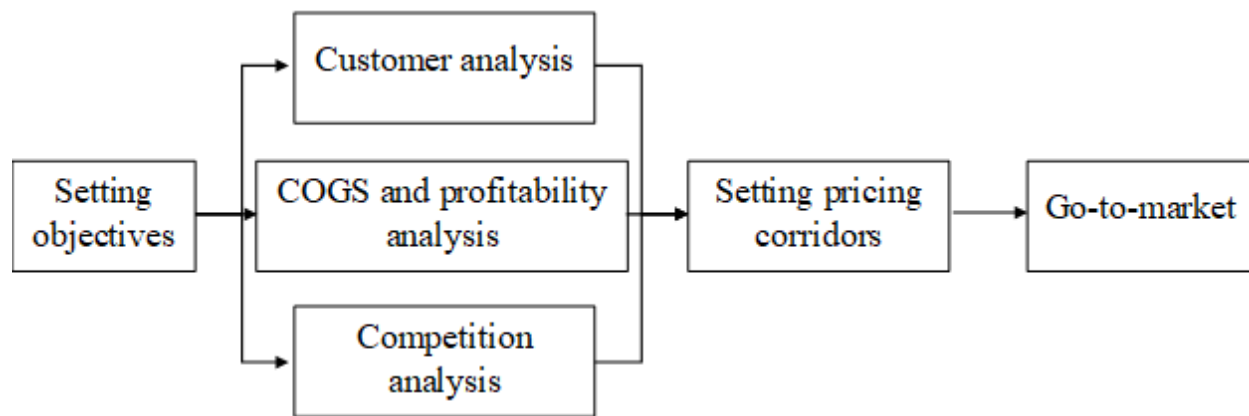


Figure 11 - Development-process of the pricing strategy

Division Y begins with setting objectives, thereafter they do three types of overarching analyses: customer analysis, COGS and profitability analysis, and competition analysis. The next step is to set price corridors which is a price interval that local markets should consider when setting their prices. Division Y sets the pricing corridors based on the objectives and the insights from the three different analyses. When pricing corridors are set, division Y brings the pricing strategy and the PSS to the market in collaboration with other parts of the company. The following sections in the results will describe every activity of the process in detail.

Division Y has the main responsibility for the PSS and the development of the pricing strategy. Still, division Y is a part of company X and much of the activities that they do are closely related to activities that company X does in general. Therefore, the following sections in the result will describe the activities both from the perspective of company X and from the perspective of division Y. This will enable the reader to better understand the dynamics surrounding the development of the value-based pricing strategy for the PSS.

4.3 Setting objectives

The first thing that company X does when developing a pricing strategy for new offerings is to discuss and determine objectives. Company X has several types of objectives: general objectives, sub-objectives, and pricing objectives. The pricing objectives, which are closely related to the pricing strategy, depend on other types of objectives. The structure between different objectives,

as well as factors affecting the objectives, are described in this section. Furthermore, challenges and actors involved in the processes are described.

4.3.1 General objectives

At company X, the pricing objective, which is the foundation of the pricing strategy, is discussed and determined after the general objectives have been set. According to employee 3:

“There can’t be a discussion about pricing objectives before proper general objectives are in place. Pricing objectives comes later and depends on the general objectives” - Employee 3

General objectives are set on many different levels in company X, from overarching objectives for the whole company down to objectives for an individual product. Business units, local markets, and individual products have a profit objective which tends to be one of the major overarching general objectives. Adding the individual product's profit objectives together creates an accumulated profit objective for local markets and business units. Employee 3 describes this as:

“The profit objectives create a red thread within the company, connecting objectives between individual products, local markets, and business units.” - Employee 3

Through good and efficient communication between different actors within the company, it is made sure that the red thread is intact. In general, the actor that owns the profit objective is responsible for setting the general objectives but there is a continuous dialogue with other relevant actors. Thus, it is often more than one actor involved in the activity of determining general objectives. In addition, external parties in the form of suppliers, customers, and advisors also have an indirect effect on the general objectives.

According to employee 3, division Y can be described as a portfolio company within company X that develop and manage digital solutions:

“We are sort of like a portfolio company within company X. We develop and then manage digital solutions connected to our core business” - Employee 3

The PSS is one example of an offering in division Y’s portfolio. Division Y owns the overarching profit objective for their unit and is thus responsible for setting the general objectives for the unit and the offerings in their portfolio. During the decision-making process, they are in dialogue with

vice presidents (VPs) for involved business units and VPs for involved local markets. These are the main actors involved in the activity of determining general objectives for division Y.

The general objective of division Y is their profit objective. The profit objective is based on a certain time horizon. The profit objective for division Y is based on each of their offering's consolidated profit objectives. The consolidated profit objective for each offering is based on the local markets profit objective for the offering. An illustration of the process is visualized in *figure 12*. Division Y sets the consolidated profit objective for their unit and the consolidated profit objective for each offering in their portfolio. Employee 1 says:

“The business owner is in the end responsible for the profit objective of the solution, but there are several actors involved in the process. For example, the business owner for the PSS will have to be aligned with the head of division Y since he is responsible for the consolidated profit objective of division Y.” - Employee 1

Division Y is also involved in supporting the local markets' profit objectives for the offerings. According to employee 1, this is because division Y has more experience and knowledge about the offerings in their portfolio:

“The local markets are very good at what they do, and they know their own market way better than we do. However, the PSS is something new for the local markets and different from the company's core product, so that's where we come in and provide support.” - Employee 1

The PSS is one of division Y's offerings and thus the PSS has a profit objective that is based on a consolidation of the local markets' profit objectives for the PSS.

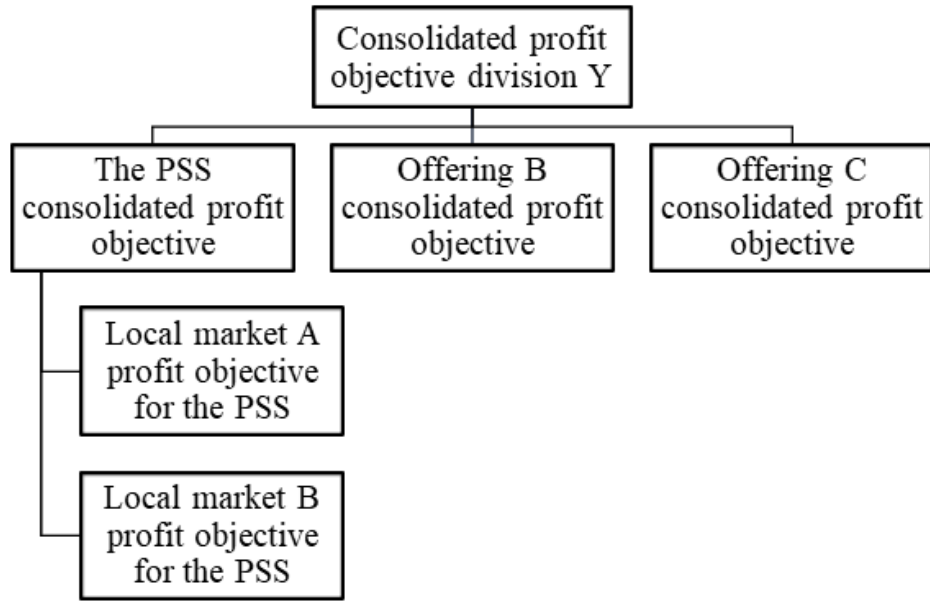


Figure 12 - Profit objective structure for division Y

For the PSS, other general objectives are to support company X's overall business and strengthen the company image. Even though there has been a lot of technical development within some of company X's core businesses, they are still rather low technology products. Because of this, some products face the risk of becoming commodities. Commoditization of products tends to push down margins over time and it could be hard for companies to stay competitive as discussed under section 2.4. Employee 2 describes this phenomenon as:

"There is a natural law that says that prices decrease over time. With our core products, we have previously solved this by effectivization through better machines, processes, and so on. These products are in fairly mature markets, so prices are pushed down and we have price erosion that we want to compensate for." - Employee 2

Many industries are becoming more digital and service-oriented because of this fact. Launching new innovative PSS is one way for companies to hedge against commoditization and price erosion as discussed under section 2.4. Furthermore, it is also a way to also increase and retain customers. Employee 1 describes this reasoning as:

"Launching a PSS like this will let our customers interact more with us, this could further improve the customer relationship" - Employee 1

Launching digital products further visualize the innovative capacities that company X possesses for customers and for the market in general.

4.3.2 Sub-objectives

In addition to the PSS general objectives, there are also sub-objectives. According to employee 3, the sub-objectives depend on where in the product life cycle the PSS currently is:

“Depending on where in the process we are, these objectives will differ.” - Employee 3

Sub-objectives are, in a sense, milestones and follow in a certain order. Together, they aim to fulfil the general objectives. Employee 3 describes this as:

“The overarching objectives are more long term, whereas these smaller objectives are more short term and focus on what needs to be done in order to fulfil the overarching objectives.” - Employee 3

Sub-objectives could be; complete market entry, scale-up production, prepare marketing and sales organizations to sell the PSS and collect feedback from customers, etc. According to employee 3, since this is a new PSS and a new market, one important sub-objective is to gain insights and experience:

“It's about collecting insights from customers, prepare the organization for production, and shape for scale. This is a new offering and a new market for us, so we need to learn as much as possible as quickly as possible” - Employee 3

Division Y is responsible for setting the sub-objectives, but they have an ongoing dialogue with local markets and other divisions in the company in order to get important insights they need to set the sub-objectives.

4.3.3 Pricing objectives

Employee 3 states that the pricing objectives should support the general objectives for the PSS and the general objectives for division Y:

“The pricing objectives need to support the overarching objectives” - Employee 3

As with the general objectives, the pricing objectives differ between products and markets. Normally, general pricing objectives are determined globally. Then, through a decentralized structure, each market can make individual adjustments since every local market is unique. Local factors to consider are culture, economics, local supplies, distribution, regulations, and subsidies, etc. Employee 1 describes this as:

“We want to have a somewhat global pricing strategy for the PSS but since the local markets differ in things like how they care for elders and how they acquire goods like this etc., there have to be some adjustments. - Employee 1

Division Y determines their pricing objective based on early estimates on factors such as COGS, customer value, WTP, competition analysis, and general objectives. Furthermore, they are also considering the trade-off between profit and penetration. Employee 2 says that:

“The price must be set so there can be a certain level of penetration. Because a higher penetration generates scale in production and word of mouth marketing which can boost further penetration of the PSS. On the other hand, a price level that generates a high penetration might lead to a lower profit margin.” - Employee 2

Due to confidentiality, the pricing objective cannot be disclosed.

All actors related to the PSS profit objective are involved in the pricing objective dialogue. More specifically, the business owner has the main responsibility for setting the pricing objective for the PSS. The business owner has a continuous dialogue with the director for Division Y and representants for each local market where the PSS is expected to launch. VPs for the relevant business unit are also involved. Employee 1 states that:

“Even though there are adjustments to the pricing strategy for each local market, the local markets have important inputs that help to create the global pricing strategy” - Employee 1

Business owners for similar products are also involved in the dialogue in order to exchange experiences and establish best practice. The customers have an indirect role since they provide insights by participating in studies, this will be described more under section 4.4. Some other external actors, mainly consultants, are also involved in the pricing dialogue of the PSS.

The relationship between pricing objectives, sub-objectives, and general objectives is visualized in *figure 13*. Both the pricing objectives and the sub-objectives aims to fulfil the general objectives.

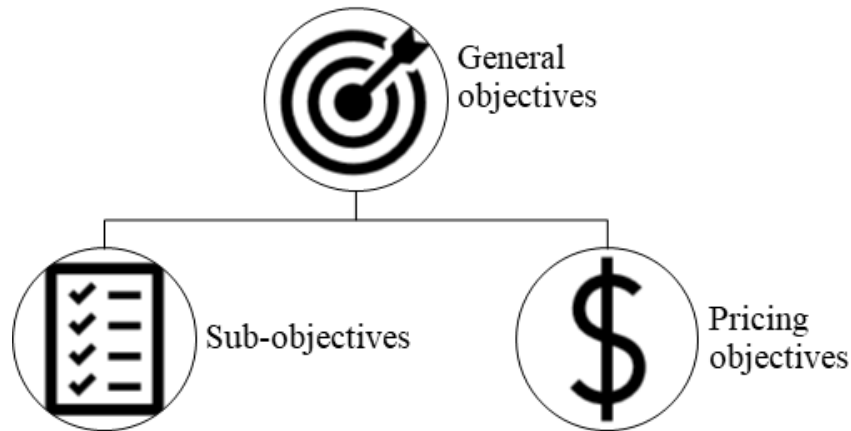


Figure 13 - Objective hierarchy

4.3.4 Challenges

One of the main challenges with setting overall objectives, sub-objectives, and pricing objectives for the PSS seems to be the absence of market structure and market data. Setting objectives often require early estimates of data. For example, early on, there are some uncertainties related to the estimates for customer value and WTP for the PSS; “Will customers appreciate and buy the PSS? Are the currently identified WTP levels reliable?”. Another variable that is hard to estimate is COGS. Employee 6 explains:

“COGS is subject to economics of scale, e.g. COGS will decrease with an increase in sales volume. Since the sales volume is hard to predict before market entry, so is the COGS.” - Employee 6

Without somewhat accurate estimates on these variables, it is challenging to determine objectives. The trade-off between profit and penetration is also hard to manage for the same reason.

Generally, estimates on WTP tend to be undervalued or overvalued, this has consequences for the long-term pricing objectives. An undervalued WTP could lead to uncaptured profits and a low margin contribution. Overvalued WTP might lead to low sales volumes. Furthermore, without

accurate WTP estimates, it is hard to determine sales volume and therefore cost per unit, which also is a component in the pricing decisions.

For many of company X's core products, there is a clear way to market, with R&D, production, marketing, sales, and so on. The products can be produced in large numbers immediately because company X has good knowledge and reliable data about its markets and its customers. In those settings, it is easier to determine objectives from the beginning. With division Y's PSS, it is harder.

4.4 Customer analysis

After the objectives have been determined, division Y begins with the three overarching analyses: customer analysis, COGS and profitability analysis, and competition analysis. The analyses occur somewhat simultaneously. This section will focus on customer analysis, which according to division Y is the most important and challenging activity when developing the pricing strategy.

4.4.1 Customer analysis; a two-phase process

The purpose of the customer analysis is mainly to identify and verify customer value and WTP, but also to learn more about things such as what distribution channel the customers prefer. The customer analysis process can be roughly divided into two phases: before and after CE marking. The type of products that company X produces are classified as medical equipment and as such, the PSS needs to be CE approved before the solution can be tested by consumers. Employee 4 explained that:

"The type of products that we sell are classified as medical equipment which means that they are regulated" - Employee 4

Therefore, all the data collected before CE marking is in a sense hypothetical since the PSS can only be discussed with customers but not tested. Employee 2 explains that it is first after CE marking that the real value can be validated through the use of actual users:

"When CE marking is approved, we can conduct pilot studies where customers get to use the PSS for a while. This means that the collected data on WTP and customer value etc. becomes more reliable since it is connected to an experience." - Employee 2

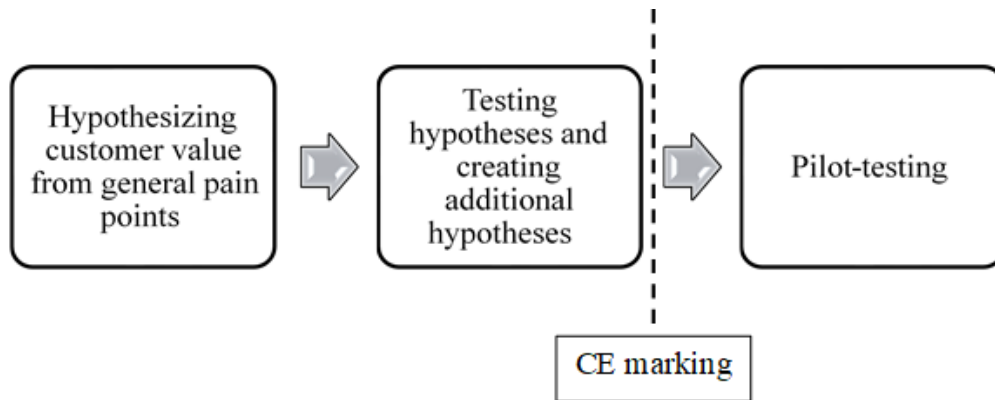


Figure 14. Customer value analysis process

Company X has a long history within their industry, which can be utilized by division Y. The company has over the years developed a thorough understanding of who their customers are, and what their situation looks like. Employee 1 explains that:

“Within the company, we have many years of knowledge and experience about our customers.” - Employee 1

The PSS is the first of its kind for division Y and company X. Therefore, there are still some uncertainties about the value that such a solution will provide for the customer. Furthermore, there is little existing market structure and similar solutions on the market to learn from. However, the general pain points of customers are known. Employee 2 explains this challenge as:

“One can say that a challenge is that we are in the process of breakthrough innovation and there are not many similar things we can learn from. It is not like launching a new TV where we can look at everything that has been done in consumer electronics.” - Employee 2

4.4.2 Hypothesizing customer value from general pain points

Building and testing hypotheses about customer value from general pain points are things that division Y does before CE marking. By looking at pain points, division Y can create reasonable hypotheses about which customer pains the solution could solve. Employee 3 describes this as:

“Initially, we need to work with hypotheses. We base these on consumer insight which we have a lot within the company with our long history and expertise in the industry. We know about the

caregivers' and patients' pain points. Therefore, we can imagine which of the pain points that the PSS could solve and then test if it is so.” - Employee 3

An example of a pain point is that caregivers often worry about if the patients need care. This is also where the first characteristics of the target audience are outlined. By looking at the functionality of the solution, it is possible to connect it with the pain point of a certain segment. Employee 2 explains this:

“A lot of people need some help with care, but if they are otherwise fully functional, they will communicate that they need help. This group of people will have no benefit from the PSS. However, caregivers that care for someone with for example dementia spends a lot of time and worry about whether the patient needs care since the patient might not be able to notice and/or communicate that themselves. This group would potentially receive a lot of value from the PSS.” – Employee 2

Through this type of reasoning, a rough target audience has been identified.

4.4.3 Testing hypotheses and creating additional hypotheses

With these hypotheses in mind, concept studies are conducted. The studies are conducted by external companies, but they are designed by division Y. These concept studies are designed in different ways. They can be one-on-one interviews or group interviews that are conducted with caregivers. Employee 2 describes the process as:

“During these studies, the concept of the PSS is described for the caregivers. This is followed by questions about the different aspect of the concept to figure out what benefits the caregivers sees in the concept and what they do not like about it.” - Employee 2

There are several studies conducted that focus on different things. Some focus on the functionality of the PSS and what benefits the customer sees in that as well as what their WTP would be if the solution was available on the market. Others focus more on things such as distribution channels and other such things that add to the overall user experience of the solution. Different techniques are used in order to ensure the quality of the data collection.

“If we want to figure out what distribution channel is suitable, we would first ask interviewees where they would like to purchase the solution. Then we would ask the same question about other

products that share similarities with the solution and then check the answers against each other”
- Employee 2

There are also quantitative studies performed which also are conducted in collaboration with external companies. These are focused on more specific things and numbers and is not as much of an understanding and exploratory process as the concept studies. Employee 2 explains that:

“The quantitative studies are conducted to get a more reliable picture of the WTP, preferred payment model, likelihood of buying etc.” - Employee 2

It is important to notice that the described methods of identifying customer value are giving hypothetical results as previously mentioned under section 4.4.1. The participants in the studies get a description and drawings of the solution and during some studies, they get to look at a prototype but none of them gets to take the solution home and try it with the patients. Therefore, the values they explain that they see might be more valuable, or the other way around. Furthermore, the customers might miss some of the values altogether. This further connects to the stated WTP by study participants, they base their WTP on the benefits they can see with the solution. Since these benefits are hypothetical, so will the WTP be. Given that the solution is a new type of product, with no real competing products on the market to compare with, it can be difficult for study participants to give an accurate WTP. Employee 2 says:

“WTP can be difficult to understand when you haven't used a product. Therefore, it's first during pilot testing that we get a more reliable picture of the WTP” - Employee 2

4.4.4 Pilot-testing

When the solution receives CE marking, pilot testing can begin. The pilot tests are conducted by division Y in collaboration with external local companies. During the pilot test, consumers get to use the PSS and after a certain time of usage, their experiences are evaluated. The pilot tests are done for different purposes and differ in execution because of this. Employee 3 gives an example:

“One thing to evaluate is to see if the purchase process works end to end meaning ordering, delivery, set up, usage, etc. This is especially important since it is a PSS and not a product, there are many more things that can go wrong.” - Employee 3

Another thing to evaluate is the customer values and WTP. In addition, it is possible that some customer values are discovered which the company has not thought of. In a pilot testing setting, the values and WTP are no longer hypothetical, as discussed earlier in this section, since the consumers actually get to use the product over a certain time. Employee 9 explains that:

“You can describe to study participants what the PSS is, but it doesn’t mean that they truly understand it. The best thing is if the customer can try the product and put the experience next to a price and see if they think it's worth the money.” - Employee 9

4.4.5 Differences in customer value and WTP

As for any type of offering, the customer value and WTP will differ between individuals. The customer value and WTP will also differ between markets because of several reasons. One obvious reason is the economic situation in a market, a country with a richer population can afford higher prices and therefore they will be willing to pay more for received value. Perhaps more interestingly, culture and legislation also have an impact. Employee 1 explains that:

“Some countries have a tradition of taking care of their older relatives in the home whereas other countries often move their loved one to a nursing home when they need care. The former population will see a bigger use for the PSS since they are the ones providing the care.” - Employee 1

The effect of legislation mainly comes through reimbursements and can have a two sides effect. Employee 5 explains:

“If medical equipment usually is reimbursed in a market, but the PSS is not, then customers could find it more unreasonable to pay a high price themselves. However, if the PSS is partly reimbursed then customers could be interested in paying the remaining smaller amount for a good piece of technology that will help them provide good care.” - Employee 5

In addition, legislation can sometimes place requirements on caregivers. These requirements can increase the value of an offering. This is not the case for this PSS but it is an interesting factor of value creation that could play a part in the future.

4.4.6 Challenges

Even though pilot testing gives more reliable data than concept studies, it is still not perfect. WTP is easier to determine when the PSS has been on the market for a while. Thus, a dilemma arises, the price should be based on WTP but WTP is easier to determine after market-entry when a price has been set. An employee at company X equated the situation with “the chicken or the egg” problem.

“A main challenge is definitely the price and WTP dilemma, it's like the chicken or the egg problem. The true WTP can't be identified without having the PSS on the market and the PSS can't get on the market without an identified WTP. One is dependent on the other” - Employee 9

Furthermore, division Y has previously launched a PSS aimed towards nursing homes. These are B2B customers that have a good understanding of the value of the PSS. For the new PSS, which is aimed towards B2C customers, it is harder to identify, understand, and communicate the value to customers.

4.5 COGS and profitability analysis

In addition to customer analysis, division Y analyses, and builds estimates for costs, sales volume, and profitability for the PSS. This section will describe how company X and division Y analyse costs, volume, and profitability; it will also highlight challenges related to the activity.

4.5.1 Cost-volume profit analysis

Company X is working with different types of cost-volume-profit (CVP) analysis in their core businesses. They have a deep knowledge about the products, the markets, and the customers, which makes different types of CVP analyses reliable. Employee 1 explains:

“This is easier for our core products. We have a long history of selling that type of products so we have a lot of data and experience. This means that we have a rather good picture of how those products will perform.” - Employee 1

It is harder to apply a CVP analysis for division Y for the PSS. Due to the novelty of the PSS, the CVP analysis becomes more experimental. Employee 2 explains that:

“There is not enough data on COGS and WTP in order to make accurate estimates and conduct a precise CVP analysis but we can still get a decent picture of what the situation looks like.” - Employee 2

However, division Y is using their data as much as possible to predict penetration-levels at different price points. For example, they use previously mentioned concept studies to look at purchase intent at certain price levels. It is one way to get a sense of how many per cent will buy the PSS at a certain price and to understand how consumers react to price increases or price decreases. Employee 1 describes that:

“In division Y we do not use exact CVP formulas but for example, if we sell x , we know that the piece cost will be y , we have this checked. Furthermore, we make assumptions, based on the data we have, that at this price the penetration becomes X and at this price it becomes Y , then we look at how this affects the bottom line.” - Employee 1

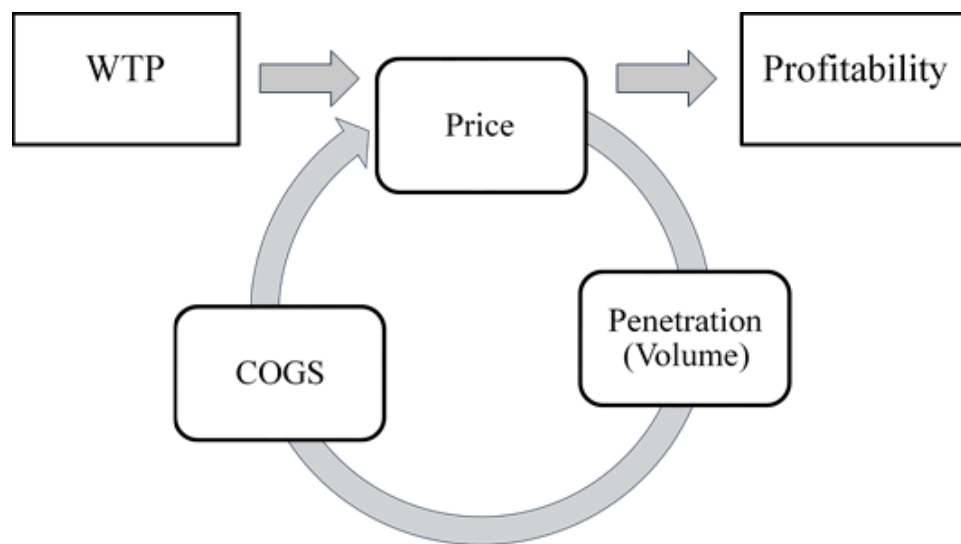


Figure 15 - Simplified illustration of division Y's COGS and profitability analysis

Division Y is still in a learning phase with the PSS and they must go out with a price based on what they currently know e.g. data on WTP and COGS. With time they will acquire knowledge and experience and can make more accurate analyses.

Actors involved in the CVP activity are several members of the division Y, commercial directors for local markets, internal teams at company X, and VPs for business units. Innovation teams and

commercial teams are also involved, they include representatives from different business units and local markets. They discuss things like CVP analysis and similar analyses related to cost, volume, profits, and penetration. There is one innovation team including representatives from division Y and from the local markets where the PSS will be launched. The representatives from division Y are setting estimates for volume and prices and discuss it with the other representatives in the innovation team. They either get commitment and can proceed directly or they get feedback with things to be fixed before further procedure. Employee 2 explains that:

“In development projects, we present our case during the journey; at this price level, we believe that we will achieve this, etc. What is important to us here will be the future estimated profitability. When you present things like this to people who allocate resources, it's about creating a realistic picture of what price levels will provide the best profitability in the long run and when you launch this innovation. The representatives will then say go or give us feedback to work on” - Employee 2

4.5.2 Challenges

Analyzing the relationship between cost, volume, and profits is multi-faceted. In the case of the PSS, several factors directly affect costs, volume, and profits. The choice of sales channel is one example of a variable that can affect the volumes and thus the costs and the profits. Employee 3 explains:

“For example, if the PSS is launched through our e-commerce channel, we have a large margin as we do not have intermediaries. However, if we sell through a partner, we will get a higher volume, but our margin will be smaller as they want a cut.” - Employee 3

But there is even more to consider regarding sales channel, margins, and COGS. Employee 3 further explains that one should not be so quick to assume a lower margin when selling through third parties:

“By going through our e-commerce channel, we should theoretically have a better margin since the third-party will not claim a cut. However, since the volume will be lower, economics of scale will have a smaller effect on COGS. Therefore, the margin might not be as high as expected. If, on

the other hand, we use a partner, the volume will be higher and will result in a lower COGS and thus a better margin.” - Employee 3

The choice of sales channel is one example of what makes CVP analysis multi-faceted, but there are other variables that division Y has to consider as well. The hardware used for the PSS is also used in a product aimed towards B2B, which means that there are two revenue streams for the same hardware. It adds a certain complexity to the sales volume estimates and also the COGS estimates since COGS are dependent on volume. The fact that many variables are moving targets makes the analysis complex. Employee 3 explains:

“What makes these types of analyses difficult is that everything is a moving target, everything is moving and depends on each other. The price depends on the way we sell, what profit we want, and the COGS, etc. The price will also be very decisive on what penetration we want to reach, a high price will give lower penetration and the other way around. Penetration affects volume which then affects COGS, so everything is interconnected.” - Employee 3

Another challenge is that the patients can be moved to hospitals or nursing homes which would make the PSS of no use. This is problematic because if the PSS comes at a fixed price, then people might not buy because they are aware of this risk. If the PSS is sold through a subscription, customer satisfaction might decrease if the subscription is locked even though the patients have been moved to a nursing home. One solution could be cancelable subscriptions, but it could potentially lead to company X losing money since the main COGS will still be there without any contributing cash flows. Employee 1 says that:

“The choice of revenue model can also play a big role. There are several factors to consider such as customer satisfaction, risk, cash flow, etc.” - Employee 1

In addition, the PSS is categorized as a med-tech product, which means that these products are regulated. Estimating costs related to regulatory compliance is challenging. With time, division Y will gather experience and knowledge to handle these challenges, it is a part of their business.

4.6 Competition analysis

The final analysis activity is competition analysis. However, as mentioned before, it occurs in parallel with the customer analysis, and the COGS and profitability analysis. Different business units within company X are doing competition analysis on different levels. This section will describe some competition analyses, done by company X, on a higher level and some competition analyses, done by division Y, on a more detailed level. With that said, there are overlaps.

4.6.1 Industry analysis

Company X uses Porter's five forces to look at the competition on a higher level in their industry. They look at rivalry, bargaining power of buyers and suppliers, threat of new entrants, and substitute products. Employee 7 explains that:

“By looking at the five forces we can determine the overall industry structure and potential change drivers that could impact any of those forces. We are also analyzing ways to utilize or neutralize the forces within their market.” - Employee 7

In addition, company X identifies and analyses change drivers e.g. technology, regulatory, social, environmental that could change the industry structure and thus impact their business. Furthermore, company X use competition analyses in different forms as a risk mitigation tool. Employee 7 says that:

“We also look at other change drivers that could affect our strategy such as technology change, regulations, social and environmental. These could affect the strategy and we can therefore mitigate risk by being aware of them.” - Employee 7

4.6.2 Key competitor analysis

In addition to broader analysis tools like Porter's five forces, company X look for everything there is to know about their key competitors in their industry and adjacent industries. Employee 7 describes this process as:

“What are their leadership, locations, vision, mission, culture, how many employees, how many locations? Then operationally, what are their capabilities like sales and marketing, sustainability, shipping, and supply? Basically a full-scale company analysis.” - Employee 7

Company X could break it down even further and analyse how competitors are set up and structured from a segment perspective for example. They can even get down to a product level and analyse a competitor's assortment. Employee 7 explains this process as:

“What products do they offer? Where do they offer these products? How are they positioning these products? What's their go-to-market; retail or healthcare channels? How are they messaging that product; what are the key claims they use?” - Employee 7

Overall company X does a top-down analysis when they look at key competitors. They start at the company level and then break it down to categories e.g. product offering.

Division Y is doing this type of competitor analysis as well, but in general, division Y has a more narrow scope than company X when it comes to competition analysis. Since the market structure for the PSS is still unknown it is challenging to perform Porter's five forces to a full extent for this scope. Instead, they are analyzing the competitive landscape of the industry from a product perspective. The analysis is more specific compared to Porter's five and division Y is looking deeper into certain questions. It is also important for division Y to build profiles of the closest competitors.

4.6.3 Competition analysis at division Y

Typically, when division Y analyses the competitive landscape they do a value chain analysis, which is analyzing the primary activities that companies do. Employee 7 says that they look at the value chain as:

“Companies primarily do five activities: they need to buy things, they need to produce things, they need to market their things, they need to sell and supply their things and finally they need to care for the things and the customers.” - Employee 7

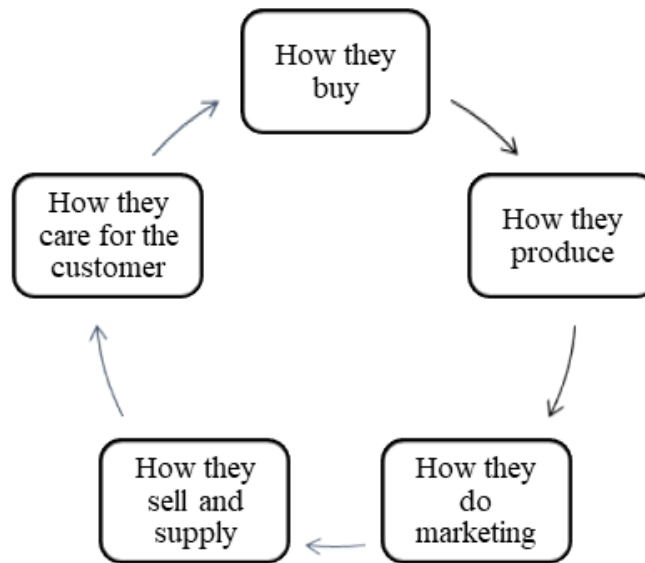


Figure 16- Analyzing competitors, value chain analysis

By understanding what the competitors are doing in that value chain it is possible to identify what it costs to produce a product and what the customers are willing to pay for the product and thus understand how the company makes money. Employee 7 describes this as:

“When you analyse the competition you need to understand what the competitors are doing in that value chain to drive a wedge between what it costs to do and what the customers are willing to pay.” - Employee 7

Furthermore, it is important to identify who the competitors are and what makes them unique. Then division Y needs to decide if they want to compete with companies in their unique areas or if they want to find a different area. This is ultimately how division Y determines their competitive advantage which affects the strategy.

Division Y is focusing on competitive pricing and pricing trends in the market. However, pricing is one of the more difficult things to analyse. Due to a lack of publicly available information, it is hard to identify the competitors’ pricing strategies. Companies rarely disclose information about their pricing since it is very sensitive information. Employee 7 explains:

“Among the things we looked at such as competitors go to market strategy, business model, partnerships, value proposition, how are they selling it, and so on, the pricing was definitely the hardest. It was challenging because the pricing information is just not there at this stage.” - Employee 7

Identifying and analyzing competition pricing is especially hard when dealing with smaller start-ups and private companies. Employee 7 explains:

“In the case of the PSS, there are a lot of start-ups and tech companies developing similar solutions, only a few are commercialized players. Even those competitors that are close to commercialization are not necessarily sure about their pricing yet.” - Employee 7

Division Y is trying to find as much information as possible and do the best possible analysis based on that data. Examples of activities are: looking at competitors' websites, read financial reports if they are public companies, and read statements by management. This tends to provide a rather good overview of competitors' pricing and pricing trends. Employee 7 says:

“When there is no explicit information about pricing available, you have to turn to other information sources. You can then look at reports, statements by management, websites, etc. and see if there are any indications.” - Employee 7

Another way to identify pricing is to get intel from account managers that hear things from customers, but this is very uncertain and difficult. The other thing to do is to hire a third party to go out and do primary research on competitors' pricing. However, employee 7 is not convinced that it is a good way of doing it:

“It usually costs a lot of money, and even then, it is not sure that good information is collected. Besides, we don't want competitors' pricing to affect our pricing strategy too much.” - Employee 7

After the launch, division Y will keep an eye out for what the competitors are pricing at and if they respond to division Y's price. Especially for the most relevant competing products. Company X is working a lot with monitoring and anticipating competitors in its core business, thus they have the tools to do the same type of analysis for the PSS.

For division Y the competition analysis is a continuous process. Employee 2 explains it like:

“The competition analysis lies and bubbles all the time and becomes especially relevant during decision points. Then you do a deep dive again and see what it looks like now. Our offer looks like this, we deliver these values at this price, in this channel: what are the competitors doing? Do we believe in our strategy or does it deviate too much from the competition? Is what we do more

relevant based on our studies? If we believe in it, we have to have some ice in the stomach and run on our own world." - Employee 2

There are a lot of actors involved in the competition analysis for company X as a whole. Each market does its own analysis but has a dialogue with business units and other markets to share ideas and analyses. There are also central competitive intelligence units at company X that support many different markets and business units with competition analysis. Division Y is using a competitive intelligence unit for the main part of the competition analysis. They are also gathering insights from local markets and other business units within company X. When necessary, division Y buy research from external parts to complement existing insights. Employee 1 said:

"Competition analysis is done in several parts of the company and on several levels. We at division Y do our own analysis but we also get help from the central competitive intelligence unit. Then the markets, of course, do their own analysis as well. We all have a dialogue with each other to share insights." - Employee 1

4.6.4 Challenges

The main challenges with doing competition analysis for the PSS is the novelty of the PSS and the, not yet defined, market structures and competitors. Employee 3 says:

"It is hard to identify and analyse information that does not exist. For example, benchmarking against competitors that do not even have a product ready for commercialization is problematic."
- Employee 3

This is a problem that company X does not usually have within their core business. Employee 3 explains:

"For mature consumer goods e.g. soda, the pricing is generally transparent. The PSS is a new type of offering and a lot of the competitors are start-ups or private companies and do not disclose pricing information until they are commercially available." - Employee 3

However, it is not necessary, and not a good idea, to wait until all the data for the competition analysis is available and complete because in that case, it will take years before launch. Employee 7 says:

“Competition analysis is a perspective on the market, by having 40, 60 or 80% of the information it is still possible to get a perspective.” - Employee 7

4.7 Setting price corridors

By combining different data points e.g. CVP analysis, customer analysis, and competition analysis, division Y is determining a global price corridor for the PSS. This is a price range in which local markets must consider when setting their prices. Employee 1 says:

“We have an approximate picture of where the competitors are, we have data on WTP and customer value, and COGS. These are 3 dynamics that together constitute the final price corridor.” - Employee 1

When setting the price corridor, division Y collaborates with representatives from local markets and VPs for involved business units. In addition to the global price corridor, division Y provides a price recommendation to each local market. Then, every local market sets their price since they have the right knowledge and capabilities to understand local market conditions e.g. suitable sales channels, local partners, culture, etc. Employee 1 explains that:

“Having a dialogue with the local markets is a way to utilize local expertise which will increase traction. In addition, it is important to involve the local markets since they are the ones that will sell the PSS. For example, in some markets, sales could be suitable to do through pharmacists, whereas e-commerce platforms could be more suitable in other markets.” - Employee 1

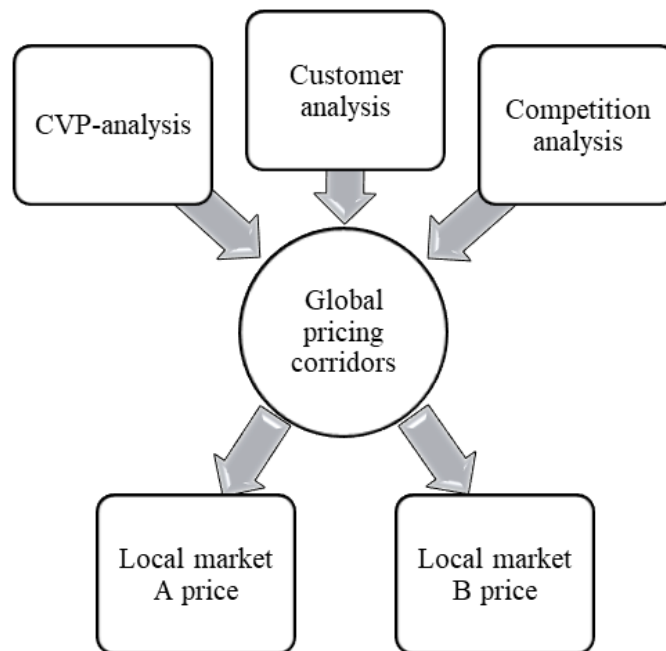


Figure 17 - Setting pricing corridors

4.8 Go-to-market

When the global price corridor is defined, and division Y has provided their price recommendations it is time for local markets to implement the pricing strategy and set their price. This occurs simultaneously with the launch of the PSS. The launch can, in other words, be described as a go-to-market strategy. A go-to-market strategy includes several activities. Due to the focus on the development of a value-based pricing strategy, this section will focus on the activities: education and training, awareness, and marketing.

4.8.1 Education and training for “sell on value”

The PSS is a new offering for company X, hence, relevant employees, e.g. sales and marketing, will get education and training on how to sell this kind of solution. Selling the PSS is different from selling core products. Employee 3 says:

“The PSS has a higher cost to serve and the customer relationship is ongoing. When we sell core products, the cost to serve is mainly the sales force and the customer service. In addition, once the product is sold, there is little further communication between the company and the customer. For

the PSS, we need the software to run all the time, there is a hardware team involved that handles replacements, one group of people is responsible for the subscription billing, etc. “ - Employee 3

Hence, the cost to service becomes higher for the PSS and the customer interacts with the company constantly through the PSS. Due to the ongoing nature of the customer relationship, additional training is required.

The local markets will sell the PSS through their own channels or third-party channels. When selling through a third-party channel, the sales forces have to sell a future value and future belief in profitability to the third-party actor. Meanwhile, the sales force has to convince the third-party actor about the value to the end customer. Hence, when selling through distributors, the sales force has to be prepared to handle the value delivery to both B2B and B2C. This requires education and training. In addition to convincing the distributor of the value of the PSS and future profitability, it is important to highlight that if the distributors bring the PSS to the market, they will be at the leading edge of the industry. Employee 8 explains that:

“We have to push that our distributors will not generate immediate revenue but there will be more caregivers to their store and then in addition to buying the solution they will buy patches, albums, bandages, and skin cream and so on. This is the main benefit for them, plus they get the image of being at the forefront. So, our sellers simply have to learn how to sell in this way. Furthermore, they have to convince the third party that there is value for both them and their customers” - Employee 8

A major part of the education is to make sure that marketing teams, sales teams, e-commerce teams, and other relevant representatives from different functions truly understand the actual value to the customer. It is hard to sell the PSS if the sales force does not know the value of the PSS. Without a proper understanding of the values and without supporting claims it is hard to sell on value and the discussion will likely shift towards a focus on price. Employee 8 says:

“I would say that one of the most important things is to understand what the actual value is to the customer. If we have the wrong idea about the value, and the customer sees it differently, we won't be successful.” - Employee 8

“The chicken or the egg” problem has been mentioned previously in this thesis under section 4.4. The same dilemma applies when it comes to the selling of the PSS. The sales force needs to be

aware of the value before selling the PSS, but the value is easier to define once customers have used the PSS for a certain period. Employee 9 explains:

“This is a chicken or the egg problem for our product. In order to define the value, you need people to use the product to understand how they use it, what they like about it and what they are willing to pay for it. Without this information, it's harder to sell the value because you don't know it.” - Employee 9

Selling value is nothing new for company X, many of their brands in their core business are premium brands with a premium price. Even if the PSS is a new offering for company X, they have the knowledge and process to manage the challenge. As long as the value could be identified, the education, the training, and the selling should be manageable. Employee 8 says:

“One of our brands is usually pricier than other brands. Our sellers need to explain why the price is higher and why they should buy from us. We have education about this for our sales personal.” - Employee 8

In some markets, a larger part of the business is becoming a tender market, where the price tends to be more important than value. Company X has then less opportunity to rely on value. The same applies to markets where customers get reimbursement for buying company X's products. Furthermore, there is a point where the price will outweigh the value. Even if the customer value is clear, the product still has to be affordable. Employee 9 explains:

“Customers have to make rent and other expenses. Therefore, it is important to identify the target market. We need to understand the profile of the customer who would be open to value-based pricing. Train our people on how to approach that type of customer. The seasoned people are good at this, but we need to provide them with proof of value, otherwise, the conversation will go back to discussing price.” - Employee 9

4.8.2 Marketing and awareness

When it comes to awareness, division Y wants the PSS to be on top of mind when customers need something like it. Both conventional and more modern methods of marketing must be used for this and they should support a value-based pricing. Employee 8 explains:

“Services like google search and social media advertising could be used to continuously create awareness among customers. There will also be large marketing campaigns through different types of channels e.g. TV, online, flyers, etc. The marketing campaigns for the PSS will have to be based on claims and testimonials that supports and communicates the values to the customer.” - Employee 8

Since the PSS is a new offering and a new type of concept for company X, marketing has to create a general awareness among people around the globe. Employee 9 says:

“You can't just throw this new concept in the market and expect the customer to understand what it is.” - Employee 9

4.8.3 Streamline the organization

There are many actors involved in a go-to-market strategy such as division Y, local markets, cross-functional divisions, commercial teams, customer support, the sales force, and marketing force, etc. VP's for local markets and business units are also involved and have a dialogue with each other. All these actors need to communicate to get everything to work as intended. Employee 3 explains:

“In order for the go-to-market strategy to work, it is important to keep every involved actor in the loop, every employee has to be motivated and have the right tools to complete their task and it is important to get good support from VPs. The key thing for this to work is to have a streamlined organization where communication, knowledge sharing, education, and training are efficient.” - Employee 3

This does not only apply to the go-to-market strategy, this applies to the whole process of developing the pricing strategy. Furthermore, streamlining the organization is a key success factor for company X as a whole. Employee 8 ends the interview by saying:

“Communication is key to everything” - Employee 8

5 Discussion

This chapter will present the analysis and discussions of the results. The chapter starts with a section that provides a summary of the results and connects the results to the research questions. The next section compares the results from the case study with the theory presented in chapter two. Thereafter, the generalizability of the case study is analysed and described. Followed by a section that describes the research contribution of the thesis. The chapter ends with a section about other interesting topics that have appeared during the research.

5.1 Summary of the results

This section provides a summary of the results by connecting the results with the two research questions:

5.1.1 RQ 1: How do companies develop a value-based pricing strategy when introducing a PSS to the market?

As the results show, division Y develops the value-based pricing strategy for the PSS by conducting six main activities visualized in *figure 18*, which previously has been discussed under section 4.2.

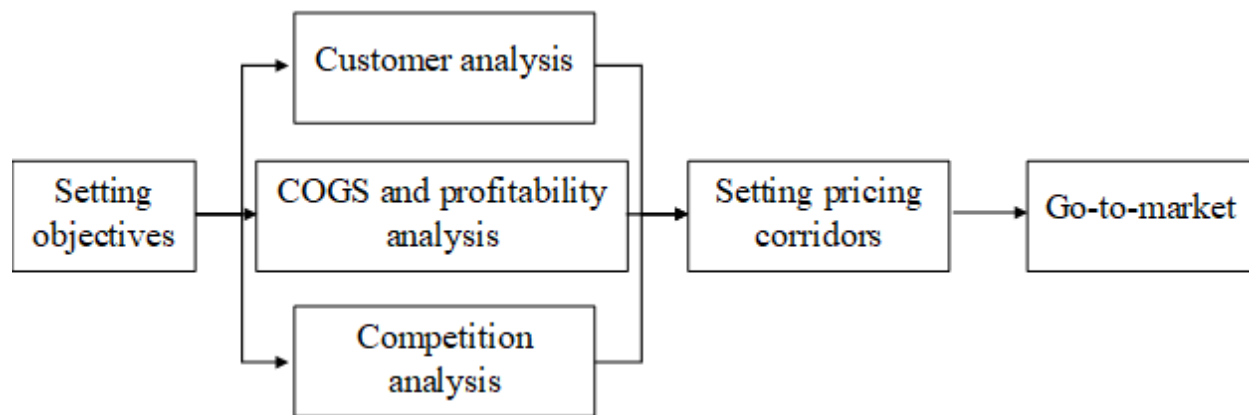


Figure 18 - Development-process of the pricing strategy

The first activity is to set objectives, the objectives are divided into general objectives, sub-objectives, and pricing objectives. All three categories of objectives are connected through a

hierarchical structure where sub-objectives and pricing objectives should support the overall objectives. Together, the objectives create the foundation for the pricing strategy where the pricing objectives provide the main guidelines for the pricing strategy.

The next step for division Y is to conduct three overarching analyses i.e. customer analysis, COGS and profitability analysis, and competition analysis. Customer analysis is divided into three steps; hypothesize customer value based on pain points, test the hypotheses and create additional hypotheses, and pilot tests. The first two steps could be completed before CE-marking while pilot-tests require CE-marking. When the pilot tests are completed, division Y has a good picture of the customers and customer values. The next activity is COGS and profitability analysis which division Y does by estimating sales volume at different price levels. It is important to get the volume estimates right since they will affect the COGS and thus the profitability. The third type of overarching analysis is the competition analysis, it mainly consists of a value-chain analysis applied to the key competitors. Furthermore, division Y conducts a competition pricing analysis that looks at pricing and pricing trends for competing solutions to the PSS. Important to notice is that customer analysis, COGS and profitability analysis, and the competition analysis occurs, more or less, simultaneously.

By combining the results from the three overarching analyses division Y sets a global price corridor for the PSS. This is a price range which local markets must consider when setting their prices. In addition to the global price corridor, division Y provides a price recommendation to each local market. Then, every local market sets its price since they have the right knowledge and capabilities to understand local market conditions e.g. suitable sales channels, local partners, culture, etc.

The development of the pricing strategy ends with the go-to-market activity. A go-to-market strategy includes many activities. Those related to division Y and the pricing strategy are mainly education and training of sales and marketing employees, marketing campaigns, and streamlining the organization.

The six activities follow, to a large extent, a sequential order like the one illustrated in *figure 18*. However, since all activities are interconnected, they are all discussed continuously during the process. The focus on a certain activity is higher or lower following the sequential order i.e., in the beginning, the focus on setting objectives is higher than on setting price corridors. Furthermore,

customer analysis, COGS and profitability analysis, and competition analysis occur to a large extent simultaneously.

5.1.2 RQ 2: What role do different actors, both within the company and external to the company, play in this pricing strategy process?

From the results, it is clear that the actors related to the development of the pricing strategy are, to a large extent, the same throughout the process. Division Y has the main responsibility for the pricing strategy as such and the ingoing activities. They have an ongoing dialogue with involved business units and involved local markets. Certain decisions require approval from a business unit's or local market's VP, hence several VPs are important actors in the process. Other internal actors are also involved; commercial teams are assisting, especially in the COGS and profitability analysis, and the go-to-market. Furthermore, marketing teams and sales teams are involved in the go-to-market, and innovations teams are involved back and forth during the process. In the competition analysis, division Y uses a competitive intelligence unit for research. There are also external actors involved, for example, during the customer analysis, external actors are conducting the concept studies. Furthermore, the results indicate that external actors in the form of suppliers, customers, and advisors also have an effect on the development of the pricing strategy. However, it could be considered more of an indirect effect. The different involved actors are visualized in *figure 19*.

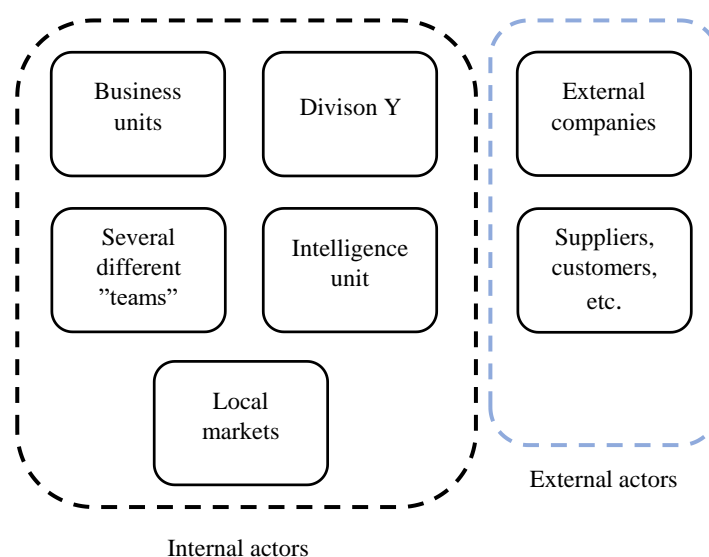


Figure 19 - Involved actors in the pricing strategy development process

5.2 Comparison between the results and the theoretical background

This section describes the similarities and differences between the results and the theoretical background. By doing so, a lot of existing theory have been confirmed but also new theoretical aspects have been highlighted. The structure will follow the same structure as the theoretical background. First, factors that affect the pricing strategy. This will be followed by a discussion about the three most common pricing strategies. Thereafter, the development process will be discussed. Lastly, there will be a discussion about how the fact that the offering is a PSS affects the development of the pricing strategy.

5.2.1 Factors affecting the pricing strategy

As described in the theoretical background, Brassington & Pettitt (2013) proposed a framework with internal and external factors that will affect a company's pricing strategy. The internal factors are organizational objectives, marketing objectives and costs, and the external factors are consumers, demand curve and competitors. Division Y is considering all the factors when they develop their pricing strategy. However, some factors have been considered to a larger extent than others.

Brassington & Pettitt (2013) mention the importance of connecting the pricing strategy to the organizational objectives of the company. Division Y is considering the overall organizational objectives for company X when designing and setting their general objectives for the pricing strategy. This applies both to the general objectives for division Y and for the PSS. The general objective for division Y is the profit objective, which is connected to the profit objective for company X. Likewise, the profit objective for the PSS supports the profit objective for division Y and thus supports the profit objective for company X. It works like a red thread, as previously described under section 4.3. This is true for the sub-objectives and the pricing objective as well. Since they support the general objective for the PSS, they are indirectly supporting the overall organizational objectives for company X.

Brassington & Pettitt (2013) further explain that marketing objectives are focused on a specific market and/or product. The results support this as division Y has specific objectives the PSS itself as well as each market it will be present in. Local markets are highly involved in the objective

discussion and are responsible for the PSS in their market. However, the results indicate there are more than just marketing objectives that have to be adapted to a specific market. In the case of company X, each local market sets their profit objective as well.

Cost is the last suggested internal factor in Brassington & Pettitt's (2013) framework. As described in the results, division Y does significant work with figuring out what the COGS of the PSS will be. It sounds intuitively like a rather simple task but as the results show, which is aligned with what Harvard Business Review (2018) and Nagle et al. (2011) says on the matter, that figuring out COGS can be difficult. The reason is that COGS can differ substantially with the volume which is an unknown factor beforehand. Several challenges related to the development of the pricing strategy have been explained as "the chicken or the egg problem" by employees. Determining COGS is such a case. Many variables are moving targets in the beginning e.g. volume, COGS, price, and they are all connected, which creates a problem of "what comes first?". This topic would be interesting to investigate further.

The results further support the effect of Brassington & Pettitt's (2013) external factors; customer and demand curve. This is done through the customer analysis where division Y identifies customer value and WTP. The last affecting factor according to Brassington & Pettitt (2013) is the competitors. Division Y takes this into account partly by doing competitor analysis themselves, but also with the help of company X's central competition intelligence unit. However, this work becomes difficult by the fact that there are few similar commercially available solutions and no robust market structure yet.

5.2.2 Value-based pricing; a combination of three common pricing approaches

As described in the theoretical background, there are three main pricing strategies: cost-based, competition-based, and value-based. These respectively focus on cost, competition, and customer value. However, as the results show, which is also supported by Hinterhuber's (2003) framework, cost and competition are still considered even though customer value is the main focus in a value-based pricing strategy. Furthermore, the results highlight that cost, competition, and customer value are interconnected. By only focusing on one factor, companies might miss important aspects that could have an effect on the pricing strategy. For example, if a company price their PSS price by adding a 5 % mark-up on top of the cost per unit, e.g. cost-based, but the customers WTP is

20% below the cost per unit, a low sales volume is a likely result. Thus, it might not be wise to consider the three main pricing strategies as stand-alone strategies but instead consider all of them combined. Based on the results and Hinterhuber's (2003) research, a more suitable approach would be to combine all three strategies into one strategy, where customer value has a more central role. This would reduce the risk of companies finding themselves in a situation as described in the example above. Furthermore, Brassington & Petit (2013) highlights that cost, competition, and customer all have an effect on pricing, which strengthens the argument that they all should be considered in a pricing strategy. This is an interesting finding that other companies should consider when developing a pricing strategy. It is also interesting to investigate this topic further.

5.2.3 Activities conducted in the development of a value-based pricing strategy

Hinterhuber (2003) suggests that companies go through a process including six activities when developing a value-based pricing strategy. Some of the activities are described in detail e.g. economic value analysis, while some activities are just briefly described e.g. pricing objectives. Overall, there are clear similarities between the activities that division Y conduct when they develop their pricing strategy and the activities that Hinterhuber's (2003) framework includes, which is a finding in itself. However, there are differences in how the activities are conducted. Furthermore, the results show that there are several challenges, related to developing the pricing strategy, which are not mentioned in the framework proposed by Hinterhuber (2003).

The first activity of Hinterhuber's (2003) framework is to define the pricing objective. Setting objectives is the first activity for division Y as well. However, Hinterhuber (2003) is only considering pricing objectives in his framework. As the results describe, division Y is discussing several types of objectives e.g. general objectives, sub-objectives, and pricing objectives. Furthermore, division Y is highlighting how objectives are connected in a form of objective-hierarchy, from product-level to business unit-level and local market-level, all the way up to company-level. Hinterhuber (2003) is not mentioning any objective-hierarchy in his framework. From the results, it is obvious that a pricing strategy for a new type of product like the PSS is dependent on more objectives than just the pricing objective. The pricing objective is rather a consequence of the other objectives, mainly the general objective. According to the results, there

are several challenges related to the activity of setting objectives. The main problem is the lack of data for the PSS and the market in general. Setting reliable objectives without reliable data is difficult. Hinterhuber (2003) does not mention challenges related to the pricing objective in his framework.

After setting objectives, the results show that three types of analyses are then conducted: customer analysis, competition analysis, and COGS and profitability analysis. Hinterhuber (2003) suggests a similar approach with some differences which will be described below. The results show that division Y works significantly with customer value analysis, which is similar to Hinterhuber's economic value analysis, but it differs in execution. Hinterhuber (2003) proposes a six-step model to calculate economic value where the foundation of the analysis is based on the closest competing offerings. Division Y takes a different approach. They focus instead on figuring out the customer value of their PSS directly from concept and pilot studies conducted with customers. The reason for this is not explained by the data but it is reasonable to consider that it could have to do with the lack of commercialized competing solutions. In order to conduct Hinterhuber's (2003) six-step model, it is necessary to find reliable data on the next best competing products and their prices. The results indicate that finding competition pricing data is difficult, actually one of the more difficult challenges. This applies to both the customer value analysis and the competition analysis. The results are supported by Harvard Business Review (2016) which claims that value-based pricing could be difficult to apply without any commercialized competing offerings.

Furthermore, division Y has to consider CE-marking in their customer value analysis, some data cannot be collected before the PSS has received CE-marking. Regulations are common within the healthcare industry but might not be the case in other industries. However, it is still important to mention that customer-value analysis differs between industries and companies due to factors that the company cannot control. This is something that Hinterhuber (2003) does not highlight.

As with the objectives, the result indicates that identifying and analyzing customer value is challenging. Division Y finds it challenging to obtain reliable data on customer value before the customers have had the chance to use the product for a while. Market entry is basically required in order for customers to buy and try the product and create a reliable picture of the customer value. This leads back to "the chicken or the egg problem" which has been discussed several times in this thesis. Challenges related to analyzing customer value are not mentioned in Hinterhuber's paper

from 2003, but he actually mentions challenges related to value-based pricing in his paper from 2008. However, Hinterhuber (2008) does not mention “the chicken or the egg” challenge explicitly, while this challenge is highlighted by division Y as one of the most difficult.

The next activity Hinterhuber (2003) suggests is the CVP analysis which is supported by the results. However, the data suggest that division Y has a certain focus on COGS when doing their CVP analysis while Hinterhuber (2003) talks about costs in general. This is interesting since there ought to be many other costs related to offering the PSS. Furthermore, division Y does not use the exact formula for break-even change which Hinterhuber (2003) recommends. Instead, division Y is pivoting several scenarios e.g. at this price level the volume is X, hence the cost per unit is Y, which will result in a bottom-line result of Z, etc. As mentioned in section X, there are challenges related to estimating COGS for the PSS. The results illustrate a process where a lot of variables are moving targets, which makes it challenging to conduct the CVP analysis. Hinterhuber (2003) does not describe this dilemma but Harvard Business Review (2018) and Nagle et al. (2011) discusses this.

Hinterhuber (2003) then proposes that a competition analysis should be conducted which is also supported by the result as discussed earlier in section X. Division Y does a value-chain analysis on its top competitors which includes several dimensions that Hinterhuber (2003) highlights as well. For example, identifying competitor strategies, distribution channels, and competitors' pricing. In addition, division Y and especially company X as a whole, conduct broader analyses e.g. Porter's five forces and trend analyses, Hinterhuber (2003) does not mention these analyses. The result shows that competition data could be hard to acquire, especially regarding competitors' prices. The economic value analysis and the competition analysis in Hinterhuber's (2003) framework relies heavily on that data on competitors are available. Hence his framework seems inapplicable on new types of products where this type of data is hard to acquire.

In order to determine profitable price levels, as suggested by Hinterhuber (2003), division Y works with setting price corridors. Division Y base their pricing corridors on information that has been collected during the previous activities. This is in line with what Hinterhuber (2003) suggests. Furthermore, Hinterhuber (2003) does not mention pricing corridors per se but he does talk about price-levels, it is yet unclear if that implies one explicit price or a price interval. If the latter is true, division Y's price corridors are aligned with Hinterhuber (2003). The result indicates that after

division Y has set pricing corridors it is up to local markets to determine their price. This aspect is not mentioned by Hinterhuber (2003). Intuitively it seems reasonable that global companies consider some kind of local factor when setting prices for different markets. Hinterhuber (2003) further states that sales and marketing divisions should be consulted in this stage. The results support this as division Y reaches out to the involved local markets for consultation at this stage. During the implementation of the pricing strategy, the local markets will focus on training and educating sales and marketing personal on "selling on value" in order to support the value-based pricing strategy. This is supported by Hinterhuber (2003).

5.2.4 The PSS and its effect on the pricing strategy

Comparing the PSS with the theory it has similarities with what Annarelli et al. (2019) defines as product-oriented PSS. For the PSS the ownership is transferred to the customer which is in line with Annarelli et al. (2019) definition of a product-oriented PSS. Furthermore, the PSS comes with additional features that could be categorized as what Tukker (2004) calls product-related and consultancy-related features.

The results mention several effects that the PSS has on the development of the pricing strategy. Firstly, the PSS generates a longer customer life-cycle compared to company X core products which lead to additional support functions during the go-to-market activity. Also, the longer customer life cycle generates a higher cost-to-serve the customer than for company X's core products. For example, hardware and software teams that manage the continuous maintenance and updates of the PSS and the application, additional logistics have to be in place to manage the delivery of refills, etc. In addition, the results indicate that due to the novelty of the PSS and the market it is challenging to collect and analyse data. However, the fact the PSS is a PSS does not really affect the data collection and analyses. What is affecting the data collection and analyses is the novelty of the offering and the novelty of the market. This could be applied to any new type of product, service, or PSS, which is an interesting finding.

5.2.5 Challenges related to value-based pricing

Challenges related to the process of developing a value-based pricing strategy has been a theme throughout the results. Employees at company X have highlighted challenges related to all

activities in the process. Even though the challenges are different depending on the activity there are two common themes. The first theme is the novelty of the PSS and the market in general. As the results point out, there are limited data on important factors such as customer's WTP, competing solutions, sales volumes in the market, etc. There are no commercialized PSS of this type on the market, hence many activities are difficult to conduct. The second theme is the "the chicken or the egg problem", in many situations one data point is dependent on another data point and the other way around. It raises the question "which data point should the division Y start with when everything is interconnected, and the variables are moving targets?". The chicken or the egg problem is somewhat a consequence of the first theme. The lack of data makes the problem of "where to start" even more difficult. Division Y has to explore and gather a lot of data on their own since they are one of the first with this type of PSS. Hinterhuber (2003) mentions that his framework could be applied to new products, but he does not mention any of the two themes. In some way, Hinterhuber's (2003) framework seems more applicable for existing products and services, or incremental innovations which result in new versions of existing types of products. Furthermore, one could argue that his framework is also more focused on developing a price change rather than developing a pricing strategy from the ground. Even in Hinterhuber's paper from 2008, where he goes through several challenges with value-based pricing, he does not touch these themes.

The results indicate that the two themes of challenges have a major impact on the development of the pricing strategy. With that in mind, one could ask if the development of a pricing strategy should be an iterative process rather than having everything redo before market entry? This question requires further research. Furthermore, companies that are considering to develop a value-based pricing strategy for a new PSS should learn from the challenges that are mentioned in this thesis.

5.3 Generalizability of the results

This section includes a discussion about the generalization of the results i.e. could company X process of developing a value-based pricing strategy be applied to other companies? Furthermore, which activities are potentially more applicable for other companies and which activities might be unique for company X?

How division Y in collaboration with other parts of company X develop the value-based pricing strategy probably has similarities with how other companies are developing their value-based pricing strategies. For example, setting objectives is highlighted as an important activity both by company X and researchers within the field of pricing. Hence, other companies might also take objectives into consideration in their pricing strategies. However, there are probably differences in the process of setting objectives and which types of objectives that companies related to their pricing strategy. Furthermore, the results indicate that objectives reach beyond the field of pricing and is a central part of a company's overall strategy and context. This is probably the case for other companies as well.

Any company that is developing a value-based pricing strategy is doing some kind of customer value analysis since it is the cornerstone of the pricing strategy. The results and the theory support this as well. However, the fact that the PSS is categorized as a medical technology product means that it has to follow certain procedures and regulations as mentioned under section 4.4. Therefore, division Y is conducting a two-phase process for customer analysis i.e. before and after CE-marking. This procedure might not be so relevant for companies without CE restrictions. However, companies that produce medical technology products that require CE-marking could potentially recognize themselves in the process. Furthermore, companies outside the healthcare industry that face similar regulations could also find this information useful.

Analyzing the relationship between costs, volume, and profit (CVP) is an important activity according to the results and the theory. Intuitively, it feels natural that companies, regardless of industry, are conducting this type of activity. Companies that are pursuing profitability have to be aware of the relationship between costs, volume, and profit. There are probably other factors to consider as well. However, some non-profit companies might have a different view of this activity. The generalizability of the competition analysis follows the same argument as the CVP activity. Many companies are probably doing this activity as long as they have competitors. However, the theory and the results illustrate different processes for conducting competition analyses. Which of them that is more suitable is hard to define.

Setting the price or setting price levels is necessary according to the theory and the results. Other companies probably recognize this activity. Division Y sets pricing corridors and then local markets determine their prices. Some global companies might use a similar process while local

companies might only use one price. According to the results, the final activity is go-to-market, this is supported by theory. The process is different between what division Y does and what the theory suggests, with some similarities though. It is possible that this activity is conducted in many different ways, depending on company and industry, since go-to-market is a quite broad term that reaches outside the pricing strategy.

As the results show, division Y face the challenges related to two main themes in the process of developing a pricing strategy, the novelty of the PSS and the market and “the chicken or the egg problem”. Companies that also launch a completely new offering, whether it be a product, a service, or a PSS, might face similar challenges. These companies could find some findings in this thesis important. Companies that are working with upgrades of previous offerings or new offerings with a lot of data might not recognize these challenges. Since these challenges affect how division Y conduct their activities, it could be argued that there are more similarities in the process of developing a value-based pricing strategy between division Y and companies with completely new types of offerings.

5.4 Research contribution

This section describes how this thesis has contributed to academic research, to companies and organizations, and to society.

As mentioned under section 1.2 there are research gaps when it comes to how companies develop a value-based pricing strategy and especially how that process applies to a new PSS. This thesis has through an in-depth case study at company X, brought up several important findings that could be used to fill that gap. For example, relevant activities in the development of the value-based pricing strategy and how these activities are performed. Furthermore, several challenges related to the process are highlighted which could be useful for academics and for companies that face a similar scenario as company X. Perhaps, the findings could assist other companies to succeed with the development of a value-based pricing strategy. Then, it would benefit the society since a value-based pricing strategy is designed to create value for the customers. This thesis also confirms existing theory to quite a large extent which is a contribution in itself.

Another interesting contribution is that the fact that the PSS is a PSS does not really affect the development of the pricing strategy to such a large extent. What is affecting the pricing strategy is

the novelty of the offering and the novelty of the market. This could be applied to any new type of product, service, or PSS. Perhaps, that explains why so little is written about value-based pricing for a new type of PSS. The focus should rather be on how companies develop value-based pricing for new types of offerings. This is something that would be interesting for other researchers to look further into.

What potentially could be categorized as research contribution is the following insight: An in-depth single case study is basically necessary to understand strategic topics at large companies. To understand the context, the offerings, the market and so on, requires much time at the company. Furthermore, companies do not go into detail about strategic topics if a researcher only conducts one or two phone calls. It is critical to be a part of the company to truly understand strategic topics and processes. In addition, company X is on the verge of launching a completely new type of PSS which could have several positive implications for the business landscape and the society. By being able to conduct an in-depth case study at company X about a secret topic as pricing is valuable in itself.

5.5 Other interesting topics

During the research new interesting topics have emerged that are a bit out of scope but still interesting to highlight. This section describes these topics to various degrees.

As company X operates within the health industry many of their products, including the PSS, have to follow strict regulations to ensure the safety and the health of customers. Many of the products are necessary for customers' health and wellbeing, therefore customers can get reimbursement from the government when buying these products. To manage regulations and reimbursement system requires resources and knowledge. Furthermore, regulations and reimbursement are factors that a single company cannot change or affect. Company X is a pioneer within the health industry and thus have the resources and knowledge to manage regulations and reimbursement systems. They also have deep a knowledge about their industry, their customers, the supply chain, local contacts, etc. Many competing solutions to the PSS are made by tech start-ups with limited experience in the health industry. It will probably be hard for them to manage these challenges with limited resources and knowledge. In fact, company X mentioned that one start-up has already gone bankrupt due to the incapability of managing regulations, the supply chain and so on. Hence,

one can argue that one important competitive advantage when launching a new offering is to have previous knowledge about the “underlying infrastructure” and resources to manage it. This could probably be applied to other industries as well.

This thesis has previously discussed that one reason for the launch of the PSS is to hedge against the commoditization of company X’s core business. Christensen (1997) describes in his book *“The Innovator’s Dilemma”* that it is difficult for large incumbent companies to manage disruptive innovations. Hence, it would be hard for company X to succeed with the new PSS since it is a disruptive innovation that is different from their core business. However, the previous paragraph indicates the opposite, if the PSS could be defined as a disruptive innovation. This would be interesting to investigate further.

Another topic that has become interesting during the research is about which of the PSS and its competing offerings that will become the dominant design. Courses at Chalmers University of Technology, e.g. Technological Change and Industrial Transformation by Christian Sandström, highlights several benefits with creating the dominant design. Competitors redesign their products to match the dominant design and the company that produced the dominant design is thus one step ahead. If company X’s PSS becomes the dominant design they might enjoy the same benefits, while if a competitor creates the dominant design, company X will be one step behind. This will for sure have an impact on the pricing strategy.

6 Conclusion

The following chapter will describe the conclusions derived from this thesis. Subsequently, the limitations and areas of further research will be presented.

The purpose of this thesis has been to provide a deeper understanding of how companies develop a value-based pricing strategy when introducing a new PSS to the market. The research questions in this thesis were answered by conducting a single case study at company X. A literature review was conducted to lay the base for the case study and the interview questions by identifying overarching themes and factors that affect the development of value-based pricing strategies.

The findings in this thesis indicate that division Y, a unit within company X, develop the pricing strategy for the PSS by conducting six main activities. Firstly, they set objectives, the objectives are divided into general objectives, sub-objectives, and pricing objectives. Secondly, division Y conducts three overarching analyses i.e. customer analysis, COGS and profitability analysis, and competition analysis. Thirdly, by combining the results from the three overarching analyses division Y sets a global price corridor for the PSS. This is a price range in which local markets must consider when setting their prices. Finally, the development of the pricing strategy ends with the go-to-market activity which education and training of sales and marketing employees, marketing campaigns, and streamlining the organization. The six activities follow a sequential order to a large extent, but since all activities are interconnected, they are all discussed continuously during the process. Furthermore, the findings show that the actors related to the development of the pricing strategy are to a large extent the same throughout the process with some exceptions. Division Y has the main responsibility for the pricing strategy, but they have an ongoing dialogue with involved business units and involved local markets. Other internal actors are also involved in several activities during the process e.g. commercial teams, the competitive intelligence unit, marketing teams, sales teams, and innovations teams are. External actors in the form of research companies are also involved. Suppliers, customers, and advisors are external actors that have more of an indirect effect on the development of the pricing strategy.

By comparing the findings from the results with the theoretical background there are obvious similarities but also several differences. The findings indicate that division Y is considering all the factors mentioned in Brassington and Pettitt's (2013) framework when they develop their pricing

strategy. However, some factors have been considered to a larger extent than others e.g. customer value, competition, and costs. This is interesting because it indicates that costs, competition and customer value all have an impact on the pricing strategy. One section of the theoretical background described cost-based pricing, competition based-pricing and value-based pricing as stand-alone strategies. As the findings show, which is also supported by Hinterhuber's (2003) framework, cost and competition are still considered even though customer value is the main focus in a value-based pricing strategy. Thus, it might not be wise to consider three main pricing strategies as stand-alone strategies but instead consider all of them combined. Remember that 80% of companies still base their price on either costs or competition prices, perhaps it is time for a shift? This is something to research further.

The findings also show that there are similarities between Hinterhuber's (2003) framework and the activities that division Y conduct when they develop their pricing strategy. Both the results and Hinterhuber (2003) suggest to first develop pricing objectives. However, the results show that there are more than just pricing objectives to consider. One should also consider other more overarching objectives. The results then show that three types of analyses are conducted: customer analysis, COGS and profitability analysis, and competition analysis. This is rather similar to Hinterhuber's (2003) framework, however, there are some differences. The customer analysis at company X has a focus on identifying the value of their PSS whereas Hinterhuber (2003) suggests that the value should be analysed in relation to competing offerings. The COGS and profitability analysis resembles Hinterhuber's CVP analysis. However, the results point a certain focus on COGS, rather than costs in general, and the difficulties related to it. These difficulties come from the fact that COGS are dependent on volumes and other factors that can be uncertain before market entry. The last of the three analyses is the competition analysis which is also supported by Hinterhuber (2003). However, the results show that a more thorough analysis is conducted than what Hinterhuber (2003) suggest. A challenge for company X is the lack of existing customer and market structure which is something that is not mentioned by Hinterhuber (2003).

When the previously mentioned activities are done, the results show that company X sets price corridors. The local markets must keep within these corridors when they set their final price. This is potentially supported by Hinterhuber (2003), who writes about setting profitable price levels, depending on if he refers to one price level or a range of price levels that are profitable. Lastly,

company X take action to implement and support their value-based pricing strategy. They do this mainly through education and training of the marketing and sales force. The education and training focus on “selling on value”, which is supported by Hinterhuber (2003).

The purpose of the thesis was to understand how companies develop value-based pricing strategies for new PSS. The results indicate that it does not seem to matter much that the offering is a PSS, and not a product or service, when developing the pricing strategy. Instead, it is the novelty of the PSS that makes a difference. The PSS is not only new, but it is also a new type of PSS and therefore, there is a lack of data on commercialized competitors and market structure which makes most of the work more difficult. However, there seems to be a difference once the PSS is on the market, there will be more things that need to work, longer customer interactions, higher costs to serve etc.

There have been two themes of challenges during the pricing strategy developments at company X. First, the novelty of the PSS and the market in general. This means that there is a lack of existing data to use and also makes many data point harder to collect. Secondly, is the mentioned “the chicken or the egg” problem. Many variables in the analyses are interconnected and depend on each other. This creates the issue of “where to start”. The theory does not mention any of these challenges. In fact, the economic value analysis and the competition analysis in Hinterhuber’s (2003) framework relies heavily on that data on competitors are available. Hence his framework seems inapplicable on new types of products where this type of data is hard to acquire.

In general, the affecting factors and activities done by company X, when developing their value-based pricing strategy, are supported by existing theory and so it should be generalizable to other companies as well. However, there are some details in the activities that might not be applicable to all companies. The effect of regulations is something that probably not all companies can relate to. The need for CE marking makes it necessary to conduct the customer analysis in two phases: before and after CE marking. However, companies within the medical equipment industry, or other regulated industries, can probably relate to this. Furthermore, many of company X’s actions can be explained by the novelty of the PSS and the market. Therefore, the results are probably more applicable to companies in similar situations where the PSS, they are pricing, is not a slight upgrade of a previous one.

The research contribution is that, in general, developing pricing strategies for a PSS seems to be similar to developing pricing strategies for product or services. This is described earlier with a comparison between the results and Brassington and Pettitt's effecting factors and Hinterhuber's (2003) framework for developing value-based pricing strategies for product or services. However, the main differences seem to be grounded in the fact that the PSS and market is novel. This creates issues like the described "the chicken or the egg" problem, and lack of existing data on similar offerings and market structure.

There were some interesting findings that were a bit out of scope but still worth to mention. Because of regulatory demands and reimbursement systems, the results indicate that it requires a rather large company to be able to comply and handle this. Therefore, start-up companies with similar solutions might struggle in this industry. Furthermore, it seems so far that company X manages to take action to adjust to the pressured margins of their core business by innovating. This is something that large companies often fail with according to Christensen's (1997) book "*The Innovator's Dilemma*". Lastly, it will be interesting to see how this market evolves given that there are several companies working in a similar direction and if there will become a dominant design on the market.

7 Further research

It would be interesting to conduct similar in-depth studies on other companies that are in the process of launching a new type of offering. This includes companies in the same industry and in different industries, but also companies launching different types of offerings e.g. products, solution, PSS, etc. Thereafter, the findings could be compared with this thesis in order to find similarities and differences. That could strengthen the research surrounding the development of value-based pricing for new offerings. If more research is conducted within this field, it would be interesting to see if more companies are trying to develop a value-based pricing strategy. Furthermore, as mentioned in section 5.2, it would be interesting to analyse if the development of a pricing strategy should be an iterative process rather than having everything redo before market entry.

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Appendix A

Topic guide

Opening questions

What is your role at company X?

Can you tell us about your involvement with the PSS?

Defining pricing objectives

What are your pricing objectives?

How do you develop pricing objectives?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Analyse key elements of pricing decisions

Customer value

What customer value have you identified?

How do you identify customer value?

How does the customer value differ between markets and segments?

What actors are involved in this process and how are they involved?

What are the challenges with identifying customer value?

Cost volume profit analysis

How do you determine your cost, volume and profit relation?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Competitive analysis

How do you work with competitive analysis?

What factors are you looking at?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Determine profitable price levels

How do you combine the results from customer value analysis, cost volume profit analysis and competitive analysis into a determined price?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Implement price decisions

What actions do you take to implement the determined price?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Other activities

Do you have any additional activities linked to the development of the pricing strategy?

What actors are involved in this process and how are they involved?

What are the challenges with this process?

Closing questions

Is there anything else you would like to add?

Appendix B

Gioia analysis codes

The following figures show the analysis that forms the base of the results and discussion. The first column is the raw data. However, the displayed quotes are only some examples of the quotes used. The second column shows the first-order concepts. The third column shows the second-order themes and the fourth column shows the aggregated dimensions.





