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**THE OPERATIONAL PERSPECTIVE
OF A PRICING PROCESS:
A case study investigating cause(s)
and improvement measures for
process flow inefficiency for
an ICT Service company in Norway**

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MASTER THESIS

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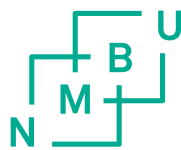
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Abstract

“The operational perspective of a pricing process:

*A case study investigating cause(s) and improvement measures for process flow inefficiency
for an ICT Service company in Norway”*

by Therese A. KNAPSKOG

Purpose: This study focus on the pricing process for an ICT Service Company in Norway. The aim was to investigate how a pricing process should be organised to achieve process efficiency in an operational perspective. Three research questions were created to achieve this aim. (1) What characterises the current pricing process. (2) What are the cause(s) for process flow inefficiency? (3) What are the recommended improvement measures?

Methodology and Theoretical Framework: Research was conducted at one point in time, focused on an in-depth interpretation of non-numerical data. Main source for data were 15 process participants, collected through a semi-structured interview and analysed thematically. Following a flexible research design, there has been a continuous shift between data collected (empirical) and theory. The theoretical framework focused on the building blocks of pricing, the pricing factors.

Findings: The pricing process were found to be simplistic and having a little degree of standardisation. Including utilisation of highly experience-based knowledge basis, a lack of guidelines, in addition to dependencies that determine how the pricing process were executed. Following, it was found that the complexity of sales opportunities processed were the main source for process inefficiency. Such as utilisation of resources being dependent on type of case, which resulted in clarifications, lack of basis for comparison and/or limited internal capacity. Additionally, utilisation of resources compensating for lack in appropriate framework, such as information basis and price objectives. Consequently, improvement measures found were a targeted improvement of factors in-line with pricing requirements and chosen pricing model. Starting with establishing price objectives and followed by determining short-term and long-term goals for re-organising the process. The study argues that pricing require continuous effort and prioritisation to sustain process flow efficiency.

Value Contribution: For practice, findings can inform managers on the link between pricing factors, causes for process flow inefficiency and improvement measures. Especially the importance of appropriate framework based on goals and chosen pricing model. Moreover, demonstrates a practical approach to how managers should prioritise improvement measures, when aiming to re-organise their current pricing process. For research, this study complements existing studies with a more operational and overall view on pricing. Including an in-depth view of how a pricing process can be executed. Additionally, proposed causes for inefficiency that should be further investigated trough qualitative and extensive research to determine the exact effect on operation of a pricing process.

Preface

Finally, with this thesis I conclude my master's degree in Industrial Economy and Technology Management. With an interdisciplinary academic background, finding a topic was challenging. This changed after my first encounter with an ICT service company in the summer of 2020, where I worked on a project to automate customer invoices. From which I saw an industry undergoing rapid changes in line with the trend of digitalisation and fast-pace product developments. The following autumn, I established contact with a similar ICT Service company to investigate a possible collaboration. Eventually, we agreed on a research topic which had the potential to be both academically challenging and be of practical importance for the ICT Service company: *Price setting in a sales process*. During a semester of research I have learned how complex and interdisciplinary pricing is in reality. For example, some of the central research areas are Organisational- and Process Management, Enterprise strategy, Economics, Behavioural Science and Data Science. These are large research fields, and can be categorised in to several topics such as sales, B2B and marketing.

I want to thank my supervisor, Tor K. STEVIK, for his participation and collaboration to conclude this thesis. A big thank you to the ICT Service Company in this case study, for showing trust in my work, prioritising time and resources. Including the informants who have set aside time and shown engagement. A special thanks to the CSO, who was my go-to person and his help in this process.

On a more personal note, writing a master thesis is usually a more challenging period for most students. Even more so with long periods of national and local pandemic lock-downs. I want to thank friends and family for endeavouring all out-loud thinking about the same topic for several months, their support and encouragement. A special thanks to Marthe, my dad and my mom for your help and inputs. Lastly, I cannot thank Didrik enough for his support every step of the way.

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Chapter 1

Introduction

Pricing can in many ways seem simple, but at the same time be confusing by having several reference names and practical forms. The process of determining price in day-to-day operations has been referred to as price-setting, price-decision process, a capability, price management or just pricing (Senczyna and Němec, 2018; Dutta, Zbaracki, and Bergen, 2003; Simon-Kucher and Partners, 2019; Simon-Kucher and Partners, 2021b). For business-2-business (B2B) companies, the process usually starts with an opportunity for sales, followed by determining product type, quantity and price, and ending with finalizing the decisions a form of sales document. In this thesis, it will be referred to as the Pricing Process. Depending on industry and company, the pricing process can, for example, be found in a company's marketing department, as a separate process in a pricing specialized department, sales and tender processes or different combinations. Tender processes is typically the case for B2B industries (Simon and Fassnacht, 2019g). Pricing, either in terms of a process or price optimization and tactics, are influenced by a number of factors within macro- and microeconomics, marketing and behavioral economics (Simon and Fassnacht, 2019e). Each area sets a different basis for pricing depending on the industry and can in some cases seem countervailing or abstract. Therefore, it is not a rare case that managers resist adopting new practices within prices (Simon and Fassnacht, 2019e). Additionally, it has been shown that most companies fail to understand that pricing inhabit unexploited potential in terms of capturing value and gaining profit (Simon-Kucher and Partners, 2020; Simon-Kucher and Partners, 2021a). While there can be many arguments for why pricing is important, another important aspect is how pricing is implemented in the operations of a company, which is the focus of this thesis.

Specifically, this thesis investigates operational inefficiency in the current pricing process for a Norwegian Company in the Information and Communication Technology (ICT) Service industry. ICT Service is one of two sub-industry groups within the ICT Sector, whereas the other is ICT Manufacturing (OECD, 2021). According to the EU industry classification system (NACE), the ICT sector is: An industry group designation for manufacturing and services industry "*whose products primarily fulfil or enable the function of information processing and communication by electronic means, including transmission and display*". The ICT Service company studied mainly operates within two industry product groups within ICT Services (Statistics Norway, 2009):

- *Data processing, hosting and related activities* (Group J63.1)
- *Wholesale of information and communication equipment* (Group G46.510) .

ICT Service products are characterized as high-value services and generally consist of tangible goods (hardware/ software/ IT infrastructure) and intangible services (maintenance/ support/ professional IT services), of which are combined to an overall product (Harmon et al., 2009). Services in general are challenging to price due to mainly four characteristics (Simon and Fassnacht, 2019h; Harmon et al., 2009):

- Being intangible (not easily transported as goods)
- Perishable components (cannot be stored for later use)
- High level of customer contact (customer integration to product)
- High degree of customization (due to the customer dependency)

An example of a product is Software-as-a-Service (SaaS), meaning that the customer gains access to a software through the internet, but the software are installed at the ICT Service Company servers (Saltan and Smolander, 2021). In the start phase, the ICT Service Company would install and if necessary integrate the application with existing applications and systems. This would then require a project and cause labor cost for the ICT Service Company. Following, the customer have access to the application, while the ICT Service Company operates and maintains the servers that run the software (Saltan and Smolander, 2021). Typically, the customer would pay a project fee, besides pay-per-user for licenses to the software. The software can either have been developed by the ICT Service company, but in most cases ICT Service companies are re-sellers of Software. Either way, the ICT Service Company does in this case serves as an Application Service Provider (ASP). Other cloud products are Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS). Of which, are typical products where the ICT Service Company provides the IT requirements and structure for other companies to perform their business operations (Saltan and Smolander, 2021).

In Norway, ICT Services is the largest industry group within the ICT Sector in terms of number of companies. From 2013 to 2018 the ICT sector increased by 4198 companies, of which the majority were ICT Services (Statistics Norway, 2021). ICT Service have experienced a 56% growth in the past 5 years and 108% growth the last 10 years. (Statistics Norway, 2021). In addition to growth in number of companies, the ICT Service industry have also seen good number in terms of financial key figures and results. For example, a report from 2018 on Norwegian national accounts for production and value creation, ICT services were one of four main industries contributing to an increase in gross profit, together with an increase in trade, transport and telecommunications (Statistics Norway, 2018). Additionally, key numbers from the ICT Service showed a positive development from 2013 to 2018 in profit margin, total return and return on equity (Statistics Norway, 2021). For the same period, the study object have had at least as good or better development in these key numbers. However, based on results from the last period of years, the company has on occasion struggled with profitability.

As presented the focus of this study is the current pricing process, and not profitability. This thesis will argue that process flow inefficiency main determinant is a lack of appropriate pricing framework (use of pricing factors). Moreover, that the solution (recommended improvement measures) have the potential to increase the companies value capture (profitability), besides increasing process flow efficiency. This is important because many of the improvement measures will require extensive resources to strengthen the pricing framework. Furthermore, it is argued that

efforts in implementation and continuous prioritization of pricing are key measures to sustain an efficient process flow. Lastly, it is argued that the root cause for process inefficiency in this case study follows the fact that most companies do not prioritize pricing.

1.1 Scope of Study

The research presented in this thesis was initiated in cooperation with the ICT Service company studied. Due to confidentiality, the company will remain anonymous and from here on be referred to as Case Company. For almost 30 years, Case Company have been a part of the ICT Service industry, in which the market and technology have had a rapid development. For the past years, the company has had an ongoing process to renew the organization in several areas, such as marketing, product bundling and company procedures along side the market changes. As a part of their organizational changes the company has started a project to improve their pricing process (Management of Case Company, personal communication, December 8, 2020). In the context of this project, this study was initiated to give an academic point-of-view to their challenges and possible solutions.

In short, **the research problem** concern *process flow inefficiency in Case Company's current pricing process*. Meaning a practical problem, which needs a practical solution. Due to no available data on how the pricing process is currently executed in the company, the majority of empirical data was focused on mapping the pricing process. Including process flow and current pricing framework, to be able to clarify causes for process flow inefficiency. Additionally, it was found that Case Company lacked competence on the building blocks for pricing. Thus, the theoretical framework was determined to focus on pricing factors, aiming to fill this knowledge gap and attain new perspectives to causes for process inefficiency.

Case company is a Small-Medium-Enterprise (SME) company (European Commission, 2017), with a 100 to 200 employees. Due to being in a Business-2-Business (B2B) industry, the pricing process takes place in the companies sales process to prepare offers to customers. There are mostly no fixed prices or list prices, but some reference prices. Prices are set for individual cases in the sales process. Meaning the price for a product or service can vary from customer to customer. Concerning their current pricing process, the Case Company expressed several areas of concern, but mainly there were two concerns regarding process flow inefficiency (Management of Case Company, personal communication, January 18, 2021):

1. The process requires extensive resources in terms of time and number of people involved
2. The process lacks standardization and produces many special cases in terms of price and discounts

The latter, due to Case Company suspecting that the main cause for process flow inefficiency origins from a poor price base and lack in standardization. Other concerns, but less directed at the process flow, were (Management of Case Company, personal communication, January 18, 2021):

3. The quality of the price decided
4. Pricing in a fast-paced market

5. Lack in visibility of contribution margin
6. Sales or account management not having enough ownership in the pricing process

While their concerns were varied, the main goal for Case Company was to improve process flow efficiency. By improving the process flow, the management believes it can help increase their ability to respond to sales opportunity faster without the amount of resources used today, and consequently increase their turnover of sales opportunities.

1.2 Existing Research on Pricing Processes

Concerning pricing, most research has focused on price decisions, optimization and the strategical / tactical elements of pricing. While there is little research on the operational perspective and the process of setting pricing (the pricing process) (Simon and Fassnacht, 2019e; Saltan and Smolander, 2021; Harmon et al., 2009). In contrast to this, when companies have been asked, 71% said that the process perspective was the most relevant topic compared to price decision and price optimization. Below 4 aspects of existing research are presented: Research gaps, why gaps exist, what current research state concerning pricing process and how this thesis contributes to current research.

Recent research on pricing of SaaS, a typical product within the ICT Service industry, identified 14 research gaps. These gaps are focused on software companies within the ICT sector and are similar (but not identical) to Case Company in terms of products and challenges. In general, there have in the last years been an increase on research concerning Pricing for SaaS. However, there is a decrease in publications from scholars. Both publishing groups lack quantitative studies (Saltan and Smolander, 2021). Concerning the pricing process for SaaS, there is a substantial lack in research of pricing in an organizational context. Research on pricing can be split into 4 topics, which is overall pricing (general topic), strategic level, tactic level and operational level. Of these, tactic and strategic level were the predominant topics, followed by operational level and overall pricing. The least dominant topics had a considerable less amount of research. At the operation level the subtopics (a) ownership, control and decision-making and (b) resources and cost planning and management were the least popular topics. Below are some of the findings of research gaps in SaaS (Saltan and Smolander, 2021):

- Little research on organization of SaaS pricing
- Proposed approaches are inconsistent
- Little is known of challenges SaaS companies face in implementing pricing
- Inconsistent vocabulary concerning pricing

On a more general basis, marketing research within B2B have paid little attention to price (Simon and Fassnacht, 2019h). In addition, just as research on SaaS, there are few references to the need of organization of price (Simon and Fassnacht, 2019f). Within business management research, there might be more relevant organizational aspects within process standardization, process operations or BID processes, however as these do not focus on pricing, they are considered outside the scope of this study (the building blocks of pricing) concerning data collection and literature.

One reason for research gaps is the fact that pricing is usually confidential, not transparent and lacks available documentation. Leading to challenges regarding collection of relevant data and establishing empirical research (Simon and Fassnacht, 2019e). Second, it is argued that the process perspective has not been prioritised by researchers. When Dutta, Zbaracki, and Bergen introduced Pricing as a Capability in 2003, they address that there at the time were little literature focused on pricing processes or research considering the process in a strategic view. They further explain this fact was due to the predominant view in marketing, strategy and economics, of which price-setting is viewed as cost-less and simple (Dutta, Zbaracki, and Bergen, 2003). The third reason, is presumed to be the lack of standardizing or unifying terms for the pricing process or in general for pricing. Such as with pricing for SaaS, where a literature review observed that terms were used interchangeably and often not clearly defined in relation to the research conducted. It was found more than 10 different terms and concepts, including pricing strategy, pricing model, pricing structure and pricing approach (Saltan and Smolander, 2021). The same can be observed when searching for literature on pricing, where it can be a challenge to separate search for pricing decisions and the pricing process, since both are explained with similar terms.

Nevertheless, there are four key areas of research in the literature collected. Some of these areas are more widespread than others, and each will be explained with point of reference to key source. First, pricing as a capability, introduced in 2003 as an ability to set prices and negotiate in a way that achieves competitive advantage (Dutta, Zbaracki, and Bergen, 2003). Second, Price management as a continuous process of four steps: Strategy, Analysis, Decision and Implementation. This is, in a way, the framework for a pricing process, with continuous improvement and a focus on profit optimization (Simon and Fassnacht, 2019e). Third, is research on pricing strategy or pricing models, referred to as Value-based pricing. There are several research papers on this topic, and some that evaluate the model specifically for the ICT industry. Arguing, that using more resources to understand the customer, can result in more appropriate pricing (Harmon et al., 2009; Pasura and Ryals, 2005). Fourth, is a constructed framework for pricing in competitive industries. Compared to the other research papers presented, this research gives the most concrete guidelines for a pricing process in terms of activities and operational perspectives. The pricing process, with guidelines for implementation is split into three phases: Planning, Execution and Analysis, including both the company side and customer side of the pricing process. Summarized, these are examples of research in pricing, and contain reference to what this thesis defines as a pricing process. However, vary to what extent they explain the operational perspective of the pricing process. Additionally, there is little focus on pricing process inefficiency in terms of company resources to execute the pricing process.

To summarize, professionalized services are products that usually compose of both goods and services, and can be challenging to price (Simon and Fassnacht, 2019h). Literature has mainly held a focus on price optimization and decisions, while there is a gap in literature concerning how pricing processes are performed in terms of operational aspects. The company studied, suspect that a lack of standardization and a secure price base is the cause of pricing process inefficiency, in terms of number of people and time consumption. However, it is unclear to what extent these assumptions hold true. To understand the pricing process fully, including the cause(s) for inefficiency in day-to-day operation, it is important to clarify how the pricing

process is executed and the framework around it. In this context, this study complements research on pricing with a more operational and overall view on pricing, rather than price decision and optimization. In addition and in a more practical context, this study will contribute to a more appropriate basis for the Case Company to make decisions for improvement measures to pricing and the pricing process.

1.3 Problem Statement and Aim of Research

Following scope of study presented and existing research on the topic, **the problem statement** is: *How should a pricing process be organized to achieve process efficiency in an operational perspective?* Three research questions are constructed to answer the problem statement, presented in Figure 1.1.

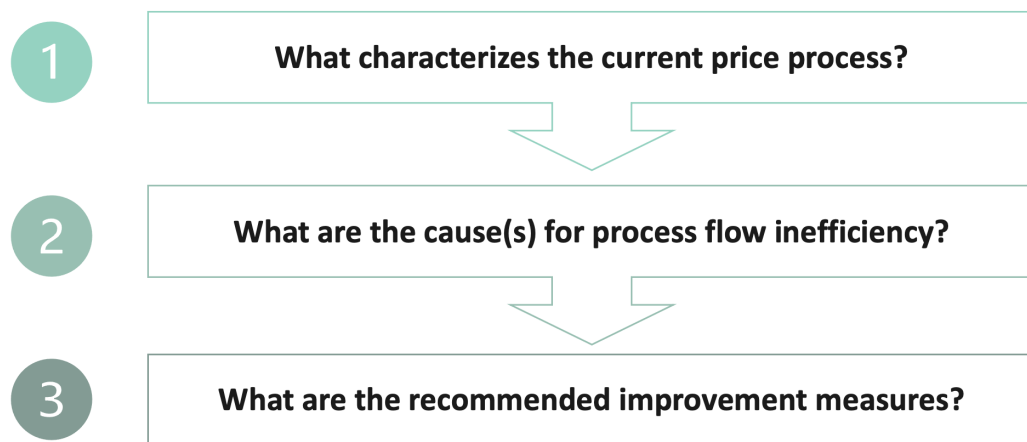


FIGURE 1.1: Research questions constructed to answer the problem statement concerning organisation of a pricing process.

Thus, the aim of this study is to investigate how a pricing process should be organized in an operational perspective, by conducting a qualitative and intensive case study. To do this the objectives are to map the current pricing process, including process execution and pricing framework. Followed by, identifying possible cause(s) based on how the pricing process is currently organized. Lastly, concluding on practical improvement measures that can be implemented in the short-term and long-term. As the theoretical framework focuses on pricing factors, the results of study objectives will be limited to answers within this theory.

1.4 Thesis Structure

This thesis mainly follows a standard structure. Chapter 1 introduces the research problem. Presented in context of the ICT Service industry, the Case Company's perception of the problem, existing literature and aim of study. The basis for understanding pricing, pricing factors and examples of pricing process models are presented in Chapter 2. Moreover, the chapter concludes with a conceptual model, where the content of the theoretical framework is set in context with the study's research problem. Method including research design, data collected and method for analysis is explained in Chapter 3. After which, the results are presented in Chapter 4 and discussed in Chapter 5. In addition, Chapter 5 outlines the general answer to

the problem statement, limitations of the result and further recommendations. The structure is summarized in Figure 1.2.

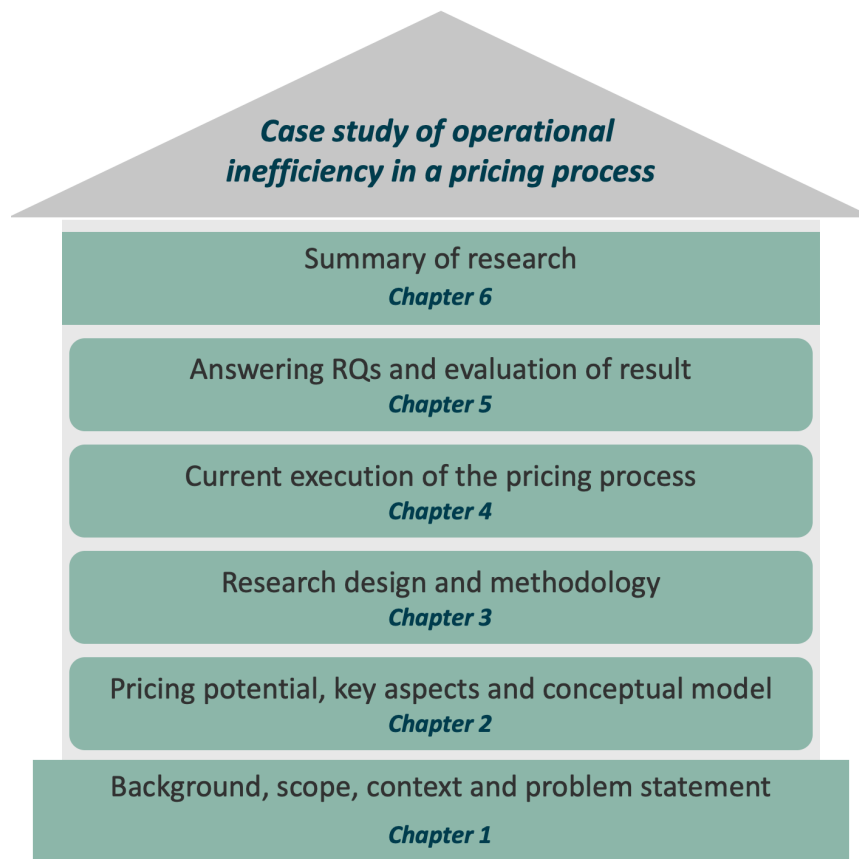


FIGURE 1.2: Thesis structure with reference to main content.

This thesis is written with regards to mainly two groups. The first group has the main interest in practical implications. Especially, the ICT Service Company for which the case study was initiated with. But also other managers with an interest to understand the importance of price management in an operational context. In the following chapters, sections of most relevance are the conceptual model (Section 2.4), presentation of results (Chapter 4) and overall interpretation of results (Section 5.2). The second group, are those concerned with both practical and research implications, additionally they are presumed to be familiar within the research field. Therefore, sections that are regarded as less important for the first group will to a greater extent assume that the reader is familiar with research topics. Exceptions are definitions or clarity that is relevant for the research design limitations.

Chapter 2

Theoretical Framework

Summary

This chapter has four main objectives; (1) give a brief introduction to pricing, (2) give an overview of key pricing factors, (3) give examples of process models and (4) visualize the theoretical framework in a conceptual model. Pricing can be defined in terms of a price, the pricing process and the process framework. Due to the variety of elements in pricing, besides the effect it can have on a company's "success", pricing can be quite complex and seem abstract. Consequently, it is often not prioritized by companies as managers lack the ability to understand pricing. Of which risk, companies lacking key elements to be successful in pricing. Elements in a pricing process are mainly explained in terms of Pricing Factors, which are the elements in the surrounding framework of a pricing process. These can be utilized differently depending on chosen process models, of which are different theoretical models for how the framework can be set within a company. Thus, there are a variety of choices companies can make when establishing a pricing process. These choices, in addition to other elements presented in the theoretical framework present the "hypothesis" for cause and effects for process inefficiency, visualized as a conceptual model. For investigation of pricing inefficiency the conceptual models keywords presented are companies undermined view of pricing and deficiencies in the pricing framework (factors).

2.1 What is Pricing?

The first part of the theoretical framework gives a brief introduction to pricing. Including different definitions of price, why does research argue that pricing is essential for company's success and why companies fail within pricing or in prioritizing pricing.

2.1.1 Key Definitions

This thesis holds a focus on three pricing definitions. **Price** can be defined as *the number of monetary units which a buyer must hand over for one unit of a product or service* (Simon and Fassnacht, 2019e). Deciding a monetary value can require an extensive pricing process and framework. Where a **pricing framework**¹ is in this thesis defined as *a system of rules and procedures to determine and implement prices* (Simon and Fassnacht, 2019e). Moreover, a **pricing process** is defined as *a series of activities that lead to the final decision of a price*. Both the framework and the pricing process inhabit a variety of different elements, which is set by the company, influencing how

¹Also referred to as Price Management (Simon and Fassnacht, 2019e), however Price Management will in this thesis refer to one of the main theoretical process models.

prices are decided and final price format. Examples of different pricing formats are fixed or dynamic prices, project price or recurring charge, or prices differentiated according to package size, product variant, customer segment, location and so on. Elements and price format are dependent on company choices regarding pricing framework and process. Additionally often industry specific, such as dependent on type of products sold (Simon and Fassnacht, 2019e). Figure 2.1 illustrates the different definitions related to pricing and a selection of elements that can be found within pricing. Moreover, illustrates that while price have a simple definition, the complexity of pricing arises from a variety of elements (from the process and framework) that interact to produce prices.

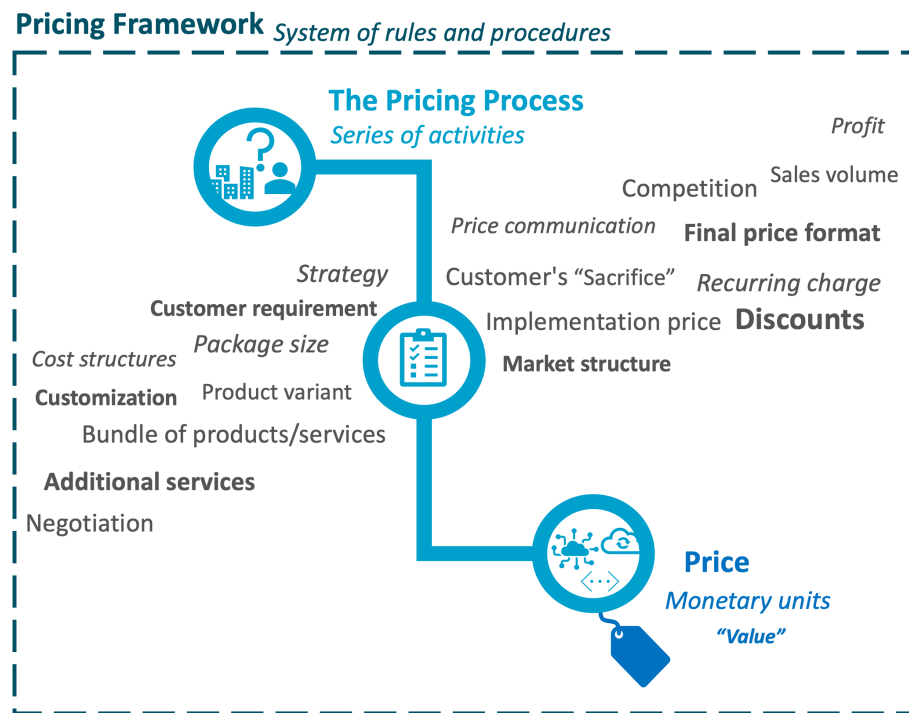


FIGURE 2.1: Presents the key terms of pricing; price, the pricing process and pricing framework. Additionally, a selection of elements that can influence how a pricing is set and the final price format.

2.1.2 Impacts of Successful Pricing

While pricing can be complex due to the many different elements interacting, research shows that pricing has the potential to impact company success in terms of value capture. **Value capture** can be defined as *the process of retaining some percentage of the value provided in every transaction* (Kaufman, 2020). Where, **value** can be defined as *the monetary, material or assessed worth of an asset, good or service* (Kenton, 2021). By this definition price is one form of value, for example how a company expresses the value of their products to customers. Moreover, value capture how the same company gain profit by selling their products for this price. In 2019, Hermann Simon² and economist Martin Fassnacht published a practical guide to pricing, where they argue that price is the strongest driver for profit. Shown through the profit function, consisting of three parameters (profit drivers), namely volume, cost and price (Simon and Fassnacht, 2019e). By altering only one of these parameters by

²One of the founders of the pricing consultancy company Simon-Kucher & Partners

2.1. What is Pricing?

a fixed percentage, price is the parameter that results in the highest increase in profit (Simon and Fassnacht, 2019e). In reality volume and price have an inter-dependency, where the increase in one often leads to a decrease in the other. However, it has been shown that an incremental increase of price by only 1-3%, there are often no effects on volume (Simon and Fassnacht, 2019e). Moreover, Simon and Fassnacht show that an increase of 2% in price, assuming no volume loss, had the potential to generate 6,6% increase in after tax return on sales for industrial companies (based on data from 2007 to 2011). Thus, from a pure profit perspective, they argue that it is better to accept a lower volume than a lower price (Simon and Fassnacht, 2019e).

While Simon and Fassnacht argue that pricing is important for increasing profit attained, other researcher argue how pricing is essential to capture any value at all. A company's plan for how to attain profit is called a business model (Lien, Knudsen, and Baardsen, 2016). This is often supplemented with a long-term goal or direction set for the company, called a strategy (Whittington et al., 2020). By visualizing strategy through a strategic map, strategy and a business model build on the same logic. Which is, clarifying the cause and connection for a company to create, deliver and capture value (Lien, Knudsen, and Baardsen, 2016). In 2003 researchers Dutta, Zbaracki, and Bergen introduced pricing as a capability, based on the theoretical strategy concept called A Resource-Based View (RBV) (Dutta, Zbaracki, and Bergen, 2003). Of which, strategy and strategic decisions are based on company's unique set of resources and capabilities to create a competitive advantage, similar to the logic of a strategic map and a business model (Whittington et al., 2020). Dutta, Zbaracki, and Bergen argued that if a company creates value for a customer it is not a given that this value is captured by the company. Rather, it depends on a company's pricing capability, meaning their ability to set or change prices. Thus, arguing that companies should pay more strategic attention to pricing (Dutta, Zbaracki, and Bergen, 2003). For example, a case study on an industrial production company spent years on developing a pricing data system, containing historical data and analysis tools. To complete the project, the company had to utilize a large amount of resources. 5 years after starting the start of their project, they had their major "win" in negotiation. They were able to convince a customer to accept a higher price than what was initial offered during negotiation. Under negotiations the customer were asking for a larger discount, but when presented with statistics and explanatory arguments based on the newly developed pricing system, they accepted a higher offer (Dutta, Zbaracki, and Bergen, 2003). This price capability utilized in negotiation proved important as a tool to handle price pressure and capture value. Moreover, due to the years of effort to develop the historical data base and tools to analyze the data, their project had resulted in a unique set of resources making up the pricing capability to be a competitive advantage (Dutta, Zbaracki, and Bergen, 2003).

2.1.3 Why Companies Fail

The above example, concerning the industrial production company achieving pricing as a capability, would in most industries represent a rare case. One reason is due to that management generally prefer working on the sales or cost side to achieve profit (Simon-Kucher and Partners, 2020; Simon and Fassnacht, 2019e). For example, it was argued above that it is better to accept lower sales (volume) than lower prices. However, research show that managers would generally behave opposite, rather accepting lower prices than lower volumes (Simon and Fassnacht, 2019e).

Additionally, as price can be made by using several price forms and can have complex chain effects, many managers would agree with the CEO of an airline: “As a manager, it is easier to work on the cost side than on the revenue side” (Simon and Fassnacht, 2019e). Thus, many companies focus on sales volume or cost, as a measure to achieve profit, because it is viewed as both easier and more effective.

Following, another proposed reason is that companies do not prioritize pricing due to an undermined view of pricing (Simon and Fassnacht, 2019e). One of the largest consultancy firms within pricing, Simon-Kucher & Partners, conducts a yearly survey called *The Global Pricing Study*. The study published focuses on pricing development and trends, and is based on data collected from a range of different companies and industries (B2B and B2C). Of which, one of the ongoing trends were companies undermined view of pricing. Figure 2.2 show a summary of statistics from 2019 and 2020, regarding what companies state as their main profit driver.³ Results show that companies have the highest focus on sales volume, followed by cost decrease and the least on pricing (Simon-Kucher and Partners, 2020; Simon-Kucher and Partners, 2021a). When presenting the results of the study, Simon-Kucher & Partners explain that the lack of focus on pricing can risk companies lacking the establish the necessary pricing strategies (Simon-Kucher and Partners, 2020; Simon-Kucher and Partners, 2021a; Simon-Kucher and Partners, 2021b).

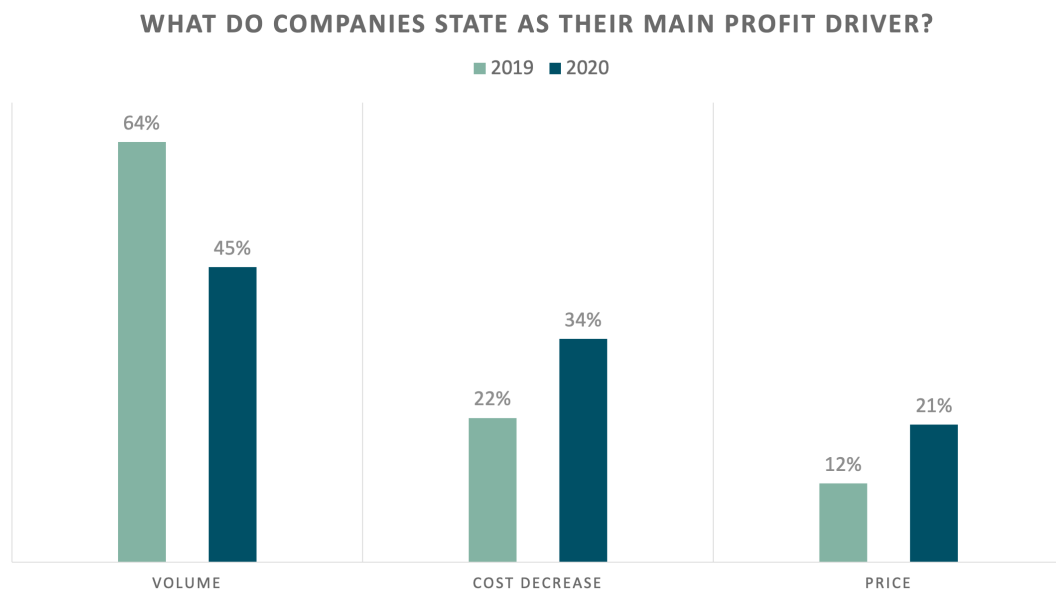


FIGURE 2.2: Summary of data published in *The Global Pricing Study* from 2020 and 2021, conducted by Simon-Kucher & Partners. The data focus on what companies state as the main profit driver.

One example of the effects of undermining pricing can be illustrated through trends on price realization and inflation. It is predicted that the next years to come, there will be a rise in inflation (Simon-Kucher and Partners, 2021b). As stated by Simon-Kucher & Partners professionals: “If your not catching all the loss in inflation rate,

³Data from 2020 are from companies that did achieve a margin improvement that year. It is not explained why their is an increased focus on pricing, for example due to COVID-19 or change in management understanding of pricing. The overall trend, of which the majority focus on sales volume, is similar for companies not achieving margin improvement (Simon-Kucher and Partners, 2021a)

then you are really going backwards” (Simon-Kucher and Partners, 2021b). In contrast the survey indicate that most companies have too low price increase goals compared to the inflation rate. However, that companies with a focus on pricing generally are better at setting higher price increase goals (Simon-Kucher and Partners, 2021b). For example, the majority of companies with a focus on sales volume or cost decrease (66% of this group) were planning a price increase inline or below inflation. While for companies with a focus on pricing, almost half (45% of this group) were planning a price increase above or significantly above inflation rate (Simon-Kucher and Partners, 2021b). For both groups, data shows that the majority of companies actually struggle to achieve planned price increases, despite the that the increases planned are relatively low. For services industries in 2019, only 49% of the companies realized at least 20% of budgeted price increase (Simon-Kucher and Partners, 2020). Trends show that price realization have in the past 8 years decreased (Simon-Kucher and Partners, 2021b).

Another reason for why managers, and thus companies, fail to understand pricing is connected to the gap between research and practice. Historically research have held a focus on more advanced pricing calculations such as price response functions and elasticity (Simon and Fassnacht, 2019e). In contrast, practice usually utilize simpler cost-plus models and experience based functions (Simon and Fassnacht, 2019e). Either due to the research gap, or due to preferring to focus on the sales volume side, companies with this undermined view of pricing risk a lack in sufficient prioritization and professionalizing of pricing. Thus, will not attain the full potential of pricing or risk fail in pricing (Simon and Fassnacht, 2019e). Even if a company has been able to decide on the appropriate price calculation, information basis and other framework elements, companies can fail due to poor implementation. Such as unclear responsibilities, misleading price communication or careless price controlling (Simon and Fassnacht, 2019e).

2.2 Pricing Factors

The second part of the theoretical framework gives an overview of pricing factors, of which are elements in the surrounding framework of a pricing process. The aspects within each factor are key parts of the factor and influence the pricing process. Moreover, those presented are not an exclusive list, but a selection of aspects considered essential for organizing the pricing process.

In a pricing framework, there are a vast amount of alternatives to pricing factors and choices which can be made within each factor. These factors generally influence the pricing process by setting the basis available for decisions, how price decisions are made and the internal organization. To simplify, this study focuses on key factors unified to 6 complementary factors, and their main alternatives. These complementary factors are defined according to their main role and influence on the pricing process and not necessarily in consecutive order. However, as will be explained, the influence of one factor is dependent on decisions within other factors. For example, process and information flow (Factor 6) is influenced by what pricing model is used (Factor 5). An overview of factors is given in Table 2.1, including an overall explanation of factors, main influence on the pricing process and content covered within each. For more information on different pricing factors the book of price management is recommended (Simon-Kucher and Partners, 2019) and the literature

review of Best-Practice Pricing for Software-as-a-Service (SaaS) (Saltan and Smolander, 2021).

TABLE 2.1: Presents 6 key complementary factors in the the pricing process, their influence on the process and content covered for each factor.

Factor	Explanation	Affect or influence	Content covered
F1. STRATEGY	Long-term goals; <i>price determinant</i>	Sets the general terms for pricing	<i>Company goals Pricing objectives Positioning Pricing strategy</i>
F2. CUSTOMER	Information on customers; <i>price determinant</i>	Upper price range	<i>Perceived value Value drivers Communication</i>
F3. MARKET AND COMPETITORS	Information on market and competition; <i>price determinant</i>	Upper price range, price strategy and positioning	<i>Target market Competitor prices</i>
F4. COST	Information on product and cost; <i>price determinant</i>	Lower price range	<i>Product typology Cost structures</i>
F5. PRICING MODEL	Utilisation and calculation of price determinants	Influence final price to customer	<i>Model approaches Price calculation Price format Price optimisation</i>
F6. STRUCTURE AND IMPLEMENTATION	Internal organisation and systematising of pricing	Process and information flow	<i>Roles Company structure Communication Controlling Support systems</i>

The first four factors are in this study collectively referred to as price determinants, due to making up the basis for the pricing process and their influence on a products price lee-way. Price lee-way is the price range for a product, or in other words the opportunity space for prices (Simon and Fassnacht, 2019a). Thus, key to understand in context of the pricing process, which aims to decide on a price in this opportunity space. The pricing lee-way is visualized in Figure 2.3. Customer and Market aspects determine the upper limit for price, of which the lowest of the two count. Cost aspects determine the lower level limit for price. While strategy aspects can shift the price range both up and down, depending on what the company wants to achieve. Legal restrictions can shift the limits for price in either direction. The latter is not a part of the scope of this study, but is an important factor, for example to avoid setting illegal price practices or to include inflation regulations in pricing decisions (Simon and Fassnacht, 2019a). The last two factors, F5. Pricing Model and F6. Structure and Implementation, influence how the price determinants are utilized and systematized.

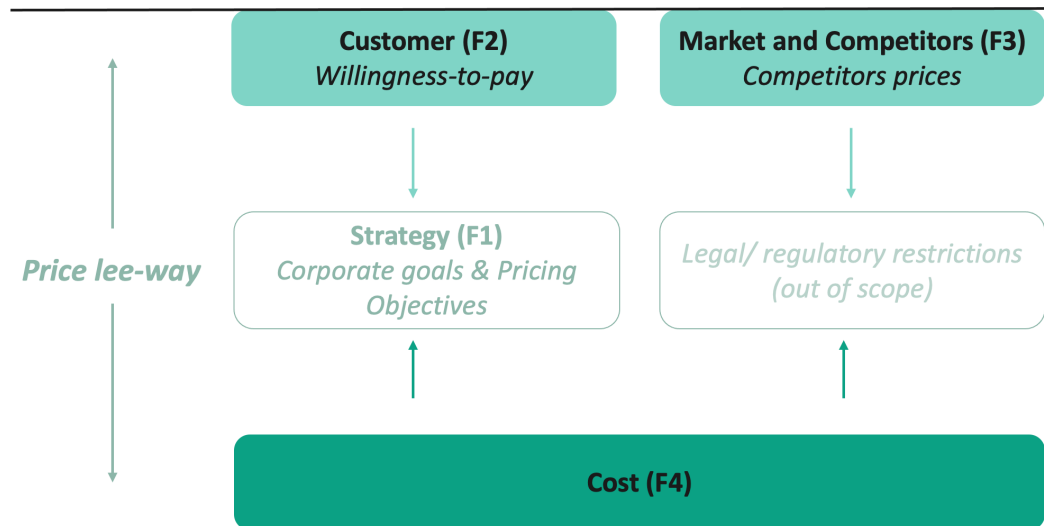


FIGURE 2.3: Visualisation of price leeway, with the dependence on price determinants

2.2.1 Strategy

Within pricing, it can be easy to confuse terms concerning strategy. Some research will only refer to pricing strategy, while other differentiate on corporate strategy, pricing objectives, besides pricing strategy (Harmon et al., 2009; Hwang et al., 2009; Simon and Fassnacht, 2019i). This study distinguishes between four aspects of strategy, illustrated in Figure 2.4. All aspects of strategy contribute to setting the terms for the pricing process.

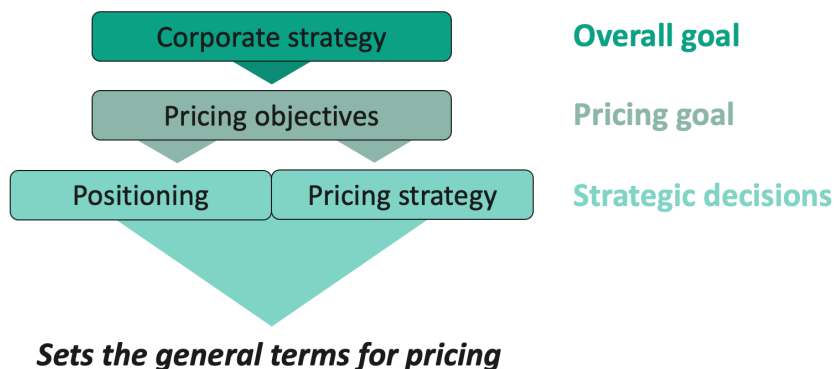


FIGURE 2.4: Presents the four aspects of strategy, which sets the terms for the pricing process.

Corporate strategy, as defined earlier, is the long-term direction for a company and usually formulated as long-term goals (Whittington et al., 2020; Simon and Fassnacht, 2019i). The goals are often related to profitability, growth, financial figures, power and social aspects. In relation to pricing there are three essential points concerning corporate strategy (Simon and Fassnacht, 2019i):

- Corporate goals which aim for volume and market share goals, can prevent a company from achieving higher profits

- Conflicting corporate goals should be prioritized early, such as profit and volume goals
- It is recommended for management to aim toward long-term profitability

From corporate strategy one derives different objectives to manage specific parts of a business, such as establishing **pricing objectives** (Simon and Fassnacht, 2019i). Pricing objectives are the pricing goal the company wants to achieve (Harmon et al., 2009). Typical, these are similar to corporate goals, but clarifies what the pricing and the pricing process aims to achieve. Examples are market share, sales volume, market image or similar targets (Harmon et al., 2009). An important take-away is that the objectives have to be clearly formulated and communicated internally. Unclear pricing objectives can lead to unspoken rules determining pricing instead of the pricing objectives (Simon and Fassnacht, 2019i).

Based on pricing objectives as a guide, the pricing strategy and positioning is decided. Of which both are important tools to achieve corporate goals and price objectives (Simon and Fassnacht, 2019i). **Price positioning** is the "arrangement of value, performance and price elements of a product to achieve the desired perception in the mind of the customer" (Simon and Fassnacht, 2019i). There are 4 types of price positions: Premium, Medium, Low-price Position and Ultra-low Price Position. In the same order, these positions decrease by customers' perception of value, product performance and price, but the decrease can vary. Each position has special requirements for product, price, distribution and communication, as guideline to achieve a proper alignment of positioning elements. In addition there exist general risks and opportunities for each position (Simon and Fassnacht, 2019i). To decide on positioning, a three step approach is recommended: (1) Map the market, including analysis of customers and competitors, (2) based on corporate goals, select one or more target markets and (3) based on each target market and its characteristics, select the appropriate price position (Simon and Fassnacht, 2019i). In other words, information basis is key to achieve an appropriate positioning and can affect how successful pricing is within a company. Lastly, positioning have substantial effect on the long-term results of pricing, summarized to three main points (Simon and Fassnacht, 2019i):

- Price positions are established overtime, in-line with customers developing perceptions of a product
- Miss-interpreting position can have substantial consequences for the company, such as too high prices causing loss in sales or too low prices causing capacity and profitability challenges
- Re-positioning, for example due to earlier mistakes in positioning, is often hard to achieve due to existing perceptions by customers and typically requires extensive use of resources

Pricing strategy based on Hwang definition of strategy, which defines pricing strategy as "establishing cross-functional schemes and synergistic goals" (Hwang et al., 2009). Meaning, a systematic plan for attaining pricing objectives, and arrangement or plan that include people from different areas of an organization to produce a combined effect. This plan sets the guideline for price decisions and how the company should deal with market changes (Simon and Fassnacht, 2019i). Pricing strategy is dependent on the industry and market environment and there exist many suggestions for pricing strategies. Examples are strategies more focused on a single

product, such as skim or penetration pricing (Simon and Fassnacht, 2019b). Additionally strategies that effect how pricing model approach, calculation and formats (F5), such as value-based, competition-based or cost-based strategies (Hwang et al., 2009). ICT Services have generally focused on cost-based strategies, while research generally recommend strategies that focus on value to customer. Harmon explains value-based pricing objectives in terms of a marketing perspective: "to assign a price that is equal to the customer perceived value of the product, while achieving profit and return on investment goals" (Harmon et al., 2009). Thus, a value-based strategy would compromise of a plan to attain these goals, such as a plan to capture value according to customers' perceived value of a product. A third example, is "pricing as a capability", which can be considered both a type of pricing strategy and a theoretical process model. In contrast to cost-based or value-based strategies which focus on cost or perceived value, pricing as a capability focuses on competitive advantage. Central to the model is the configuration of company resource to capabilities, which give the ability to capture value and gain competitive advantage (Dutta, Zbaracki, and Bergen, 2003). These last examples are strategies with one or several recommended theoretical process models, which will be further explained in the section 2.3. To determine strategies, especially for specific products or situations, long-term price optimization are usually used as a tool, which is further explained in relation to Factor 5. It is argued that no other tool in marketing is as effective as change in price (Harmon et al., 2009). However, to be successful in pricing all aspects of strategy have to be in harmony (Simon and Fassnacht, 2019i).

2.2.2 Customer

There are three aspects of customer, which all concern the understanding of customers. Value drivers can be viewed as the basis for how a customer perceives a product. While communication as a tool to both collect information and express product value. These aspects lead to the customer's perception of value, which is the third and main aspect within F2. All aspects influence customers' willingness to pay, and specifically the upper limit of the price range for a product. This is summarized in Figure 2.5.

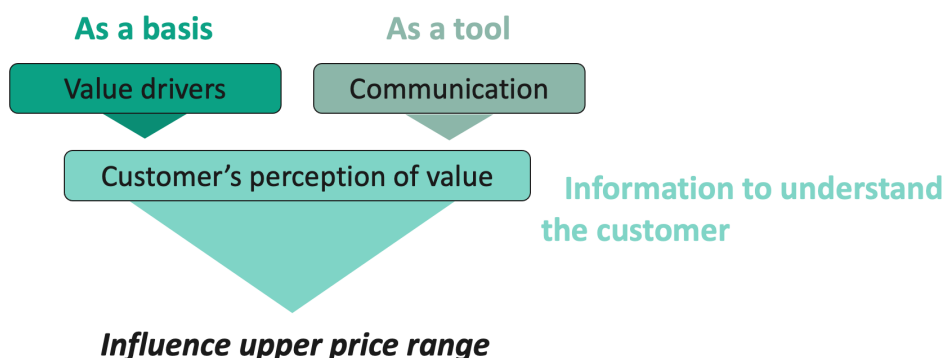


FIGURE 2.5: Presents key aspects concerning customer, distinguished to perceived value, value drivers and communication, of which limits the upper price range for a product.

Customers perception of value is argued to be the essential parameter for what price a seller can achieve (Simon and Fassnacht, 2019a). From section 2.1, it was

explained that profit essentially is value capture and price is essentially value, or in the eyes of the customer, the sacrifice they must accept to attain a product. Therefore, a company should understand both their own value proposition and how the customer perceives this proposition. Where the latter is in economics referred to as customers' willingness-to-pay (Simon and Fassnacht, 2019a). Willingness-to-pay determines the upper level of a product's price range by understanding and quantifying the customers perception of product attributes. As a result, companies can produce a correlation between customer's attitude of price and product attributes (Simon and Fassnacht, 2019a). Willingness-to-pay can be differentiated to individual level, the individuals willingness to pay for product, and aggregated (group) market level, which shows price effect on sales volume (price-response function) (Simon and Fassnacht, 2019a). Additionally, the results can be used as guidelines on how products should be configured and presented concerning price format. Options for product and price configuration will be commented on further in Factor 5 Price Modelling. Details of data collection and calculation will not be explained. However, independent of method to calculate value, such calculations require extensive data to achieve reliable results (Simon and Fassnacht, 2019a). Apart from willingness-to-pay, behavioral economics and transitional psychology concepts have developed theories that can help companies further develop their understanding of customers. These theories are recommended to be taken into consideration in a pricing process, however will not be commented further in this study (Simon and Fassnacht, 2019a).

Value drivers are essentially what influence a products value in the eyes of the customer (Harmon et al., 2009). One way to evaluate this is through distinguishing between basic and attraction product attributes. Attributes, is a term to describe a product's value proposition, based on the Kano model. The model evaluates product features in terms of customer requirements and expectations. Basic attributes are not recognized by the customer. Meaning that the customer will not pay for performance above what is expected. However, it is important that these attributes are not below customer expectations, thus causing dissatisfaction. For basic attributes willingness-to-pay is more or less in proportion with expected performance. While attraction attributes cause over-proportional increases in willingness-to-pay (Simon and Fassnacht, 2019a). Attraction attributes differ by customer groups and industry. For the ICT Service industry, the basic attributes could be internet access with expected performance, while attraction attributes could be brand. It is important to be able to distinguish product attributes according to basic or attraction. For example, a successful price increase due to basic attributes is dependent on convincing the customer of superior performance increase. If the customer is not convinced, the company can risk over stretching customers willingness-to-pay (Simon and Fassnacht, 2019a). For service products, which depend on the integration of the customer to deliver products, it can be hard for customers to evaluate product quality before delivery. Therefore reputation and references are often important attraction attributes, thus value drivers, for a service providing companies (Simon and Fassnacht, 2019h). Another way to evaluate value drives are though 5 proposed categories of value drives; economic value, performance value, supplier value, buyer motivation and the buying situation (Harmon et al., 2009). Thus, besides willingness-to-pay and product attributes, there are other situational and customer specific value drives that can increase understanding of the customer. For example, services are typically in a "make or buy". This means that either a company would buy a product or provide it themselves (Simon and Fassnacht, 2019h). Thus, the proposed value has to precede what the customer could achieve themselves. Additionally, the price have

to be inline with the perceived value of outsourcing the ICT product and/or service (Simon and Fassnacht, 2019h).

Lastly, there is **communication** as a tool to express the value of a product and to collect information from customers to understand their perception. External communication should focus on convincing the customer that the products offered is worth the money. Meaning, communication extended beyond just the price itself. For example, if the service composes technology that can be difficult to understand the value of, the company have to focus on educating the customer on what the service inhabit for the customer (Simon and Fassnacht, 2019h). There are several tools to achieve this, such as price lists, advertising and guarantees, communication of price changes, price format (presentation of price) and payment terms (Simon and Fassnacht, 2019f). In a RBV case study, it was found that relational resources in their B2B networks were key to achieve pricing as a capability. Mainly by helping the company continuously improve their understanding of customer, market and competitors. Examples of use of relations are gathering direct feedback from potential customers, creating ecosystems around technology to collect information or involving partner firm to increase customer and/or market understanding (Ojala and Laatikainen, 2019).

2.2.3 Market and Competitors

Market and Competitor concern information aspects relevant for a company to understand their position in the market. Where market can be explained as the arena for the trade of a particular product, not necessarily physical. Rather the concept including the sellers and the buyers of this particular product (Cambridge University Press, 2021). For a company in a particular market, the key participants are customers and competitors. Since customers are covered in F2, the first information aspect is competitor prices. The second information aspect is the target market, which is the aggregated information of customers and competitors. Information on Market and Competitors influences the upper price range, price strategy and positioning. This is summarized in Figure 2.6.

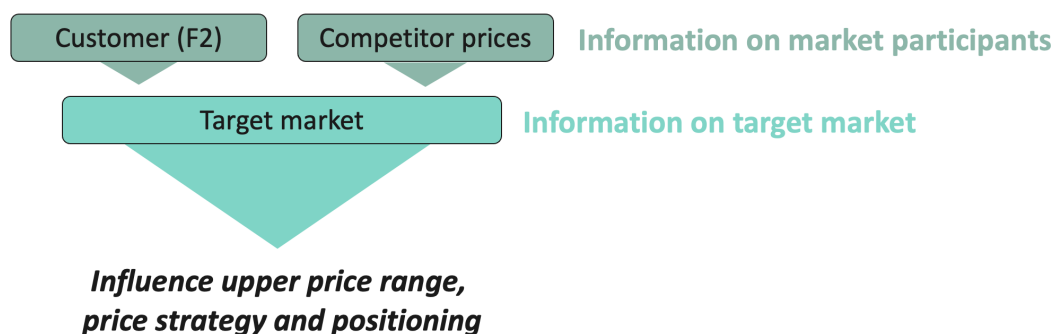


FIGURE 2.6: Presents the two key aspect in F3 (Market and Competitors) in relation to F2 (Customers). Specifically the aspects are target market and competitor prices, of which influence upper price range, price strategy and positioning.

Competitor prices is simply the competing price of equal or approximately equal

products (substitutes), offered by competitors in the company's target market (Simon and Fassnacht, 2019a). As briefly mentioned in Section 2.1, there exist an interdependence between price and sales volume for a product. Thus, when a company or a competitor makes a change in price, it often affect sales volume achieved. To quantify the effect, one often uses price elasticity. Price elasticity can be explained as a number to express change in customer demand, as a result of a change in product price (Hayes, 2021). Moreover, called cross-price elasticity, if competitor prices are taken into account (Simon and Fassnacht, 2019a). Due to competitors price change effect on a company's sales volume, it is recommended to systematically monitor competition through three steps (Simon and Fassnacht, 2019a):

1. Identify relevant competitors (should be done when establishing positioning and target markets)
2. Analyze current competitor prices
3. Anticipate future competitor prices

Monitoring competitors often requires extensive company and financial resources, but can be essential to make informed pricing decisions and avoid pricing mistakes. The influence of competitors' price on the target market depends on product features, customers' ability to assess performance and market structure. For example, a customer might find it hard to assess if a product has superior performance and none of the competitors have a particular strong brand or other attraction attributes. Then, price would likely be the decisive factor for the customers purchase. Thus, competitor prices will have a strong affect on target market and sales volume a company can achieve (Simon and Fassnacht, 2019a; Harmon et al., 2009). The same holds true in competitive markets with many substitute products. In contrast, if a competitive market has many differential products, competitor prices have a lower influence on the target market. For example a company could make small price changes without the risk for large loss in sales volume (Simon and Fassnacht, 2019a). In relation to the steps presented above, Table 2.2 gives an overview of information to assess competitors current and future anticipated prices (Simon and Fassnacht, 2019a).

TABLE 2.2: Information on competitors current and future prices (Simon and Fassnacht, 2019a)

	Information describing CURRENT situation of competitors	Information describing anticipated FUTURE situation of competitors
Regarding product	Product attributes, Customers perceived value of competitor products	Technology, Patents, Cost structure (f.ex. by reverse engineering)
Regarding price	Price of product	Sales organization, Data on past price behavior
Regarding company	Revenue, Market share, Customer structure	Capital strength, Capacity, Future plans (investments, new products, price measures)

Depending on the industry, not all of the information points will be as readily available. For example, due to challenges such as complex product lines, B2B companies often do not publish price lists or customers often hesitate to share competitors' price lists. Even if a company gets a price list, it will usually not contain discounts and would require product/ technical professionals to evaluate which products to compare (Dutta, Zbaracki, and Bergen, 2003).

Target market is the term for a group of customers a company consider as potential customers or want to sell products to. As already mentioned, knowledge of the target market is important when deciding on positioning and pricing strategy. Additionally, to understand the situational context for customers considering the purchase a product from the target market. Essentially, the information on target markets can be looked upon as the sum of information on the markets key participants, the individual customer groups and competitors (Simon and Fassnacht, 2019a). The aggregated information of customers, is typically a sales-volume relationship as a result of the market's willingness-to-pay (F2). Moreover, the aggregated information of competitors, is typically the calculation of cross-price elasticity (F3). To optimize prices, based on this information, the price-response function is recommend (Simon and Fassnacht, 2019a). Explained further in relation to Factor 5 Pricing Model. Further details on understanding the target market will not be covered, as the main aspects are covered through the bullet points above.

2.2.4 Cost

Key aspects within costs are product typology and cost structure. Product typology helps explain the relationship between type of product and cost. From there, cost structure is defined to give key elements to calculate cost and the cost function is used to determine lower price range. This is summarized in Figure 2.7.

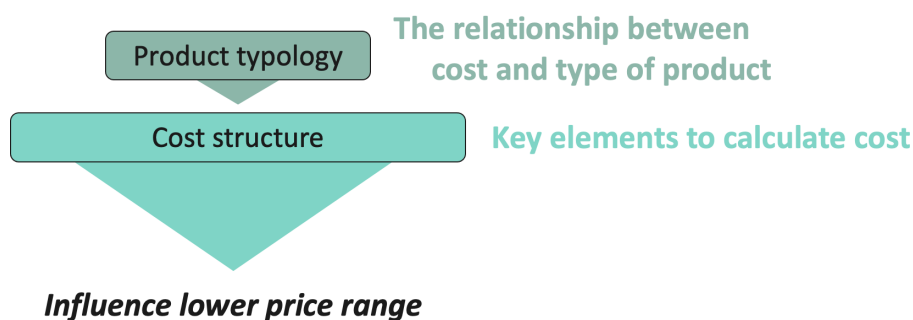


FIGURE 2.7: Presents the 2 aspects in Factor 4 Cost, and how these influence the lower price range for a products.

For service products, there are three main **product typologies**: Capital-intensive, Technology-intensive and Labor-intensive services. These typologies have each a general cost structure, which can be used as a guidelines to decide on appropriate cost for a specific product (Simon and Fassnacht, 2019h). An overview of the typologies characteristics and their general cost structure is given in Table 2.3.

TABLE 2.3: Characteristics and general cost structure for the three main services typologies (Simon and Fassnacht, 2019h).

Service typology	Charerctierstics	General cost structure
Capital-intensive	Often services provided to numerous customers and requires fixed capacity. Examples are hotels or cinemas.	Fixed-cost >>Variable costs
Technology-intensive	Services usually have a fixed capacity due to technical requirement, is used individually and time of use differ. Meaning demand fluctuates and requires the supplier to have enough capacity to deal with maximum utilization. Examples are online accounts or ticket machines.	Relatively high fixed costs compared to variable cost
Labor-intensive	Services are mainly dependant on people at the forefront, often delivered by appointments and are individualized and customized. Labor cost can be considered both fixed and variable, depending on contract of employment. Examples are taxi drivers or advisory services.	Personnel cost >Fixed cost

Additionally, service products are generally characterized by integration of customer in service delivery, which in a varying degree can influence the cost and outcome of the service (Simon and Fassnacht, 2019h). For example, if a new potential customer wants an offer for the outsourcing and operation of ICT infrastructure, the suppliers cost would depend on the customer's current situation and special requests. Such as, evaluating if the customer has the required infrastructure in place to fulfil the product request or extensive need for labor due to application integration between different systems. Thus, the heterogeneously of customer resources will often cause differences in the process of providing the service, and thereby cost structures and risk in cost calculations (Simon and Fassnacht, 2019h). Concerning the ICT Service industry, the majority of costs are usually service delivery and infrastructure costs. Infrastructure costs are the technology requirements to provide a service, therefore can be considered fixed costs. Service delivery costs will differ depending on the company, but are typically customized operation and support as product wraparounds. Therefore, can be considered variable costs. While these are general considerations, it can be challenging to assign appropriate cost for the intangible parts of a service (Harmon et al., 2009). For example, considering labor as cost for two different service related products. For the first, a project related service, it might be appropriate to consider labor as variable cost. Due to the amount of project and project labor requirement vary according to customer. For the second, an operation-related service, the amount of operation labor might vary, but the company might have to provide a fixed capacity of labor available to help customers. Therefore, fixed costs can be a more appropriate assignment of the last service product.

Cost structure is the composition of fixed and variable cost, and as shown, is influenced by product typology. Fixed cost is generally defined as costs not influenced by the volume produced. Variable costs is cost per production of one unit of product, and changes depending on volume produced (Simon and Fassnacht, 2019a). Besides these cost parameters which are a part of a product cost structure, there is a third

cost parameter called marginal costs. Marginal costs is the cost per additional unit, independent of volume produced. These three parameters are combined to a function of sales volume (volume produced), and usually visualized graphically to give an in-depth understanding of cost. In a graphical visualization, the marginal costs express how cost change according to sales volume (Simon and Fassnacht, 2019a). With knowledge of cost structure expressed in a cost function, the graphical result can be utilized as guidance for the lowest acceptable price for a product and offer. This should be done by considering both short-term and long-term perspectives (Simon and Fassnacht, 2019a). For a long-term perspective, the company should only accept prices that cover both variable and fixed costs, referred to as fully-load unit costs. Thus, the fully-load unit cost determines the lower price range in the long-term. For a short-term perspective, a company can accept prices that are below fully-loaded costs. However, the price should cover variable costs and have a positive unit contribution margin. The latter is earnings due to price above variable costs. Of which, contributes to cover fixed costs in the long-term perspective. Thus, the unit contribution margin determines the lower price range in the short-term (Simon and Fassnacht, 2019a). The unit contribution margin is the calculated difference of price and variable cost, however based on price format the definition of short-term variable cost can differ. If there are uniform prices, the short-term variable cost equal the standard variable costs. If there are differentiated prices and there is no capacity restrains or product independence, marginal costs are considered short-term variable costs. Lastly, if there are capacity constrains or bottlenecks, marginal cost and opportunity cost are considered as short-term variable costs. Whereas, opportunity cost can arise from different aspects of the company such as supply chain or the sales demand side (Simon and Fassnacht, 2019a).

Service products will often have problems with determining variable costs with certainty, due to customer dependence as mentioned above. It is recommended to include experience-based estimates to support the estimation process. However, unpredictability in the service process risk causing deviations. To lower the uncertainty, company's can build the price format to pay-per-user or pay-per-time, which puts the customer at risk and not the company (Simon and Fassnacht, 2019h). Thus, making the cost calculation less uncertain. Another remark, is that companies have to be cautious of lower price ranges close to zero and using this as latitude for price cuts. Typical for service products, the marginal cost can be low. If the customer's willingness-to-pay is considerable higher, this can create a substantially large price range (in a short-term perspective). (Simon and Fassnacht, 2019h). By utilizing this price range, the company risks two negative effects. First, resentment from customers who paid full price. Second, in the long-term, it can teach the customers that it is possible to achieve lower prices. This can increase price pressure in negotiations with customers, thus risking the long-term profitability of the company. Keeping in mind, that the minimal acceptable price in the long term have to cover both fixed and variables costs (Simon and Fassnacht, 2019h).

2.2.5 Pricing Model

A Pricing Model is the structure and method for determining pricing. To simplify, four aspects of a Pricing model are included. All of which, is one form of structure or method for determining price. These are Model approach, Price calculations, Price Format and Price optimization. All 4 aspects influence the final price to customer. If

there is no negotiation, the pricing model determines the final price offered. This is summarized in Figure 2.8.

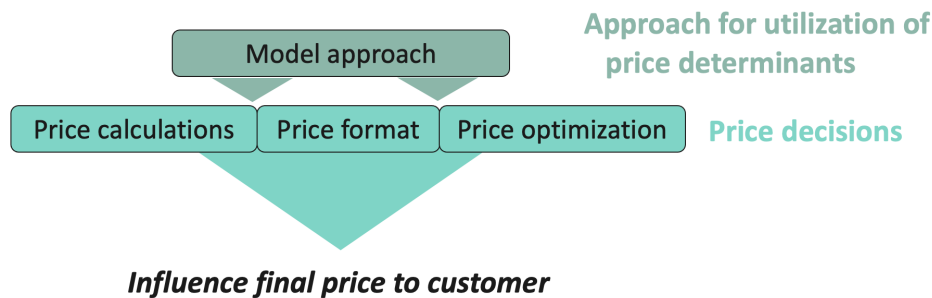


FIGURE 2.8: Presents the five aspects in Factor 5 Pricing model, and how they relate to each other.

Model approach, is in this study defined as the overall approach for utilization of price determinant in a pricing model. In F1. Strategy, there were presented some examples of strategies that also determine which model approach is utilized. Of these, cost-plus and value-based model approach are the two most common and discussed approaches within the ICT service industry.

The cost-plus model approach is the most traditionally used in the ICT Service industry (Harmon et al., 2009). Cost-based model approach focus on cost-oriented calculation, often formed by cost-based strategies. The calculations used can be either one-dimensional (one variable used to calculate cost), or multiple variables which use reference projects and existing data or estimates (Simon and Fassnacht, 2019g). While cost-based is the most wide spread form for model approach, it is argued that value-based is the best-practice model approach. Argued by the fact that cost-based focus more on short-term profitability, and value-based focus more on long-term profitability (Harmon et al., 2009). Moreover, that the potential for value-based pricing increase with service wraparound such as with price bundling (Pasura and Ryals, 2005).

Value-based pricing uses knowledge or performance index as a guideline when calculating prices with a focus on customer's perceived value (Simon and Fassnacht, 2019g; Harmon et al., 2009). Thus, the ability to evaluate willingness-to-pay at focus, as mentioned in F2 Customers. Sources for evaluating value are company employees, economic value analyze, evaluation by focus group or conjoint measurement. Additionally, with this model approach, it is importance to consider how customers make economic evaluation of investment of product, which influence how they value the potential purchase (Simon and Fassnacht, 2019g). This can help a company with appropriate prices, also assisting in negotiation. For example, if a company can argue which method for evaluating value is appropriate, for example payoff period versus net percent value (NPV), it can help the company capture additional value from customers (Simon and Fassnacht, 2019g). Table 2.4 summaries different approaches to collect information on value (Simon and Fassnacht, 2019g).

2.2. Pricing Factors

TABLE 2.4: Presents 5 method for a company to collect information on value (Simon and Fassnacht, 2019g).

Name	Method
Internal evaluation	Estimates value through tests, and require good knowledge of product utilization and production process
Economic value analysis	Conduct interviews of customers and create a list of all cost components in their offers. Compare list of cost components to cost calculation for products (represent product life cycle costs). Followed by estimation of pricing latitude.
Evaluation through focus groups	Discuss a real or conceptual offer within a focus group. Followed by survey of specialist or experts, such as customers, consultants and/or technology experts, concerning willingness-to-pay for a product.
Rating of product importance	Conduct a survey concerning features of a product and/or offer. The result is used to evaluate the company on those same features.
Conjoint measurement	Conduct a survey concerning purchase preferences for different product offerings, meaning the same product which differ in features and price. Requires systematic variation of performance attributes. Followed by a calculation/ estimation of value of different attributes and attribute level.

Price calculations comprise of the method for calculating prices in a pricing model. Generally there are three aspects to the price of a product (Simon and Fassnacht, 2019d; Simon and Fassnacht, 2019c; Simon and Fassnacht, 2019b):

1. *One-dimensional prices*, which is one price for one product
2. *Multi-dimensional prices*, which is either several prices for one product or one price for several products
3. *Optimization pricing*, which is calculations to optimize, either one-dimensional or multi-dimensional prices in both short-term and long-term perspectives

One dimensional prices can be categorized as rigid process, flexible-intuitive process and comprehensive process. The rigid process uses one source of information (variable) in one step. A flexible-intuitive process uses several sources of information (variables) separately in several steps. For example, establishes a price proposal or basis, then revising the price one or more times with additional information. In contrast to the first two categories, comprehensive pricing evaluates several sources for information in parallel and develops several price alternatives to compare. The latter requires more resources, but in return can exploit more of a markets profit opportunities (Simon and Fassnacht, 2019d). A selection of different pricing calculations, including reference to the second and third aspects of price calculations, are given in Table 2.5.

TABLE 2.5: Example of methods for price calculation used as a part of a pricing model approach, to decide on price to customer (Simon and Fassnacht, 2019d; Simon and Fassnacht, 2019c; Simon and Fassnacht, 2019b)

Name	Calculation method	Variable
Cost-Plus pricing	One dimensional, rigid process	Cost
Competitive-based Pricing	One dimensional, rigid process	Competitive prices
Break-even analysis	One dimensional, comprehensive process	Inter-relationship between price determinants (Strategy, market and cost)
Decision support system	One dimensional, comprehensive process	Inter-relationship between price determinants (Strategy, customer, market and cost)
Marginal analysis	One dimensional, comprehensive process	Inter-relationship between price determinants (market, cost and goals)
<i>Multi-dimensional pricing (covered as a part of pricing format)</i>	<i>Several prices for one products, or one price for several products</i>	<i>Na</i>
<i>Pricing by optimisation (covered as a last aspect in F5)</i>	<i>Price decisions to reach optimal price in the short- and long-term</i>	<i>Na</i>

Rigid process are what is traditionally used by companies, due to its simplicity. However, this calculation method and a flexible-intuitive process are criticized not to take into account the complexity of pricing or inter-dependencies of pricing determinants (Simon and Fassnacht, 2019d). Concerning the comprehensive pricing process, break-even analysis is best fitted for "yes/no" decisions, such as price changes. The decision support system, allows companies to consolidate and simulate a greater amount of information, thus gives a better basis for pricing. Lastly, marginal analysis is a form for price optimization, utilizing price and volume relationships which gives the company general rules for optimal price (Simon and Fassnacht, 2019d). These are some examples of price calculations for one-dimensional prices, and choosing the correct calculation can be a challenge.

Price format is in this study understood as how products and price are arranged. Examples are one price for several prices or it can be linked to how prices are presented to customer, such as discounts, order, offer, contract and payment terms.

The price calculation above, with only one price for one product, is for most companies not the case. Rather companies would have a form of price differentiation for a product, based on a set criteria. Or one price for the purchase of several products, such as prices for bundled products or product lines. Both referred to as multi-dimensional prices, of which have a considerable higher potential to capture value than one-dimensional (profit) (Simon and Fassnacht, 2019d). In general, multi-dimensional is utilized to capture customer difference in willingness-to-pay (Simon and Fassnacht, 2019h). Examples of price differentiation are volume-based discount, performance-based or fixed and variable prices for one product. Another price format, is to make price differences across product lines. For example, one

product would be sold with a negative contribution margin, to attract customers. While other products would be sold with considerable higher contribution margins to capture additional profit (Simon and Fassnacht, 2019c). For price bundling, a customer can buy several products for one price, which is usually lower than the sum of prices for buying individual products (Simon and Fassnacht, 2019c). It is argued that complex products will benefit from bundling, as it simplifies the products which individually are too complex. For example, that customers are not able to estimate the appropriate value for the individual product, compared to a simplified bundle of products. Additionally, bundling products makes it more difficult for customer to compare competing offers (Simon and Fassnacht, 2019h). One important remark is that multi-dimensional pricing will in general make pricing more complex and increase cost. Thus, it has to be considered if these costs are worth the value captured. Another remark, is that reliable information on customer's willingness-to-pay is essential to be successful in implementing multi-dimensional prices. Moreover, as will be covered in price optimization, product inter-dependency should be taken into account to achieve appropriate pricing for multiple products (Simon and Fassnacht, 2019c). For service products, general recommendations are non-linear prices, multidimensional prices and utilizing price differentiation (customer segments). The latter due to customer's are more likely to accept price differences for intangible products such as services (Simon and Fassnacht, 2019h).

Concerning presentation of prices, the aim is often to increase customer perceived value by a favorable price format. For example, bundled prices can be presented such that all individual components are presented with a discount. Or in a way which shows all additional components gained at a higher discount or free of charge, by buying the bundle (Simon and Fassnacht, 2019c). Contract set-up and payment terms, are important for long-term contracts, typically found in B2B. While details will not be explained, it is worth mentioning that decisions on how prices are charged over-time, such as fixed prices or conditional prices, are important for how the customer receives the prices. Additionally, risk a company hold by setting prices in a certain format. Especially for services, where cost estimations often have uncertainties, contract set-up with shared risk could be appropriate to ensure profit and minimize risk (Simon and Fassnacht, 2019g).

Price optimization is calculations to optimize the price decision. There are two elements to price optimization. First, are the calculations which help understand pricing in the short-term and long-term. Second, is the interpretation of calculated price effects. By understanding the different calculations and effects, it can help companies price effectively in terms of reaching price objectives (Simon and Fassnacht, 2019b). Details of calculations will not be presented, as these generally are quite complex with many parameters. However, the general idea of price optimization is to include all relevant price determinants in one or several functions to calculate and analyze price effects. These calculations usually have high requirements for information from F2-F4 (Simon and Fassnacht, 2019b). To evaluate optimal prices, it is recommended to start by calculating the short-term optimal prices. Then, calculate the long-term optimal price with dynamic functions. The difference from short-term to long-term (such as lower or higher results), is then used as a guideline to decide the optimal price. The most common calculation is the price response function (PRF), which quantifies price change on sales volume. It can be used both for short-term decisions and long-term decisions. Generally it requires information on cost, customer's perceived value and competitor prices. Typically companies struggle with enough reliable information on customers' perceived value. In addition, the PRF

can often have large margin error. However, the PRF is argued to be a prerequisite for optimization of prices (Simon and Fassnacht, 2019a). Other examples are the cost-function from F4 or the objective function (based on price objectives). Examples of long-term calculations are dynamic price-response, dynamic cost-function or competitive dynamics. The results of different dynamic effects can contradict each other or reinforce, which has to be considered when making optimal price decisions (Simon and Fassnacht, 2019b).

There are several parameters which can determine what calculations are appropriate to calculate and evaluating optimal prices. Some of which are pricing objectives, product typology, competitor products, and short-term/ long-term perspectives. For pricing objectives, one example is the conflict between capacity utilization and maximizing profit. Which is often the case for service products (Simon and Fassnacht, 2019g). Regarding product typology, standardized services can often rely on price response function. While for labor-intensive and less standardized services, the price-volume relationship in the PRF is less reliable. An alternative is to use the price response function as a supplement. When a company sells several products, cost and product inter-dependencies are essential to consider. Products that have dependency should be optimized simultaneously (Simon and Fassnacht, 2019d). Including inter-dependency to substitute products and complementary products (Simon and Fassnacht, 2019g). Such as including cross-price elasticity, which is the effect of competitor prices to a company's sales volume (Simon and Fassnacht, 2019a). Lastly, there might be conflict between maximization in short-term and long-term profit (Simon and Fassnacht, 2019b). For B2B industry, customers usually buy products through a long-term contract. Meaning either they buy, and possibly expand the purchase later. Or they do not buy at all. This is essential when setting prices in negotiation, since their are consequences of losing a customer in the long-term, in terms of losing future potential sales (Simon and Fassnacht, 2019h).

A case study show that companies often have to adapt their pricing model continuously, and do so by trial and error (Ojala and Laatikainen, 2019). Adjustments were due to market changes, product changes, other operational changes or change of functionality of a product. Thus, adjustments have been shown necessary to make sure the pricing models were up-to-date (Ojala and Laatikainen, 2019). Therefore, implementation and structure is important, to ensure that the pricing model is adjustable and continuously evaluated.

2.2.6 Structure and Implementation

Research argue that implementation of the pricing process is as important as developing a good pricing process (determining and developing F1 - F5) (Simon and Fassnacht, 2019f). For example, that a company is able to streamlining vast amount of information from different parts of the company effectively (Hwang et al., 2009). Thus, one can increase competence and develop a good pricing process based on F1-F5, but the results will be dependent on appropriate structure and implementation.

Within this factor there are 4 aspects concerning structure and implementation of a pricing process; internal organization, roles, support systems and price controlling. All of these four aspects will to some degree influence the process and information flow internally, besides success in implementation of the pricing process. This is summarized in Figure 2.9.

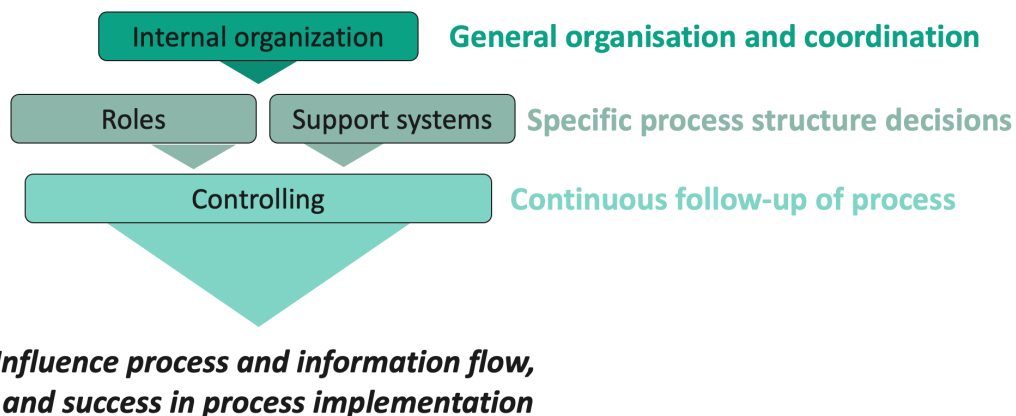


FIGURE 2.9: Presents the four aspects to implementation and structure of a pricing process, how they relate and contribute to influencing process/information flow and success in implementation.

Within **internal organization** there are 3 key points; organizational structure in relation to tasks and information flow, internal coordination and internal communication. These will be explained briefly, before going more in-detail on what task and responsibilities can be, concerning the aspect roles.

Essential for an efficient process is the allocation of tasks and responsibilities. This is done by clarifying the organizational structure (Simon and Fassnacht, 2019f). The general idea is to delegate tasks (including pricing authority), make clear separations between teams or department responsibility and establish how these interact. Creating tasks and roles are given in more detail, with roles. However, the general guidelines is (Simon and Fassnacht, 2019f):

- Designated team (leader / members) to make price decisions and complete tasks
- Designated departments to provide required information
- Tasks should be based on determined process stages

For example, collecting information on the price determinants, can be looked upon as different tasks. These tasks need a variety of information and competence, often from different and specific parts of the company. Therefore, it should be clarified how departments interact, including where information is gathered, who is responsible for gathering information and who is responsible for the exchange of this information (Simon and Fassnacht, 2019f). This can be done in several ways, as some case studies illustrate. In one case study the key sources for information were marketing, customer service, market research, finance and cost management. These were separate teams, whose role was to provide information and report necessary information to the product price manager and the price department. The price department made a price proposal, which was first sent to an approval committee, then a pricing advisory board. These consisted of senior and directorial level managers, respectively. The price manager were responsible for implementing determined price strategies for products (Pasura and Ryals, 2005). Another case study had a more flexible pricing process. There were teams with senior management, as well as teams with lower-level managers for specific department areas. In some case, including customers and partners. These firms had a strategy for flexible pricing, and based much of the strategy on communication with relevant stakeholders

(Ojala and Laatikainen, 2019). In Hwang's framework for competitive industries, it is proposed that senior management be involved once a year, to focus on industry specifics. Middle- and senior management are involved on a quarterly basis to focus on product and market. While the operation teams (field sales and supportive organization) are involved regularly focusing on the individual customer. Respectively, these 3 types of involvement are separated according to being industry driven, market driven and sales-driven (Hwang et al., 2009).

Depending on the required information, and thus required internal coordination, there are three suggestions for internal coordination of the pricing process. The first two, presume that the company wants in-house knowledge of pricing and establishes a price manager or a price department. The third suggestion is to outsource the pricing competence, by utilizing a pricing consultancy, such as through having a project and/or workshops (Simon and Fassnacht, 2019f). All three suggestions can be combined, depending on company requirements and objectives. A price manager responsibilities will depend on how the pricing process is organized internally, such as allocation of pricing authority. Examples are, development of pricing strategies, perform calculations and analysis, coordination with teams to do extensive analysis or building a tactical framework (Simon and Fassnacht, 2019f). Price departments are common for companies that either have an extensive product portfolio and /or make frequent pricing decisions. The department should then have employees with expertise in different fields, to be able to perform calculations and analysis mentioned in F1 to F5. It can be difficult to find employees who have broad enough knowledge to handle all methods required by a complex pricing process. Typically, such people would be previous price consultants. Alternatively, employees might need extensive training, which can be time exhaustive (Simon and Fassnacht, 2019f). For some companies, the financial and resource expenses required to establish a pricing process is not worth having all the know-how internally in the company. Alternatives are to use pricing consultancy, such as for extensive analysis, education on pricing through workshops or projects to help solve internal pricing problems. However, it could still be beneficial to allocate one person, with main responsibility for the pricing process. Due to different options, companies need to evaluate benefits versus costs of building all or just parts of pricing know-how (Simon and Fassnacht, 2019f).

For internal communication the general recommendation is to be aware of the internal flow of information. For example, it is argued that it is important to explain to employees clearly what prices exist and what they are based on. Especially regarding the sales force, since it can help the sales force explain prices to customers in negotiation and increase their motivation (Simon and Fassnacht, 2019f). Examples of measures on internal communication are: Make price information available online or through a tool. Establish up-to-date prices including details, such as contribution margin and variables determining price. Establishing routines to inform the sales force about rationale for prices regularly. Establish argumentation guidelines for prices, which can be used externally vis-a-vis customers. And lastly, if a pricing system is implemented, these should be configured with a focus on user-friendliness and easy availability for the sales force (Simon and Fassnacht, 2019f).

Similar to how a pricing process can be industry and company unique, roles and associated tasks usually vary and can even be unique. Thus, general recommendations should be used only as a basis for developing specific roles and tasks in a company's pricing process (Simon and Fassnacht, 2019f). For roles there are 4 key

points; defining tasks, allocating pricing authority, incentive systems and the role of the CEO.

As mentioned above, allocation of tasks and responsibilities is done by clarifying the organizational structure. However, before allocating the tasks and their responsibilities, the tasks have to be defined. Some recommendations are (Simon and Fassnacht, 2019f; Ojala and Laatikainen, 2019):

- Identify and define company specific tasks based on "stages" from a theoretical pricing process model (examples of process models will be given in Section 2.3)
- Understand what the different tasks require, such as competence and skills
- Create clear definitions and assignments

In a case study concerning pricing of advanced products, there often were high technical requirements for estimating risks and overall cost for a product (Ojala and Laatikainen, 2019). Thus, clear understanding of task and their requirements are important to allocate the appropriate employees and skills for the different roles in a pricing process (Ojala and Laatikainen, 2019).

Following task requirements, the pricing process often requires information from and integration of several departments. For example, a critical success factor for price decisions can be the cooperation between functional departments, such as finance and controlling. Or between market oriented departments, such as sales and marketing (Simon and Fassnacht, 2019f). To avoid conflicts, a clear rule of authority is important. Generally, research argue that the allocated pricing authority should be relatively high in a company's hierarchy (Simon and Fassnacht, 2019f). In contrast, companies and employees often lack a clarity on how the responsibility of pricing actually is distributed internally (Simon and Fassnacht, 2019f). One suggestion for allocating authority is to differentiate on three types of price decisions: List prices, discounts and price promotions. Of which can be placed at different authority level in a company. However, similar to other organizational structure, the decisions on price authority should be made company specific (Simon and Fassnacht, 2019f). Table 2.6, gives an overview of guidelines for companies when deciding on tasks, responsibilities and price authority. Including an overview of the general authority hierarchy in a company, and determinants for when pricing authority should be placed higher.

TABLE 2.6: Present guidelines for roles concerning tasks and price authority (Simon and Fassnacht, 2019f).

General guidelines	
TASKS AND RESPONSIBILITY	<ul style="list-style-type: none"> • Clearly defined task in relation to process stages • Designate task according to pricing requirements • Allocate tasks with clear separations between teams/departments responsibility and how these interact.
PRICE AUTHORITY	<ul style="list-style-type: none"> • Can be divided to list prices, discounts and price promotions • Clear rule of authority is important to avoid conflicts
AUTHORITY HIERARCHY	<ul style="list-style-type: none"> • At the top of a general hierarchy is senior management • Followed by sales/marketing management and financing/accounting/controlling management • At the bottom are sales force and operation
ALLOCATION OF PRICE AUTHORITY	<p>A price decision is at a higher level of hierarchy according to:</p> <ul style="list-style-type: none"> • Product importance for company • Senior managers knowledge of products and market • More homogeneous and less dynamics of market • Importance of coordination of prices for segments • Less focus on overall company goals at lower level • Importance of clear and consistent signals to competitors and customers

For B2B industries, it is common that prices are subjected to negotiation, of which price authority needs extra consideration. The three most observed allocation of price authority for the sales force are:

- Complete or almost complete price authority
- Price authority are limited to a lower limit, prices below need to be approved
- No price authority, and any price below the predetermined price needs approval

Recent theory recommend a limitation of price authority allocated to the sales force. However, neither theoretical or empirical evidence can with certainty determine a best-practice for delegation of authority to the sales force (Simon and Fassnacht, 2019f). Companies have to evaluate the appropriate price authority, based on the guidelines given above in Table 2.6. In addition, Table 2.7 gives some arguments for or against the allocation of price authority to the sales force.

2.2. Pricing Factors

TABLE 2.7: Present some arguments "for" and "against" allocating price authority to the sales force (Simon and Fassnacht, 2019f).

FOR	AGAINST
<ul style="list-style-type: none"> • Enhance status of sales force and increase of motivation • Sales force have better competence on customers willingness-to-pay and ability to differentiate prices • Creates more flexibility, less organizational delays and quicker responses to market • Flexibility in negotiation, where prices are solved simultaneously with customer 	<ul style="list-style-type: none"> • Sales force motivated to win sales opportunities, thus have an incentive to lower prices • Research show that most sales people have a fear for price decisions. Removing price authority can be a psychological relief • It lowers the price pressure customer can exert on a sales force • Price analysis is too complex to be performed by the sales force, and is normally conducted by internal unit

When the sales force have some form of pricing authority in negotiation, they often use list prices set by an internal department as a starting point. While the final price (transaction price) depends on the sales process and often deviates from the list prices (Simon and Fassnacht, 2019f). The cause for final prices below list prices can be general market price declines or sometimes due to weak performance of a sales force. The latter are linked to two reasons (Simon and Fassnacht, 2019f):

1. Price authority is used in the sales person's interest instead of company goals, due to difference in objectives
2. Sales force lacks necessary information or training

For the first point, appropriate measures are limitation of pricing authority or design of an incentive plan in-line with company objectives. For the second point, it measures to improve information systems, internal communication and training of sales force (Simon and Fassnacht, 2019f).

Either due to a suspected weak performance of the sales force or to support the internal organizing of a pricing process, it is recommended to implement different incentive systems and educate the sales force in-line with the amount of pricing authority given (Simon and Fassnacht, 2019f). There exist different suggestions to how an incentive system should be set-up appropriately, including their effects on employees. Systems and effects should be investigated carefully before implementation. The objective should be to find an incentive system in-line with company goals and pricing objectives (Simon and Fassnacht, 2019f). Education of employees should be considered to be extended beyond just the sales force. Often companies inhabit low pricing-intelligence, meaning the average level of knowledge on pricing that individuals in the pricing process have. For example, knowledge of pricing interrelationships, understanding of pricing methods or negotiation tactics (Simon and Fassnacht, 2019f).

Lastly, a key role in most companies is the CEO. It can be argued that due to price's effect on shareholder value, the ultimate responsibility for realization of price objectives should be allocated to the CEO. This does not mean that the CEO has to take actively part in the pricing process, which for most CEOs would not be possible. However, the role and tasks for the CEO in the pricing process could be (Simon and Fassnacht, 2019f):

- Take part in organizing an optimal pricing process (F6)
- Establishment of strategy (F1)
- Create awareness of why pricing is important and creating price discipline
- Use price in investor relations

Involvement of CEO in price management have shown to increase average operating EBIDTA return, pricing power and success rate of pricing. However, the CEO should be careful to take part in concrete price decisions and the operational activities in a pricing process.

Support systems can be systems to gather and analyze data, or to automate parts of the pricing process. One alternative for establish pricing systems will be briefly mentioned below, a decision-support system(Simon and Fassnacht, 2019f). Before looking into key points which are important to consider before investing or implementing such systems.

Decision support system can be built to incorporate a larger amount of information to complete price calculation and assist or even make price decisions. Due to the resources required to buy or build such a system, it is often recommended for complex pricing process. The system typically have 5 main building blocks (Simon and Fassnacht, 2019d):

1. Product portfolio
2. Decision criteria (information on and quantified price determinants)
3. Volume and revenue effects
4. Costs
5. Contribution margin

In this order, the system works from one or more products and a set of criteria, to calculate predicted sales volume, costs and expected contribution margin forecasts. The goal of such a system is to achieve realistic buying situations and forecasts (Simon and Fassnacht, 2019f). This type of support system requires high competence in methodology, including how to adapt the model to specific situations. Additionally, high requirements for information sources, especially estimation of market potential and customers willingness-to-pay according to attributes. It is generally recommend to use multiple source of information and analytical methods (Simon and Fassnacht, 2019c).

One case study argues that the advancing in pricing within a company, the challenge is often effective price change across a variety of products and customers. Of which usually requires extensive coordination across participants in the pricing process, including developing similar support systems (Dutta, Zbaracki, and Bergen, 2003). Furthermore, found that the development of systems must be based on existing systems, and a company cannot abandon existing systems. Therefore the process to develop an existing pricing process, with or without a new support system, can a be extensive and a challenging process (Dutta, Zbaracki, and Bergen, 2003).

Price controlling concern controlling of all aspects in a pricing process (F1-F6). For example, control of final price to customer, pricing objectives or information flow (Simon and Fassnacht, 2019f). To implement a control system, companies often use extensive information technology (IT) systems, such as presented with the Support

systems above. Additionally, it requires measurable plans and goals with variables to control.

This study does not focus on price controlling or appropriate systems, besides the Support systems or Price optimization presented previously. However, there are some common tools which are worth mentioning. Common analysis are price realization, price waterfall or discount jungle. Additionally, analysis of responsibilities, lost deals or complex variance (Simon and Fassnacht, 2019f). Some companies use Six Sigma. This tools was originally intended for the manufacturing process to detect mistakes or deficiencies in the process. It has some limitations, but can be shown to be useful to improve pricing discipline, improve quality and help companies avoid some major mistakes (Simon and Fassnacht, 2019f).

2.3 Process Models

The third part of the theoretical framework gives examples of different process models. A process model concern how the pricing process is viewed in terms of a broader idea and can be set within a company. Moreover, influencing which of the factors in Section 2.2 are utilized. While there are several alternatives for models, this study includes three alternatives; Framework for competitive industries, Price management and Pricing as a capability.

To understand the variety of process models, the subsection below looks into proposed stages and routines. Besides looking at strengths according to what their key resource focus on. The process models illustrate that companies can both execute and define their pricing process in different ways.

2.3.1 Framework for Competitive Industries

The first process model is a pricing process framework constructed for competitive industries. Of which proposes a standard process map of three phases; planing, execution and analyses (Hwang et al., 2009). Compared to the other process models, the activities proposed have the most specific guidelines for day-to-day operation of a pricing process. An overview over stages and proposed routines/ activities is given in Figure 2.10.

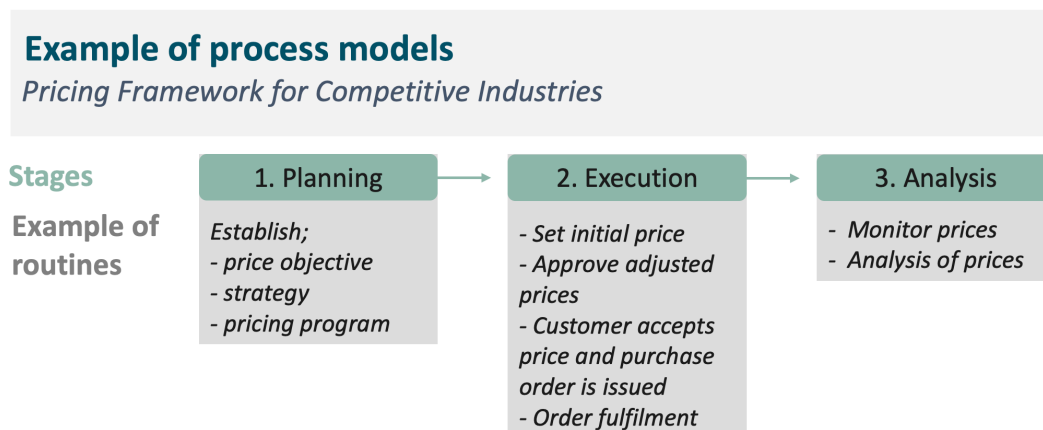


FIGURE 2.10: Presents the three stages found with the process model Framework for Competitive Models, with associated routines /activities (Hwang et al., 2009).

The model is proposed in relation to a case study, where one main focus were the implementation of an advanced ICT support system. In the case study there were initially identified 4 main challenges (Hwang et al., 2009):

1. Sales force had problems assessing price due to a wide range of products, complex price structures and product changes. Causing a mismatch between the initial (proposed) price and the final (offer) price.
2. Absence of historic pricing data, such as transactions.
3. A need for regular meetings to discuss price adjustments, where large discounts could take as much as a week.
4. Current forecast analysis lacked flexibility and was time-consuming.

Moreover, the study proposed that these four challenges caused revenue leakage, inconsistent pricing, limited price analysis and frustration due to time hold-up. To solve the challenges the company initiated a set of business initiatives (sales incentives, performance measurement and change to price authority) and system initiatives. The system initiatives were set in motion to create a robust information management system to support the pricing process. The system consisted of blocks pointing to an enterprise application interface (Hwang et al., 2009):

1. *Enterprise Data Warehouse*, with storage of historical price, sales volume and margin information.
2. *Pricing Online Analytical Process*, with online capabilities for advanced analysis easily available
3. *Master Data in Real-Time of Customer, Product and Price*
4. *Pricing Transaction Management*, processing operation activities such as calculating price, assigning approval for prices and consistency checks
5. *Order Management and Demand Forecast*, as a result of Pricing Transaction Management

Systematizing the pricing process by both business initiatives and developing an information management system helped the company improve several of their challenges simultaneously. However, to implement the system initiatives a 3-year timeframe was required. Effects measured were prevention of revenue leakage, 40% decrease in response time on price adjustment, 50% decrease in time spent on price transaction processing and time for analysis reduced from 3 days to 2 hours (Hwang et al., 2009).

2.3.2 Price Management

Price management views pricing as a continuous process and separates tasks into the four main stages; Strategy, Analysis, Decision and Implementation. Each stage have several options for pricing factors to implement, but there is no set order for the routines (Simon and Fassnacht, 2019f). An overview over stages and proposed routines/activities is given in Figure 2.10.

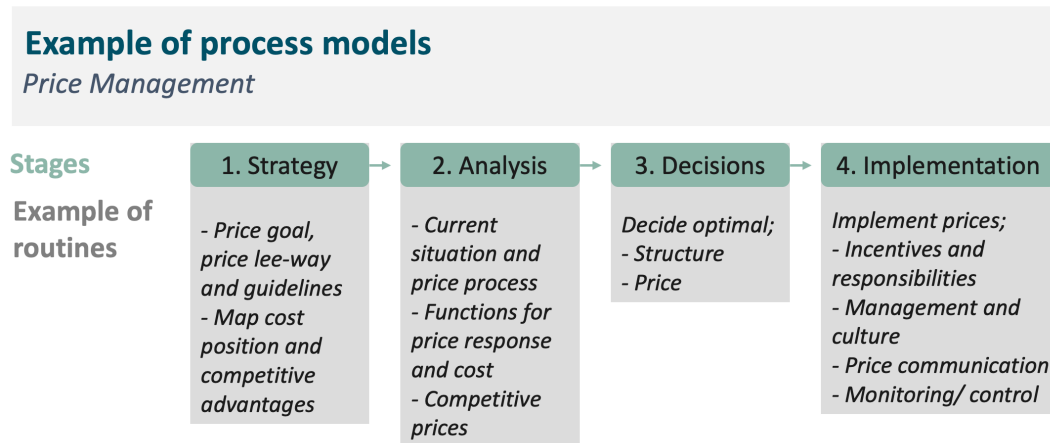


FIGURE 2.11: Presents the four stages found within the process model Price Management, with associated routines / activities (Simon and Fassnacht, 2019f).

Compared to the other process models the study / book on price management inhabits more details on how to construct a pricing process in terms of factors. It is written with the objective to be a practical guide, moreover is extensive and introduces advanced calculations. However, as Price Management focus on theoretical basis of factors, there are less guidelines on how the process should look in day-to-day operations (Simon-Kucher and Partners, 2019). Examples of factors are covered in the previous subsection.

2.3.3 Pricing as a Capability

Pricing as a capability focuses on the strategical view on pricing. Instead of a determine order of actives or framework stages, the model focuses on building key resources and capabilities to achieve competitive advantage when pricing. A resource can be company skills, processes or other outputs a company have, which competitors cannot copy and that produce superior economic rents. Moreover, a capability is the configuration of these resources into complementary bundles, which generate adaptive and valuable output (Miller, 2003). In the context of a pricing process, resources could be pricing factors, while capability could be the configuration of these resources. The configuration of the resources are often explained as company systems and processes (routines) developed to acquire set goals, rents and balancing company internal interests (Dutta, Zbaracki, and Bergen, 2003). Routines can for example deal with the collection of information to the pricing model, analyzing information or establish pricing internally and vis-a-vis customer. In other words, focus more on the requirements of pricing to be successful and competitive (Dutta, Zbaracki, and Bergen, 2003; Ojala and Laatikainen, 2019). An example of "stages" and proposed routines/activities from one case study on Pricing as a Capability is given in Figure 2.12.

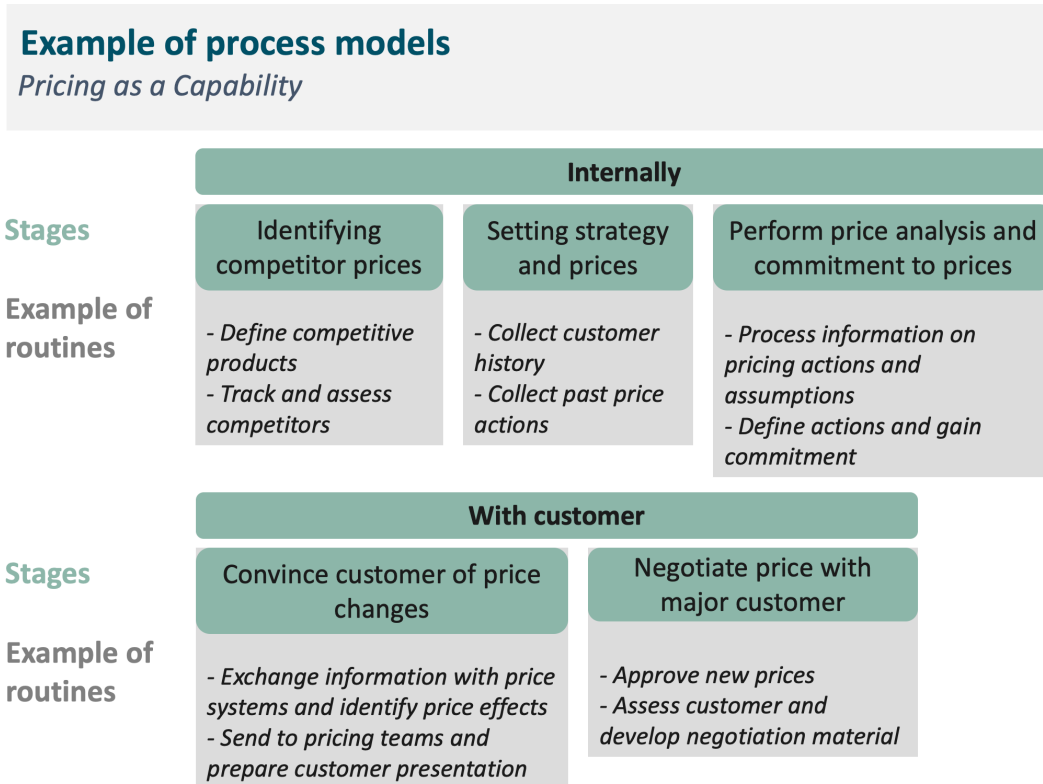


FIGURE 2.12: Presents the proposed "stages" from one case study on Pricing as a Capability, with associated routines /activities (Dutta, Zbaracki, and Bergen, 2003)

The main difference between these process models, to the others above, is the view of company capabilities. For example, one of the stages proposed in the figure above, was identifying competitor prices. Of which, there were 3 routines identified (Dutta, Zbaracki, and Bergen, 2003);

- Defining which products were equal in terms of functionality.
- a series of nested routines for monitoring competitor prices: Price database, data entry, calling up prices, tracking product changes. This was done both for company prices and competitor prices.
- Assessing competitive information.

These routines require technical know-how to understand competitive products. In addition to sales force know-how and relational resources to gain competitive knowledge. Moreover required coordination mechanisms between cross-functional teams to compare company and competitive products (Dutta, Zbaracki, and Bergen, 2003). All of these routines, skill/know-how and coordination mechanisms contribute to pricing as a capability (competitive advantage) in the long term and specifically focus on gaining information systematically. Thus a focus on company requirements to be able to price and capture value. As a result different case studies on pricing as a capability have identified / proposed key requirements, in relation to different routines. Another a case study found that analytical skills were a key company resource to quantify the companies' value proposition. Of which required system thinking, deep understanding of customers and ability to identify value proposition benefits (Ojala and Laatikainen, 2019). The study also included

key resources, in terms of key information a company required. For example, market knowledge was found to be a key resource to achieve pricing as a capability and included knowledge of target market, competitors value proposition, and if relevant, knowledge on foreign markets (Ojala and Laatikainen, 2019). The studies also focus on the importance of education as a part of customer preparation and that competence of employees individually or collectively are important to prioritize to be competitive (Dutta, Zbaracki, and Bergen, 2003; Ojala and Laatikainen, 2019).

Similarly to the process model Pricing Framework for Competitive Industries, one of the case studies on pricing as a capability focus on the implementation of an advanced ICT system. The study argued that a company cannot buy the systems and skills (pricing process factors) that is required for pricing (as a capability), thus the process of pricing is argued to be "imperfectly imitable" and thereby give the competitive advantage in relation to the Resource-based View (RBV) (Dutta, Zbaracki, and Bergen, 2003).

2.4 Conceptual model

A conceptual model, also referred to as conceptual framework, is a simple visualization of expected relationships between cause and effect for a concept. Whereas the concept for this case study is "Pricing Process Inefficiency", as introduced in Chapter 1. The model presented in this section is based on the theory presented and the initial case study information at hand (presented in scope of study). Thus, an important remark is that this model is an outline that contextualize the theoretical framework, scope of study and problem statement. The relationships are proposed, and can either be confirmed or denied by research results.

Causes for pricing process inefficiency are referred to as determinants, which are presented at three levels. At the bottom are the basic determinants, representing proposed root cause for pricing process inefficiency. These are linked to theory on why companies fail within pricing presented in Subsection 2.1.3. Moreover, summarized to 2 keywords:

- Lack of prioritizing of pricing
- Lack of professionalization of pricing (a poor pricing process framework)

One level above basic determinants are underlying determinants, which specifies the basic determinants further. Thus, the underlying determinants are linked to theory on pricing factors presented in Section 2.2, as these are what makeup a pricing process framework. The pricing factors are summaries to 3 key points:

- Incomplete structure and implementation (F6 from Subsection 2.2.6)
- Defect price determinants (F1 to F4, from subsections 2.2.1 to 2.2.4)
- Defect pricing model (F5 from Subsection 2.2.5)

Lastly are immediate determinants, of which are closest to the concept "Pricing Process Inefficiency". These determinants are often the most visible. Thus, these are linked to stated problems or concerns from the case company studied, presented in Section 1.1, and summarized to 3 key points:

- Lack in standardization
- Time consumption
- Resource consumption

Based on the initial scope of study and the theoretical framework, these determinants are proposed to have a connection and/or lead to pricing process flow inefficiency. From pricing process inefficiency there are two types of consequences proposed. Short-term consequences are linked to what the case company studied wants to achieve by improving the pricing process (presented in Section 1.1). Thus, what the company feels the pricing process prevents by the current situation, namely loss of sales opportunities. Long-term consequences are linked what research argues can be achieved by having a successful pricing process (from subsection 2.1.2). Thus, long-term consequences are loss of potential profit.

Consequently, the conceptual model visualizes a summary of theoretical framework in context with scope of study and problem statement. The model is given in Figure 2.13, with the proposed relationships presented above.

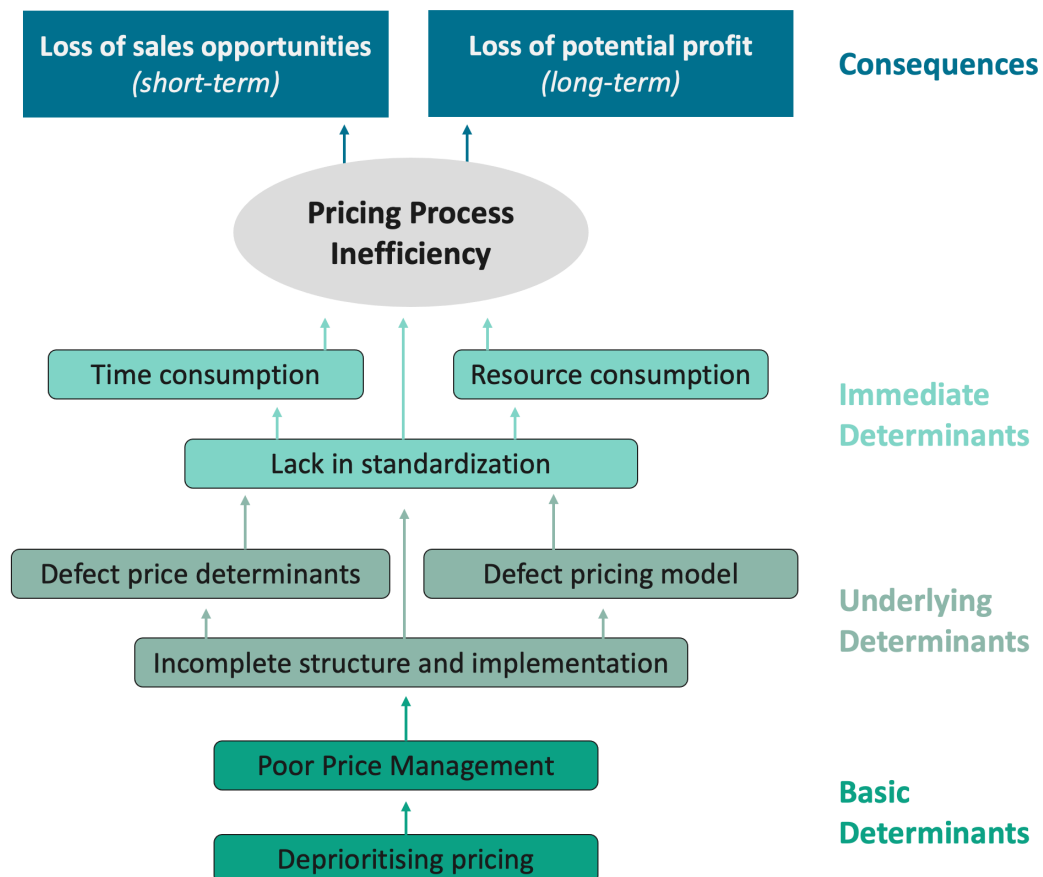


FIGURE 2.13: A conceptual model visualizing a summary of the theoretical framework in context with scope of study and problem statement.

Chapter 3

Method

Summary

This chapter have four main objectives; To explain and discuss (1) the research design for this study, (2) what and how data was collected, (3) how the empirical data was analyzed and (4) delimitation and validity of method. Research design can be summarized as a cross-sectional case study, with an intensive and flexible design. Moreover, the approach was mainly abductive and qualitative. The main data was primary data collected from 15 informants through a semi-structured interview. Of which was analyzed thematically. Other data collected were the Case Company's recorded data and literature relevant for the topic. Of which was used to further analyze and interpret the empirical data collected. Method validity is considered sufficient, by measuring the intended features of a pricing process. Including current process execution, framework and the initiating cause for flow inefficiency. However, is delimited to time constraints, theoretical framework and limited measurement of the cause-effect relationship for process flow and inefficiency.

3.1 Research Design

This thesis presents a case study, of which had a focus on the pricing process for an ICT Service Company in Norway. Research questions concerned the pricing process characteristics, determinants for process flow inefficiency and recommended improvement measures to increase process flow. The following sections will explain the overall research design and rational for choice of method.

In short, the empirical data collected, was collected at one point in time (cross-sectional) and from one study object (case study). While conducting the research an abductive approach was utilized, meaning there was a continuous shift between theory and empirical data. The focus was to gain in-depth knowledge of the study object and their pricing process, therefore an intensive research design was utilized. Additionally, there was a focus on non-numerical data, meaning a qualitative approach. Lastly, the research conducted had a flexible design. Meaning that the design was adapted according to findings while research was conducted and analyzed. For example, adjusting the thematic coding or adjusting focus of literature. Figure 3.1 gives an overview of the research design and presents keywords for data collection and data analysis.

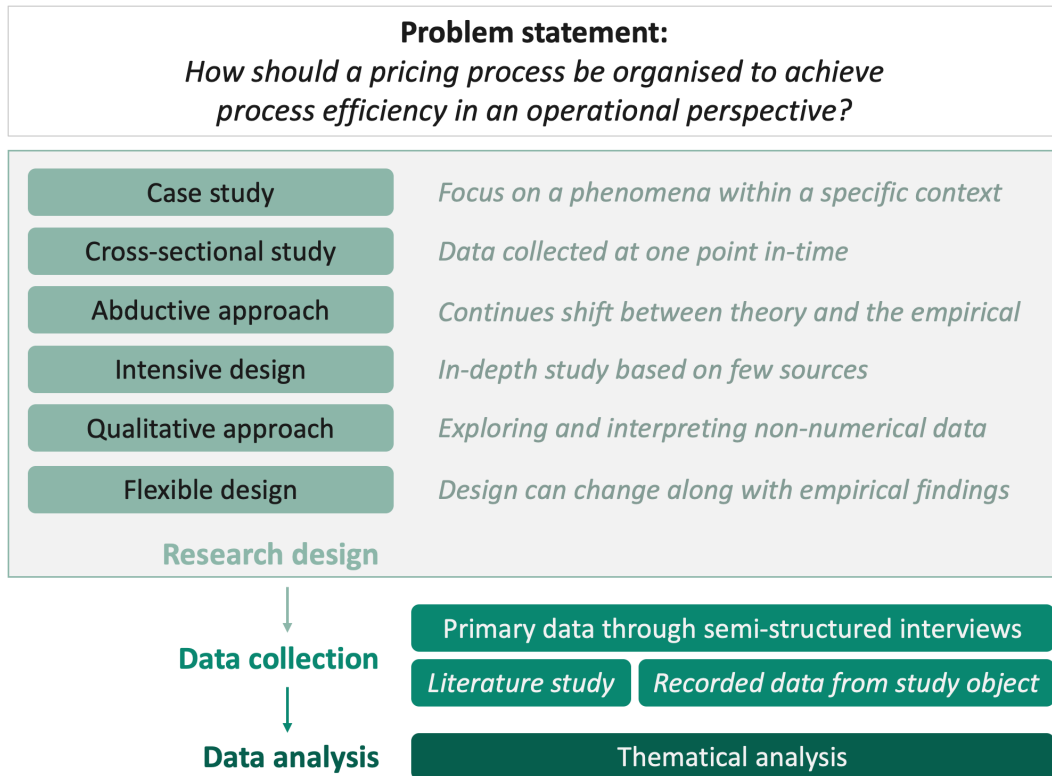


FIGURE 3.1: Overview of research design used in this study.

The main determining factor for research design, were the complexity of the research problem. Of which, determined an abductive, intensive and qualitative research design. In the same order as the overview above, different aspects of the research design will be discussed. Including how research problem complexity determined the research design.

The research conducted was a result of cooperation with an ICT Service Company, of which desired help to solve inefficiency challenges in their current pricing process. Thus, the research design had a focus on a phenomenon (pricing process flow inefficiency) in a specific context (one ICT service company in Norway). Due to being a case study, the main source for data was primary data, meaning the data collected directly by the researcher. This data was collected at one point of time (a cross-sectional study), mainly due to time constraints.

This study has had a continuous shift between empirical data and theoretical data. This is referred to as abductive approach. Alternatives are inductive and deductive approaches, which are opposite alternatives. Inductive moves from empirical data to theory. Meaning to approach the empirical data without a predetermined expectation of how the world looks. Moreover, collecting data of which afterwards are analyzed and interpreted to general theories (Busch, 2016). In contrast, deductive moves from theory to empirical data. Meaning approaching empirical data based on existing theory. Then the objective is to confirm or deny these theories through created hypothesis (Busch, 2016). There were two main challenges that determined approach. First, the scope of the study and research problem were both complex and unclear. While the Case Company had a few concerns regarding their current pricing process, there was not enough available data as a basis to decide how to

focus the research. Thus, the lack in basis required the research to focus on mapping the current pricing process, instead of only looking at causes for inefficiency. The latter would be necessary to develop a theory (inductive approach), including a good understanding of the research problem before data collection (Busch, 2016). Second, there was a lack of theories which focused on operational inefficiency in the pricing process. Thus, there was a lack of sufficient theoretical basis to construct a hypothesis that could be either denied or confirmed (deductive approach). Therefore, abductive research, going back and forth between theory and empirical data, was seen as most appropriate. For example, preliminary literature gave a basis for conducting data collection and key topics for the interview. Such as variables to explain pricing process execution, factors in a framework and determinants for inefficiency. Before and during data analysis, theoretical data was used as a guideline. Respectively, using theory to create relevant thematic code and to adapt theory to fit the aim of the study. For example, the Case Company management was included in determining the direction of the theoretical framework, based on current findings. As a result, the building block for pricing (pricing factors) was chosen as the focus of the theoretical framework, as this was the area the management identified as a knowledge gap. After data collection, this theoretical framework was used to further analyze the findings by identifying the pricing process framework. Thus, the advantage of an abductive approach, is its flexibility towards new discoveries and adapting the research after that.

Intensive design goes more in-depth and collects data from fewer sources, extensive is the opposite, less in-depth and more sources (Busch, 2016). An intensive research design was chosen as the most appropriate, for three reasons. First, due to being a case study, in-depth knowledge is essential. Both to understand the context and to uncover new discoveries. Including adapting theoretical framework to the context of the case study, such as a knowledge gap on pricing factors. Second, the research required an extensive mapping of several "unknown" variables. These were unknown, due to a lack of sufficient theory to develop a hypothesis for process inefficiency. Of which, also dependent on choice of focus / theoretical framework for the study. This follows the choice of an abductive approach. These variables were at the end of study connected to process execution and framework (factors). Third, and similar to above, due to a unclear and complex research problem, there lacked predetermined hypothesis or theories that could indicate "solutions" for the research problem. Thus, an in-depth study is more fitted to discover both problems and solutions.

For intensive data, qualitative method is often recommended (Busch, 2016). The opposite alternative is the quantitative method that seeks to quantify data. It is often used to confirm or deny theory, thus often used for deductive methods. While qualitative methods are often used when it is difficult to quantify data and holds a focus on words and interpretation (Busch, 2016). As explained, the research problem were complex, unclear and required in-depth knowledge and understanding. In such cases, qualitative approach are most appropriate, such as determined for this case study (Grønmo, 2020). For example, quantitative approaches is often dependent on clear theoretical theories that are directed or can be related to the research questions (Busch, 2016). This was not found within the scope of this study. Partly, due to time constrains, which limits the amount of literature and theory that can be included in the study. As argued above, the theoretical framework was chosen in collaboration with the study object. As a result, this choice will also limit the research design and findings.

The data had a flexible design. Meaning, the design or focus can change according to empirical or theoretical findings while following the abductive approach. In this case study, the scope of theoretical and empirical focus have been continuously focused. In addition to including the Case Company to discuss the final focus of the theoretical framework utilized.

3.2 Data Collection

Data collected are mainly primary data through semi-structured interviews of 15 informants. Supplied by recorded data (primary) and literature. This section will briefly explain how and what data was collected, to ensure sufficient data basis in terms of empirical data, theoretical framework and in-depth knowledge to understand the context of the study object.

To collect empirical data, a semi-constructed interview was held with a sample of 15 informants. Sample aimed to represent pricing process participants within SME and ICT Service Industry in Norway. A non-probability and purposive sampling method was utilized to decide on informants. Meaning the informants were deliberately chosen, based on the level of participation in Case Company's pricing process. To ensure that all key participants were asked and to include different levels of organizational roles, the management of Case Company were involved in creating a list of informants to be asked to participate in the research. As Case Company is an SME company, it was possible to include all key participants of the process, participants not included were a few pricing resources which are involved less frequently in the current pricing process. Thus, it was concluded to ensure that the sampling were not at risk for sampling biased and sufficiently representative to give insight to the research problem. The participation was voluntary and there were no non-response. All informants were asked to confirm by mail to participate in the research and signed an information letter approved by the research institute, see approval for data collection given in Appendix A.

The interview guide was constructed based on preliminary literature search and initial case information at hand from meetings with the management of Case Company. Moreover, it followed McCracken's guidelines for an interview guide. Including a preliminary section with opening questions, a main section where the key questions are asked and an ending section to conclude the interview (McCracken, 1988). The opening section sets focus on the informant interviewed, with simpler background questions. The main sections were split into several "grand-tour" questions, with a list of different keywords or sentences to steer the interview within relevant themes. Due to being cross-sectional research, the informants are asked reflective questions to get more insight into the pricing process in a time perspective. This was included in the closing section of the interview. For details, see the interview guide given in Appendix B. Following a qualitative research design, the method for interview did not utilize control variables except for keywords, aligned with McCracken's interview guidelines (McCracken, 1988). The informants were encouraged to speak freely and open. In this way, opens for discovery of new insights. Thus, results are less at risk of being limited to predetermined views on process inefficiency. This follows the choice of an abductive and flexible research design.

Recorded data was used to supplement the data interview data collected. This strengthens both the context of the data analysis, which is important for case studies. In addition, were used to supplement the basis for creating a should-be pricing

process commented further in data analysis.

Concerning literature, a broad search was conducted to find relevant literature on both pricing factors, determinants for price flow inefficiency and improvement measures. Search terms were used separately and combined, additionally in both Norwegian and English. Examples of search terms are: ICT, Information and Technology, ICT Service, Norway and Managed Service Provider. And Pricing, Pricing Process, Flow Inefficiency, Optimization, Price setting or Price process execution. In English, there were to a higher degree used a combination of key terms used to limit the amount of hits and limit the search to the most relevant articles. Moreover, Oria was used as the main search engine to ensure reliable results. Around 100 articles or books were found relevant to the topic. These were further looked into and prioritized, resulting in the key sources used in theoretical framework and analysis in the discussion section. However, while there found a diversity of literature connected to pricing, there were limited findings to the operational perspective of pricing. This is to some extent linked to time constraints, which limit the extent of which can be used to locate relevant literature. Besides difficulties within pricing terms, where terms often is used interchangeably as discussed in section ???. Besides key terms, the snowball method was used on key literature to locate relevant and newly published literature within pricing. For all sources used, they have been evaluated by the use of CRAAP test, used to check reliability of sources. Moreover, literature has been used continuously in the research. Preliminary research was used to guide relevant questions for the semi-structured interview. While analyzing data, literature was utilized to help guide and focus coding in the thematic analysis. Lastly, the final literature search was to finalize the theoretical framework on process models and pricing factors. After which were used to further analyze the pricing process, such as identifying current pricing framework.

3.3 Data Analysis

Data collected were mainly analyzed through thematic analysis and followed a standard 6 step procedure:

- Familiarizing
- Transcribing
- Intelligent verbatim transcribing
- Coding
- Re-coding
- Organizing

The interviews were mainly 1 hour long, with some of exceptions of interviews close to 1,5 hours. The interview was held via video meeting, and recorded via Teams. The first version of the transcript was made by using word audio transcript, which translates sound to text with time stamps. Following, the transcript were manually corrected, to ensure correct translation from audio to transcripts. Lastly, the transcripts were proofread, such as removing unnecessary verbal words. Corrections made were only to improve readability, while aiming for as few corrections as possible to make sure key content was not edited.

Thematic coding can be done in several ways, and thus have the advantage of being easily adapted to a study (2021). In this case, there were made main categories based on the interview guide. Moreover, with subcategories which were adapted along side the coding process. Coding varied from mapping key words such as tools or knowledge base utilized, to a list of activities explained by the informants concerning steps in the pricing process. As a result, the coding resulted in informants answers related to several sub categories, which could be easily compared to each other or across participants. The thematic code was mainly used to interpret the current pricing process, including the basis used and surrounding framework. Some of the subcategories were quantified. However, the method of this studied is focused on interpretation of non-numerical data. Therefore, quantified numbers were used with caution. For example, the numbers can be useful to indicate trends or reality, but could not be not emphasized as a fact of reality. Figure 3.2 presents an overview of the thematic code used for analysis.

1) Participants background	Education Working experience Position in firm
2) General info	Role in pricing process Overview of process and steps Estimated time use
3) Pricing process execution	Input and output Responsibility and decisions Activities and process paths Coordination Work surface, tools, database and documents
4) Basis for process execution	Experience / know-how Output from tools Input from co-workers Expertise on customers Expertise on market and competition Expertise on cost Expertise on profit or contribution margin
5) Specific decisions	Cost- or value-based pricing Dynamic- or fixed pricing Prices set to 0,- Discounts
6) Participant's reflections	Pros and cons with current process Suggested improvements Categorized and specific evaluations

FIGURE 3.2: Presents an overview of thematic code used to analyze transcripts from interview

In addition to organizing the informants answer in Excel, according to themes above, parts of the thematic code were translated to steps and activities concerning execution of the current pricing process. This was visualized using Business Process Model Notation (BPMN), which shows a process according to activities/steps and direction/flow of process. Based on all models created, a general representative BPMN model were made. In analysis from individual BPMN models to a general representative model, all exceptions and generalizations were noted. Including process determinants and basis used in different activities. Thus, it was possible to gain

an in-depth understanding of how the pricing process is executed. Lastly, the thematic code was further analyzed, by translating findings to pricing process factors. These were found by utilizing the theoretical framework, and then identifying what can be said to exist and what lacks in the current pricing process framework.

Other data collected were the Case Company's recorded data and literature relevant for the topic. Of which was used to interpret the empirical data collected. Such as collecting information on the Case Company's should-be pricing process. This is how the company say the process is executed, which were expressed in a similar BPMN model. This was used as a basis for comparison to the general representative BPMN model mapped from the informants.

The last step of analysis is conducted in Chapter 5. The result from data analysis and data collected gave a variety of perspectives and details to the current process. Since the study method does not focus on quantitative data, a cause-effect relationship to process efficient could not be found in the results alone. Rather by analyzing the details in context of emerging patterns between literature, the current process execution, framework and informants reflection of the current process. This part of analysis focuses on key details found. While, the analysis also take into count the lack of quantitative data and thus data to confirm proposed correlations.

3.4 Delimitation and validity

The Main delimitation's for this study were time constraints, theoretical framework and findings restricted to a specific context (case study).

The research was initiated due to a challenge with process flow inefficiency, of which one main concern was lack of standardization. Following, one area of research could be business process standardization. However, during research, it was found that the company lacks the foundation to have a standardized pricing process. Additionally, that the Case Company desired more knowledge on the framework of a pricing process. Therefore, was not included in the scope this study. With time constraints and in-depth study, an important research design is to limit the scope of study, including scope of literature basis. Moreover, as the aim was to focus on practical solutions for one study object, it was determined that a focus on their knowledge gap would have the potential to give a higher degree of new insight.

For similar reasons, neither BID models or operational management (research areas) were included in this study. For example, BID and negotiation can be a central area to understand the context of a pricing process. Or operational aspect can give more insight into process flow inefficiency. Other fields not look into are lean office process or agile organization. Within process optimization and organization, the list of possible fields to include could go on. However, due to time constraints, it was not possible to investigate both the pricing process framework (foundation) and include other large areas of research.

Time constrains have limited both research methods possible and the amount of findings that could be analyzed in-depth. For example, an alternative to the abductive approach could have been to first conduct an inductive approach followed by a deductive approach. For example, conductive a smaller qualitative data collection (interview) to determine key variables and develop theories for process inefficiency. Then, test these theories deductively, by performing a larger data collection through surveys. In this way, findings could to a higher degree be stated with certainty.

Such as the connection between current organizing of the process and process flow inefficiency. This method would however require more time, and was therefore not possible. Similarly, time constraints limited the amount of findings that could be further investigated. While the research method focused on an in-depth understanding of the pricing process, the findings contained a varied set of details, of which not all could be further investigated. Additionally, follows the fact that thematic analysis concerns constructing focus themes and patterns related (constrained) to research questions.

Another important delimitation was the lack of information on how the current process was conducted. Since there was a lack of data, and several unknown variables, the most fitted method was qualitative research. However, one of the key elements in this study is to understand possible cause-effect relationships. While qualitative and intensive studies can be useful to find new proposed relations and discoveries, it lacks the ability of confirmation. Such as the strength of a correlation, or correlations in effect of resource consumption and economic effects.

Due to the methods focus on in-depth knowledge and context, the result will have a limited generalization of results. Which is often the case for intensive design, qualitative approach and case studies (Busch, 2016). Additionally, intensive design often implies an interpretation-based method, which means a none objective reality, just subjective opinions of the reality (Busch, 2016). Thus, the research and result can be said to be highly dependent on researcher and interpretation during research. For example, while there is an interview guide, the researcher will ask follow-up questions depending on his/her understanding of the answer and informant. Furthermore, when completing thematic coding, development of code and categorization is also dependent on the researcher's interpretation. Therefore, researcher understanding of context are essential to achieve a reliable and valid result (Busch, 2016). Limits to generalization of results, means that it is limited to what extent the researcher can go from empirical to theory. For example, that it is too context specific to validly say that the sample result applies and represents the population. The aspects to delimitation and validity will be further discussed at the end of Chapter 5.

Despite limitations such as interpretation based on cause-effect, time constraints and limits within the scope of the theoretical framework, method validity is considered sufficient. Validity refers to how accurately the research method measures what was intended. In this study, it is evaluated that the data collection and analysis (methods utilized) were able to measure the intended features of a pricing process. Including current process execution, framework and the initiating cause for flow inefficiency. For example, it was possible to interlink several variables from interviews to variables in literature, and thereby recommend improvement measures. However, as mentioned neither degree of correlation was known or hypothesis testing was possible to conduct. This made the recommendation more general, in contrast to research emphasizing that pricing are mostly industry and company unique (Simon and Fassnacht, 2019e).

Chapter 4

Results

Summary

This chapter have three main objectives; to present (1) how the current pricing process is executed, (2) findings in relation to effect of current execution and (3) what factors exist in the current pricing framework. Implications of the result is further discussed in the next chapter.

4.1 Pricing Process Execution

Findings that explain how the Case Company executes their pricing process are categorised into four subsections. The first subsection focus on findings concerning participants background and role in execution of the pricing process. The second subsection focus on what participants use as a basis to complete a pricing process and make decisions. These subsections differentiate on the process participant groups (1) Case Manager, (2) Pricing Resource and (3) Management/ Advisory. The third subsection will present findings according to main process steps. Followed by the fourth subsection, which presents alternative routines to complete the different steps, routine determinants and consequently the effect on count of activities and people involved. The last two subsections differentiate on the defined (Should-be) pricing process, which is used as a reference, and the actual (As-is) Pricing Process, which is the main emphasis of the result.

4.1.1 Process Participants

There are three main participant groups. Participants from the group (1) Case Manager, are responsible for executing the pricing process and involving necessary contributors. Their general role in the company is as either key accounts for existing customers or sales people to acquire new customers. Participants from the group (2) Pricing Resource, are contributors that participate mainly to make estimates when Case Manager require assistance. Their general role in the company are Technical (professional team), Pre-sale or Project & Delivery. Participants from the group (3) Management/ Advisory are contributors mainly involved to give input on final decisions, such as price or strategy. Their general role in the company are senior management or other company roles not included in the other groups. The first group is always present in a pricing process, due to main responsibility for cases.

Pricing relevant education and working experience:

Background is categorised into years of working experience, relevant background regarding the ICT industry and relevant background regarding pricing. The last two categories are interpreted based on participants description of background. Regarding ICT relevance, requirements for education is technical and ICT relevant certificate or higher education. Requirements for experience is work within the ICT industry and/or work with ICT products. Regarding pricing relevance, requirements for education is higher education including subjects on economics or marketing. Requirements for experience are work related to pricing by working within sales, purchase, marketing and similar work where price is relevant for tasks performed. For pricing and ICT relevance, the results are illustrated as a percentage of informants in group fulfilling the above requirements. The results compare the groups by ranking, from lowest percentage or years to highest. Annotated as L (lowest), M (median) and H (highest). The results are shown in Table 4.1.

The group Case Manager have the least years of average working experience, while are median concerning ICT and pricing relevance. Pricing Resource have the highest amount of average working experience and informants with ICT relevant background. However, have the lowest relevant background for pricing. Lastly, the group Management / Advisory are median concerning working experience and lowest concerning ICT relevant background. However, have the highest relevant background for pricing. In summary, all informants have an average of 20 years of working experience and most participants have relevant working experience from the ICT industry. However, participants have the least amount of relevant education for pricing.

TABLE 4.1: Presents an overview of participants background, concerning years of working experience, relevance within the industry and relevance for pricing.

[Years in average] of working experience		Case Manager	Pricing Resource	Management, Advisory	Group average
In Total		16	26	19	20
In ICT Service company		L 6	H 15	M 8	9
In current role		4	7	3	4
[% of group] with relevant background					
ICT	Education	M 33%	H 80%	L 25%	46 %
	Experience	83%	100%	50%	78 %
Pricing	Education	M 50%	L 0%	H 75%	42 %
	Experience	83%	20%	75%	59 %

*Ranking of informant groups: **Lowest**, **Median**, **Highest**

Participants reference and terms to explain process:

In subsection 4.1.3 and 4.1.4 a general pricing process is presented. The descriptive name of steps and actives are based on how the informants have explained the tasks to complete a process. However, most participants explain the Pricing process differently. In other words, the data collected is to some extent 15 different steps and processes. The difference in explanation is related to their focus on what the pricing process is, their role and what they consider as most important concerning the "procedure" for executing the process. For example, most participants have different references to what the main steps are in the process. Some refer to the natural order, such as the presented Should-be and As-is Pricing Process. Meaning first you register, then collect prices, then make sales offer document and then send the offer. Other refer to CRM stages such as "lead", "contact-made", "pre-sale" and "negotiation". And others refer to the folder structure on the teams work surface "information received from customer", "internal working documents", "documents ready to be sent", "contract sent to customer" and "signed contract".

Summarised the main findings are as follows:

- Participants have different references to what the main process steps are
- Participants have more control on their own activities, then activities outside their role
- Follow-up questions were necessary for participants to explain the complete pricing process

4.1.2 Basis Used to Complete Process

This subsection looks at work-surface for process execution, existing databases, tools and templates. In addition, what participants use as a basis to complete the pricing process. The latter considers tools, databases, input from others and expertise utilised.

Work surface

The main work surface for process execution is Teams. For each sales opportunity processed:

1. A teams channel is created for the customer, if none does not already exist
2. A folder based on case number is created, containing predetermined folder structure of 5 folders

The 5 predetermined folders are: (00) Information received from customer, (01) Internal draft documents, (02) Documents ready for sending, (03) contract proposal and (04) Signed offer. Each folder represents a level, and documents are moved from one level to another according to progress in the pricing process.

Databases, tools and templates

Based on participants description of the process, they exist a variety of source that participants can use for assistance in the pricing process. The main sources used in the process are summaries in Table 4.2. For price attachment, mentioned in both tools and templates, the main difference is automation. The price attachment in tools gather information from database 3, while in the template version prices are filled in manually. It varies between informants which sources for assistance is used.

For example, case manager that does not involve BID manager or Technical Design manager will mostly use previous cases and templates.

TABLE 4.2: List main sources used as assistance to complete the pricing process, categorised into database, tools and templates.

Source for assistance	Name and description
Database	(1) Teams, where documentation for cases are uploaded (2) CRM-system, used to register case progress (3) Internal business system, with active contracts and product register (4) Service system, contain some information on hours used to operate ICT products
Tools	(1) Spreadsheets to calculate cost, made by Technical Design manager (2) Spreadsheet to compile price attachment, made by BID manager (3) Spreadsheets to calculate project cost, made by Project & Delivery (4) Use of documents from previous cases to compare, collected from Teams (5) Spreadsheet for evaluations in negotiation, made by Head of Purchase
Templates	(1) Technical Design for some standard products (2) Price attachment to fill in price manually (3) Using previous case documentation as templates

Participants basis to complete process

There are created 7 main categories for basis used to complete a process. Each main category contains several sub-categories. For example, experience had subcategories "previous cases" and "know-how". To see different sub-categories, an extended table is given in Appendix C. Table 4.3 gives one moderate interpretation and one strict interpretation of basis used by participants to complete the process. The interpretations are based on what the informants mentions or explains concerning activities conducted or decisions made. In the moderate interpretation, at least one of the sub-categories is utilised, while the strict version is the aggregated average percentage based on subcategories. Meaning, the strict interpretation takes all subcategories into account. Subcategories are created based on both theoretical price determinants and sources mentioned by informants. Lastly, the result does not differentiate on the level of use, just that the category is mentioned at least once by the informant. Thus, the result shows the percentage of participants that utilises the different main categories as a basis.

Both the moderate and strict interpretation show the same results. The most utilised basis is experience / know-how and input from other contributors. The least used basis is output from tools, meaning using a tool to get an output, and expertise on market and competition. In between these are expertise on customer, expertise on cost and expertise on profit / contribution margin.

4.1. Pricing Process Execution

TABLE 4.3: Presents 7 main categories for basis used by participants to complete the pricing process. The moderate interpretation are when participants use at least one subcategory, while the strict interpretation is based on the aggregated average percentage of all subcategories within one main category.

	Experience / know-how	Output from tools	Input from others	Expertise on customer	Expertise on market and competition	Expertise on cost	Expertise on profit/contribution margin
Moderate interpretation	89%	60%	100%	82%	62%	85%	77%
Strict interpretation	71%	15%	63%	41%	22%	52%	34%

*Ranking of result: **Lowest**, **Median**, **Highest**

4.1.3 Process Steps

Case Company's defined pricing process is internally referred as the Sales Process, in context of result it will be referred to as the should-be Pricing Process. Thus, the should-be Pricing process is *how the company says the pricing process is executed*. The should-be Pricing Process starts with "an opportunity for sales" and ends with "opportunity set aside", "opportunity lost" or "opportunity won". Neglecting the first end option, meaning a complete pricing process is executed, the Should-be pricing process have minimum 3 steps and maximum 5 steps, where 1 step is repeated. This assumes that only one round of negotiation is possible. Thus, the should-be Pricing Process have 4 main process steps, visualised in Figure 4.1.

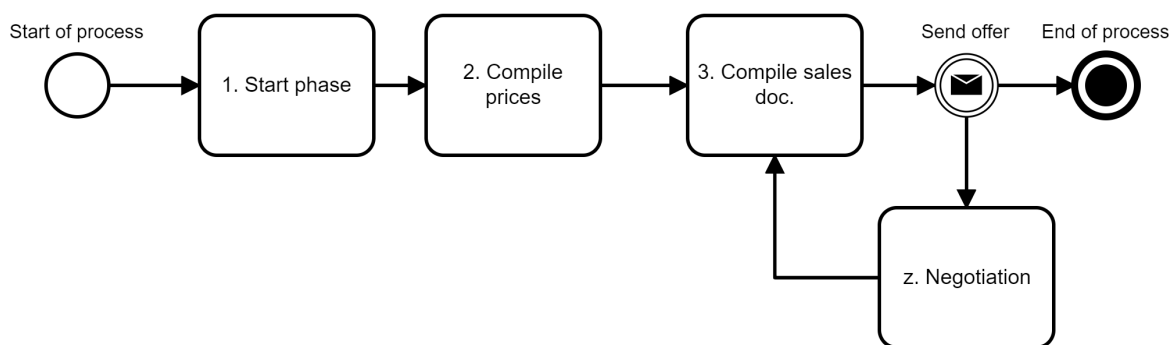


FIGURE 4.1: Main steps in the company's defined (Should-be) Pricing Process. Steps 1-3 are always executed, unless the process ends due to "opportunity set aside". Step z is dependent on customer response after the initial sales offer is compiled and sent.

Similar to the should-be Pricing Process, the actual (As-is) Pricing Process has the same start- and end options. The As-is Pricing Process is *how the pricing process actually is executed based on informants process description*. Neglecting the end option "opportunity set aside", the As-is Pricing Process have the same 3 minimum steps. However, have a maximum of 9 process steps, where 3 steps are repeated. This assumes that only one round of negotiation is possible. Thus, the As-is Pricing Process have 6 different main steps, in contrast to the Should-Be Pricing Process with 4 different main steps. The steps are visualised in Figure 4.2.

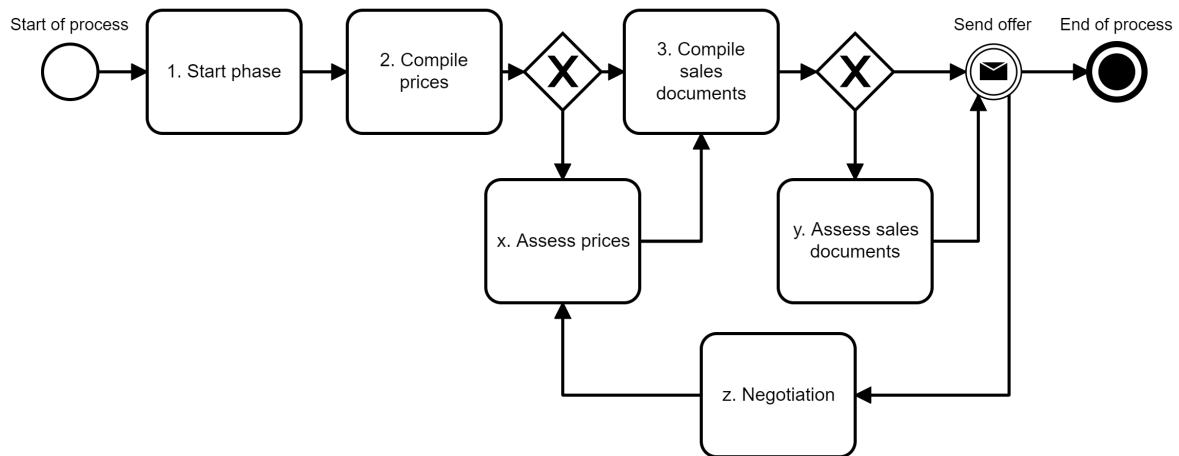


FIGURE 4.2: Main steps in the actual (As-is) Pricing Process. Steps 1-3 are always executed, unless the process ends due to "opportunity set aside". Step x and y is dependent on case characteristics such as complexity, strategy or need for clarifications. Step z is dependent on customer response after the initial sales offer is compiled and sent.

To generalise the steps, it is assumed that when negotiation takes place there will be changes to prices and/or the sales documents. This might not always be the case. For example, the company might choose to set aside the opportunity, or the negotiation mainly concern answering questions from customer. The step and process overview are in other words a representation of how the pricing process is mainly executed, and there are some exceptions that are not included.

The process has a different amount of steps due to two reasons. First, the Should-be process is a general description. It composes less details, and is described with the assumption of a standard procedure to complete a pricing process. Second, even though the steps are similar, they compose of different routines and activities. In other words, the steps have different characteristics. As shown in Table 4.4 the steps are similar considering input to and output from the steps. However, differ in count of possible routines, activities to complete step and people involved. One example is that the Should-Be Pricing Process in most steps consequently ends with an output of "Go" or "No-go", where the latter equals the end option "opportunity set aside". This is not the case for the As-is Pricing Process, where the routines determines if such an evaluation is considered at all.

Table 4.4 gives an overview of the process step in terms of input/output and count of routines, activities and people involved. Routines is a pattern of activities executed to complete a step or the pricing process and explained in more details in the following subsection. Regarding input and output, these are generalised, but depending on routine the outputs can vary from the overview below. The last column of Table 4.4 shows estimated numbers for the complete process. Sum of routines, means the sum of routines for all steps, not to be confused as possible routines for a complete process. Minimum count of activities implies that the least amount of steps are executed, and the opposite for maximum. The same applies for people involved. For example, minimum is based on completing the least amount of steps, utilising the least amount of people. Customers are not included as count of people, only employees from Case Company are counted.

4.1. Pricing Process Execution

TABLE 4.4: Presents an overview of the general steps in the pricing process for Case Company. The Should-be process is how the company says the process is executed. The As-is process is how the process is actually executed based on informants description. "+" represents that more then maximum value is possible, but has not been determined.

<i>Process Step</i>	1.	2.	x.	3.	y.	z.	Complete Process
<i>Description</i>	Start Phase	Compile Prices	Assess Prices	Compile Sales Doc.	Assess Sales Doc.	Negotiation	
Should-Be Pricing Process							
Input to step	Sales opportunity	Registered case & "Go"	-	Preliminary prices & "Go"	-	Customer response	-
Output from step	Registered case & "Go"/"No-go"	Preliminary prices & "Go"/"No-go"	-	Sales documents	-	Revised sales doc. & "Go"	-
Possible routines to complete step	1	2	-	2	-	2	Sum: 7
Count of activities to complete step	4	9	-	3	-	Min: 2 Max: 4	Min: 18 Max: 20
Count of people to complete step	1+	Min: 1+ Max: 6+	-	Min: 1+ Max: 5+	-	1	Min: 1+ Max: 6+
As-Is Pricing Process							
Input to step	Sales opportunity	Customer requirement	Preliminary prices	Preliminary prices or Revised prices	Sales documents	Customer response	-
Output from step	Customer requirement	Preliminary prices	Assessed prices	Sales documents	Assessed sales doc.	Revised sales doc.	-
Possible routines to complete step	4	7	3	2	3	2	Sum: 21
Count of activities to complete step	Min: 2 Max: 5	Min: 2 Max: 15	Min: 1 Max: 2+	3	Min: 1 Max: 2+	Min: 2 Max: 4	Min: 7 Max: 31+
Count of people to complete step	Min: 1 Max: 2+	Min: 1 Max: 4+	Min: 1 Max: 5+	Min: 1 Max: 2	Min: 1 Max: 5+	Min: 1 Max: 3+	Min: 1 Max: 5+

4.1.4 Routines and activities

Only complete routines are included in alternative routines. Examples of incomplete routines not included, are cases where the sales opportunity are set-aside (no-go) or simple price request are answered without a complete process. For the latter, this is typically key accounts assisting existing customers, such as simple requests of one product or expansion of a existing products. Additionally, official tender processes are not taken into account. These would mostly be similar to complex cases, and be more extensive in terms of customer requests, documentation and extent of meeting activities.

In total, the should-be process inhabit a total of 7 routines divided to 4 main steps. While the as-is process have 21 routines divided to 6 main steps. Thus, a total of 28 general routines will be presented in this subsection. The main objective is to give a visual presentation of the different routines and present their main determinants, count of activities and count of people involved. Due to this objective, the different activities are not explained in detail. Determinants are the reasons for why

a routine is executed to complete a step and are mostly connected to case size (expected recurring revenue), complexity or customer importance. Determinants not mentioned concern if the customer is new or existing. Generally, offers to new customers are more often large or complex. While, offers to existing customers are often simpler cases and have more customer information available. However, all routines presented apply to both types of customer cases. Concerning activities, another important remark is that the Should-be Pricing Process will often have activities not found in the As-is Pricing Process. For example, registration in the CRM-system is defined as separate activities in the Should-Be Pricing Process, while in the As-is Pricing Process the opportunity is automatically registered through a form in Teams. Moreover, most informants do not mention registrations beyond the form in the start phase. Thus, the as-is process does not contain CRM registrations. Such exceptions or clarifications, and possible causes, are briefly presented at the end of each step after all possible routines are presented.

Routines are presented as simplified Business Process Model Notation (BPMN). Black arrows means that the following activity is executed by the Case manager, red means BID manager, blue means Technical Design manager and green means Project & Delivery. The boxes represent general activities in one routine.

STEP 1 START PHASE:

For the Should-Be Pricing Process the steps are mainly about registration in the CRM-system, registration of case (in Teams form) and a meeting to determine "Go" or "No-go" on the sales opportunity. Participants in "Go" / "No-go" meetings are usually BID Manager, Case Manager and often Technical Design Manager or other technical resources. In the defined process, Case Company often lack details about the people involved. The step have only one routine and consists of 4 activities, shown in Figure 4.3.

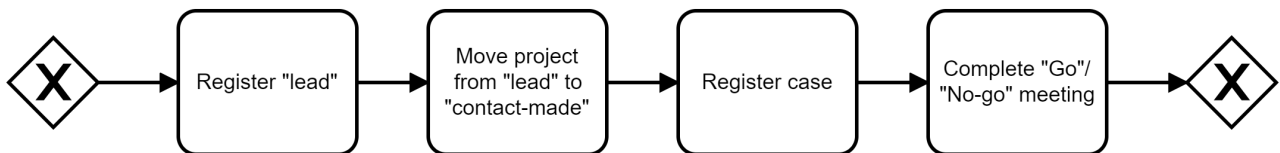


FIGURE 4.3: Should-Be Pricing Process step 1, routine and activities.

In contrast, the actual pricing process have 4 possible routines, with a minimum of 2 activities and a maximum of 5 activities. The different routines consist of the 5 same possible activities, but determinants controls if more or less activities are executed. In addition to the activities similar to activities in Figure 4.3, there are 3 additional activities. Meeting with customers, is often when the company wants to explain products, clarify customer requests or the customer wants more information before receiving an offer. Gathering case information, is when the case manager publishes customer request on the sales opportunity work surface in teams. The request is either a written summary of an oral request or could be a request document. Lastly, dialog with BID manager, is either to initiate the BID manager (from group Pricing Resources), to take charge of compiling prices and/or other parts of the process internally. Or, it could be that the BID manager wants to confirm that hen is not needed to complete the process. BID manager usually take part in compiling prices (step 2) and compiling parts or the complete sales documents (step 3). This is controlled by

case size (expected recurring revenue) and/or case complexity in terms of products requested. The As-is process is shown in 4.4.

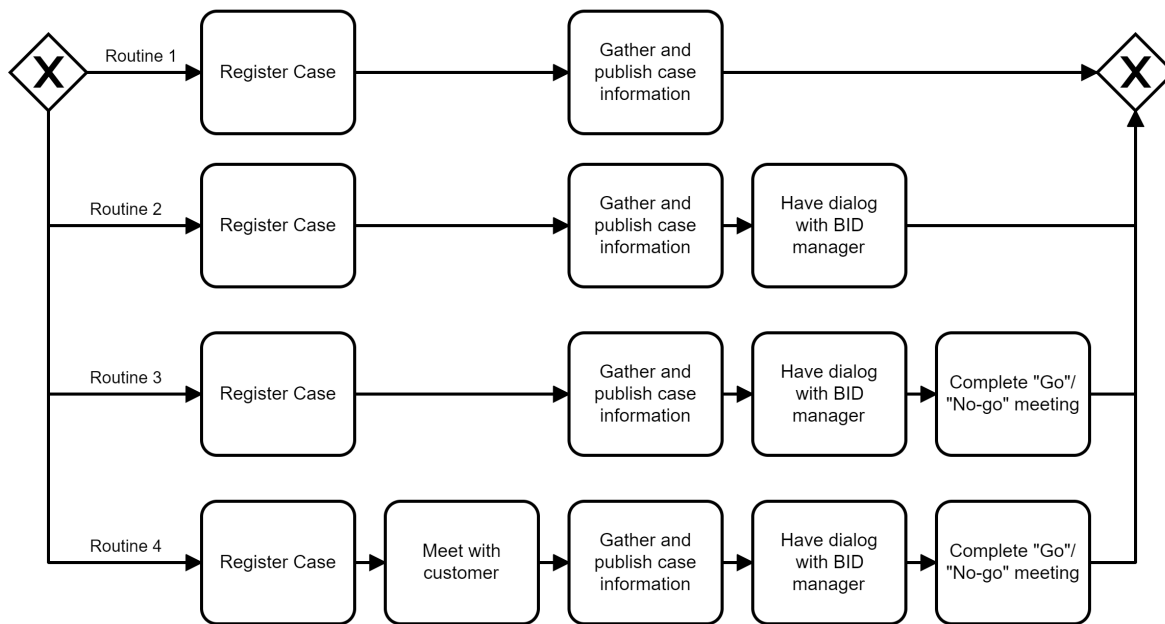


FIGURE 4.4: As-is Pricing Process step 1, routines and activities.

A summary of the different routines, their determinants and effect on count of activities and people involved is shown in Table 4.5. A "+" behind the count of people involved means that more people might be involved to advise / contribute in decisions.

Exceptions and comments to the general routines for Step 1 As-is are:

- Order of activity can differ, such as gathering and publishing information or meeting with customers before registration of case
- For simple cases, the degree of customer information to gather might be limited
- Newly employed case managers might contact co-workers to check / get input to interpretation of customer request
- One informant says that Teams form is not used when BID Manager is not required, in such cases the CRM registration would be used
- In some cases there is no contact with the BID Manager before Go / No-go meeting

TABLE 4.5: Possible routines to complete Step 1 in the As-is Pricing Process, with reference to the Should-be Pricing Process-

ROUTINES:	Should-be	As-is			
	1	1	2	3	4
Determinants	None	(1) Simple case, (2) Without BID manager	(1) Simple case, (2) Without BID manager (1) Larger case, (2) With BID manager	(1) Larger case, (2) More complex case, (3) With BID manager	(1) Large case (2) Complex case, (3) Customer clarifications, (4) With BID manager
Count of activities	4	2	3	4	5
Count of people involved	1+	1	2	2+	2+
Tools and database	(1) CRM database, (2) Teams registration form	(1) CRM database, (2) Teams registration form	(1) CRM database, (2) Teams registration form	(1) CRM database, (2) Teams registration form	(1) CRM database, (2) Teams registration form

STEP 2 COMPILE PRICES:

Compiling prices, based on informants, is the most extensive step. It mainly concerns making initial estimates on relevant prices to develop a sales offer. The Should-be Pricing Process has two identical routines. The only difference is if the Case Manager or the BID manager are responsible for completing the step. The identical routine is shown in Figure 4.5 and have 9 activities. The defined process mentioned several participants besides the one responsible for completing the step, but not directly related to activities. Participants are Project leader (P&D), professional team and pre-sale (BID Manager and Technical Design Manager). These participants are responsible for the results in this step.

Some of the first activities in 4.5 are regarded as part of step 1 in the As-is process, such as gathering information or assigning tasks. For example, tasks can be assigned as a message in teams (case work surface), or as a part of "Go" / "No-go" meeting during the start phase. The last activity, a go/no-go meeting after determining preliminary prices, is not found in the as-is process. Instead, step 2 as-is will move on to step x before step 3, if there are any uncertainties or if it as an important case. Lastly, the should-be process inhabits several predetermined activities independent of case complexity, meaning activities are completed either way. In contrast, the as-is process has fewer predetermined activities, and many are dependent on case complexity.

4.1. Pricing Process Execution

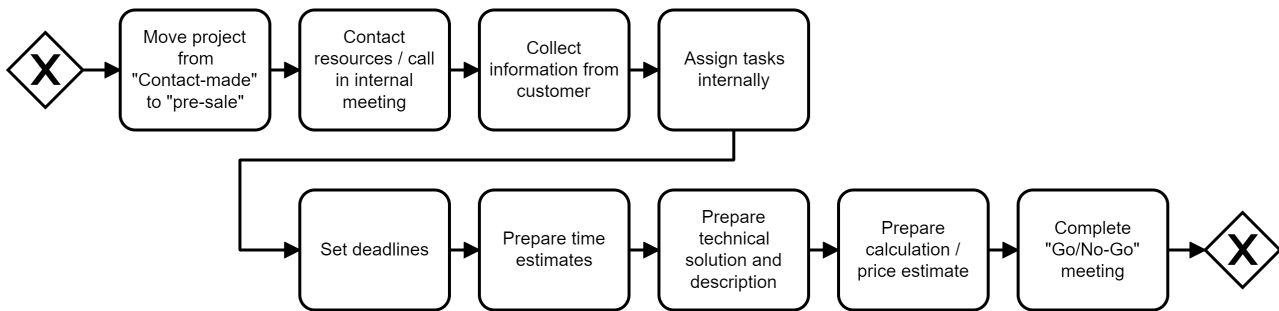


FIGURE 4.5: Should-Be Pricing Process step 2, general routine and activities. The general routine represents two routines, the same activities are executed either by Case Manager or BID Manager.

The As-is pricing process have 7 possible routines, presented in Figure 4.6. Due to the extent of activities and alternative routines taken by Project & Delivery to estimate implementation, project activities are shown separately in Figure 4.7. The routines have a minimum of 2 activities, where only the case manager is involved. While having a maximum of 14 activities, where BID manager, Project and Delivery and possibly Technical Design manager are involved. This is due to case complexity, such as determining special cost or product considerations. Case Manager with either less experience or less technical skills will make more use of BID manager and/or Technical Design manager. When Technical Design manager is involved, he has usually either participated in meeting with customer from step 1 or been initiated by BID manager. For example as a result of Go / No-go meeting in step 1. Sometimes the BID manager is not involved before after the Technical Design manager have completed his tasks. Depending on case the as-is process will move on to either step 3 or step x. The should-be process continues to step 3 either-way.

There is created two general alternatives for project. Alternative (a) is determined by being an easy case, where an estimate can be made based on previous cases. In addition, all necessary information is available, such as a technical design for technical solution proposed to customer. This is typically constructed by the Technical Design manager. Alternative (b) lacks some information, thus Project & Delivery have to make some clarifications with either Case Manager or Technical Design Manager. In addition, alternative (b) presumes that there exists no similar cases to base estimates on. Thus, estimate of labour hours to complete project requires more collaboration with technical professionals. These alternatives are to "extremes", but there exists several alternatives for execution, depending on case requirement and complexity. For example, an official tender project would often require the Project & Delivery to create a project- and milestone plan, which is attached to the final offer.

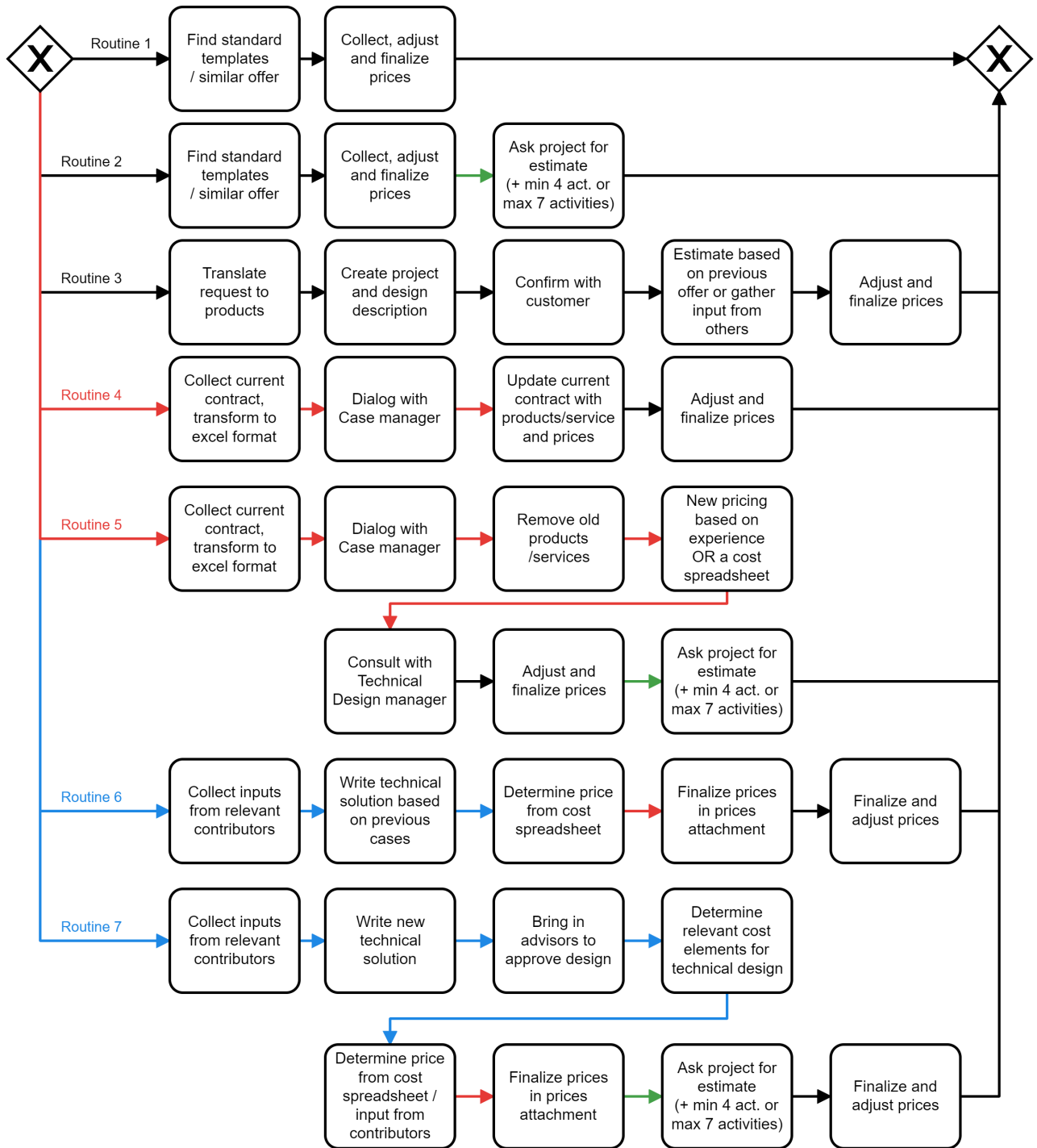


FIGURE 4.6: Process step 2 (As-is) routines and activities.

4.1. Pricing Process Execution

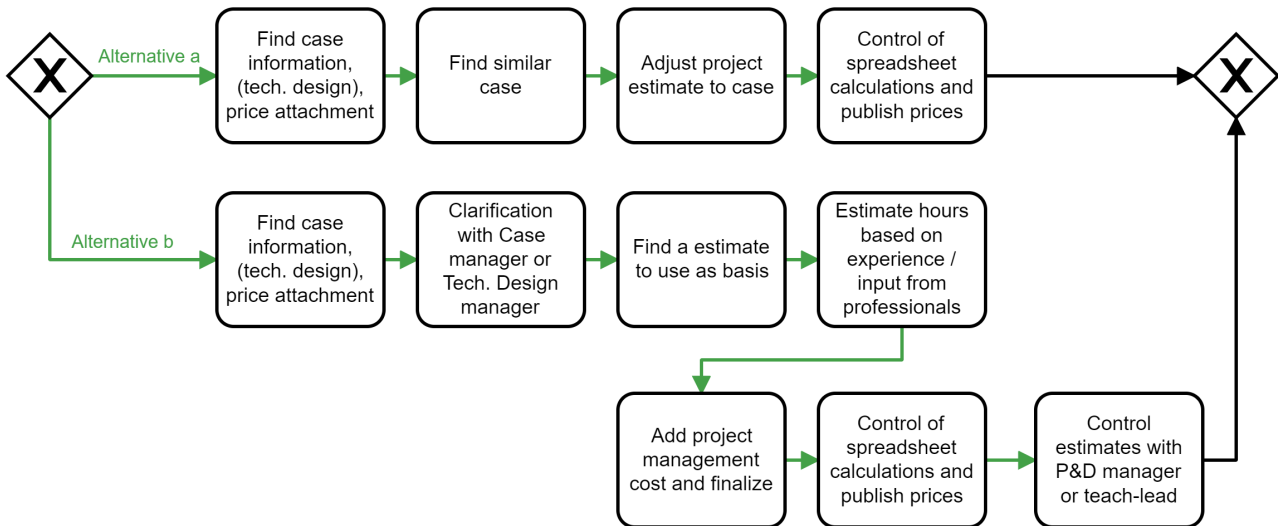


FIGURE 4.7: Process step 2 (As-is) routines and activities for Project & Delivery, as a consequence to the activity "Ask project for estimate".

Summary of the different routines are presented in table 4.6. Exceptions and comments to the general routines for Step 2 As-is are:

- Not all Case Managers adjust preliminary prices received from BID manager or Technical Design manager. Some vary and some always adjust prices to case and customer. Depending on Case Manager the preliminary prices can be adjusted according to achieve a desired sum of final offer price, total contribution margin or prices compared to similar cases.
- Adjustment of prices might also apply both before and after receiving project estimate. Or the Case managers make a project estimate based on previous cases and get it approved by Project & Delivery.
- During step 2, it is not unusual that the contributors communicate regularly either through messages or meetings. Especially if the case is complex and/or the step is completed over a longer period of time. Thus, there might be more activities, in terms of interaction between process contributors. One informant estimated at least one meeting per week for larger cases.

TABLE 4.6: Possible routines to complete Step 2 in the As-is Pricing Process, with reference to the Should-be Pricing Process.

Routines	Should-be						
	1	2	3	4	5	6	7
Determinants	<p>1</p> <p><i>Either performed by Case manager or BID manager</i></p>	<p>(1) Simple case, (2) Without BID manager (3) With Project & Delivery alternative a</p>	<p>(1) Simple case, (2) Without BID manager (3) Case manager have more technical skills and experience</p>	<p>(1) Larger case (2) With BID manager</p>	<p>(1) Large case (2) More complex case (3) With BID manager (4) Products lack list-prices (5) With Project & Delivery alternative b</p>	<p>(1) Large case (2) More complex case (3) With Technical Design Manager (4) With BID manager (4) Technical design based on similar cases</p>	<p>(1) Large case (2) Complex case (3) With BID manager (4) With Technical Design Manager (5) With Project & Delivery alternative b (6) Special requirements for technical design</p>
Count of activities	9	2	5	4	14	5	15
Count of people involved	Min: 1+ Max: 6+	2	1	2	4	3+	4+
Tools and database	<p>(1) CRM database (2) Tools not specified</p>	<p>(1) Price attachment template (2) Project calculation sheet</p>	<p>(1) Price attachment template</p>	<p>(1) BID manager price sheet / Standard price attachment (2) Technical Design manager calculation sheet (3) Project calculation sheet</p>	<p>(1) BID manager price sheet / Standard price attachment (2) Technical Design manager calculation sheet (3) Project calculation sheet</p>	<p>(1) BID manager price sheet / Standard price attachment (2) Technical Design manager calculation sheet (3) Project calculation sheet</p>	<p>(1) BID manager price sheet / Standard price attachment (2) Technical Design manager calculation sheet (3) Project calculation sheet</p>

STEP 3 COMPILER SALES DOCUMENTS:

The third main step is mainly about using the estimated prices and other prepared material to compile the final sales documents as an offer to the customer. Both the should-be and the as-is process have two identical routines with three steps. The routines differ by either BID manager or Case manager completing the step. The should-be process starts by compiling all documents, then work on the commercial content. Followed by verification from relevant contributors. The as-is process is similar, but does not include verification and has a different order of activities. As informants have mainly explained, the relevant documents are collected and some of the prices are exported to be a part of the offer letter (first activity). Then the commercial part is written, with assistance from similar offers and templates. Lastly, the documents are finalised and compiled. Similar to step 2, if there are uncertainties or an important case the process will continue to an additional step, in this case step z. While the should-be process will move on to sending the offer either way. When an offer is sent, negotiation takes place if the customer desires to negotiate prices or content of the offer. The should-be process is shown in Figure 4.8 and the as-is process is shown in Figure 4.9.



FIGURE 4.8: Possible routines to complete Step 2 in the As-is Pricing Process, with reference to the Should-be Pricing Process.

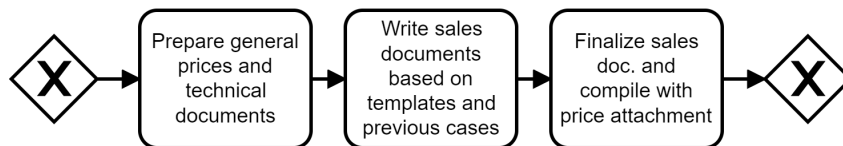


FIGURE 4.9: As-is Pricing Process step 3, general routine and activities. The general routine represent two routines, the same activities are executed either by Case manager or BID manager.

Summary of the different routines are presented in table 4.6. Only one general exception was found for Step 3 As-is:

- Less formal offers, do not necessarily create typical sales documents. For example when the offer concerns existing customers. In such cases, the offer might be presented through a phone conversations or messages. While prices are confirmed through mail.

TABLE 4.7: Possible routines to complete Step 3 in the As-is Pricing Process, with reference to the Should-be Pricing Process.

<i>Routines</i>	Should-be	As-is
	1	1
Determinants	<i>Either performed by Case manager or BID manager</i>	<i>Either performed by Case manager or BID manager</i> (1) With BID manager if the case is large and/or complex
Count of activities	3	3
Count of people involved	Min: 1+ Max: 5+	Min: 1 Max: 2
Tools and database	(1) Sales document templates	(1) Sales document templates

STEP X ASSESS PRICES AND STEP Y ASSESS SALES DOCUMENTS:

The should-be process includes verification steps from relevant contributors, as a part of predetermined activities in the process. In contrast, the as-is process depends on case size, complexity or uncertainty to determine if such verification steps are completed. Thus, step x and step y are only found in the as-is process. Moreover, they are steps to assess or verify preliminary prices or sales documents. These steps inhabit the least concrete routines. In Figure 4.10, two activities are presented. The first activity is gathering clarification, approval or input regarding price or sales documents. The type of clarification, approval or input depends on the case and Case manager. The second activity is usually related to large and important customers, where contributors are gathered in a meeting to discuss strategic elements of prices and/or sales documents. Or it can be meetings at the end of the process to gather all contributors to decide on the final offer. For example, when the pricing process have involved many contributors and/or BID manager have had responsibility for step 2 and/or step 3. In total there are three possible routines. Either one of the two activities are completed (routine 1 and routine 2), or both activities are completed (routine 3). The main point is that assessment or verification is not a predetermined activity, but rather dependent on the case.

Summary of the different routines are presented in Table 4.8. Exceptions and comments to the general routines for Step x and Step y As-is are:

- Regarding as-is steps, it is assumed that assessment in prices effects the sales documents, thus repeating step 3. Generally, only the last activity would completed as a consequence of completing step x. In some cases, for example simple approvals, step 3 will not be completed at all.
- It is possible for the activities shown in Figure 4.10 to consist of several clarifications or several meetings. Thus, the table has a "+" on count of activities in the different routines.

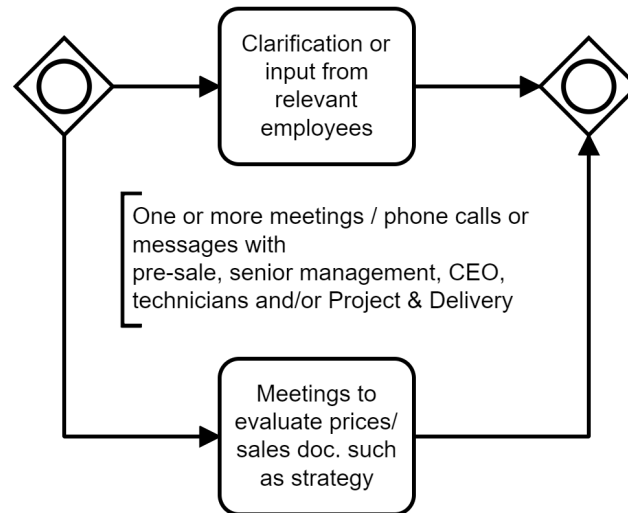


FIGURE 4.10: As-is Pricing Process step x and y, general routine and activities.

TABLE 4.8: Possible routines to complete Step x and/or y in the As-is Pricing Process, with reference to the Should-be Pricing Process.

Routines	As-is		
	1	2	3
Determinants	(1) Require clarifications, or check uncertainties	(1) Important customer or (2) Large case (3) Gathering contributors to finalize	<i>A mixture of determinants from routine 1 and 2</i>
Count of activities	1+	1+	2+
Count of people involved	Min: 1 Max: 5+	Min: 1 Max: 5+	Min: 1 Max: 5+
Tools and database	-	(1) Sometimes new calculations regarding cost for products offered	(1) Sometimes new calculations regarding cost for products offered

STEP Z NEGOTIATION:

After sending an offer to customer, the sales opportunity is either "lost", "won" or the customer wants negotiation. For both the should-be process and the as-is process, the negotiation step has two routines. For cases where the customer mainly wants the offer presented, rather than negotiating content, the first routines apply. These cases rarely lead to any major changes to offer. For cases where the customer mainly wants to negotiate content and/or prices the second routine apply. The second activity in all routines are identical, in terms of content of activity.

For the should-be process, the first routine have 2 activities. To update the case in the CRM system, followed by presentation of the offer to customer. If this routine is followed, step 3 is skipped, and the cases moves to "opportunity won" or opportunity lost", ending the process. In the second routine, there are 4 activities. The first two activities are equal to the first routine, followed by a negotiation with customer. After negotiation with customer, the result of negotiation is evaluated in a "go"/"no-go" meeting. "No-go" means that the opportunity is set aside, ending the process. "Go" means that Case Company moves to step 3, to update sales documents according to negotiation and sends the offer a second time. As a result, the sales opportunity is "won", "lost" or a new round of negotiation is conducted. Routines for step z in the should-be process is visualised in 4.11.

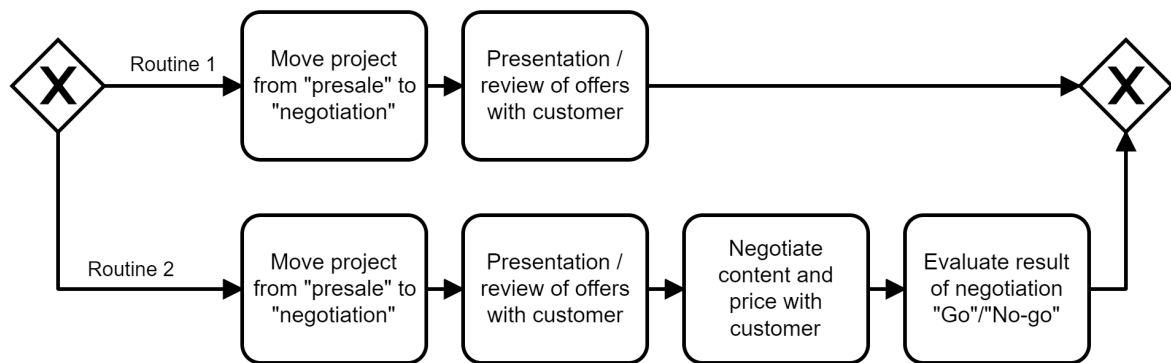


FIGURE 4.11: Should-Be Pricing Process step z, routine and activities.

Since negotiation is not the main focus in investigation of the pricing process, only two general routines are presented for the as-is process. These are "extreme" versions of negotiation. The first routine concerns a simple case, and similar to the should-be process, the customer only wants a presentation of offer. The second routine concerns a more complex case, meaning either in size of offer or customer importance. In addition to the fact that the customer wants to negotiate content or prices, as routine 2 in the should-be process. The first routine has one activity. The routine is almost identical to the should-be process, except for not containing a registration activity. If this routine is followed, both step x and step 3 may occasionally be skipped. Thus, the case moves directly to either "won", "lost" or repeat of step z, "negotiation". In the second routine, there are 4 activities. The first activity concerns preparations before negotiation. The second, is identical to the first routine, meeting with customer. Following the meeting, the technical design manager often contributes by calculating the cost of the products offered (third activity). In addition, an evaluation matrix is made (fourth activity). This is before the case moves on to step x. Exceptions for the last routine is negotiation where alternative such as preparation, cost calculation or evaluation matrix is not included. For example for simpler cases, but where the customer still wants a negotiation. By following routine 2, depending on changes required due to meeting with customer, step x and step 3 is completed. Supplemented by step y, if there are still some uncertainties or strategic discussions left before sending the offer a second time. After sending the offer, the case is "won", "lost" or a new round of negotiation. The as-is does not include "opportunity set-aside", as the informants did not mention it in their deceptions. Routines for step z in the as-is process is visualised in 4.12. Summary of the different routines are presented in Table 4.8.

4.2. Identified Effects of Process Execution

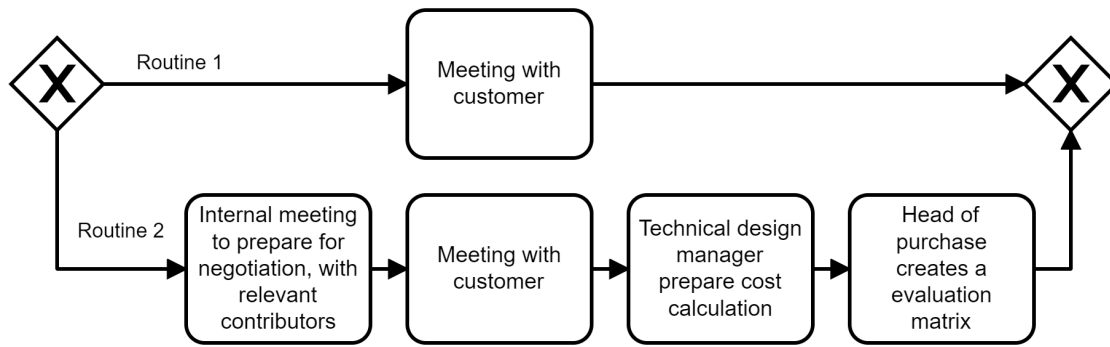


FIGURE 4.12: As-is Pricing Process step z, routine and activities.

TABLE 4.9: Possible routines to complete Step z in the As-is Pricing Process, with reference to the Should-be Pricing Process.

Routines	Should-be		As-is	
	1	2	1	2
Determinants	(1) Customer wants a presentation of the offer	(1) Customer want both presentation of offer and to negotiate content and/or prices	(1) Simple case (2) Customer wants a presentation of the offer	(1) Larger and/or more complex case (2) Customer want both presentation of offer and to negotiate content and/or prices
Count of activities	2	4	2	4
Count of people involved	1	1	Min: 1 Max: 1+	Min: 3 Max: 3+
Tools and database	-	-	-	(1) Cost calculation (2) Evaluation matrix

4.2 Identified Effects of Process Execution

This section will present findings concerning different effects of the current pricing process. These effects are linked to company resources and effects on participants. The latter, are effects in terms of participants evaluation of the current process.

4.2.1 Company resources

During a six month period, September to February, Case Company processed 70 sales opportunities. This means an average of 12 sales opportunities processed per month, by utilising the pricing process described above. Moreover, 1/3 of the sales opportunities were on average lost per month.

The pricing process above is a generalisation of all informants descriptions and approaches to the process. Findings from thematic analyses show additional results that describe the effect of current process in terms of people involved and time used to complete a process.

For people involved, group Case manager have on average minimum 1 person and maximum 6 people involved. Group Pricing Resource have a minimum of 2 people

and a maximum of 5 people. While group Management / Advisory have a minimum of 2 people and a maximum of 8 people. The last two participant groups are always at least two people, due to a case manager role in the process. Group Management / Advisory have a higher maximum amount, since they are usually involved when there are larger or more important cases. Thus, more people are involved. As the general pricing process presented in Subsection 4.1.3 and 4.1.4, increase in people involved often follow the increase in case size, complexity or importance. Contributors in a pricing process, in addition to case manager, can be:

- Sales or KAM manager
- BID manager
- Employees from Technical professionals or Hardware and Software (HW/SW)
- Technical Design manager
- Project & Delivery: Managers and/or tech-lead
- Senior management: Chief Technology Officer (CTO), Chief Sales Officer (CSO), Chief Executive Officer (CEO), Chief Product Officer (CPO), Chief Operations Officer (COO) and/or Chief Information Security Officer (CISO)

The list contain over 14 different potential contributors. None of the informants mention cases where all contributors are utilised. However, for large and important cases, there are examples where 10 different contributors have participated due to high price pressures and uncertainties. Most utilised are BID manager and Technical Design manager (from the pre-sale team).

For time used to complete a process, the average is a minimum of 3 workdays and a maximum of 30 workdays. This is the informants estimated time, from registration of case to the first offer is sent. Most informants struggled to give time estimates, and often supplied by comments such as: "It varies greatly from case to case, size and depth of cases". For example, easy cases, where most of the offer can be copied from a previous case, might only require one hour. While large cases might stretch out for months. As one informant continues to explain from the above quotation, this can be due to the customer: "I am working on a customer case where we have been working for over a year. Where it is just as much the customer controlling the pace, as if we control the pace. In this case, there have been a lot of clarification meetings".

If a case uses more time to be complete it can depend on customer, case managers capacity and capacity of pricing resource. However, many informants say that the actual pricing is not the main cause for time consumption. Rather, communication and clarification internally required to set or calculate the price. Estimates on pricing tasks were by some informants estimated from 1 to 3 hours, or 1 workday if the case is particularly complex. One informant explains that by having more capacity to push for progress in the case, it determined if the complete case would take 3 days or over a week. A recurring comment is that time can be saved if participants can reuse similar and previous cases. While, one often expect extended time when Project & Delivery is involved, due to capacity constraints in the department.

4.2.2 Participants Evaluation of the Current Pricing Process

There are three aspects to participants evaluation of the pricing process: Positive evaluations, negative evaluations and suggestions for improvement.

POSITIVE EVALUATIONS:

Informants focused mainly on commenting on the negative sides of the current process. However, positive evaluations stated by the informants can be summarised into four main points:

1. *The newly developed price attachment tool*
2. *Use of teams channel as a work surface*
3. *On the path for achieving a better process*
4. *Not too bureaucratic*

In general, the reasons for positive evaluations were due to the most recent improvement measures to improve templates, tools and/or automation of registration form.

NEGATIVE EVALUATIONS:

Negative evaluations are mostly linked to system, and product and price uncertainties when completing the pricing process.

While some informants argue that there is a clear methodology for how the pricing process is executed, others argue for lack of clear guidelines. The latter is attached uncertainties on who to ask for assistance or information, also understanding allocated price authority. Some informants relate lack in guidelines and systems to increase in time consumption due to extent of clarifications required. In addition to high requirement of experience to complete the process efficiently. Another informant connects the lack of a systematic process to random prices and possible revenue leakage. Lastly, several informants mention that the involvement of Project & Delivery mostly results in longer time required to complete the process. Also, inconsistency in how Project & Delivery are involved (phone call , mail or through teams).

Often products can lack reference prices. For example, prices are not documented or due their is a "special" customer requirement. It is an on-going project to implement more reference prices in the internal business system. With the current state, participants sometimes struggle in deciding on price. Often solved by experience based estimates or using previous cases as basis. However, the informants explain an industry where new products are constantly introduced. On occasion these are requested by customer before any reference prices are set. Thus, the pricing process can take more time, due to no lack in reference prices or reference cases.

For prices, one informant expressed concern on price competence being concentrated to too few people: "There are very few commercials, that in a way, can challenge prices at a professional level". For example most base prices set are highly based on the Technical Design managers initial calculations. Other concerns are related to uncertainty in prices and discounts. Informants mention cases where the company has been relieved of losing a sales opportunity, due to a substantially low final price level. Discounts are also varied, to the extent that they cause problems for the back-end of the company completing the order. This is due to discounts

not aligned with automatic systems already implemented to charge customers according to usage-based prices. Lastly, some concerns are expressed regarding price communication due to lowering prices several times during negotiation rounds with customers: "Does not reflect so well on us as suppliers ... That we are in a way are always willing to give strategic price and decrease price level."

The main negative evaluations are summarised by the following 15 points:

1. *To many people required*
2. *Products lacking predetermined price and descriptions*
3. *Labour-intensive products considered pure profit*
4. *Inconsistency and uncertainty in pricing and discounts*
5. *Difficult to price new products*
6. *Few can challenge the prices set, on a professional level*
7. *Lack in visibility of cost and contribution margin*
8. *Difficult to assess competitors with company*
9. *Lack in historical data and systems*
10. *Lack in clear guidelines and no "correct" method*
11. *Prices can be adjusted several times during a process*
12. *Process are at times experienced as random*
13. *Lack in control of prices*
14. *Involving Project & Delivery slows down the process*
15. *Highly dependent on Technical Design manager*

SUGGESTIONS FOR IMPROVEMENT:

While most informants agree that the current pricing process has areas which would benefit of being improved, some informants problematize the need greater than others: "I think it is an advantage that these processes are reviewed. And, I think that there really needs to be a revolution in how things are done." Suggestions for improvements are mainly linked to price and inconsistencies, case and process ownership, and system.

Informants view pricing quality as to what degree price aligns with the market, customer preferred price forms and contribution margin. Most informants evaluate the quality of price as "okay". Concerning the market, many informants desire more information on competitors. Price inconsistency can be large, one informant commented: "If I go into the system and see a server sold for 1500. Then, in the next second see another contract with a server sold for 4500, I'm not surprised, because that's the way it is." Most informants want less inconsistency, due to the risk of customers learning of the price inconsistencies. One specific suggestion is to give all products a minimum price. In addition, minimising discount inconsistencies by discounting complete offer by an percentage in stead of individual products.

The management of Case Company discussed case and process ownership as one of their concerns regarding the pricing process (from scope of study). Of the informants discussing this concern, there are conflicts to how case ownership should be

allocated. Some informants (case managers), are sceptical to increased responsibility in setting prices. They argue this is due the fact that pricing is complex and inhabits many elements to consider. Furthermore that case managers strength is customer handling and not pricing.

Most informants desire improvements in databases, tools, automation and/or systems. While there are varied suggestions for specific improvements, the general feedback is to create a system to assist further and simplify the pricing process.

The main suggestions for improvements are summarised by the following 12 points:

1. *All products should have a minimum price and visibility of cost and margin*
2. *Discount on offer instead of products*
3. *Less adjustment of prices and more equal prices to customers*
4. *Identify actual cost for labour intensive products*
5. *Historical data should be collected and analysed*
6. *Both more and less responsibility of pricing to case managers (conflicting suggestion)*
7. *Contributors only used for technical support*
8. *Increase Case managers technical competence*
9. *More systematising and structure*
 - *Overall simplification and streamline of process*
 - *Reducing people involved, but increasing people responsible for price*
 - *Fewer manual tasks and meetings, more automation*
 - *Tool to take you through the process naturally and produce sales documents*
 - *More professionally driven*
 - *Thresholds for approval*
 - *More guidelines to strive for less price inconsistency*
10. *Clear strategy on products the company wants to deliver*
11. *Team to evaluate new products and trends in market*
12. *Increased knowledge of competition and market*

4.3 Identified Process Factors

The following section explains findings in terms of factor from the theoretical framework. It will present which of the factors are identified, and if possible characteristics of factor identified.

4.3.1 Strategy

The Case Company has overall corporate goals, including desired customers and growth ambitious in the form of a five-year plan. Desired customers found are middle-sized companies with complex ICT requirements, in addition to customers

with a focus on cyber security. Based on recorded data and informants, there exist no explicit pricing objectives, price positioning or pricing strategies.

4.3.2 Customer, Market and Competitors

Concerning customers, Case Company has no routines, calculations or systematic method to evaluate customers' perception of products. Informants explain that they consider possible projects, thus the long-term implication that companies either buy or do not buy at all, when considering value proposition to customer and value captured by company. The latter being possible potential for up-selling, future projects and future profit. Other elements considered are type of company and sector considerations, size of company, gaining good reference customers (strategy), customers expectations and value loss if customers leave the customer-supplier relationship. However, these elements are often based on experience or experience from other contributors. Examples show, that Case Company on occasion miss-interpret both perceived value by customer and proposed prices compared to competitors: "We had a slightly smaller public tender ... As before, we gave a price for consultancy where we experienced that we had a low price level. However, of 3 participants, we were the most expensive." Thus, a lack of a systematic way to evaluate product attributes in the eyes of the customer or value drivers, besides competitor prices. Value drivers are to some extent considered in negotiation by the use of evaluation matrix. This is often based on customer feedback of the initial offer, besides experience.

From experience, informants mention that on occasion customers have problems understanding the value of products. For example due to complexity or not understanding the functional value: "... someone internally at the customer considering the product as simply ("whole wheat"), thinking that there are only 2 buttons to press, and then it's done. While, what we are going to do, is actually quite comprehensive". Currently technical professionals are on occasion included in the process, such as in meetings with customers, to solve such cases.

Concerning market and competitors, the Case Company have at least one identified general target market, of which is middle-sized companies requiring complex ICT requirements. Concerning what process participants have available, there are not any routines, calculations or systematic method for evaluating the target market or competitor prices. Similar to above, concerning customer. This is explicitly mentioned as something the informants do not use due to lack of availability. Knowledge of the market depends on the different participants in the process. One informant describes a market which is exposed to competition on price and regional differences concerning price pressure. Most informants cannot evaluate if the company is competitive in terms of price. Many refer to customer feedback indicating that Case Company is not the most expensive, nor most cheap. Group Price Resources often refer to Case Manager as the participant with most market knowledge, due to close relation to market and experience. Lastly, there are examples of considering market, but based on experience. In such cases it is evaluated which competitors the Case Company is up against, in terms of local or not local, and size. Additionally, taking into account experience from previous lost or won sales opportunities.

On occasions Case Company ask customers for a debrief after lost cases to understand why the case was lost. It is not indicated to what degree or how often this is conducted. In addition, there is not found that these feedback are systematised

or readily available for process participants, except for the proposed offer lost being available in teams (work surface).

4.3.3 Cost

Prices are mainly based on cost calculations. Findings indicate that Case Company do not differentiate on short-term and long-term costs. Cost are based on what components cost, but it has not been identified if it is mostly based on fully-load costs, marginal unit costs or something in-between. General findings concerning cost information and knowledge:

- Mainly Technical Design manager handles calculation of cost
- Calculations have been approved, but not thoroughly controlled
- Labour-intensive products are often considered to have no cost (short-term perspective)
- Risk for cost calculations are shared with customer by the user- and usage-based prices

According to these findings, products which are mainly services (labour-intensive) are mainly priced by a short-term perspective. There are done some measures to improve basis for cost calculation, including registration of labours in relation to product and customer. However, not all technical employees have historically registered hours enough to have a suitable database to evaluate cost. In addition, the internal business system is not suited to collecting current or historical data. Thus, the Case Company lacks documentation to calculate cost.

Similarly for estimates conducted by Project & Delivery, estimating time to complete a project for a customer. There is no database collecting estimates made or registering of actual time usage. Thus, the cost estimates are based on experience. Cost estimates are the only estimates Project & Delivery conduct. If there are new products, estimates are based on internal tests, comparing projects and/or by consulting with technical employees.

4.3.4 Pricing Model

As mentioned with cost, Case Company have mainly a cost-plus pricing model approach. Disregarding inconsistency in pricing, the calculations are both one-dimensional (one price for one product) and multi-dimensional (one price for a bundle of products). There is not found any calculations for long-term optimisation of price. For the short-term, there is partly a price optimisation tool available in the newly developed price attachment made by BID manager. This is based on cost and expected total contribution margin for an offer, but dependent on available information of cost. Of which does exist for all products.

Concerning categorisation of prices, if case managers use the price calculated by Technical Design manager without altering the price, it can be considered a rigid price calculation. If the case manager alters the price by evaluating similar cases and experience concerning market or similar, it can be considered a flexible-intuitive process. Either way, price calculations are the simplest forms of price calculations, considering the least amount of information. Concerning multi-dimensional prices this is mainly bundled products consisting of goods and services to provide an ICT service. It has not been investigated how these prices are calculated in detail. Thus,

it is assumed that they are based on similar one-dimensional cost-plus pricing calculations, with an added contribution margin. Multi-dimensional prices are often presented as one product, where individual components are not visible to the customer in monthly charge.

Prices calculated by this model is mainly conducted by the Technical Design manager. The model has several modules for different types of products. Labour cost are estimated based on discussions with technical professionals and their estimates based on experience. Cost depends on variables such as number of users or amount of computational usage (servers, disk, memory and CPU) and similar. The result of these calculations are transformed into simpler price formats incorporated in BID managers price attachment. Technical Design manager have main responsibility for the pricing model due to establishing the model in 2015. Of which, was created to gain a better overview of cost, which at the time lacked. Since then, the model has been approved, and has to some extent been adjusted / updated.

Case Company have both labour-intensive products and pure goods products. The main challenge is pricing of service, with some or only labour costs.

4.3.5 Structure and Implementation

In general, findings indicate that participants have clear roles and well-known responsibilities. However, responsibility for case manager can depend on technical skills and/or experience. Pricing authority is mainly placed with case managers. However, Management / Advisory will have a higher authority on the final price if involved in the process. Price authority applies to all final decisions. CEO is mostly just involved when cases concern important customers, to participate in strategic discussion.

8 key responsibilities were found in relation to completing a step or delivery in the pricing process:

1. Manage case
2. Register sales opportunity
3. Determining cost
4. Collect prices
5. Estimating price
6. Complete sales documents
7. Setting technical solution
8. Send offer

These are overall responsibilities, completed with or without the help of other contributors. All informants from group Case manager say they have responsibility for 5 key areas: Manage case, Register sales opportunity, Collect prices, Complete sales documents and Send offer. One exception is an informant with more technical competence, which also mentions Setting technical solution, Determining cost and Estimating price. Thus, have responsibility for completing all key steps / deliveries.

4.3. Identified Process Factors

Depending on specific contribution to the pricing process, the group Pricing Resource say they have responsibility for 5 key areas: Setting technical solution, Determining cost, Collecting price, Estimating price and Completing sales documents. In contrast, the group Management / Advisory does not have responsibility for any of the areas. This is due to their main contribution as an advisor.

Based on individual BPMN of informants described process execution, all areas of responsibilities were counted. Figure 4.13 presents the average amount for each participant group. The numbers represent an interpreted count of responsibility in the process, thus the result have to be used with caution. Generally the table differentiates the average count of responsibility, and responsibilities that can be transferred to others depending on process routine utilised. For example, if the case is not complex, the Case Manager will perform responsibilities that could have been transferred to others. Such as compiling prices without using the BID manager. The result shows that while the groups Pricing Resource and Management / Advisory can essentially transfer their responsibility to others, Case Manager cannot. Rather, when the Case Manager involved other contributors, some of the responsibility is transferred, but the case manager will still have most of the responsibilities. This is due to the involvement of others often means that the case is larger. Additionally, case manager will always have some responsibility for step outputs, even if it is completed by others.

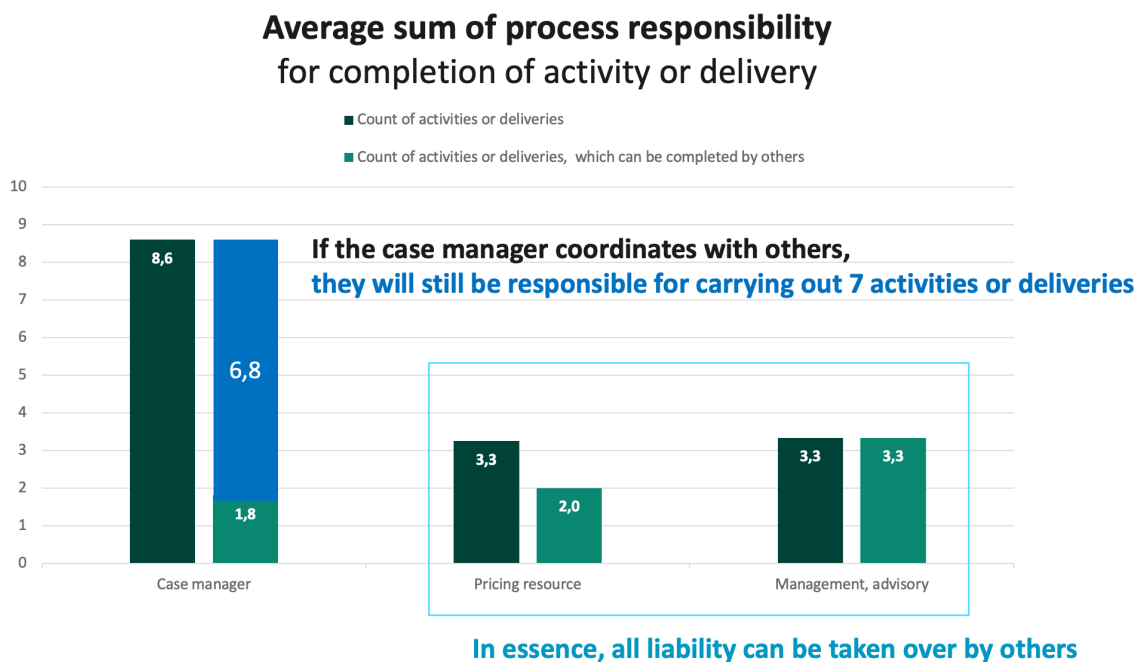


FIGURE 4.13: Presents the average amount of responsibilities the different participant groups have to complete a pricing process. These are representative numbers, and should be used and interpreted with caution.

Decisions are categorised into process path, strategy, price basis and final price authority. All case managers say they decide the process path and final price. Some say they decide strategy and price base. Pricing resource say they decide on price base, when they participate as process contributors. While, Management / Advisory

say they decide on strategy and final price. For the latter, the exception are informants from group who only participate as advisors and not as managers. Other exceptions are case size and important cases. For the first, anticipated recurring revenue because of winning a case opportunity can determine if BID managers are involved. Thus, if the anticipated case size exceeds a determined value, the BID manager should be automatically involved because of case registration in teams. Second, important cases often determines if senior management (group Management / Advisory) is involved. Informants from this group say they have authority above case managers in determining final price and strategy. In summary, Case Manager have the most authority in the pricing process concerning amount of decisions. While Management / Advisory mainly have the highest authority, and can determine final decision regarding price and strategy.

Concerning internal organisation, there are defined tasks. But the tasks defined are not in-line with all tasks preformed in the actual execution of the process. There exist one designated team, which is pre-sale. The role of pre-sale or case manager is often the same. Gathering relevant information, coordinating contributors and compiling price and sales documents. In addition, pre-sale have main responsibility for the pricing model calculation and the template price attachment. There are no teams to gather information on customers, market or competitors.

There exist no support systems. Only source of automation is the newly developed price attachment, that gathers price information from the internal business system. Thus, most of the tasks in the pricing process are manual tasks.

Lastly, there is little evidence of any systematic price controlling: "We have not been very good at ensuring quality. It may well be that it happens, but in my experience you put all your trust in the one who sits on the price competence and has the models." One recent measure is to create different sales and purchase accounts for product groups. In this way the company can to some extent check if the expected contribution margin is achieved.

Chapter 5

Discussion

Summary

This chapter have two main objectives: (1) Discuss the thesis three research questions and (2) conclude on an overall interpretation for this study, including answering the problem statement and discuss limitations, implications and further recommendation. Based on findings, Case company's pricing process is interpreted to have a simplistic framework and little degree of standardization. Among findings are experience-based factors, lack of key guidelines and structure and process dependency on contributors and type of case (size, complexity or importance). Results further indicate that the complexity of sales opportunity processed are the main source of inefficiency. Both due to utilization of resources can be shown to be dependent on type of case, and the resources used compensate for lack in appropriate framework. Lastly, it was found that a target improvement of factors in-line with the chosen pricing model has the potential for improvement beyond process inefficiency. Thus, the study proposed a 5 step general approach for Case Company, to improve their current pricing process. Based on the findings, it is argued that a pricing process in general should be organized with respect to factors, of which should be in-line with company pricing complexity. The practical implications suggest that management can benefit from an increased focus on pricing intelligence and prioritization of their pricing process, especially in professional service industries. For research the thesis complements current studies, by taking prior research into a practical setting and analyzing pricing in an operational perspective. However, as pricing is mostly industry and company specific there are limits to the extent of generalization of findings. Thus, proposed causes for inefficiency in pricing are recommended for further investigation. Including, taken other research fields into account, such as lean office operations, business process engineering or agile organization.

5.1 Analysis of Research Questions

From Section 1.3, three research questions were introduced: (1) *What characterizes the current pricing process?* (2) *What are the cause(s) for process flow inefficiency?* And (3) *What are the recommended improvement measures?* The first research question can be answered by summarizing the findings presented in Chapter 4. The two last research questions are dependent on answers to the previous research questions, and thus require further analysis. The discussion presented in this section, is thus the analysis to answer all research questions and the foundation for answering the problem statement at the end of this chapter.

5.1.1 Pricing Process Characteristics

From the thematic analysis and mapped process execution, results indicate two main characteristics regarding Case Company's pricing process. Firstly, the pricing framework has a minimal presence of factors. Second, the current process has many random dependencies.

MINIMAL PRESENCE OF FACTORS - KEY GUIDELINES

Minimal presence of factors can be linked to the lack of key guidelines, such as strategy, structure and implementation, additionally utilization of mostly experience-based factors. While Case Company have a formulated corporate strategy, there were no indications of clearly defined pricing objectives or pricing strategy. There were found a partially formulated price positioning, such as a target group and known value where Case Company placed themselves as neither the most expensive or cheapest ICT Service provider. However research argue that both pricing strategy and positioning should be based on a determined price objective (Simon and Fassnacht, 2019i). Thus, the positioning is at most present, but can be assumed to have some deficiency. For example based on Simon and Fassnacht definition of price positioning, there are no documented formulation of the arrangement of the parameters value, product performance and price elements (Simon and Fassnacht, 2019i). It can be reasonable to argue that these deficiencies can be a critical for a pricing process, considering that strategy is in many ways the first building block for a pricing process. According to Harmon, a formulated pricing goal tells what the company wants to achieve (Harmon et al., 2009). In Hwang's proposed pricing framework for competitive industries, the proposed proposed steps start with planning, which mainly concern setting a strategy and goals (Hwang et al., 2009). While, Simon and Fassnacht argue that a clear pricing objective is important both to be able to handle conflicting goals early and ensure that the sales force, or those charged with pricing authority, act in-line with company goals (Simon and Fassnacht, 2019i). Thus, indicating that Case Company lack key guidelines in terms of strategy aspects, in their current pricing process.

Structure and implementation include several considerations, including allocation of price authority, tasks and responsibility (roles) and internal coordination. It was found that the case managers (sales-force) mainly have what Simon and Fassnacht refer to as complete price authority (Simon and Fassnacht, 2019f). However, the basis for prices is often set by contributors from Pricing Resource and if Management / Advisory are involved, they will have the final say (higher price authority). Simon and Fassnacht argue that it is favorable that sales force have relatively high price authority, as they will have a higher competence on customer willingness-to-pay and ability to differentiate price. Moreover, that it often gives a higher flexibility and quicker responses (Simon and Fassnacht, 2019f). Arguments against this allocation of higher price authority argue that a sales force will have incentives to win opportunities, thus a higher willingness to lower prices. Additionally, it is not favorable when pricing is to complex (Simon and Fassnacht, 2019f). For example, results show that one process determinant is complex cases. Thus case managers often have to include other contributors from Pricing Resource, when products and pricing becomes more complex. But, as Simon and Fassnacht point out, participants comment that the pricing process is considerable faster when they can complete the process without other contributors. The general recommendation is that price is allocated to relatively high in the companies hierarchy, where sales-force and operation are suggested to be lowest and not highest in this hierarchy (Simon and Fassnacht,

2019f). This is partly what is seen at Case Company, but at the same time there is less of a hierarchy in the firm and a small company. Something participants mention as a positive side of the current pricing process, less bureaucratic. However, the Case Company do not differentiate on different types of price authorities, Simon and Fassnacht, 2019f suggested allocation on price authority are list price, discounts and promotions. There are many suggestions and discussions in allocation of price authority, and the main finding is that these are considerations that seem neglected by the management of Case Company. Such as appropriate incentives systems, taken into account technical competence or dynamic of market (Simon and Fassnacht, 2019f). While the allocation of price authority can be questioned, the participants express the same understanding of allocated pricing authority. In contrast, research have shown that an unclear price authority can lead to conflicts, thus unnecessary time consumption (Simon and Fassnacht, 2019f). To decide on allocation of tasks, research argue that it essential to define task in relation to process stages and allocate these tasks taking pricing requirement into account, such as technical competence (Simon and Fassnacht, 2019f). While the generalized process execution map, as-is, was possible to create with mostly clear stages, the defines should-be process map differed. Both in content and tasks within. However, results indicate that all participants in the process experienced clear roles and well-known responsibilities. For example, most participants were aware that case managers had pricing authority to change price basis given from other resources. And while there were several formulations of differentiated, it could be found 8 main responsibilities in the case, similar to process stages; Manage case, register sales opportunity, determining cost, collect prices, estimating price, complete sales documents, setting technical solution, send offer. In-line with Simon and Fassnacht, 2019f recommendation, clear definitions and assignment tasks. While the should-be process does not fulfil this criteria, since it is not inline with the actual process. The unspoken roles and responsibilities can be said to be clear. However, compared proposed task by research, Case Company lack several key tasks and thus roles. For example, research argues that coordination within pricing is essential. This is due to the amount of information required, often by use of several departments to provided the necessary information (Simon and Fassnacht, 2019f). Findings indicate that there do not exist designated teams to perform necessary information collection, analysis or controlling. The key roles which are found are Case managers, which are the process owners, and Pricing Resource to estimate the price basis if required. Besides this, sales, management or other contributors are involved only to contribute to strategy or commercial considerations. However, their involvement is generally controlled by the case manager responsible for the sales opportunity. As with the management, results indicate that the CEO's involvement within Case Company's pricing process is mainly restricted to an advisory role. Both Dutta and Simon and Fassnacht argue that pricing should be considered important for a company, respectively due to the ability to capture value and the effect value capture (profit) (Dutta, Zbaracki, and Bergen, 2003; Simon and Fassnacht, 2019i). Furthermore, Simon and Fassnacht thus argue that while a CEO should not actively take part in the operational activities of pricing, active contribution such as in organizing, establishing strategy or creating awareness can increase the success rate of pricing (Simon and Fassnacht, 2019f).

Other considerations to structure and implementation are roles, price controlling, handling negotiation and internal communication. While the results indicate clear task and responsibilities, it can be question if they lack certain roles. As mentioned, their lack s designated teams to provide required information. Moreover, research

recommend to allocate responsibility of coordination (Simon and Fassnacht, 2019f). While Dutta and Hwang mainly coordination information flow through IT support systems, Simon and Fassnacht suggest the use of a price manager or price department (Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009; Simon and Fassnacht, 2019f). Case Company does not have a designated support system for pricing, but rather several databases and tools which can be used. Moreover, the closest they have to a price manager or department are the BID manager or Pre-sale. Moreover, the pre-sale or other contributors from Pricing Resource makeup just a limited available personnel. As their tasks cannot be handled automatically, participants have experienced unnecessary time delays due to a hold up from pricing resource. Research argues that a more systematized coordination is recommended for companies that have an extensive product portfolio and/or make frequent price decisions, however have to be considered based on the cost of improving pricing competence in-house. Alternatives suggested are use of price consultancy (Simon and Fassnacht, 2019f). Following that Case Company does not have an IT support system for pricing, their is neither or results at least indicate a lack of price controlling. One participant exemplified this by negotiations, were prices could be adjusted many times during a process. Moreover, expressed concerns regarding sending a mixed signal concerning price and quality to customers. The expressed concern are in-line with other research concerns both allocation of price authority and cost consideration. For example, Simon and Fassnacht mentioned that price authority to sales force should be restricted, as sales force will be otherwise willing to lower price to win the sales opportunity (Simon and Fassnacht, 2019f). Or, in relation to cost, the researchers mentioned that companies should be aware of service products were marginal costs can be low but the customers willingness-to-pay can be high. This in turn can give room for large price ranges in a short-term perspective, where the lower limit is close to zero. Furthermore gives an opportunity for larger price cuts in negotiation. Specifically, Simon and Fassnacht warn that utilization of these price cuts, which can teach customers that it is possible to achieve lower prices and increase price pressure (Simon and Fassnacht, 2019h). From the participants example, the price range is utilized several times and the company risk communicating prices out of line, about their desired price positioning. There have been made some improvements to increase a more systematic price controlling, by allocating purchase and sales of products to different company accounts. In this way the company controls expected contribution margin for different product groups. But as one of the participants state "We have not been great at ensuring quality". Thus, it can be considered a structure and implication aspect, with room for improvements.

With regard to negotiation, research exemplifies that companies often have a starting price, such as a list price, while the ending price, referred to as transaction price, can often differ from the starting price depending on negotiation (Simon and Fassnacht, 2019f). For Case Company there were found no set list price, while there existed some reference prices for some products. Several of the participants mentioned the lack of reference prices for all products as a negative aspect to the current pricing process. Continuing the example above, the company starts negotiation with starting prices either using existing reference prices or by estimating prices in Step 2 of the pricing process. Research argues that the difference from starting price to transaction/end price is due to 1 of 2 reasons. Either a general market decline or sales force weak performance. For the latter, weak performance by the sales force is linked to sales force utilizing personal objectives, such as motivation to win sales opportunity. Or, a lack of necessary information available or training of sales force

(Simon and Fassnacht, 2019f). There is also the aspect of internal communication. Research argues that it is important to be aware of information flow in regard to the process. Such as what prices exist or what they are based on (Simon and Fassnacht, 2019f). The guidelines to achieve this is the availability of price information and routines to keep sales force up-to-date. In other words, the similar suggestions made in regard to negotiation and sales force performance. Results indicates neither easy availability of price information nor routines to update the sales force on prices. In contrast, participants interviewed explained that either they find prices by searching through previous sales opportunities processed, find reference prices in their product register or they have to involve pre-sale to make new estimates. Thus, there is a presence of key aspects to structure and implementations such as a clear allocation of tasks, responsibility and price authority. While, there is a lack of price controlling, consideration concerning negotiation, internal communication, training or appropriate incentive systems. Overall the structure also hinders the opportunity for price optimization or a more data driven process. Supporting the results, where participants express uncertainties in relation to pricing.

MINIMAL PRESENCE OF FACTORS - EXPERIENCE-BASED FRAMEWORK

In a way the strategy is the initial building block, by setting the terms for the process and being the initial guideline. While structure is the final building block putting all factors together in a systematic way, being the final guideline. In between these there are 3 informational building blocks and 1 building block regarding how the information is used. These are Customer, Market and competitors, Cost and Pricing model. For case company, it was found that these building blocks were to a little degree data driven, but rather experience-based and mostly manual tasks. Research explains the information factors Customer, Market and competitors, and Cost in terms of the price lee-way. The latter gives information on the lower price limit, in regard to the limit to gain contribution margin on products. While the first two give information on the upper price level which can be achieved. The limits are then further adjusted according to strategy, such as determined price objective (for example profit or volume) and the desired positioning (Simon and Fassnacht, 2019a).

Concerning Customer and Market and Competitors it is suggested to quantify, such as the companies value proposition, how the customer perceives their value proposition (through value drivers and product attributes), current and future anticipated competitor prices (using price elasticity), or the aggregated market response (price-volume relationship represented by the price-response function) (Simon and Fassnacht, 2019a). In contrast, the results indicate that Case Company lacks a systematic routines and calculations to both collect information and analyze data. There is no evidence of calculations similar to those mentioned and in general a lack of quantification information of the upper price level. For example, while the Case Company have identified and formulated a target market, their exist no quantified information or at least not available to the participant, to use in their price decisions in the pricing process. While their is no evidence of quantified data used in these factors, there are indications that some aspects are used. For example taken into account possible future project (up-selling), customer characteristics such as industry (expected price level and key ICT requirements) or consider type of competitor (local or national). However, these considerations are based on participants or other contributors experience, usually from previous sales opportunities won or lost. In the reflective part of the interview, several of the participants expressed that it was difficult to asses competitors and several proposed increased knowledge of the market

and competitors as an improvement measure. Compared to theory, it seems logical that experience alone can risk the company not evaluating or overlooking key aspects. For example, value drivers can be viewed as basic and attraction attributes. If a company miss-interpret a basic attribute for an attraction attribute, the company risk overstretching the customers willingness-to-pay (Simon and Fassnacht, 2019a). While experience can be a useful tool to evaluate customer perceptions, if this is not systematized, the ability to assess the customer will then be highly dependent on the case manager responsible for the sales opportunity. Summarized Case Company have some information, such as identified target market and competitors, but no quantified information beyond the identification of key participants in the market. Thus, it can be questioned if the Case Company or sales-force to a large enough extent understand customer and market, such as the customers understanding of their products or how price sensitive the market is. These are key not only to determine upper price level, but also how price and sales offer should be presented in a process with customers. For example, in Dutta's case study one important routine was analysis before negotiation and target training of sales force in relation to analysis conducted (Dutta, Zbaracki, and Bergen, 2003). It can be discussed that the lack of quantified information illustrates the argued gape between research and practice. While research focus on more advanced calculations and quantified information, most companies use simpler and experience-based information (Simon and Fassnacht, 2019e; Saltan and Smolander, 2021; Harmon et al., 2009). These calculations are often resource extensive and the information required not of often readily available, such as competitor prices (Simon and Fassnacht, 2019a).

Similar to the other information factors, cost has several parameters that can help the company make informed price decisions. Theory propose that determined cost should be based on the products cost structure, including the parameters fixed, variable and marginal cost. Moreover, take into account a products typology, short-term and long-term considerations (Simon and Fassnacht, 2019a). Based on the results it was not possible to identify the basis for Case Company calculations, other then that their mainly one cost calculation conducted. Thus, one can assume that the company does not differentiate on short-term and long-term cost. The cost calculation sheet used by Technical Design manager, is the main calculation, and the calculation sheet used was established in 2015. Little indicate that the calculations have been thoroughly evaluated by management, but they have been approved and partially updated since established. As mentioned concerning price controlling, participants have expressed concerns in regard to lowering prices. One reason for the large price ranges utilized by sales force is that Labor-intensive products are often evaluated to have close to zero costs. While theory, clearly argues that companies have to be careful in their cost consideration. Omitting labor cost indicate short-term cost calculation, does the company could risk losing profit or not cover all cost in a long-term perspective (Simon and Fassnacht, 2019a). The majority of products sold by Case Company consist of both goods and service. The service part of products, which mostly is labor-costs are estimated based on experience. There have been new attempts to log the actual costs, but was at the time of study not fully in place. Thus, the Technical Design manager would discuss with a technical expert to help him estimate the estimated or expected labor cost for different services. Research shows that service companies often struggle to determine cost structure and calculate cost for service products. this is due to the uncertainty of labor, because service products are often dependent on customer. Thus theory recommend to make use of experience-bases estimated, but only as support to calculations made (Simon and Fassnacht,

2019h). The current cost calculation used by Case Company can be argued to be simplistic since it seems not to take into account several of the parameters mentioned. For example theory proposed three main product typology with general cost structure (Simon and Fassnacht, 2019h). Compared to these Case Company's products could be characterized as both technology and labor intensive. These typologies further propose considerations to fixed and variable cost considerations, including to what extent personnel costs should be considered when determining lower price level (Simon and Fassnacht, 2019h). Thus, the results indicate that Case Company have a basic cost calculation, but risk overlooking essential cost parameters. This is an interesting finding, considering that the company has struggled with profitability at some periods. And these findings indicate a risk of not full control of their actual costs, both short-term and long-term. Other concerns are that the cost calculation and competence to perform these calculations is today only isolated to the Technical Design manager, except for Project & Delivery completing estimated cost for implementing customers and similar project costs. Similar to product cost calculations Project & Delivery have not available databases to determine cost. However, while the Technical Design manager have established a calculation sheet with set cost parameters, Project & Delivery either use comparable cases calculated before or have to redo calculation. While at the same their cost calculations are usually amount of hours estimated, by a set hourly time rate set by management. If new estimates are done Project & Delivery use the same method a Technical Design manager, which is using technical resources to estimate the expected time used based on experience.

How the informational factors are utilized is determined by the pricing model. First and foremost by the chosen model approach, of which often aligns with a company's pricing strategy. Similar to the informational factors, result found that Case Company use a model approach which is often viewed as to contain more experience-based functions and has a short-term focused, the cost-plus pricing approach (Harmon et al., 2009; Simon and Fassnacht, 2019a). In terms of the model approach utilized, it can be argued that the informational factors are in-line with approach. Such as having more focus and information regarding cost, and less on customer, market and competition. However, as discussed above there are found deficiencies in the cost information and calculations utilized. Moreover, the identified deficiencies within cost can be considered even more important, considering that cost is used as the main informational factor by Case Company. The cost-plus model is the most traditionally used pricing model, and research argue this is due its simplicity (Harmon et al., 2009). Following, it was found that Case Company's mainly utilize the simplest form for price calculation based on only one variable which is cost. This form for calculation is referred to as a rigid price calculation (Simon and Fassnacht, 2019d). They partly utilize flexible-intuitive pricing calculation, which is the use of several variables but in separate steps (Simon and Fassnacht, 2019d). In such cases the process path includes Case Manager evaluating and adjusting base prices received from Pricing Resource, by using previous cases, experience or similar as a second informational variable. The models have been criticized not to take into the complexity of pricing, due to the limited use of variables and excluding inter-dependency of information (Simon and Fassnacht, 2019d). Alternatively, their exist a price calculation referred to as comprehensive pricing, but would require more information and thus increased use of resources to collect required information. In turn research argue that their is an increased potential to capture value (Simon and Fassnacht, 2019d). As mentioned, the majority of cost calculations are done by the Technical Design manager, following this role also calculates most of the

prices. The model has several modules for different types of products, and the cost and price calculation is transformed into simpler price formats incorporated in BID managers price attachment. The price attachment created for a sales opportunity (if pre-sale is involved) or price attachment collected from previous cases (pre-sale not involved) are usually the base prices used in the pricing process. Of which, are used by price manager as final price or adjusted by sending offer to customer. The price format is often a bundled of products consisting of goods and services to provide an ICT service. Multi-dimensional prices are often presented as one product, where individual components are not visible to the customer in monthly charge. It is not looked into detail of other price formats such as discounts or payment terms. However, some participants have expressed a worry that discounts are often made without it being visible to the customer. For example changing prices directly on product. Thus that there exist products which are sold at very different prices to customers. Research argues that multidimensional prices and other prices formats are positive by increasing the potential for higher value capture. However, there are more considerations such as fencing and long-term consequences of prices that are important when utilizing different price formats (Simon and Fassnacht, 2019c). Of which Case Company illustrate, by having large inconsistency in prices, risking discounted prices are reused instead of the originally calculated price. In addition to logistics problem in the back-office, which Case Company have experience in their process of digitalising the invoicing process. Using a cost-based pricing approach can be a risk if cost are uncertain, which is typically the case for service products (Simon and Fassnacht, 2019h). Case Company partly have reduced this uncertainty by using user- and usage-based prices. Mostly there are set price formats, fixed price or usage-based, for different type of products. But, as with discounts, they are examples of some inconsistencies in the prices given in sales offers. The inconsistency in discounts, price format and thus prices, can be argued to partially be linked to a lack of support system, price optimization and price controlling. As there are no support systems, most of the tasks within the process are manual and there is no system to check for irregularities. Of which is linked to the lack of key structure and guidelines. At most, there is a newly developed price attachment which can collect base prices from the database with product register, and additionally calculate an estimated contribution margin. Theory explain that the goal of price optimization is to include several information aspects into one function (Simon and Fassnacht, 2019b). To some extent, the newly developed price sheet does so, but with limits. Research recommends the price-response function, argued to be a prerequisite for price optimization, and use of dynamic functions. The latter are functions that take long-term aspect into considerations (Simon and Fassnacht, 2019b). Based on results, there is no indication of Case Company utilizing any form of price optimization, and at least not use of functions considering long-term parameters. Thus, to summarize Case Company have a complete pricing model, but it consists of the simplest form of model approach and calculation. Additionally, the use of price form without evaluating important parameters when using multi-dimensional prices and no evidence of advanced price optimization.

As discussed, the informational factors and the pricing model are mainly simplistic and experience-based. In this context, the use of experience is an important evaluation as presumably key characteristic. From the results, the two most used basis for completing tasks or making decisions were experience, including using previous cases as basis, and input from others. With the strict interpretation of data, the use of experience was at 77%. In a way, this could mean that the main source for all

participants is experience, either one owns or from someone else. In contrast, the use of expertise varied from 22 - 55%, where the least used expertise were regarding market and competition. The least used basis in total, was output from tools. While the result can be used as a fact for how much the different basis are used, in supports the indication that the key source of information is experience. Additionally, the information factors which have the least quantified information is also the least used basis based on this result. The working surface utilized is on teams, and as presented in the results, each case has one main folder located in designated locations in customer groups. While the folder structure is created automatically, calculations spreadsheets (tool) and templates have to be collected manually from other locations in their work surface. This also applies for comparative data, which is previous offers given to other customers. Thus, requiring the case manager or others to remember relevant and similar customers, and search through customer groups to find relevant and comparative offer documents. This is both time-consuming and highly dependent on what the different personnel remember of both relevant content and customer specific information. However, Teams alone, as a work surface is commented by participants to be an efficient tool. It enables the participants to tag each other easily, to initiate the different tasks during a process and discuss questions and challenges in one place. In addition to this work surface, the process utilizes 3 additional databases, there exist 5 tools and 3 main templates. Overall the use basis used by the participants and their work surface supports the indication that pricing process is highly based on experience, additional influenced by the amount of manual tasks. The indication of a high degree of manual tasks is apparent by the fact the use of these databases, tools and especially templates are dependent on case manager.

Concerning the discussed characteristic, a minimal presence of factors, this can also be illustrated by comparing the results to other proposed process models. Compared to Pricing as a Capability, it lacks key steps to be able to achieve pricing as a capability. While steps in this pricing models cannot be adopted directly, the key essence are capability to gather information, analyze information and communicate prices (Dutta, Zbaracki, and Bergen, 2003). Neither of these appear as key steps in Case Company's current execution of the process. The same applies to the pricing process model called Price Management (Simon and Fassnacht, 2019e). While it can be identified a cost-plus calculation (rigid pricing model), and to some extent analysis through discussions (flexible-intuitive pricing model) (Simon and Fassnacht, 2019d). There is a substantial lack of factors such as price determinants, which is the basis for pricing (Simon and Fassnacht, 2019a). However, there is to some extent a structured process, but, with varied routines (Simon and Fassnacht, 2019f). The variety does in a way create flexibility for case managers to complete the process according to case. Pricing authority and responsibilities are familiar for most participants. But, knowledge of how prices are calculated or expertise on price determines lack (Simon and Fassnacht, 2019f). There is no control of prices or optimization of prices to achieve objectives, and essentially price objectives lack (Simon and Fassnacht, 2019e). Compared to the last pricing process model, a pricing framework for competitive industries, routines in step 1 to 3 (start phase, compile prices and assess prices) are similar to steps in the pricing process execution. However, compared to this framework the Case Company has neither a planning phase or an analysis phase (Hwang et al., 2009).

RANDOM DEPENDENCIES - CONTRIBUTORS

The second characteristic of Case Company's pricing process is argued to be random dependencies in the pricing process. Random dependencies can be linked to how the process execution is dependent on which contributors take part in the process and the type of case processed. Research within the scope of this study does not look into dependencies which can be found in a pricing process explicitly. However, it is an important characteristic found mainly from emerging patterns from results. For example, several participants expressed that they experienced the prices set as random. Taken into account that research argues that pricing has long-term consequences, random patterns can be discussed as a risk. Or at least indicate a lack of standardization in the pricing process. For example in relation to price position, it is argued that it is both established over-time with customers and it is hard to correct mistakes (Simon and Fassnacht, 2019i).

The pricing process dependency on contributors in the process can be linked to contributors' difference in process understanding, identified process exceptions, and contributors experience and competence. To some degree, all informants provided different explanations of the pricing process. For example, some informants explained a clear methodology with the CRM system and/or folder structure in Teams. Others, presented a process where it was unclear which resources (other colleagues) to ask when clarifications were necessary. The latter was most apparent for participants with less experience in the company. While it is difficult to determine the exact meaning of the different process descriptions, it can be interpreted as the first indication of a process which is more dependent on which case manager initiates the pricing process, more than a process controlled by standardized framework with set activities and routines. To some extent, most participants have process descriptions which were more focused on their own tasks, and less on what other contributors do. While results regarding F6. Structure and implementation found that the participants had a clear understanding of roles and tasks, the results show that some of the tasks could overlap if BID manager were involved. At the same time, the amount of responsibility indicate to stay relatively the same. The tendency for a more random than standardized process is supported by the fact that several informants experience the prices (output from process) as random. It can be argued that this random process is an important factor for why most informants were not able to explain the main steps and had a limited understanding of activities outside their own role. Generally a less standardized process is viewed as a negative characteristic, due to being less streamline and therefore often more time-consuming.

It can be argued that Case Company has a standardized pricing process considering that a representative as-is process map was possible to construct. However, with 21 different routines divided into 6 main steps, the process could vary greatly in terms of activities and people involved. Additionally, the results show that the as-is pricing process has several differences to what the Case Company have documented as the should-be pricing process. The most apparent difference being the flexibility of the process. While the should-be process often had some predetermined set activities to be preformed, the as-is were flexible and could be adapted. Such that the as-is process could be more efficient than the should-be process in terms of number of activities, but it could also be substantially in-efficient. Additionally, as findings show, most routines and steps had exceptions from the general presentation. For example, some interview participants say that the registration form in step 1 is only used when the BID manager is involved, while others express that they always use

it to initiate a pricing process. Often the process expectations found, can be linked to contributors. For example, in step x and y their were mainly two activities, of which the first activity is gathering clarification, approval or input regarding price or sales documents. The type of clarification, approval or input depends on the case and case manager. Presumably, because case managers' competence and experience are essential in Case Company's pricing process, assuming that experience is their key information driver (as discussed with minimal presence of factors).

For both process understanding and process exceptions a central parameter is the contributors in the process, and mostly which case managers is responsible for the case. The difference in the case managers was their experience and background. As experience is the essential informative parameter, it is likely that this difference in case managers were important. For example in Step 2, dependency affected which templates or other tools were utilized, which cases were used as basis for comparison or, as mentioned, other contributors involved. For the latter, it could effect if the BID manager were involved, or if the Case Manage adjusted prices after receiving prices from the Technical Design manager.

RANDOM DEPENDENCIES - TYPE OF CASE

Type of case is by participants characterized by how important the customer is considered for the Case Company (customer importance), complexity of products requested and size of offer developed (in amount of products, proposed value and expected recurring value). These were explained as main process determinants for which routines and resources were utilized. The reason for type of case being linked to random dependencies, is due to the effect of the contributor executing the process (dependencies on contributor) are further linked to the requirements due to type of case.

One of the most repeating responses by participants when explaining the process, was "it varies from case to case", which most participants mentioned as a positive characteristic of the current process. For example an easy case where the customer requested standard services, would require less steps then a complex case where the customer requested more customized and less standard services. Or concerning step x and y, these additional steps where mostly used when there were large or important cases. A last example where that the evaluation matrix by purchase manager were mostly used for customers considered of high importance. The Type of case as a "random" dependency can further be explained in terms of process flexibility and Case Company's pricing intelligence.

Simon and Fassnacht explain that the placement of relatively high price authority with the sales-force can be favorable to get quicker and more flexible response to sales opportunities (Simon and Fassnacht, 2019f). Evidence of this in Case Company's process can be seen from the gap from minimum to maximum count of activities to complete one process. While the should-be process had mostly predetermined routines and activities, the as-is had both routines and activities that were dependent on type of case, determining which activities and routines were utilized. For example, routine x and y were often utilized when the customer were of high importance. In Case Company's pricing process, determining prices (step 2) was the most extensive step, or at least could be. One routine consisted of 2 activities, where only case manager were involved. Or, step 2 could have 14 activities where BID manager, Project & Delivery and Technical Design manager could be involved

besides the Case manager handling the case. Thus, the current pricing process indicates a high degree of flexibility, inline with theory. However, it can be question if the current process has ability for quicker responses except for small and easy cases, where only the case manager is involved. In total, the current process could differ from 3 to 9 steps, 7 to 31+ activities and 1 to 5+ people. In other words, results indicate a flexible but resource extensive process in terms of activities and people to complete the most extensive cases.

In line with type of case, the pricing process becomes more extensive. One important discussion in relation to this is the companies pricing intelligence. According to Simon and Fassnacht deception of this term, Case Company can be considered to have a relatively low pricing intelligence, meaning there is a general low competence on pricing. For example, one informant illustrated this by the fact that few can challenge price on a professional level. The pricing resource, which have the most responsibility for price calculations, has the least relevant education and second least relevant experience for pricing. Thus, in total the pricing resources, used as the experts in calculating prices, have the least relevant background of all participant groups. On the one hand, this group has the highest amount of working experience both in the company, in the role and in total. Additionally have the most ICT relevant education and background. Which is by theory argued to be essential to set prices for complex products, such as ICT service products. For example to be able to identifying correct product and cost typology (Simon and Fassnacht, 2019a). Based on participants background, pricing is the area informants have the least relevant education and experience, respectively 40% and 60%.

An interesting discussion about the general price intelligence, is how the price authority is allocated. As the pricing resource have the highest experience in relation to understanding company products and ICT technology, they have as mentioned a good prerequisite to understand the cost of these products. Also, as the pricing model is experience-based, one can assume that the amount of experience is important. However, the group with highest operational price authority are the price managers. Of which, is the group with lowest working experience, at is median consider both ICT and pricing relevance. This relevance could vary greatly depending on the case managers. Contrasts observed were usually either a higher ICT relevant background or a higher pricing relevance, a few had both. Thus the level of pricing intelligence is not only evaluated as low, but also an important characteristic with the pricing framework (use of factors) and the low level of standardization. Especially considering process execution's dependency on case managers.

RQ1 - WHAT CHARACTERIZES THE CURRENT PRICING PROCESS?

Case Company's pricing process and its characteristics, thus the defining features, can be explained as the sum of the findings presented in Chapter 4. Due to the scope of the study, these characteristics are restricted to two how the process is executed and the pricing framework (use of factors). While there are many interesting findings and details from results and theory, the discussion above focuses on findings of most relevance and importance. Such as results that align as a pattern or how theory and results align. Lastly the findings concerning the first research question are mainly descriptive summary of thematic analysis and patterns as a result of the analysis. Thus, highly specific for the case study.

Overall the above discussion focuses on two overall characteristics; a minimal use

of factors and random dependencies. According to Simon and Fassnacht, the foundation of price, the price opportunity space, are determined by strategy, customer, market and cost factors (Simon and Fassnacht, 2019a). Moreover, research argue the importance of choosing the correct pricing model and appropriate internal structure and implantation, respectively to value capture and to be successful in pricing (Harmon et al., 2009; Simon and Fassnacht, 2019e). In other words, research has shown how factors in different ways can be essential for a pricing process. In contrast, the result indicate a pricing process with the minimal presence of factors and mostly a use of experience-based factors. Both in terms of guidelines, information and calculations. It can be argued that there are to some degree a standardized process, as it was possible to construct a complete as-is process map. However with variety of process exceptions, process descriptions, dependency on both contributors and type of case, in addition to lack of guidelines, the results indicate a lack of standardization. However, there is a flexibility to adapt to the requirements of the process according to the type of case. Meaning case company can have both an efficient process and an exhaustive process, in terms of count of activities and people utilized. Summarized the results indicate that Case Company's pricing process is characterized by a simplistic and experience-based framework, flexible process paths and little degree of standardization. Where the last two characteristics can be connected to "random" dependencies.

5.1.2 Cause of Process Inefficiency

From scope of study and problem statement, process inefficiency was defined as an increase activities, people and time to complete on case. At the beginning of this study there were several presumed causes for process inefficiency. From the introductory section concerning scope of study (Section 1.1), Case Company's key concerns were a lack of standardization and a poor price base. Based on the discussion of process characteristics, these presumptions hold true, with both random dependencies and a minimal use of pricing factors. However, it remains to be discussed if these are the actual sources for inefficiency. From Case Company's presumed causes, a conceptual model for process inefficiency were created by setting the presumptions in context with the theoretical framework (Section 2.4). Including possible cause and consequences of process inefficiency, based on pricing factors (Section 2.2), proposed process models 2.3) and the understanding of pricing (Section 2.1). The conceptual model extended the presumed causes with a set of possible determinants for process inefficiency. From the lowest level (basic determinants) to the highest level (immediate determinant), the model proposed:

1. Pricing not prioritized and poor process framework
2. Defect price determinants, price calculation and systematizing
3. Lack in standardization, time and resource consumption

The hierarchy of determinants illustrates what type of result can be expected to be found. At the starting point of causes are basic determinants, of which can explain why or the root-cause for why the pricing process is inefficient. At the end-point of causes are immediate determinants, which can explain what makes the pricing process inefficient. In other words what the Case Company experience as inefficient. While it is possible to state immediate and partly underlying determinants, due to visibility, basic determinants can only be proposed based on indications and sum of analysis conducted. Based on the analysis of process inefficiency, there are two

main arguments presented. Resources utilized is dependent on type of case (immediate determinant). Moreover, the resources utilized compensate for the simplistic framework. In other words, the gap between the complexity of sales opportunities processed and the simplistic pricing framework are proposed as the main source for inefficiency.

UTILIZATION OF RESOURCE DUE TO TYPE OF CASE - CLARIFICATIONS

From results, it was shown that if the case included high customer importance, complexity or size, process execution would in most cases include more activities and people. These are based on process execution and what the result refer to as process determinants, meaning determinants for which routine is followed in the pricing process execution (see routine overview for each step in Subsection 4.1.4. Besides the variety of activities in different routines, informants explained a total of 15 different potential contributors and a time consumption from 3 to 30 workdays to complete a process. For the latter, this is the time used from the registration of a sales opportunity to the first offer is sent. Supplemented with comments such as "... it varies greatly from case to case, size and depth of cases". Utilization of resource due to type of case can be explained in terms of clarifications due to uncertainty, lack in basis for comparison and limited internal capacity.

From characteristics, it was discussed that Case Company have both a lack in information (simplistic framework), and informants explained an experience of uncertainty and price inconsistencies in the current process execution (random dependencies). Additionally, the as-is process showed that the process often involved extra steps (x or y), when case managers felt uncertain on prices and/or sales documents. As a result, the process would increase in activities, if there are more uncertainty or several rounds of discussions. In addition, to involving possibly 5 additional contributors. Results indicate, that the requirement for clarifications usually increased when larger group of contributors were involved in the process, typically for important customers or large cases. Moreover, based on informants explanations clarifications were mostly due to uncertainty. Uncertainties could be linked to sales document, to the set up of individual prices to give a desired end price or more technical questions regarding product. Either way, the need for clarifications from one or several managers caused the involvement of other people, also additional activities and time consumption. Clarifications were also more apparent for less experienced case managers, requiring more assistance. For the latter, results indicate that the need for clarifications have a possible connection to the experience-based framework and less standardized process execution (from subsection 5.1.1). For example, as the characteristics indicate decisions and process execution require know-how to evaluate prices and/or gather information. Such as gathering a comparative basis from previous cases. With regard to pricing intelligence and the analyses of participants background, pricing relevance were the lowest looking at the group average. This can explain why step 2 can become quite extensive depending on the type of case. For example considering how Simon and Fassnacht explain pricing as complex chain effects, and can especially be challenging for service products (Simon and Fassnacht, 2019e; Simon and Fassnacht, 2019h; Saltan and Smolander, 2021). For case managers, they have the least education on ICT technology. Explaining why technical contributors are involved in the pricing process to help. Moreover can be connected to why coordination of a pricing process can be important, because technical complex products require technical competence to price. This was illustrated in several cases studies within pricing as a capability (Ojala and Laatikainen, 2019).

Another finding supporting that clarifications arise due to uncertainty, is the pricing authority set. While case managers have in most cases complete pricing authority, Management / Advisory have the final price authority. Thus, in cases where prices are adjusted, there is room for an uncertainty about whether the adjusted prices need to be approved. Since there is no clear rule divided to type of price adjustments such as discounts or list prices, which are type of price allocation suggested by theory (Simon and Fassnacht, 2019f). Another example, is the lack of list prices. Several informants mentioned products lacking predetermined prices or base prices as a negative side of the current process. This room for uncertainty proposed, is supported by research arguing that the sales force often have a fear of price decisions (Simon and Fassnacht, 2019f). Thus, it is easier to go to step x and y, and be sure that the prices are acceptable. Uncertainty was also seen with complex cases, such as special price format considered for important customers or product consideration which were more complex.

UTILISATION OF RESOURCE DUE TO TYPE OF CASE - BASIS FOR COMPARISON

Results found that another key immediate cause was the lack of basis for comparison, mostly linked to the group Pricing Resource, especially in more complex cases. While Case Company have a data basis where previous cases can be found, the cases have to be found manually, requiring the participants to remember similar cases. Other than this, results found no systematic collection of information, such as feedback from customers to increase knowledge on market. A clear example of how the lack of basis for comparison affects the pricing process, is examples given from Project & Delivery. The results proposed two general routines, either where there existed a basis for comparison or it lacked. When it lacked, they had to either discuss more with the contributors in the case. Or if there were new products, they were dependent on testes done by technical employees, to estimate time use to include in their price estimates.

As mentioned, both pricing resources and case managers are defendant on experience, and thus previous offers developed as comparative basis. However, as their products are customer dependent (a typical characteristic of service products (Simon and Fassnacht, 2019h)), it can be a challenge to find appropriate comparative basis. For example, the fact that the most used phrase from participants interview was "it varies from case to case". Indicating that the offers and products are often custom, challenging the opportunity to streamline the products or in this context, find comparative basis. Or in other cases, due to the degree of manual tasks in their working surface, participants can struggle with locating the correct case even though it might exist. In both cases they have to take as similar case they can find, but use a higher amount of time to adapt to the case. Thus, the basis for comparison can extend the time consumption for process execution. Basis for comparison concern what process participants require to complete their tasks. Research has discussed this topic in different ways, but all agree that understanding and allocating the required task requirement is key for pricing. In Ojala and Laatikainen's case study, they illustrated that products could have high technical requirements for estimating risk and overall cost. Moreover, to achieve pricing as a capability it was important to allocate the appropriate employees and skills, for different parts of pricing (Ojala and Laatikainen, 2019). Simon and Fassnacht arguing that in relation to structure and implementation of a pricing process, the understanding of tasks and task requirement is key (Simon and Fassnacht, 2019f). Thus, the type of case effected knowledge requirements, and

if there were lack of knowledge basis, the process would increase in inefficiency parameters.

UTILISATION OF RESOURCE DUE TO TYPE OF CASE - INTERNAL CAPACITY

As mentioned with characteristics, key pricing tasks are allocated to a few resources. Thus, when a case manager wants help to calculate prices for products from BID manager or wants project estimates from Project & Delivery, it is not a given that they have the immediate capacity to help. While case managers are several people allocated to new sales or existing customers, the BID manager (handling larger cases) is only one person. Some participants estimate that the BID manager were initiated in 80% of all cases used, where findings show an estimate of 12 cases per month. Meaning the BID manager could possibly be participating in 2,4 new cases a week. Besides the BID manager, most participants assumed an increase in time consumption when Project & Delivery were involved in case. Mainly due to internal capacity. As a result, some participants explain that their own capacity was as important. If they do not push for progress, the process execution could easily go from 2 days to 1 week, for the same amount of work. Thus, internal capacity can expand the time consumption for the pricing process. As discussed with clarifications and basis for comparison, the results indicate that the tasks in the pricing process have high requirements, to either confirm prices, product set-up or technical uncertainties. Similar to what research argue, pricing often require integration of several departments (Simon and Fassnacht, 2019f). For Case Company, it is the integration of sub-departments Account Management, Sales and Pre-sale (from the sales department) and the technical experts from different operation sub departments. For the latter, this includes Project & Delivery and IT Services. In addition to management for all technical departments, if necessary for complex or important cases. Moreover, research argue that a critical success factor is the cooperation between all contributors required (Simon and Fassnacht, 2019f). For Case Company, case managers are the main coordinator, thus it can explain why their capacity is key for progress in the case. But it can be questioned, since they also have other tasks, that Case Company lack roles for a better integration of the different departments and for roles to complete tasks that have high requirements. Thus, internal capacity increases the time consumption in cases. In general informants explained that easy cases could reuse similar cases, and the case manager could produce a sales offer without contributors. While most were negative to the use of Project & Delivery, because the process would be expected to be delayed / have a higher time consumption.

Overall, these immediate determinants are closely interlinked. For example if the case were easy (not complex), then findings indicate an increased likelihood of finding a comparative basis (previous cases) and decreased likelihood of requiring clarifications. Additionally, the case manager is more likely to handle the case alone, thus not dependent on the internal capacity of other company resources. However, if it was a more complex and large case, the likelihood increases for requiring clarification, help from other resources (pricing resources and/or management) and difficulty in finding comparative basis. Of which all are linked to an increase in utilizing more activities, people and time. These are generalized immediate determinants. One of the informants explained that it might as well be the customer controlling how much time is used to develop a sales offer. However, based on the results, the main reasons for increased use of resources are type of case, due to clarifications and uncertainty, lack in basis for comparison and limited internal capacity. The immediate determinants discussed above are summarized in Figure 5.1, below.



FIGURE 5.1: Presents a summary of apparent causes found in relation to an increases utilization of activities, people and time.

RESOURCES OFFSET THE SIMPLISTIC FRAMEWORK - AVAILABLE INFORMATION

The immediate determinants discussed above can be stated with more certainty, as it can be directly linked to the increased utilization of resources. However, it does not answer why; why does Case Company have to utilize an increased amount of resources to handle large or complex cases? One explanation is that resources used compensate for lack in appropriate framework. Lack in appropriate framework can be explained in terms of a lack of available information, established strategy and structure.

Lack of information is mainly connected to defect price determinants F2. - F4 (Customer, Market and Cost). Research argue that knowledge within these factors are important for price optimization (Simon and Fassnacht, 2019a). For example, information on a products opportunity space for prices or understanding of pricing form in relation to customer perception (Simon and Fassnacht, 2019a). While lack of information might reduce ability to maximize profit, research does not state if this can be linked to pricing flow inefficiency. However, research have shown that an improvement of the pricing process have had multiple effects, such as both achieving more advanced price analytics, increased value capture and decreased use of time (Hwang et al., 2009). Thus, it is proposed that a lack of information affects process inefficiency by creating a room for uncertainty and discussion. Informants examples of lack of information are lack in historical data, a complete list of base prices, a complete register of labor hours to estimate service costs and in general a lack of systematization of data.

Research propose that sales people should have easily available information on how prices are set and the basis for prices (Simon and Fassnacht, 2019f). Based on informants expressed uncertainty on pricing, results indicate that this is not in place and Case Company have a defect internal communication. Presuming that contributors lack research proposed key information (F2-F4), low pricing intelligence and defect internal communication, the results indicate a considerable room for uncertainty and thus discussion. For example, research argue that despite general considerations for pricing of ICT Services, it can be a challenge to assign appropriate cost for intangible part of a service (Harmon et al., 2009). For Case Company, cost calculation was

the main calculation to set prices. Including theory proposing the challenges of cost calculations on service products, one can presume that is an increased uncertainty when Case Company in addition lack key information. With the random dependencies, it can be presumed that Case Company have an amplified degree of uncertainty and room for discussion. The same applies can be said for information on the target market, including information about customer and competitor prices. As an extension of the arguments above, lack of information about competitor prices can contribute to more clarifications and inconsistent pricing. For example, Case Company uses considerable resources, in terms of contributors during negotiations with high price pressures. In addition, the Case Company has experienced miss interpreting their prices compared to competitors and consequently losing sales opportunities. Thus, lack in information led to use of resources without capturing value.

One example that the lack of available information and the room for discussion leads to an increased utilization of resources, can be seen by comparing the should-be and as-is pricing process. Since the should be process is constructed with the assumption of a more standardized process, it has fewer activities, and mostly predetermined activities (conducted either way). The as-is as described by characteristic not standardized, with more activities, but less predetermined activities. Large cases presumably require more information, for example more products or larger market competition. But as there is a limited availability of information, all larger cases extend resource utilization. Looking at step 2, the most process would for large cases go from 2 to 15 activities and from 1 to 4+ people involved. Thus, the results indicate that the lack of available information (defect price determinants, F2-F4) causes uncertainty and creates a room for discussion. Thus, leading to utilization of resources as discussed with immediate determinants.

RESOURCES OFFSET THE SIMPLISTIC FRAMEWORK - ESTABLISHED GUIDELINES

Lack of established guidelines can be linked to strategy (F1) and structure and implementation (F6). Of which, both can be linked to Case Company not prioritizing pricing. While strategy is mainly explained as a determinant for uncertainty/clarifications and room for discussion, internal organization can also be linked to internal capacity and basis for comparison.

Examples of lack of available information were cost structure or market insight. Beyond these, there are other considerations which also need to include strategy elements. Including questions such as; how to present products in a bundle (price positioning) or how the contract terms and price format should be set-up (long term profit, risk and price objective) (Simon and Fassnacht, 2019c; Simon and Fassnacht, 2019g). It involves the contributors considering if their prices will cover fully loaded costs or if it is better with low price and higher risk to win a customer, in contrast to losing a customer presumably for the next few years to come. Thus, similar to the lack of information on price lee-way, it is proposed that the lack of clear a clear strategy can create a room for uncertainty and discussion. For example price positioning sets the terms for appropriate product configuration, price range and communication of price. Thus, according to research not having a clear strategy such as positioning, risk the case managers completing a process where they make decide based on their own guideline (Simon and Fassnacht, 2019i). Thus, leading to case manager dependencies discussed concerning process characteristics and can lead to the need for clarifications. Moreover, pricing strategies are guidelines for the company to react to market changes or how to introduce new products (Simon and Fassnacht, 2019i). With the same argument, this can make room for uncertainties,

and can explain why in important causes, many contributors are involved to make decision on how to react if negotiations become a challenge. Another aspect, is the lack of strategy as a guidelines in deciding the final price. Results show a variety of elements included when evaluating final price. It depends on the case manager or other contributors what information on customers is available and how elements are weighted. Thus, lack of systematized information about customers risks individual and subjective evaluations and adjustment of price. Of which is highly dependent on the people that are or are not involved. Thus, not only can the lack of guidelines cause uncertainty, but it can be an explanation of the informants experience of random prices.

Key to establishing available information and a clear strategy within a pricing process, is structure and implementation (F6). For example, Simon and Fassnacht state that while all factors concerning price determinants and pricing model can be theoretically optimal, a company can still fail due to poor implementation (Simon and Fassnacht, 2019f). Meaning having an inappropriate structure for the pricing process and pricing requirements. Among things, informants expressed a negative view on a lack of clear guidelines, a "correct" method and prices adjusted several times during a process. Comparing the should-be and the as-is process, the results indicate that the defined process lacks an updated structure. There were found many exceptions such as focus on CRM activities or how the BID managers is involved in the process (through a meeting or through a team message, in step 1 or in step 2). Having a defined pricing process of which does not reflect the actual process, is the first indication that their is a lack of structure. For example, it can be questioned if Case Company's presumed level of process standardization in the should-be process risk the company lacking the necessary framework and/or structure to actually withhold this level of standardization. In the pricing process, the pricing model has possible areas of improvements considering price optimization (presumed due to the lack of information and framework simplicity). However, considering process flow a possible cause could be the fact that only one employee has the competence to calculate costs, thus creating a hold up depending on internal capacity. This relates to coordination and information flow. Informants were positive to Teams channel and site as the main work surface, due to being easy to communicate with relevant contributors and share information. However, the informants also express that the main cause for time consumption were communications and clarifications internally required to make decisions in pricing, and not pricing itself. For making prices or estimating price, participants estimated 1 to 3 hours for easy cases, while 1 workday for complex cases. Research argue that coordination of a pricing process is important due to the amount of required information from several departments (Simon and Fassnacht, 2019f). Where alternatives are in-house (price department and/or price manager), or outsourcing pricing through consultancy firms or similar (Simon and Fassnacht, 2019f). Case Company has neither, whereas the BID manager and Technical Design are the closest the company have to a price manager, often responsible for collecting basis data from others. However, as the analysis of responsibility showed, the involvement of others will generally not lead to a significant reduction of task for the case manager. Rather it causes additional tasks or activities to the complete process, mostly as these are involved in larger or more complex cases. Thus, the results indicate that a key determinant for inefficiency is internal coordination, presumably due to a defect structure in context of lack of available information. One result which supports this presumption is the informants difference of understanding the pricing process. Such as different reference to steps, more control on their

own activities and in general informants struggling to explain the complete pricing process in simplified terms. This also relates to internal communication. Simon and Fassnacht recommend that company's should be aware of the internal flow of information. In example, that all contributors are aware of what the prices are based on (Simon and Fassnacht, 2019f). In contrast, contributors have a limited knowledge of what the prices are based, they often copy prices from similar offers and as one informant explained, few can challenge price on a professional level. Thus, with the current structure where there is no role for coordination of information, the formal structure does not reflect the actual information or process flow, and participants have to a little degree of information price basis, the process and decisions become more uncertain. In turn, clarifications are required, inefficiency is dependent on basis for comparison and internal capacity at the time. For example, in relation to communication research state that service products often require the sales people to convince the customer that a product is worth the money, especially for products that can be technological complex and therefore hard to understand (Simon and Fassnacht, 2019h). With limited available information, a defect coordination and the sales force limited technical background, it does seem natural that the resulting process will compensate with more activities and more time consumption. This can be linked to the experience-based process, which requires assembling more experience (more people), to gain more knowledge to make decisions. Thus, one could question if one dedicated price manager responsible for coordination, mapping required information and making this readily available could increase efficiency.

Besides the fact that the process is mostly experience-based and has defects concerning internal organization, another cause can be Case Company's low pricing intelligence in context with allocated price authority. As mentioned the general pricing intelligence is low, in addition to sales force (Case managers), having a generally low technical competence. The latter varies greatly, but were more apparent for newly employed case managers. In contrast to what theory recommends, Case Company does not have a designated team to make price decisions or designated departments to provide information (Simon and Fassnacht, 2019f). Results show the pricing process increases in inefficiency with new employees, as they need more clarifications than others and as the basis for decisions is highly based on experience. Additionally, newly employed express an uncertainty in the beginning as to understand who has the final price authority. Research state it is normal for companies to lack clarity on how responsibility is allocated (Simon and Fassnacht, 2019f). Results show one example were 10 contributors were involved, due to high price pressure and uncertainty. It can be question that this is linked to a lack of clear responsibility and price authority. While informants agree that case managers have price authority, but management have the final authority, this is still one large group of people. The allocation presented today (pricing authority at lower level with sales force), research argue that the positive sides are flexibility, less organisation delays and quicker responses. (Simon and Fassnacht, 2019f). While the current process is less bureaucratic and flexible, it has considerable delays as the competence level is not in-line with pricing requirements. For example the technical complexity or lack of available information. However it risk sales force using their motivation win rather than thinking profitability in long term or similar company targets. At the same time, the company lacks strategy for pricing, thus own objectives are more likely to be used in the sales process by case managers. Moreover, this can be connected to theory on sales force "failing" in pricing. Simon and Fassnacht propose that weak performance in terms of not achieving list price / base price, is due to sales force following their

own objectives or a lack in sufficient training (Simon and Fassnacht, 2019f). Based on the result, a mix of both can be true, keeping in mind that a measurement of sales force performance has not been conducted. For the first point proposed measured are incentive plan. for Case Company they lack both price objectives and an incentive plan in line with these objectives. for the second it is suggested improvement of information system, internal communication and training of sales force. While performance of sales force is not investigated, these are generally interesting measures, because at all points Case Company seem to have defects. Newly employees struggle to understand the process and allocated price authority. Case managers in general do not have information readily available or the required competence, thus involving others and increasing inefficiency. In general the measure of sales performance is based on achieving list prices. Which is another thing the Case Company lack. all of this indicates a considerable defect considering structure and implementation.

PRICING NOT PRIORITISED

One last interesting discussion concerning determinants for pricing process inefficient, is to what extent Case Company have prioritized pricing. Besides the lack of available information and established guidelines, the only indication of a lack of prioritization is the current pricing model. Based on informants explanation, the current plus-model was created in 2015 by initiative by an employee. While this is a limited insight into the Company's focus on pricing, it suggests that the management has previously not prioritized pricing. The result have no data on how pricing was decided before 2015, other than that their exist a wide variety of prices for similar products and that the cost-plus model was created to fill a gap in standardized cost calculations to set prices. Research state that is common that companies do not prioritize pricing sufficiently, and consequently it becomes a lack of professionalizing pricing (Simon and Fassnacht, 2019e). If this is true for Case Company, it can explain why their is a substantial lack of information and guidelines in the current process. Additionally, it would support researches argument that companies often having an experience-based and simpler pricing model, as it is easier and pricing is not viewed as important for company success (Harmon et al., 2009; Pasura and Ryals, 2005; Simon and Fassnacht, 2019e). In contrast, case company have complex products (service products and technical advanced), and many prices. Which would indicate that a more advanced pricing (model and process), would be more appropriate. Moreover, which seem logical with regard that most case study with substantial effect also required extensive resources in terms of capital and time (Hwang et al., 2009; Dutta, Zbaracki, and Bergen, 2003). Another argument is that most research focus on price response functions and elasticity, while practise rather focus on these simpler models. Thus, it indicates that there still is a gap from theory to practice, which can help companies understand how to prioritize pricing in a practical way, step-by-step (Saltan and Smolander, 2021; Simon and Fassnacht, 2019e; Harmon et al., 2009). While the above discussion can explain why the immediate determinants require an increased utilization of resources, pricing not prioritized can explain one of the root-causes for Case Company's current pricing process challenges.

RQ2 - WHAT ARE THE CAUSE(S) FOR PROCESS FLOW INEFFICIENCY?

At the beginning of this subsection the conceptual model of pricing process inefficiency was reintroduced from the theoretical framework. This is a model was to some extent a hypothesis, but mostly a model to set the case study background and theory in context to study process inefficiency. Based on the discussion above the

first model introduced was mostly in-line with the findings, but it can be adapted to the findings for Case Company. From the highest level close to inefficiency, immediate determinants, to the lowest level, basic determinants, the following evaluations and adaptations have been made:

The immediate determinants were based on the scope of study and Case Company's assumption of causes for inefficiency. This was due to immediate causes are the most visible causes, and is thus often linked to what the management might already have observed. The most immediate causes for process inefficiency are kept unchanged, being time and resource consumption. Mainly due to the observable of what makes the process inefficient for the Case company. The third immediate determinants were proposed to a lack of standardization. While this holds true, the results indicate that the lack of standardization is rather a consequence of the basic and underlying determinants. Moreover, a more appropriate immediate determinate is linked to the main cause of increase in time and resource, namely type of case type, including clarifications, capacity or comparison basis. As the discussion on causes shows, one or all of these lead to the other immediate determinants and process inefficiency. Thus, is an more appropriate overall immediate determinant. Moreover, there were three **underlying determinants** proposed; defect systematizing of pricing, defect price determinants and defect price calculation. The third determinate, defect price has been removed for mainly due to a lack of direct link to process inefficiency. The pricing model has been discussed briefly in connection to consideration which are necessary to make price decisions. However, it is not considered a central determinant in an operational perspective. Mostly as the configuration of the pricing model in an operational perspective is dependent on price determinants (available information and strategy), and the organizational context (structure and implementation). The choice of model rather sets the requirements for information required. While research show that other price models such as value-based is recommended (Harmon et al., 2009), the current model cannot be linked to process inefficiency, except for capacity constrains since only one employee makes the pricing calculations. Instead, the defect price determinant is split in two; a lack of information basis and a lack of guidelines. Both in the discussion of causes and characteristics. Lastly, defect systematizing of pricing is kept as sub-level of underlying determinants, as it can be linked to both of the other underlying determinants. Such as a lack of systematizing of information or a lack of systematizing the process structure according to pricing requirements. And lastly, there were two **basic determinants** proposed; pricing not prioritized and poor process framework. Regarding a poor process framework, findings indicate there exist many deficiencies. However, as the current framework is to some degree in-line with their current price model (cost-based and simple), it is evaluated to be more correct to modify this determinant to "simplistic process framework". While poor can indicate that the framework is bad, simplistic rather focuses on the fact that it is rather simple and with few framework factors. Which is more in-line with the causes and process characteristics found. As discussed above, pricing not prioritized is considered to hold true, as a likely explanation of the current state of the pricing framework. Thus, 4 out of 8 determinants have been modified in a revised conceptual model. Alone, most of these causes cannot be directly linked to an increase in process inefficiency. However, in context of each other gives an explanation of key causes leading to process inefficiency. The resulting conceptual model based on findings and literature is given in 5.2.

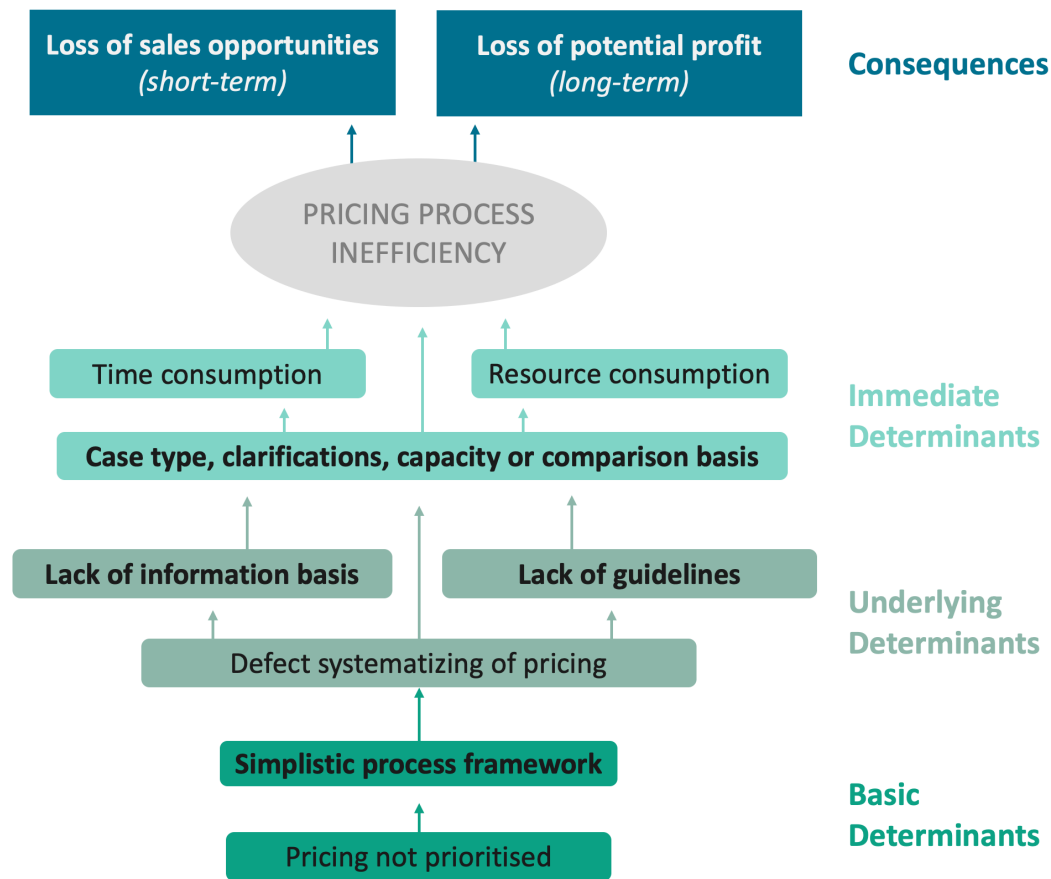


FIGURE 5.2: Presents a revised conceptual model from 2.13, adapted based on above discussion and findings.

At the beginning of this study there were several alternatives for the focus of the theoretical framework and how to focus the investigation of causes for process inefficiency. Through discussions with the management, it was found that their biggest gap was the building blocks of a pricing process. As a result, the findings on causes are limited to literature and findings within these building blocks. Moreover, there are other fields of research which could not be included due to limited time of study. However, the findings present both interesting proposals for process inefficiency and is able to confirm, with additional insight, Case Company's concerns at the start of the study.

The pricing process is to some extent flexible. There are many routines that can be made and cases can easily be scaled to type of case. However as the current framework is set, case managers or other contributors often have to search and use effort to find answers and the process is at time very extensive. Thus, causes for process inefficiency are summaries with a hierarchy of causes. At the lowest level of causes for process inefficiency and in-line with management knowledge gap of pricing, there is Case Company lack of sufficiently prioritizing pricing. Thus the Case Company has a simplistic process framework and little degree of standardization. These causes cannot be stated with certainty, but results indicate that it aligns with current research stating that most companies lack prioritization, and thus professionalization, of pricing. The simplistic framework, lead to a defect systematizing of pricing, a lack of information and a lack of established guidelines. Thus, when case managers or

other contributors participate in a process execution, these determinants can create challenges with efficiency due to type of case, needing clarification, restricted internal capacity or lack in appropriate comparison basis. The direct cause can differ depending on the context of the case, shown by the variety of immediate causes. Following, results show an increase in resource and time consumption. Moreover, indicate that the utilization of resource compensate for lack in appropriate framework. consequently, the process inefficiency can result in loss of sales opportunities (from management of Case Company's view), besides a loss of profit in the long-term (Simon and Fassnacht, 2019e). Overall, this indicates that the complexity of sales opportunities processed are the main source for inefficiency, as the requirement for pricing is not in-line with the current framework.

5.1.3 Measures to Improve Process Flow

Informants gave a variety of views on Case Company's current pricing process. Such as acknowledging that some improvements were necessary or stating; "... I think that there really needs to be a revolution in how things are done". Based on analysis of the results above, it is proposed a 5 step general approach. Similar to different alternatives for pricing perspectives and factors, the same applies for improvement measures. The discussion on causes for process inefficiency found that one of the causes was the use of inappropriate pricing framework. In other words, to simplistic compared to the pricing complexity. To improve the framework, it is proposed that Case Company could either improve their current cost-plus model by strengthening the key factors / necessary information, or revise the pricing model besides strengthening necessary factors / information basis. These are the two main alternatives considered as a part of a 5 step general approach. The first alternative is based on minimal changes and use of company resources in implementing the improvement measures, while the second alternative requires more extensive resource use. Either way, the 5 decisions steps are proposed with the aim to achieve pricing factors in-line with the pricing model and pricing requirements. Below each step in the general approach is discussed, before summaries the proposed improvement measures.

STEP 1 - ESTABLISH PRICE OBJECTIVES

It is recommended that the company start by establishing pricing objectives. By establishing objectives, it is the first step to providing guidelines for the pricing process and participants. Based on strategy, price positioning and pricing strategies should be established, taking a clearly defined target market into account (Simon and Fassnacht, 2019i). In addition, senior management should be aware to clearly communicate these objectives internally (Simon and Fassnacht, 2019f). By establishing strategies, a possible effect can be reduction of contributors involved to discussing case strategies, such as the involvement of CEO for important customers. Instead using clear price objectives and appropriate incentive systems to increase sales force independence (Simon and Fassnacht, 2019i; Simon and Fassnacht, 2019f). Besides establishing guidelines for process participants, it can help the company to prioritize pricing sufficiently in the future. Thus by formulating goal, and thinking of pricing as a long-term tool for success. Such as theory on strategy, arguing that one should view strategy as the relationships between cause and connection to create, deliver and capture value (Lien, Knudsen, and Baardsen, 2016). Or to be more aware of implications of price positioning in the long-term (Simon and Fassnacht, 2019i). It can also help the company be aware of the competence required

within pricing. For example their current formulated target market aims for customers with complex ICT requirements. Thus, understand how to create availability of required technical competence, either by education for sales force or by coordinating the availability of required technical competence in-house. Several case studies show that interdisciplinary teams often have been required if products are complex (Ojala and Laatikainen, 2019; Simon and Fassnacht, 2019a). Another argument for why strategy is important, is that determining strategy often require information on market, competitor and customers (Simon and Fassnacht, 2019i). Thus, it will be a good starting point to understand the lack of available information. In addition to hinder random long-term effects.

STEP 2 - ESTABLISH PRICE MANAGER OR DEPARTMENT

Based on Case Company's aim for complex ICT products, growth ambitions and the required improvement of information basis, it is recommend that Case Company allocate the main responsibility for pricing. Either by establishing a price manager or a price department. If the company choose to standardize prices further, compared to their historical prices, it can be argued that a price manager is sufficient due to the size of the company. The use of a price manager can be beneficial both to implement improvement measures and serve as a key information coordinator to reduce uncertainty in the process. Moreover, with an allocated responsibility of pricing it can help the company sustain sufficient prioritization of pricing, and help increase availability of information. Such as assign the price manager with the responsibility for building tactical framework or continuously update the sales force (improving the internal communication) (Simon and Fassnacht, 2019f). In addition, there are other potential company effects, such as increased knowledge of the market or new products. Generally price managers are recommended when a company has products and prices, or make frequent price decisions. However, the initiative to employ and train a price manager can be quite resource extensive. Considering that Case Company already have experience limited external capacity from contributors in the process, it can be argued that a price manager is necessary. At least as a project manager to implement new improvement measures. If this is preferred alternative, it can be more efficient and less costly to higher a price consultancy firm (Simon and Fassnacht, 2019f). Thus, determining whether to employ a price manager or initiate a price consultancy firm should be considered based on price objectives, and cost-affect evaluations.

STEP 3 - DECIDE ON PRICING MODEL

Currently Case Company have a cost-plus model. Of which, theory argue is a simplistic pricing model and criticized for not taking into account the inter-dependencies found in pricing (Harmon et al., 2009; Simon and Fassnacht, 2019d). Based on findings, there are no indications that the pricing model used is the source of inefficiency. Rather that the lack of appropriate available information and similar factors, in-line with their current model. However, both theory and case studies show that an improvement of pricing model can have an extended beneficial effect for company's, both efficiency and profitability. In case studies where efficiency have been approved, the improvement of the pricing model have included and ICT support system improvement (Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009). Concerning considering the effect of a pricing model, are a discussion on price "quality" vs process efficiency.

For Case Company, it can be argued that the most extensive pricing process conducted, has the highest price "quality". In this context quality is viewed as recurring value-capture attained from the cases won. Currently, the pricing process is highly experience-based, and with a more extensive pricing process, more people (thus experience at hand) are involved. If the central information basis is experience, then one can presume that these cases have a larger potential for more informed decisions when pricing. Thus, while the extensive pricing process is often experienced as the most inefficient, they can be presumed to have a better price quality. This has also been confirmed by the Case Company management, where sales offers from extensive process have had attain high value capture. Thus, one can presume the opposite for efficient processes and simpler cases. In such cases, fewer people are involved, thus a weaker experience base and a more insecure price quality. This theory is illustrated in 5.3, where the processes without BID manager are simpler processes and with BID manager are more extensive processes. Moreover, the main goal is to exemplify why Case Company should consider revising their current pricing model. It illustrates that a larger basis for information can be beneficial for achieving better prices, and thus increased profitability per sale. Moreover, if the goal is to decrease the number of people in the process, then a revised pricing model with extended use of price determinants can be important to take into account. Especially as the improvement measures proposed will require extensive use of company resources, thus an effect beyond process efficiency can be an important parameter in decisions made. Considering this as a long-term effect which seems promising, it cannot be stated with certainty. For example, literature suggest that success in pricing is dependent on appropriate structure and implementation (Simon and Fassnacht, 2019e).

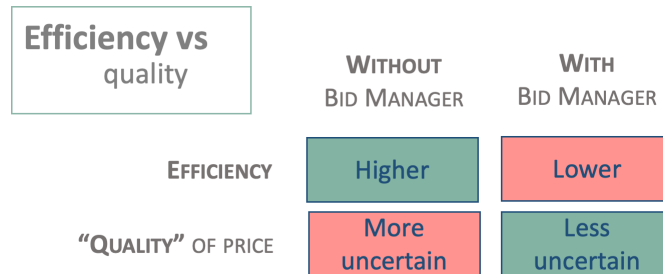


FIGURE 5.3: Presents a visualization over the effect on price, quality of price, with regards to process execution.

Based on this, step 3 concern choosing one of two alternatives; keeping the current cost-plus model or revising the current pricing model. If Case Company choose to revise the current pricing model, the research recommend both a value-based model and a model based on a price-decision support system (Harmon et al., 2009; Hwang et al., 2009; Simon and Fassnacht, 2019h). Based on the most known pricing models found in theory, a multiple use of variables is the general recommendation (Simon and Fassnacht, 2019c). Moreover, the value-based model is recommend both in relation to service industries, and specifically in studies on the ICT sector (Harmon et al., 2009; Pasura and Ryals, 2005). Competence and data would likely take time and take a large amount of resource to develop. Such as establishing routine to be able to map customer willingness-to-pay, often viewed as information not readily available (Simon and Fassnacht, 2019g). But as pricing as a capability argue, the benefits will in the long term be competitive advantage, by development of unique data, competence and routines (Dutta, Zbaracki, and Bergen, 2003). Further, it is argued that

values-based should extend to product development. Meaning, that implementation will require good collaboration between the departments. Thus, an additional argument for establishing a price manager or department, if Case Company choose the alternative to revise the current pricing model. For example, if Case Company want both an ICT support system and value-based pricing, a price manager tasks could be to coordination data collection, model development and system development, in addition to coordination relevant contributors (Simon and Fassnacht, 2019f). Thus, it can be achieved that less time and activities are required in the operational part of executing the pricing process. Rather more is moved to planning and analysis phases, such as the proposed pricing framework for competitive industries.

Besides the choice of pricing model, Case Company should increase their focus on price monitoring, controlling and optimization. The lack of control, relates to informants comments on random prices. Moreover, it risks the company not being aware of the price decisions made and their long-term effects. Examples already mentioned are positioning, cost consideration when setting prices for service products or differentiation of products (Simon and Fassnacht, 2019i; Simon and Fassnacht, 2019a; Simon and Fassnacht, 2019c). Or consider the effects of lacking price-response function and similar optimization functions. The considerations are also important to understand the difference in information required if the cost-plus model is kept, with no additional optimization functions or acquiring a new pricing model, digitized and with controlling potential. All options have advantages, if one considers resources requires (company resources and information basis) versus effect (profit or increasing the amount of cases won in negotiation). A last remark, is that case studies have shown that initiatives to improve a process model, especially to establish a support system and historical data, can take several years. Both to be successful and to see effects of improvement measures (Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009).

STEP 4 - DECIDE ON MEASURES TO IMPROVE INFORMATION BASIS

Understanding the market and customer can help the company in negotiation by understanding the buyer situation and competitor prices. To collect information, establishing relations with key participants in the market can be important. One case study used this to evaluate base prices or to understand further customer perception of price, competitor prices and so on. Since the company to some extent have products which is difficult to understand the extent of cost and advanced elements, educating the customer will be important when presenting prices. Thus, case manager might need a higher technical competence if the end-goal is to involve fewer contributors to the process. Results exemplify the lack of informed decisions through price cuts. Informants explain uncertainty with the amount of times price cuts are conducted during negotiation and the relief of not winning cases were prices have been cut close to costs calculations. In contrast, theory shows that service products often have low marginal costs, thus it makes a lee-way for price cuts. Utilized unconsciously company's risk both resentment from customers and long-term profitability (Simon and Fassnacht, 2019h). In-line with theory informants propose that the actual costs for labor should be identified and that the company should start collecting historical data to ensure a data basis. For the latter, this aligns with the study on pricing as a capability (Dutta, Zbaracki, and Bergen, 2003). Acquiring information on customer, market and competition requires large and structured data, end establishment of routines for continuous collecting and analysis of data. This was considered essential in pricing as a capability (Dutta, Zbaracki, and Bergen, 2003;

Ojala and Laatikainen, 2019). Besides increasing process flow by giving case managers a more secure basis for pricing, it can help create more consistent pricing and more strategic pricing. It is also essential when considering on position and price strategies mentioned above. In addition, it is argued it can help the company prioritize resource or product development according to attributes, by understanding what aspect of a product the customer values (Simon and Fassnacht, 2019a). These are just some of the examples of improvements given by informants, but overall the informants indicate that they want an improvement in data basis. Of which can be linked to causes for inefficiency, a lack of available information. Thus, based on the choice of a pricing model, Case Company should establish the required routines to collect information and have information readily available. If Case Company choose to keep the current pricing model, the most important factors to improve is Cost. Meaning identifying the relevant cost typologies, and evaluating the appropriate long-term and short-term cost structures (Simon and Fassnacht, 2019a). Research on different process models all focus on that information gathering requires systematic routines. Thus, the improvement of cost will likely require extensive mapping of current sources for cost.

In relation to strategy it was mentioned that information on market is essential, which includes information on customer and competitors (Simon and Fassnacht, 2019i; Simon and Fassnacht, 2019a). However, if the cost plus model is used, it might not be necessary to have as large or frequent routines to collect this type of knowledge base. In contrast, if a value-based approach is used, cost can be useful to understand the lower limit of the price range, but as important. While market and competitors would require the extensive routines to collect and systematize data (Simon and Fassnacht, 2019a). An argument to have routines to collect market and customer data is the insight it potentially can give to the sales force. Of which, can assist in decisions related to price format, bundling or communication. For example, research show that for service industries it is often hard for customers to evaluate product quality before delivery (Simon and Fassnacht, 2019a). Understanding trends in their area of industry can thus help sales force to understand what is important in a negotiation situation.

One challenge with current theory is the gap from simplistic pricing to advanced pricing. For most factors, an increase in information often requires extensive data collection. Such as the quantification of customer willingness-to-pay, theory present that it requires extensive data to be reliable (Simon and Fassnacht, 2019a). Thus, at the current state of theory it can often seem like either a company uses a simplistic model or it has to use extensive resources to advance. While their can be a lack of middle way to the challenging of attaining an appropriate information basis. The only middle way suggestion found (within the scope of the theoretical framework), is the use of price consultancy. Other examples of the challenges of improving information basis are dependency on customer or competitive information. For service products, a company will most often always have some risk for the actual cost for producing a service (Simon and Fassnacht, 2019a). Or, it is not guaranteed that large amounts of competitive information can be attained. Thus, while it is proposed that Case Company should aim to improve the information basis, this can be resources extensive and with risks of not being able to attain the appropriate information. However, an attempt to improve the information is recommended. For example, based on informants reflections it has incidents where Case Company have thought they were the cheapest, but turned out to be the most expensive offer.

In general, all informants expressed that they wanted more available information, either if it is available or the information lacks, Case Company should consider this as an important step. Especially as the lack of information was one of the more apparent causes for inefficiency, creating uncertainty and causing lack of basis for comparison.

STEP 5 - REVIEW AND ADAPT PROCESS STRUCTURE AND FRAMEWORK

When Case Company have decided on strategy, established a price manager for coordination, chosen a pricing model and determined the required information bases, the last improvement is the overall structure and framework. Comparing different process models, a pricing process can be organized in several ways. Moreover, research state that pricing is industry specific and often company unique (Simon and Fassnacht, 2019f). Thus, process models can be used as a basis, but should be adapted. This includes the definition of tasks, activities and routines. For Case Company, Hwang's proposed activities or tasks are similar to Case Company's except for lack of planning and analyze stages (Hwang et al., 2009). A good starting point could be to include these stages in a revised process structure, but to adapt the tasks and other structure to Case Company's requirement. This would be in-line with Simon and Fassnacht recommending to use process model stages as a basis, but to adapts tasks within (Simon and Fassnacht, 2019f). Moreover, in-line with research on pricing as a capability, proposing that company unique capabilities are essential to capture value at all (Simon and Fassnacht, 2019f; Dutta, Zbaracki, and Bergen, 2003). About where Case Company's current process does not align with current research and theory, it was found 5 key points for Case Company to consider independent of choice of process model:

- Alignment of in-house price intelligence, incentive systems and allocation of price authority
- Increased focus on external and internal communication
- Consideration of ICT support system and price monitoring / controlling
- Increased focus on coordination of process and information flow
- Revision of defined tasks and should-be process

Results indicate that Case Company have a relatively low pricing intelligence, lacks appropriate incentive systems and should consider their current allocation of price authority. For example, a weak sales force performance can be linked to lack of training and/or incentive systems (Simon and Fassnacht, 2019f). Moreover, there are many arguments for why sales force should not have complete price authority, such as lower risk for price inconsistency and complexity of pricing (Simon and Fassnacht, 2019f). Price inconsistency and discount inconsistency were elements that informants explained as negative evaluations of the current process. Moreover, if Case Company choose to use a more advanced pricing model, it is based theory an indication for a change in allocated price authority (Simon and Fassnacht, 2019f). Arguments for allocation of price authority with the sales force is increased flexibility, rapid responses and increased motivation (Simon and Fassnacht, 2019f). By viewing the simplest type of cases, the results align with these argument, both by illustrating more flexibility (to type of case), and rapid responses (for simpler cases). However, with more complex cases results indicate that these arguments do not hold true. Similarly, informants that argue against allocation of price authority to sales

force, argue this due to complexity and amount of elements to consider. This supports theory arguing that complex pricing often is conducted by determined internal units and not the sales force (Simon and Fassnacht, 2019f). Thus, it is recommended that Case Company focus on alignment of price intelligence with price objectives, incentive system, allocation of price authority and training of employees. The latter has been argued to be especially important for companies that take part in negotiation (Simon and Fassnacht, 2019f). For example, in the process model pricing as a capability, training of employees were a key routine in negotiations with custom, including presentation preparation and convincing the team internally of price decisions made (Dutta, Zbaracki, and Bergen, 2003).

Informants expressed negative evaluation towards inconsistency in pricing, discounts, labor-intensive products considered pure profit and lack of visibility of cost and contribution margin. All of these can to some extent be linked to internal communication. For example, results found that a key element in process inefficiency was lack of available information. Research argue that it is essential that the sales force have information on and understand how prices are set and the basis for prices (Simon and Fassnacht, 2019f). For example, if Case Company would implement a value based pricing (as recommend for ICT service industry), theory proposes establishing list prices / minimum prices with a set flexibility for price changes (Simon and Fassnacht, 2019f). Results indicate that list prices exist for some products, however that it vary due to difference in source of information used by price managers. Theory also suggest that with list prices, price authority should be divided to setting list prices, setting discounts and price promotions (Simon and Fassnacht, 2019f). Such measures could help Case Company improve internal guidelines and decrease current experienced uncertainty and inconsistency when pricing. Internal communication is also important to increase the level of updated knowledge and competence for sales force when in negotiation. Research argue that external communication is important both to make customer understand the value of a product and to make customers understand services composed of technology that can be difficult to understand (Simon and Fassnacht, 2019h). For example, the result found that the case managers in general have relatively low background with pricing and an average background in ICT Technology. Thus, the internal communication is important to give the sales force the appropriate knowledge to explain technology and why products are worth the price (Simon and Fassnacht, 2019h). One informant exemplified the importance of both pricing and technology knowledge, by explaining how customer pushed for price discounts and miss-interpreting the technological complexity; "the customer considering the product as simple ("whole wheat"), thinking that there are only 2 buttons to press, and then it's done. While, what we are going to do, is actually quite comprehensive". Based on the examples above, it is there recommended that Case Company increases their focus on internal and external communication, by making information more readily available and clearly communication price and technology basis for products. In evaluation of internal communication, Case Company should include that fact that most informants argued that the use of team channels was viewed as a positive tool to exchange information.

While the recommendations can help process inefficiency by improving available information and internal guidelines, implementation of an ICT support system has shown to both improve pricing and decrease resource consumption. Mostly, by decreasing the amount of manual tasks, such as calculation and analysis (Hwang et al., 2009). Implementing ICT support system can be both company resource exhaustive, and take several years to show desired results (Hwang et al., 2009; Dutta, Zbaracki,

and Bergen, 2003). However, it makes it possible to store historical price data, decrease price inconsistency and help with price monitoring and controlling (Simon and Fassnacht, 2019f; Hwang et al., 2009; Dutta, Zbaracki, and Bergen, 2003). Of which result show are elements that lack in Case Company current process, and are elements that informants propose as improvement measures. If Case Company should implement a ICT support system, it is important that the interface is simple and user-friendly (Simon and Fassnacht, 2019f). For example, one informant explained that Case Company had tried to make the sales force utilize the newly improved calculation sheet (excel), but was not successful because it was viewed as too complex. Research also argue that the development of systems have to be based on existing systems, of which is partly why the development of systems can be challenge and resource extensive (Dutta, Zbaracki, and Bergen, 2003). ICT support systems are by researched mentioned as a prerequisite for price controlling, however the complexity of the systems can vary depending on the intended use (just price controlling or including price decisions and analysis) (Simon and Fassnacht, 2019f)

As step 2 above mentioned, coordination is key both to implement improvement measures and continuous follow-up of pricing and the pricing process. Similar to Simon and Fassnacht, arguing that price management should be view as a continuous process (Simon and Fassnacht, 2019e; Simon and Fassnacht, 2019f). Considerations of coordination concern both the overall responsibility and allocation of tasks. Research give several examples of why it is important to understand task requirements (Ojala and Laatikainen, 2019). For example the technological requirements as mentioned with internal and external communication. Thus, it is recommend for Case Company to evaluate the requirements for task, to understand the required competence of employees or required coordination. Results showed that their often were hold-ups in the process due to limited internal capacity when the process required coordination with other departments. Therefore, the consideration of requirements with or without ICT support systems can be important. For example, a better structure could perhaps increase independence of sales force, decrease price manager and Project & Delivery input requirements, thus reducing process infect. A more appropriate coordination or allocation of tasks can also help prioritization of other tasks the employees have. For example, informants explain that progress in cases was often dependent on their capacity to push for progress, instead of having more tie for communication and commercial tasks.

In general, the results showed that their were several differences between Case Company's as-is and should-be process. Indicating that the should-be (defined) process should be revised to reflect the current process more correctly. Thus, if Case Company does revise and make changes to the current process structure and framework, this should be included in a revised should-be process. Including the defined tasks within stages and routines.

RQ3 - WHAT ARE THE RECOMMENDED IMPROVEMENT MEASURES?

Overall, a target improvement of factor inline with the chosen pricing model is recommended. Of which, have the potential for improvement beyond process inefficiency. Informants expressed a positive attitude towards improvement measures implemented before this study, such as price attachment tool and automation of registration form. While, having several comments to negative elements with the current process and several points for improvement measures. Most of the suggested improvement measures are in-line with theory. Such as an increased use of information basis and use of ICT support systems. While improvement measures cannot be

stated with certainty, such as being dependent on appropriate structure and implementation to be successful (Simon and Fassnacht, 2019f), case studies show that the use of both business and digital measures can give effect to both effect and profitability (Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009). However, in the scope of this study, literature gives no measures on how to increase efficiency in a pricing process, rather the measures found are mostly linked to literature that focus on best-practice and price optimization. Thus, due to the nature of the study, focus on interpretation of the current pricing process. In addition to lack of theory explaining cause-effect and/or improvement measure-effect, improvement measures cannot be stated with certainty. The improvement are discussed with known implications to pricing process, and result to discuss possible effects of improvement measures.

From the discussion above 2 general alternatives are given. Either to keep the cost-based model, but focus on establishing clearer guidelines, improve coordination, information basis and appropriate structure. Alternatively, redefine the process model and consequently the complete basis for the pricing process. In this context in is recommend to set a long-term plan for implementation of a price decision system. The main goal should be to implement a better basis for process participants and clearer guidelines. Independent on choice of alternative, it was recommended a 5 step general approach to strengthen the current pricing framework (factors). Starting by establishing price objectives, then a price manager. First after this done, should the company decide on which alternatives are appropriate; to keep the cost-plus model or to choose another pricing model such as value-based pricing. Following, it is recommended that Case Company focus on measures to improve information basis and current process structure and framework. The general approach is summarized in Figure 5.4. Research argue that companies often have to adapt their pricing model continuously, and do so by trial and error (Ojala and Laatikainen, 2019). For example, the case study found it necessary with adjustments due to market changes, product changes, other operational changes or change of functionality of a product. Thus, adjustments have been shown necessary to make sure the pricing models were up-to-date (Ojala and Laatikainen, 2019).

GENERAL APPROACH

I. Establish price objective	<i>Terms for pricing (F1)</i>
II. Establish price manager or department	<i>Coordination (F6)</i>
III. Decide on alternative	<i>Price model (F5)</i>
IV. Decide on measures to improve information basis	<i>Price lee-way (F2-F4)</i>
V. Review and adapt process structure and framework	<i>Internal organising (F6)</i>

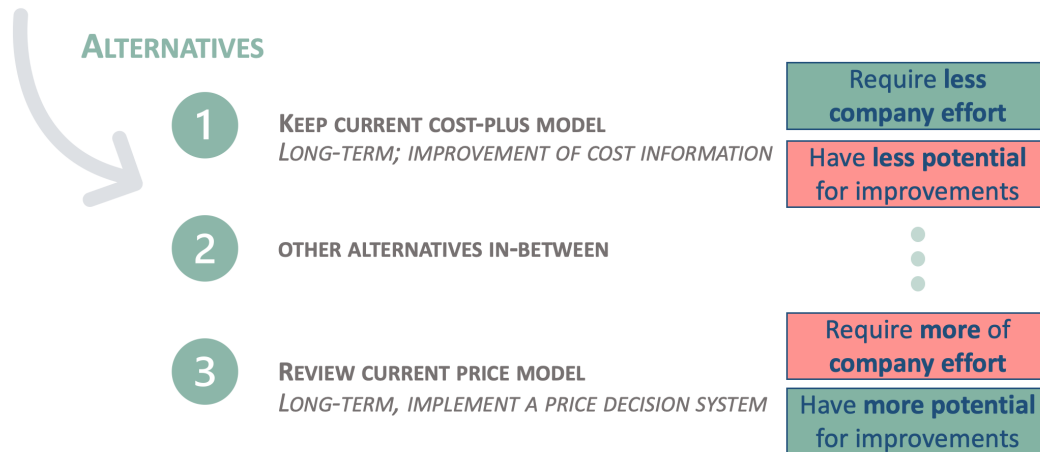


FIGURE 5.4: Presents a summary of general approach and alternatives for future action.

5.2 Overall interpretation

To conclude the analysis in the previous section, this section discusses the overall interpretation of the problem statement, implication and limitations of the result of this study. The study's research questions aimed to map Case Company's pricing process, understanding why it experienced as inefficient and propose improvement measures. This has been done in close collaboration with the company. In this process, there have been 2 key elements that have shaped the study. Firstly, is the choice of theoretical framework, thus the lens used to study the problem statement, of which were the building blocks for pricing. This was chosen due to being the company's most apparent knowledge gap. As a result the causes for inefficiency and improvement measures found would be limited to findings within this scope. Alternatively the study could have focus on ICT support system and theoretical model for efficient process model such as agile organization or lean office processes. Where causes could for example to a higher degree focus value adding activities, and activities that could be removed. Secondly, the results found a lack of strategy. Harmon state that price objectives clarifies what the goal of pricing is, and strategy is the guideline for appropriate set-up of internal organization and calculations (Harmon et al., 2009). Thus, proposed improvement measures cannot be stated other then general recommendations and considerations, as their is a lack of basis to determine the appropriate decisions. Another example is determination of appropriate calculation and evaluation of optimal prices. Simon and Fassnacht explain that their are several parameters which can determine the appropriate calculation and evaluation of optimal prices, which beside price objectives are product typology, competitor products and short-term/long-term perspectives (Simon and Fassnacht, 2019g).

The below discussion will argue for a focus on factors when developing a pricing process. Mostly as research argue that F1 - F5 is key for determining and developing good prices. Moreover F6 is key to be successful independent on how well developed calculation and competence are (Hwang et al., 2009; Simon and Fassnacht, 2019f)

5.2.1 Problem Statement

At the beginning of the thesis it was introduced that the main source of inefficiency was a lack of appropriate pricing framework (use of pricing factors). Based on the analysis above this was shown by a lack of available information basis and a lack of guidelines. For example, lack of framework can be what makes it that participants often have to "search" and "collect" more information, as their are no clear guidelines or readily available information to base decisions on. The amount of inefficiency is dependent on the cause, such as important customer or perhaps lack of information. Linked to these findings are defect systematizing, which is the central for a company to systematize necessary data, such as historical data or analysis of competitors, or to achieve appropriate allocation of pricing authority and internal communication to help participants in pricing decisions. Research show that this can be challenging, resource exhaustive and dependent on implementation to be successful (Simon and Fassnacht, 2019a; Simon and Fassnacht, 2019f). Moreover, that most companies due not have this in place, because practice follows a more experience-based approach, then research focus on price optimization and advanced pricing calculations (Simon and Fassnacht, 2019e; Harmon et al., 2009).

Since most research and theory, thus the theoretical framework, focus on price optimization or profitability rather than process efficiency, the findings and proposed improvement measures have the potential to increase value capture (profitability), besides increasing process flow inefficiency. This is due to the improvement measures are based on literature that focus on best practices to increase value capture, such as value-based pricing within ICT Service industry or the on Price Management (Harmon et al., 2009; Simon-Kucher and Partners, 2019). Research have shown that business and digital initiatives to improve the pricing process have proven to increase both profitability and efficiency, but the result require years of effort and company resources (Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009).

The study can give an explanation to why most companies choose a more experience-based approach to pricing. In this case study, the company lacked management initiative to establish pricing professionally within the company. Such as the result indicating that the current cost-plus model used was created by imitative from the operational level of the organization in 2015. Presumably, this can explain why the model which was then created followed a model that could be created by experience from an operational level. Another example, is that gap between the current information basis and the required information basis for the company to use other pricing models. Thus, the improvement measures will in most cases be extensive and require management initiative to be implemented. Which is supported by research statement that implementation and structure is key to be successful in pricing initiatives at all (Simon and Fassnacht, 2019f). Based on the amount of company effort required to improve the pricing process, it is thus argued that continuous prioritization is central to being successful. For example, research argue that the involvement of CEO to communicate the importance of pricing internally and with relevant stakeholder (Simon and Fassnacht, 2019f). Moreover, that research has shown that pricing

has to be continuously improved to align with current products or market changes. One case study exemplified this where alteration were done several times due to product changes, and pricing were a try and fail process (Ojala and Laatikainen, 2019). This can be essential for Case Company, which is found in a industry with complex price composition, rapid marked changes and growth (Statistics Norway, 2021; Berli and Hundhammer, 2020) (Management of Case Company, personal communication, January 18, 2021).

HOW SHOULD A PRICING PROCESS BE ORGANIZED TO ACHIEVE PROCESS EFFICIENCY IN AN OPERATIONAL PERSPECTIVE?

In general findings indicate that a key element to process efficiency is that the pricing factors align. Moreover, that the factors alignment can be focused on four main questions;

- What is the price objective?
- What is the price lee-way?
- How is price decided?
- How is the process managed and controlled?

These four questions are constructed based on the results, theory and analysis discussed in the above subsections. The first question can be linked to guidelines. Moreover, linked to uncertainties in process, the need for clarification and price inconsistency. In contrast, if there were established guidelines it could assist in increased independence of case managers and price decisions which had to be made in the process, instead of having meeting with up to 10 employees to complete the pricing process. The second question can be linked to an information basis. For Case Company, one of three information factors were found established. While they had established information on cost, some elements of cost calculations were found to be experience-based and less data driven. Following, with their current cost-plus model participants expressed uncertainties, which were exemplified by concerns about price inconsistency and by the miss interpretation of price position in negotiation. The third question is how the information basis is utilized, which is important about understanding the required data and routines to collect data, to increase confidence in prices and calculations. In other words, it sets the requirements for structure, information flow and similar. The last question focus on the continuous perspectives and analysis. Similar to the last steps of Hwang's framework for pricing (Hwang et al., 2009). In other words the findings indicate that a pricing process should be organized with respect to factors. Including continuous prioritization and effort to sustain process flow efficiency and success.

An important perspective is the consideration that there are no correct answers, but rather an aim to align factors, including the consideration of process aim, the cost of improvement measures and in-house knowledge compared to effect (efficiency and profitability). Since the improvement measures discussed can be costly, the aim and cost considerations are an important aspect. Thus, in this case study, it is recommendation that Case Company have to first establish a price objective to implement this in further decisions as to which improvement measures to implement. Which is important in consideration of current process characteristics, prices set, resource requirement and potential effect on implementing improvement measures.

Thus, the overall interpretation is that a company should organize the pricing process with respect to factors, summarized in Figure 5.5. In this case study, it was found that the Case Company should strengthen the information basis, pricing model and internal organization used in the current pricing process. This to align the factors, including taking into account the complexity and frequency of pricing decisions required.

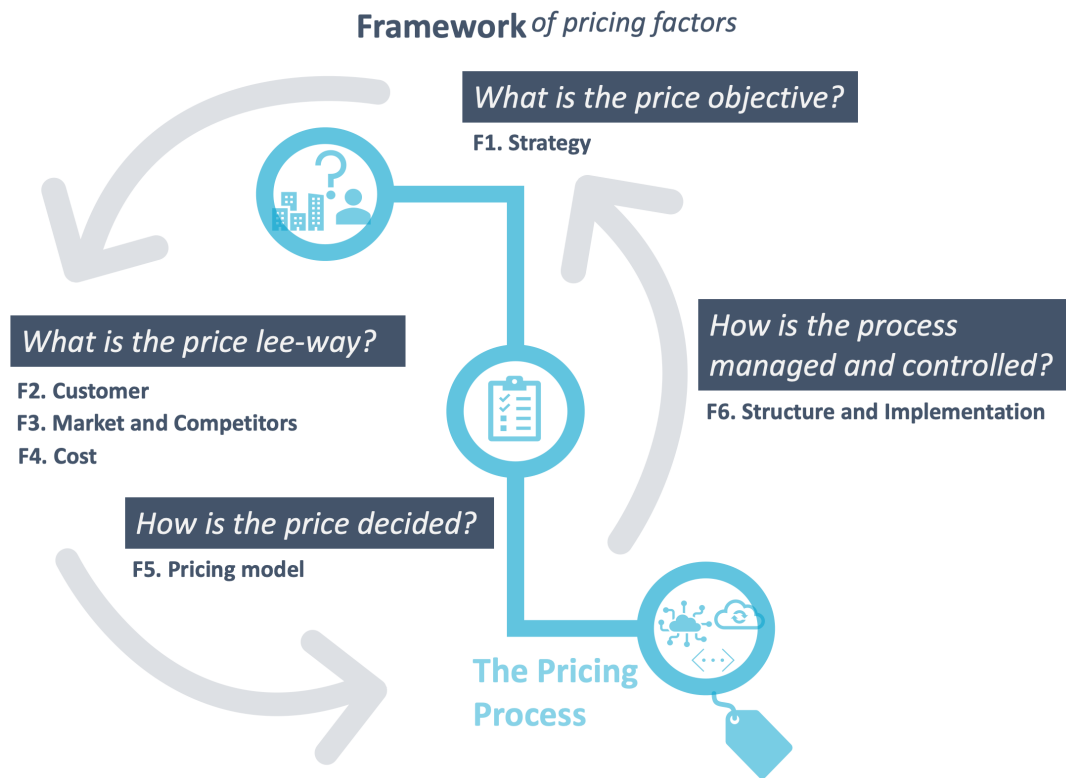


FIGURE 5.5: Presents a summary of the answer to the problem statement - a framework of pricing factors. Adapted from REF and findings.

5.2.2 Limitations

Limitations can be evaluated according to research design and research findings. Research design was discussed in relation to validity in Chapter 3, such as time constraints, theoretical framework and findings in context of a case study.

The research design and method made it possible to create a detailed view on the current pricing process execution and framework. Including an overview of variations for execution. It was able to measure different causes for flow inefficiencies, and link these to possible determinants. Thus, it was possible to provide recommended improvement measures. While the method accurately shows initiating cause for why flow inefficiency takes place in the process, it does not accurately measure the cause-effect relationship. This limits the certainty of improvement measures recommended. The result takes into account these uncertainties, and gives two general "roads" for improvement measures. Thus, method validity is considered sufficient to give the Case Company a good basis for future decisions. While for research, providing suggestions for hypothesis that should be tested. However, is generally limited by not having identified the exact correlation between identified determinants or improvement measure to pricing process efficiency.

Moreover, this study found a lack of extensive research on the operational inefficiency in a pricing process, the main topic investigated. Thus, method and results are limited by lacking hypothesis testing. If there had been less time constraints, this could have been improved by expanding the study and testing the hypothesis for inefficiency causes proposed.

Regarding the data collected, the sample consisted of most employees frequently involved in Case Company's pricing process. However, as pricing is industry and company specific, there are limits to degree of generalization which can be transferred from sample to the population; pricing within ICT Service Industry companies. On the one hand, both process characteristics and determinants for inefficiency are found in a specific pricing process and context. On the other hand, for the proposed improvement measures, Case Company lacked strategy and similar basis for the study to give specific improvement measures and recommendation. Moreover, the recommendations are in general linked to best-practice theory within pricing. Based on this, the general approach to improvement measures can be used as a starting point for companies to evaluate specific measures to implement. Moreover, the overall interpretation is made on a general basis. For example a lack of information and lack of guidelines is an overall identified determinate for inefficiency. Taken into account research shows that most companies lack professionalization and use experience-based pricing model, similar to Case Company, it suggests that findings to some extent can be generalized. Either way, generalizations should be used carefully, as pricing is specific to company and the context of which the company operates.

Similarly, the choice of theoretical framework or lens used to investigate research problems can limit the extent of findings, and thus generalization. As mentioned, the theoretical framework has a limited reference to process efficiency, and there were limited foundation to give explanations between cause-effect relationship of process efficiency. Thus, the proposed causes for inefficiency cannot be stated with certainty. However, research has shown that business and digital initiatives have given both efficiency and profitability effects. Moreover, the improvement measures are based on best-practices in regard to price optimization and profitability. Thus, the proposed improvement measures can be given with more certainty, with regard to have positive effect for Case Company, as long as the appropriate implementation is utilized (Simon and Fassnacht, 2019f; Dutta, Zbaracki, and Bergen, 2003; Hwang et al., 2009).

Lastly, an important factor not discussed in-depth in this study is the cost of improvement measures. Case Company initiated the research problem, based on a wish to reduce resources used in setting prices. Most of the improvement measures can be quite exhaustive to implement. However, research does argue that pricing is the strongest profit driver and can give competitive advantage (Simon and Fassnacht, 2019e; Dutta, Zbaracki, and Bergen, 2003). The research cannot state the effect of improvement measures, of which is a limit to the improvement measures proposed. However, the general approach proposed, can help in decisions on improvement measures. In this decision, cost considerations (short- and long-term) should be taken into consideration.

5.2.3 Implication and Recommendations

Generally, this study complements existing research with operational and overall view on pricing. Including an in-depth view of how the pricing process can be executed and an overview of important pricing factors to consider. Thus, exemplifying how the building blocks of a pricing process (factors) are used in ICT Service industry, and evaluating these building blocks in an operational perspective.

Concerning research, the main implication of this is the confirmation of a knowledge gap on pricing in an operational perspective. Viewing complex pricing factors in an operational perspective, the study does to some extent exemplify why most companies have a simplistic and experience-based pricing process. Such as the resource requirement to implement routines and gather necessary data. Or the requirement of a clearly communicated strategy, which requires the involvement of a company's management. Moreover, there were found several determinants for process efficiency for future investigation. These are recommended to be investigated by qualitative and extensive research to determine the exact effect on process operations, such as correlation and economic effects. Additionally, future research is recommended to implement findings from this study in the context of other research fields, such as lean office model or BID processes models.

Concerning the findings in this study, it is recommended that future research increase the focus on the relationship between simplistic pricing frameworks and the cost of improving pricing frameworks. Moreover, increased guidelines to minimize the gap from research to practice. Lastly, theory would benefit from a more unified vocabulary on terms, which more clearly differentiate on price optimization and pricing process operations.

Concerning practice, the study gives an in-depth view of how a pricing process is executed in practice. Foremost, the study exemplifies the research argument; that most companies utilized experience-based price calculation and often lack professionalization of pricing. While most of the findings are of highest relevance for the study object, such as guidelines for the next decisions and steps. Case studies can be valuable by their ability to decrease the distance between theory and practice. While specific determinants for efficiency and improvement measures discussed are less appropriate for generalized use. The overall interpretation, and the perspectives discussed with the case study, can open for new perspectives for managers considering improving their pricing process. Moreover, it gives a practical approach to where companies should start, when considering improvement measures. Lastly, it can help companies understand the complexity of pricing, and why pricing should be prioritized by management.

Chapter 6

Conclusion

This case study argues that a pricing process should be organized with respect to pricing factors to achieve process efficiency. Research focused on a company in the ICT Service Industry in Norway, referred to as Case Company, of which mainly have products composed of both goods and services. Due to the technological feature of such products, besides customization and customer dependence, pricing can be quite complex. It was conducted a qualitative, intensive and abductive investigation, to investigate characteristics of Case Company's current pricing process, identify cause(s) for inefficiency and to propose improvement measures. Results indicate that Case Company had a simplistic, experience-based and minimally standardized process. Based on the mapped process execution, it was found that an increase in efficiency (use of time and resource), could be linked to type of case, lack of information and lack of guidelines. Moreover resulted in clarifications or challenges with basis to make prices or internal capacity. Improvement measures were a 5 step general approach to decide to specific improvement measures. Including establishment of strategy, allocation of responsibility for coordination (price manager) and choosing a pricing model. For all three research questions discussed, pricing factors and the extent of which necessary elements within these factors, were essential to explain characteristics, causes and improvement measures. Therefore, it is proposed that companies should organize their process with respect to pricing factors.

Due to being a case study, findings are limited to generalizations. Such as proposed actions for improvement measures. However, the study but theory into a practical context, thus a potential to give companies new perspective to their evaluation their current pricing process. For research, thus study complements current theory with an overall and operational view to pricing. It is recommended that future research complements this study with other fields of study, and to quantify the proposed determinants for inefficiency. Including taking cost effect into consideration with different improvement measures. For the study object, findings contribute to a more appropriate basis for the Case Company to re-organize their current pricing process.

Lastly, the study exemplifies that their still is a gap between best-practice theory and practice. Moreover, a lack of professionalization and prioritization of pricing. To change this, more studies on the operational perspective of pricing is needed.

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Appendix A

Approval from Norwegian Centre for Research Data

The following is Norwegian centre for research data (NSD) approval for data collection, in relation to data protection, data management and data archiving. This organ approves data collection in research and the preservation of treatment of privacy data.

The approval means that the research and data collection is within the framework and requirements set by NSD.

Including the information given to informants, and their right to privacy or withdrawal from the research project. This was done by an information document that was sent separately to all informants, and was approved through signature. Or explicit confirmation and agreement through mail. In addition confirmed at the start of each interview.

9.3.2021

Meldeskjema for behandling av personopplysninger

NSD NORSK SENTER FOR FORSKNINGSDATA

NSD sin vurdering

Prosjekttittel

Casestudie på prising prosessen til en IKT bedrift innen IKT service

Referansenummer

304220

Registrert

22.02.2021 av Therese Knapskog - therese.knapskog@nmbu.no

Behandlingsansvarlig institusjon

Norges miljø- og biovitenskapelige universitet - NMBU / Fakultet for realfag og teknologi

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

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Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

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Prosjektperiode

01.01.2021 - 01.06.2021

Status

03.03.2021 - Vurdert

Vurdering (1)

03.03.2021 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 03.03.2021, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

DEL PROSJEKTET MED PROSJEKTANSVARLIG

Det er obligatorisk for studenter å dele meldeskjemaet med prosjektansvarlig (veileder). Det gjøres ved å trykke på "Del prosjekt" i meldeskjemaet.

<https://meldeskjema.nsd.no/vurdering/602bec3e-8d81-4f5d-b9fb-2ab36e33d1d2>

1/3

9.3.2021

Meldeskjema for behandling av personopplysninger

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

<https://www.nsd.no/personverntjenester/fyll-ut-meldeskjema-for-personopplysninger/melde-endringer-i-meldeskjema>

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 01.07.2021

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

<https://meldeskjema.nsd.no/vurdering/602bcc3e-8d81-4f5d-b9fb-2ab36e33d1d2>

2/3

9.3.2021

Meldeskjema for behandling av personopplysninger

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Appendix B

Interview Guide

Interview guide is written in Norwegian, approved by NSD. Information of method is given in Chapter 3 Data Collected.

Fase 1: Oppvarmingsspørsmål	Introduksjon (3 min) Uformell prat Avklare ståsted analyse <ul style="list-style-type: none">- Målet er å presisere hvordan prising prosessen gjennomføres i dag. Det vil si at jeg i hovedsak ønsker svar på hvordan du faktisk utfører prising, fremfor hvordan det kan eller vil bli gjennomført i fremtiden. Informasjonsskriv og lydopptak <ul style="list-style-type: none">- Har du noen spørsmål til informasjonsskrivet?- I informasjonsskrivet er det informert om at samtalen vil bli tatt opp, jeg vil gjerne først bekrefte at det er OK at jeg tar opp samtalen? Start lydopptak
---------------------------------------	--

Fase 2: Åpningsspørsmål	Bakgrunn (5 min) Utdanning <ul style="list-style-type: none">- Kan du fortelle om utdanning din? Stilling <ul style="list-style-type: none">- Kan du fortelle kort om din nåværende stilling i bedriften? Stikkord;<ul style="list-style-type: none">o Anseniteto Tidligere stillingero Rolle i prising prosessen Tidligere erfaring <ul style="list-style-type: none">- Har du noen tidligere erfaringer med prising av produkt/tjenester? Stikkord;<ul style="list-style-type: none">o Tidligere erfaring innen IT drifto Tidligere erfaring med prising
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<p>Fase 3: Hovedspørsmål</p>	<p><u>Prising prosessen (40 min)</u></p> <hr/> <p>Generelle oppfølgingsspørsmål under alle hoveddelene:</p> <ul style="list-style-type: none">- Har du noen eksempler?- Forstår jeg forstår deg rett, vad at sier at ...- Kan du utdype dette?- Hva mener du med ...- Kan du fortelle mer om ...- På hvilke måte, hvordan, hvorfor..- Må det være slik og hvorfor? <hr/> <p>A. Hoved steg i prising prosessen</p> <p>Hoved steg</p> <ul style="list-style-type: none">- <i>Kan du beskrives helt kort om prosessen overordnet, og gjerne referer til hoved steg?</i> <p>Stikkord;</p> <ul style="list-style-type: none">o Viktige avgjørelsero Input / outputo Koordinering mellom stego Tidsbruk fra lead til priso Hvor bidrar du (hvilke hoved steg)?o Hvilke input initierer ditt bidrag? <hr/> <p>B. Fremgangsmåte og avgjørelser under kandidatens rolle i prising prosessen</p> <p>Introdusere ny bolk</p> <ul style="list-style-type: none">- <i>Forstår jeg deg rett at du at bidrar under ... hoved steg. Videre ønsker jeg å høre mer om fremgangsmåten din for hvert av stegene du bidrar i.</i> <p>Input som start av prosess steget</p> <ul style="list-style-type: none">- <i>Hva mottar du av input, det vil si hva starter din rolle i prosessen?</i> <p>Stikkord;</p> <ul style="list-style-type: none">o Format (møte/e-post/oppgave/system)o Får du alltid samme type input?o Dekkende / tilstrekkelig / nok input?o Etterspør du mer input? Hvor ofte?
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Aktiviteter for å gjennomføre prosess steget

- *Kan du fortelle om aktivitetene (oppgaver med prising) du arbeider med i dette steget?*

Stikkord;

- o **Utdyp aktivitet**
- o **Viktige avgjørelser**
- o **Output** som følge av aktivitet
- o **Rutine/ fremgangsmetode**
 - Hvordan oppsto rutinen? Likt hver gang?
- o **Koordinering** for gjennomføring
 - Med hvem, hvor (arbeidsflate) og hvordan(format)?
- o **Antatt tidsforbruk**
 - Variasjon i tidsforbruk, hvorfor?
- o **Hvilke verktøy/dokumenter** benytter du?
 - Hvordan bidrar eller brukes det?
 - Hvor hentes og lagres det? Hvem har tilgang?
 - Benyttes tom mal / kopier?

Grunnlag for avgjørelser i aktiviteter

- *Hva baserer du dine avgjørelser i aktivitetene/prising på?*

Stikkord;

- o **Hva er mest avgjørende for dine avgjørelser?**
- o **Hvordan benyttes kunnskapen?**
- o **Erfaring**
 - Med prising, utdanning eller opplæring
 - Med tidligere tilbud vunnet/tapt
 - Kilde? Fra? Format?
- o **Input fra andre**
 - Hvilke type input?
 - Kilde? Fra? Format?
- o **Kompetanse om kost**
 - Hvilke kost elementer (ressurser eller innkjøpskost)
 - Kilde? Fra? Format?
- o **Kompetanse om markedet**
 - Som markedspriser, konkurrentpriser
 - Kilde? Fra? Format?
- o **Kompetanse om kunden**
 - Betalingsvilje, forventning, segment, forespørsel o.l.
 - Kilde? Fra? Format?
- o **Kompetanse om fortjeneste?**
 - Dekningsbidrag på produkt/tjeneste og hele tilbudet
 - Kilde? Fra? Format?

	<p>Vektlegging av grunnlag</p> <ul style="list-style-type: none">- <i>Hvordan vektlegger du grunnlaget som vi har snakket om for å ferdigstille aktiviteter (for prising) og da hoved steget?</i> <p>Stikkord;</p> <ul style="list-style-type: none">○ Kost-basert eller verdi-basert perspektiv?○ Dynamisk månedspris eller fast enhetspris?○ Hvis du setter rabatt?<ul style="list-style-type: none">▪ Hvor mange ganger er det nødvendig med rabatt?▪ Fremgangsmåte, tidsforbruk?▪ Avgjørelse basert på?○ Har det hent at enhet/dynamiske pris settes til 0 kr?<ul style="list-style-type: none">▪ Hvorfor, på hva og hvor ofte? <p>Output som ferdigstilling av hoved steg</p> <ul style="list-style-type: none">- <i>Etter ditt bidrag i et hoved steg, hva leverer du videre som output og til hvem?</i> <p>Stikkord;</p> <ul style="list-style-type: none">○ Format?○ Lever du alltid samme type output?○ Hender det at du få output i retur? Hvorfor?○ Hender det at du gjør feil / eller tar en «sjanse»?○ Hvordan kvalitet sikrer du output før du sender den videre?
	<p>C. Refleksjon</p> <p>Gode eller dårlige sider ved dagens prosess</p> <ul style="list-style-type: none">- <i>Kan du fortelle om dine refleksjoner rundt nåværende prising prosess, for eksempel hva du tenker er bra og eventuelt dårlig slik den praktiseres i dag?</i> <p>Stikkord;</p> <ul style="list-style-type: none">○ Har nødvendige verktøy/ kompetanse for å sikre kvalitet?○ Hvordan vurderer du måten prisingen gjennomføres?<ul style="list-style-type: none">▪ Steg, fremgangsmåte, tid, system o.l.▪ Flaskehals?○ Hvordan vurderer du kvalitet og ressursforbruk?<ul style="list-style-type: none">▪ Tid, folk, kompetanse, innhenting av informasjon○ I forhold til konkurrenter,<ul style="list-style-type: none">▪ Bedre / dårligere?○ Kunders respons på hvordan prisene leveres i et tilbud?○ Hva sitter du igjen med etter at prisen er gitt? <p>Forslag til forbedring</p> <ul style="list-style-type: none">- <i>Kan du fortelle kort om hvordan du tenker prising prosessen kan forbedres?</i>

Fase 4: Avslutning	<u>Oppsummering (5 min)</u> <hr/> Kort oppsummering <ul style="list-style-type: none">- <i>Eventuelle uklarheter</i>- <i>Har jeg forstått deg riktig?</i>- <i>Er det noe du vil legge til?</i> Videre kontakt <ul style="list-style-type: none">- <i>Takk for at du tok deg tid til intervjuet.</i>- <i>Om det skulle være noen uklarheter eller videre spørsmål, er det greit at jeg tar kontakt på telefon senere?</i>
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Appendix C

Complementary details to results

Quantified results should be interpreted with caution. Following are additional details to results:

TABLE C.1: Presents sub-categories of basis used to complete a pricing process. The sub-category is separated by colour and belong to one of 7 main categories. In the same order as the table: (1) Experience / know-how, (2) Output from tools, (3) Input from other, (4) Expertise on customer, (5) Expertise on market and competition, (6) Expertise on cost and (7) Expertise on profit / contribution margin.

Values	Case manager	Management, advisory	Pricing resource	Grand Total	Average
Average of Tacit knowledge	60 %	67 %	100 %	76 %	71 %
Average of Privious cases	100 %	0 %	100 %	67 %	
Average of Spreadsheet 1 (tech d.)	0 %	0 %	50 %	17 %	15 %
Average of Spreadsheet 2 (Bid m.)	20 %	0 %	25 %	15 %	
Average of Spreadsheet 3 (project)	20 %	0 %	25 %	15 %	
Average of Service Catalog templates	40 %	0 %	0 %	13 %	
Average of BID manager	80 %	67 %	25 %	57 %	63 %
Average of Technical Design manager	100 %	100 %	50 %	83 %	
Average of Project Delivery	80 %	33 %	25 %	46 %	
Average of Management, advisory	80 %	33 %	50 %	54 %	
Average of Technicians	80 %	67 %	75 %	74 %	
Average of Element cost	40 %	33 %	25 %	33 %	41 %
Average of Resource cost	40 %	33 %	75 %	49 %	
Average of Market knowledge	20 %	0 %	25 %	15 %	22 %
Average of Competition knowledge	20 %	67 %	0 %	29 %	
Average of Anticipated customer dev.	60 %	100 %	25 %	62 %	52 %
Average of Customer price expectation	60 %	33 %	50 %	48 %	
Average of Customer portofolio	40 %	67 %	25 %	44 %	
Average of Customer sector type	40 %	100 %	25 %	55 %	
Average of Strategy / strategic customer	60 %	100 %	0 %	53 %	
Average of Element contribution margin	80 %	67 %	50 %	66 %	34 %
Average of Total contribution margin	20 %	67 %	25 %	37 %	
Average of Element with best contribution margin	0 %	0 %	0 %	0 %	



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