UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

The Role of Price in New Product Development and Aspects Influencing the Target Price
- At Swedish Business-to-Business Manufacturing Companies

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Tutors: Christian Ax, Elin Larsson
Authors: Andreas Staberg
Niklas Wallin

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Andreas Staberg　　　　Niklas Wallin

Abstract

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Authors: Andreas Staberg and Niklas Wallin

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Background and Problem: Pricing has begun to gain more interest in the management accounting field, where cost management earlier has been in focus. The use of price during the development of new products is a concern which there is divergent opinions about. The establishment of an early target price is a well known practice in new product development in the manufacturing industry. With which types of processes this target price enters into the new product development process and how the target price is set are not entirely clear from the literature, though.

Aim of the Study: This thesis has explored which aspects business-to-business companies consider in their pricing of new products. The thesis has also explored how these aspects interact in the determination of the target price in the new product development process, and how the final price to the individual customer is reached.

Methodology: The empirical data is obtained via semi-structured interviews conducted and recorded on site at three large Swedish manufacturing companies. The case companies were chosen out of criterion regarding size, product line range and that they produce somehow standardized products.

Analysis and Conclusion: The thesis finds that the case companies allow the target price to emerge throughout the new product development process and that it is influenced by three main aspects; competitors, costs and customers, which integrate during the process. The price is dynamic in the process and none of the companies had an exact target price established in the first phases. The final price is usually reached through customer negotiations.

Keywords: Pricing, New Product Development, Target Price, Pricing Process, Price Negotiations.

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1. Introduction

This chapter introduces the reader to the background, the problem discussion, the purpose of why this study is conducted and the structure of the study.

Management accounting has traditionally focused on cost management, and companies have focused on how much they can cut their expenditures from one year to the next (Simon, Butscher and Sebastian, 2003). This is still a common focus in the business world but a movement towards revenue management has started among researchers (Shields and Shields, 2005). For a company to be successful, active work with its revenues is needed, and one of the very bases of revenue is price (Simon, Butscher and Sebastian, 2003). As Bernstein and Macias (2002, p. 53) say “The pricing process is a vehicle for achieving the company’s business strategy and financial objectives”.

It is therefore surprising that, according to the Professional Pricing Society, only five per cent of the Fortune 500 companies have a strong and dedicated function that is focused on the pricing issue (Hinterhuber and Liozu, 2012). As put forward by Brennan, Canning and McDowell (2007, p. 207): “Paradoxically, pricing is both one of the most important and yet one of the most neglected aspects of business-to-business marketing”. One problem is that company executives may not fully view the strategic role of price (Piercy, Cravens and Lane, 2010). Decisions on products, communications and the value chain are prioritized (Piercy, Cravens and Lane, 2010). The pricing decisions are typically treated as tactical issues (Piercy, Cravens and Lane, 2010). Research result highlighting that the pricing should have a more central role can be found in a study by Hinterhuber (2004). His study of Fortune 500 companies shows that a price raised by 5 per cent on average leads to an increase in earnings before interest and taxes (EBIT) by 22 per cent (Hinterhuber, 2004). At the same time, the study shows that a cost reduction by 5 per cent on average leads to an increase in EBIT by only 10 per cent and the situation is similar for an increase by 5 per cent in turnover, which on average leads to an increase in EBIT by 12 per cent (Hinterhuber, 2004). This emphasizes that the pricing issue is one to take very seriously and that it is paramount for a company to have the ability to set the “right price”. Dutta, Zbaracki and Bergen (2003) argue that this capability requires both resources and coordination.

Another aspect that highlights the need for a well developed pricing process is that the development of new products is a main challenge for companies in today's competitive business environment (Cooper and Slagmulder, 1997). The rapid technological development has made product life cycles shorter and the time to correct a misjudged price is therefore limited, or perhaps even nonexistent (Cooper and Slagmulder, 1997). According to Simon, Butscher and Sebastian (2003), there is little academic research on the pricing process that tells us about how companies are organized in their pricing process and how this process enters into the new product development process. This may be an effect of the theoretical standpoint in the literature about new product development (NPD), which often sees the pricing as one of many decisions to deal with in the launching phase of the NPD process at first (Ingenbleek, Frambach and Verhallen, 2010). Pricing is a topic that needs further research. The low prioritization of pricing within the management accounting literature and management's preoccupation of cost savings inhibit the potential of companies. The failure to realize the importance of different factors in the pricing leads to major pricing errors (Shipley and Jobber, 2001).

The practices through which companies determine price in the new product development process, and the research literature that has been written about pricing have been distinguished in respect of their content (Noble and Gruca, 1999). A gap between pricing theory and pricing practice in business-to-business (B2B) has been observed for a long period of time (Noble and Gruca, 1999; Laitinen, 2011). This study is limited to a B2B context because of its higher grade of complexity compared to business-to-customer pricing. Characteristics that are added in a B2B context are well-informed buyers who share price information (Lancioni, 2005), a common presence of price negotiations (Kaplan and Sawhney, 2000) and the importance of well-founded relations (Hawes, Mast and Swan, 1989). This extended complexity, together with the aforementioned low prioritization of research on pricing in the NPD process within the management accounting field, motivate this study. The research issue is thus to identify:

- *Which aspects that influence the pricing in the NPD process in a business-to-business context.*
- *The role of these aspects throughout the NPD process.*

The study has a descriptive purpose and the intention is to add knowledge regarding which role the pricing has in the new product development process that B2B companies undertake. More specifically, this study will examine when and in which manner different aspects, regarding primarily customers, competitors and costs (cf. Ingenbleek et al, 2003), affect the pricing during the new product development process. Further, the study will look at how companies are organized in the pricing of a new product, e.g. which functions that participate and at which point in time they do so during the NPD process. The impact from different functions on the process and how the exchange of information takes place between them are necessary to gain knowledge about in order to understand the price outcome. The study will also survey how companies proceed with specific activities considered necessary for the mentioned three aspects of pricing, e.g. how the willingness to pay is estimated for a product that does not yet exist and how the quality of the estimation is assured. To summarize, this study will contribute to the understanding of which underlying aspects B2B companies consider in pricing decisions for future products.

The structure of the study is divided into four chapters. In the next chapter, the theoretical framework is presented. It is followed by a chapter about the research method, where the selection of companies studied is described along with how the data is processed. The fourth chapter presents the findings from the case companies. The last chapter discusses the findings, presents the conclusions from the study, and provides some ideas for further research.

2. Theoretical Framework

This chapter presents the theoretical framework used for describing the authors' perspective of the pricing of future products. The chapter starts with a description of a generic new product development process and is continued with a presentation of aspects which determine the pricing of a new product. The chapter ends with a description of how pricing decisions can be organized and how customer negotiations form the price.

2.1 New Product Development

The development of new products is often seen as a process (Ulrich and Eppinger, 2003). The product development can be seen as a sequence of steps and activities which a company undertakes to conceive, design and commercialize a product (Ulrich and Eppinger, 2003). There is no single model describing this process; it varies between companies and sometimes even between different development projects within the company. There are though generic models, and a well-known model is designed by Ulrich and Eppinger (2003). It consists of six phases, starting with the *Planning* phase followed by *Concept development*, *System-level design*, *Detail design*, *Testing and refinement* and finally *Production ramp-up*, which are described below.

- *Planning phase* - The planning phase is often referred to as the "phase zero", due to that the company not yet knowing what to produce initially in the phase. Ideas are gathered about opportunities for new products and the input for this can have several different origins, e.g. new research findings, customer requirements or competitor movements. The next step in the planning phase is to evaluate and prioritize the opportunities gathered, in respect of competitive strategy, market segmentation, technological trajectories and product platform. Resources are then allocated to the most promising ideas and a mission statement of what the product will be is stated.

- *Concept development* - The ideas about opportunities are conceptualized, e.g. the needs of the target market are identified, alternative concepts for the product are generated and evaluated and the best ones are chosen and taking further for development. The product concept contains information about the form, function, features and analysis of competitive products and economic profitability.

- *System-level design* - A functional specification of the product is done in this phase. A product architecture is created and decomposed into subsystems and components. The phase also includes a determination of a preliminary process flow diagram for the final assembly.

- *Detail design* - The architecture developed in the previous stage, the materials that will be used and what parts the company will produce in-house or buy from suppliers, are determined. The tools needed for the production are constructed or acquired. The process plan from the previous phase is decided and the phase should result in control documentation for the product.

- *Testing and refinement* - Prototypes are constructed, tested and evaluated, and the product is refined.

- *Production ramp-up* - The production site is tested and minor faults are corrected. Customers are in many cases consulted regarding eventual remaining flaws. The production starts gradually when the site becomes more and more operational.

2.1.1 Target Costing

A management accounting technique developed for use in NPD is Target Costing (TC) (Ellram, 2006). The technique implies establishing a target cost that the developing company relates to and strives to achieve. The observed objective of TC is to "support NPD by keeping constant vigilance on the cost and functionality of products, and establishing methods to close the gaps between current and desired cost and functionality" (Ellram, 2006, p. 14). The TC is calculated as the estimated selling price subtracted by the desired profitability (Ellram, 2006). For the TC process to work, it requires that a specific target price is set early in the process (Cooper and Slagmulder, 1997).

2.2 Aspects Which Determine the Pricing of a New Product

The pricing can, like the NPD, be seen as a process with a set of procedures that helps a company to determine and implement a price for new product (Simon, Butscher and Sebastian, 2003). There are three main aspects; competitors, costs and customers (Avlonitis and Indounas, 2005), that influence the pricing during the NPD process (Shipley and Jobber, 2001; Daly, 2002). There are also additional aspects which have an influence in the pricing and they will be presented below in our framework along with the three main aspects.

Many companies focus primarily on one of the three main aspects before the pricing, which is an improper approach, according to Shipley and Jobber (2001). An integration between them is required as well as an integration with all other relevant aspects for avoiding pricing errors (Shipley and Jobber, 2001).

2.2.1 Competitors

These aspects appear in terms of how competitors act and how their products are priced. The company pays a lot of attention to the competitors and adjusts its price after them (Avlonitis and Indounas, 2005). It can include both current competition and how the future competition is likely to evolve (Daly, 2002). Increased negotiation capability from customers and suppliers, and the macroeconomic environment a company faces can force a company to take stronger considerations to competitors (Avlonitis and Indounas, 2005). The competitor aspect also encompasses substitutes which do not directly compete but still constitute a constraint in the pricing (Shipley and Jobber, 2001). Solutions the customer company has developed by their own are also sorted into competitor aspects.

A positive implication for the company, when competitors play an important role, is the lower risk of getting outmaneuvered by its competitors, unlike when a cost-based strategy is chosen (Schäder, 2006). The disadvantages are the missing link to the market demand and that there is a major risk of triggering a price war (Hinterhuber and Liozu, 2012).

2.2.2 Costs

Cost-based pricing has, as a starting-point, an aim to reach a margin that covers a given cost (Schäder, 2006). It has traditionally been the main aspect considered in pricing decisions (Ahmed and Scapens, 2003). The cost structure of the own company, the effect of volume on costs and expected learning effects are examples of cost aspects. (Daly, 2002) The advantage with cost aspects is that the information needed is often easy to find due to the fact that cost-data is often already internally available in accounting systems (Avlonitis and Indounas, 2005). A hazard is though that the cost-data may be incorrectly calculated or based on book-values. The real and full cost that is driven by the product or service may not be correctly shown (Ellis, 2011). Another weakness is that the connection to the competitors and the customer demand, i.e. the market, is questionable (Hinterhuber and Liozu, 2012). There is a risk that the price is set too high and that the customers will therefore be absent (Ellis, 2011).

2.2.3 Customers

To consider the customer before pricing is an approach that concentrates on the value the customer perceives from a product (Daly, 2002). An input for setting the correct price is derived from a subjective and quantified value of a purchase proposition to possible customers (Hinterhuber and Liozu, 2012). The company then aims to understand how much the product is worth to the customer (Hinterhuber and Liozu, 2012). The elasticity of demand for a product is also a customer aspect to consider (Daly, 2002). The main advantage with customer-based pricing is the direct link to the customer market (Hinterhuber and Liozu, 2012). The price of the product will not be set too high, if the customer-value analysis is correctly done (Ellis, 2011). The main disadvantage is that the customer-value data is hard to gather and hard to get in an objective manner (Hinterhuber and Liozu, 2012). A customer value-based approach opens up for competitors to entry and take market shares just by offering a product that is almost the same but has a slightly lower price (Hinterhuber and Liozu, 2012). Another challenge is that the customer may not really recognize the full potential of the product and is therefore not willing to pay for the value the company supposes that it gives the customer (Hinterhuber and Liozu, 2012). The willingness to pay (WTP) is how much a customer is willing to pay for a given feature, solution or product (Kotler and Keller, 2006). It is obtained through market analysis where customers are interviewed and asked to state the maximum they would pay for it (Kotler and Keller, 2006). It is important to assure that the customer understands the full value of all the features the product offers, otherwise the WTP will be incorrectly estimated (Kotler and Keller, 2006). Companies often treat the WTP as a given constraint when setting the price, not as a variable that can be actively managed (Kotler and Keller, 2006).

There are five main ways of gathering new data about the customer. It can be obtained through observations, research groups, surveys, analyses of behavioral data and via experimental research (Kotler and Keller, 2006). Both direct surveys and indirect surveys are available in order to measure the WTP. With direct surveys, potential customers are sampled and asked to state what amount of money they would be prepared to pay for a described product or a solution that solves a customer need (Breidert, Hahsler and Reutterer, 2006). Indirect surveys instead contain a rating procedure from the customer (Breidert, Hahsler and Reutterer, 2006). Different product profiles are ranked against each other to create a preference structure from which the surveying company can obtain the willingness-to-pay (Breidert, Hahsler and Reutterer, 2006). The products can be ranked by means of systematically varied prices, which are easier for the customer to take a stand on (Breidert, Hahsler and Reutterer, 2006).

2.2.4 Underlying Purposes of the Development of a New Product that Affect the Pricing

Depending on the underlying purpose of the product development, additional parameters have influence on the pricing (Palmer and Kavanagh, 2011). The most frequently reported parameters from previous literature are parameters related to profit, survival, sales volume, sales revenue, market share, image creation, competitive advantage, barriers to entry and perceived fairness (Shipley and Jobber, 2001). Perceived fairness is understood as the situation where both the selling company and the customer perceive the price as fair (Shipley and Jobber, 2001). The image parameter implies that if the company has a value-for-money approach, the price must be lower than what is perhaps possible to charge if the company has a high-end approach to attract the customer (Cooper and Slagmulder, 1997).

2.2.5 Product Line Strategy

Many products are categorized into product groups regarding, e.g. quality to ensure market coverage (Cooper and Slagmulder, 1997). There are three main levels for segmentation where different prices may be charged for respective segment (Schäder, 2006). Products may also be developed for certain markets, e.g. “Small family car”, where there exists an upper market price limit regardless of the features (Cooper and Slagmulder, 1997). A “Small family car” cannot cost more than a certain amount of money to be successful because of targeted customers’ income restrictions (Cooper and Slagmulder 1997). These act as constraints and something that influences the pricing of a new product.

2.2.6 Pricing Strategy

Noble and Gruca (1999) states the occurrence of three pricing strategies nearly associated with pricing of newly developed products: skim pricing, penetration pricing and experience curve pricing.

2.2.6.1 Price Skimming

Price skimming requires that the product contains new technology or obvious improvements that attract customers (Huimin and Hernandez, 2011). Price skimming means charging a high price immediately after the product is launched and then reducing the price step by step (Huimin and Hernandez, 2011). In this way, the company wants to make the most out of customers' willingness-to-pay (Huimin and Hernandez, 2011). The positive outcome from price skimming requires low elasticity of demand either by the overall market or by special market segments (Huimin and Hernandez, 2011). Price skimming is also effective in the situation where customers are unfamiliar with a product category and a higher price is considered standing for higher product quality and product value (Daly, 2002). Customers then sometimes choose to buy products that cost more (Daly, 2002).

2.2.6.2 Penetration Pricing

In penetration pricing, the selling price is initially set lower than the average market price in order to gain extra market shares (Daly, 2002). This may create a fast diffusion and market visibility of the product and market acceptance for the product (Daly, 2002). Another purpose with penetration pricing is to build a solid user base (Daly, 2002). A possible implication of penetration pricing is that other companies get deterred from entering the market (Dolgui and Proth, 2010).

2.2.6.3 Experience Curve Pricing

In experience curve pricing, the focus is different compared to penetration pricing and price skimming (Noble and Gruca, 1999). The experience curve effect implies that unit costs decrease with cumulative volume. The strategy is to take advantage of this by setting prices low to build cumulative volume early and thereby reducing unit costs (Noble and Gruca, 1999).

2.3 New Product Pricing Process

A framework presented by Bernstein and Macias (2002) consists of activities needed in a successful new product pricing process (NPPP). The three main aspects outlined above - competitors, costs and customers - are covered in this framework together with product line aspects.

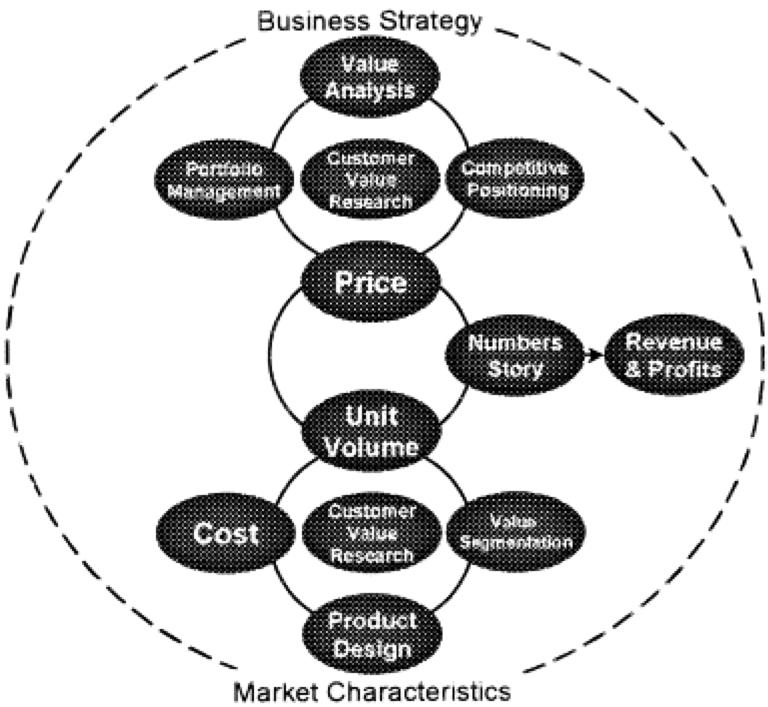

Figure 1. *Bernstein and Macias, 2002.*

- *Portfolio Management* has the purpose of avoiding the introduction of a product that will lead to a cannibalization that affects the total product line too negatively. The pricing of the product line can simultaneously with the new product introduction be overviewed and optimized.
- *Value Analysis* - Methods to weigh the importance of product attributes through an effort to acquaint oneself with the customers' perspective. When an attempt to rank the attributes against competitive suppliers and technologies has been made, it is possible to begin to quantify the value of the new product.
- *Competitive Positioning* - The data from the value analysis is used to map the new product compared to products from competing suppliers and competing technologies. A price-value map can be created in order to summarize and support the product team before the positioning decision.
- *Product Design* - In this task, the central consideration is to confirm that product features comply with customer needs, meaning a control ensuring that the product is not over-engineered.
- *Value Segmentation* - Groups of customers are distinguished because they are supposed to have different value perceptions for a given product. Possible criteria for a value segment are the application of the product, the purchasing industry, or the region the product is being sold to. Non-traditional market segments should also be considered in the analysis.
- *Cost* considerations are a part of the NPPP because of the importance to understand how the product affects costs and profitability. A system must be put in place that can manage

changes in product costs over time and that analyzes a perspective of variable and fixed costs. The constant effort to drive engineering and procurement functions in a company at the lowest possible costs is supported by the NPPP in this manner.

- *The Number's Story* - The previously collected data is aggregated into a spreadsheet model in this activity. This model integrates price with unit-volume into a forecast of revenues and profits for different pricing scenarios.
- *Customer Value Research* - This is about predicting what the customer will value in the future. More approaches connected to this subject are generally needed, according to Woodruff (1997). Mainly indirect approaches are necessary, because customers typically do not know how they will value product attributes in the future (Woodruff, 1997). Repeated customer value research is one approach that tracks desired value on individual-value hierarchy dimensions to explore patterns of change (Woodruff, 1997). Future customer value change can also be determined through data on specific determinants, such as macro environmental factors, competitor innovations, emergence of new markets and changing customer use situations (Woodruff, 1997). Both qualitative and quantitative research methods are included for understanding customer perceptions of value (Bernstein and Macias, 2002).

2.4 Organizational Influence on Pricing

The pricing decisions of the company can be divided into three levels regarding time horizon and hierarchy (Laitinen, 2011). The levels are; Strategic pricing, Tactical pricing and Operational pricing (Laitinen, 2011). The strategic pricing is decided by the top management and should be consistent with the overall strategy of the company (Laitinen, 2011). It has a long-term perspective which lasts over several years. The tactical pricing is decided by the middle management, which follows the strategic pricing objectives from the top management and sets the price on an intermediate basis (Laitinen, 2011). The operational pricing is the short-run decided price, it is the final selling price and it is set by the operational management and sales staff (Laitinen, 2011).

The organization of pricing decisions depends on delegation and is organized very differently among firms (Laitinen, 2011). There are often numerous different departments in a company that have an impact on the pricing of products and the opinions about pricing tend to differ between the departments (Brennan, Canning and McDowell, 2007). A pricing committee with members from different departments is a way to spread influence across the whole company in the pricing decisions (Brennan, Canning and McDowell, 2007). The task of the pricing committee is to direct the pricing process, with its most important functions being administering pricing policy, responding to competition and developing the pricing strategy for the company (Brennan, Canning and McDowell, 2007).

2.5 Customer Price Negotiations

To operate and sell goods in a B2B market has other requirements than to be in a business-to-consumer market. Price negotiations are a commonly occurring activity when the final selling price is decided (Daly, 2002). Several aspects have an impact on the final price, e.g. length of contracts, quantity, delivery conditions, payment methods, number of substitutes, costs and risks for the customer to switch supplier, and the power between the companies (Wright, 2004). Trust is also an important aspect in B2B transactions (Hawes, Mast and Swan, 1989). It is the “binding force” in many productive relationships and can have a greater significance than both written contracts and legal rights (Hawes, Mast and Swan, 1989). There is a more economic and less subjective evaluation in B2B; the business customer is more rational (Laitinen, 2011). A higher amount of information sharing among business customers and a better training for and qualification of purchase managers have led to improved negotiation skills for these managers. (Lancioni, 2005) There is a pressure from purchasers on B2B companies, which has increased the importance for the latter to implement a suitable pricing strategy (Brennan, Canning and McDowell, 2007). Because of the complexity of negotiated prices, the actual price paid by customers may be half the product’s list price, and, importantly, executives in the seller organization may not know what the actual price becomes (Lester, 2005).

3. Methodology

The chapter starts by explaining the research method and why it was chosen. It continues with a description of how the data was collected and analyzed. Further, the chapter explains how the selection of the objects studied was conducted. The chapter ends with an explanation of how the empirical data is presented.

3.1 Research Approach

The theory was processed prior to the empirical data being obtained. This helped to create an understanding of the research field and helped in the development and refinement of the research questions. A qualitative approach was chosen, and to answer the research questions, primary data was gathered via on-site semi-structured interviews.

3.2 Selection of the Case Companies

The selection of interview objects, i.e. the companies, was carried out with regard to their products, their amount of customers for the examined products, the company having a broad product line and their operating in a B2B context. Their products were required to be somehow standardized and the amount of business customers was required to be relatively high. This was because we wanted to examine companies with an extensive organization which probably had a more developed pricing than smaller companies.

Three companies which matched these criteria were chosen. The determinant factor was the ease of information access but another factor was that the companies were interesting to study from the authors' point of view. The companies decided themselves which business unit that was able and suitable to participate in the study. All companies are multinational groups with many business units producing different products. Henceforth, it is these selected business units which are referred to as "companies".

The companies did also decide which manager that was suitable to interview, since we did ask for the person with best knowledge in how the company decides and arrives at the price which faces the market. We assumed that the targeted companies had the best knowledge in selecting respondents. This was because of the ambiguity around job titles and job descriptions, where a certain job title may have different meanings at different companies. The choice to consider one respondent at each company as enough to interview was motivated by the fact that the respondents answered on behalf of the whole company and did not give their personal opinions. The respondents had sufficient knowledge to describe the pricing holistically.

3.3 Data Collection

For the interviews, a questionnaire was created with guidance from the theory, with three question areas following on from each other in an order we considered logical. The authors had responsibility for two and one question areas respectively. It started with the NPD process and was followed by a question area regarding the aspects influencing the pricing. The last area covered how the companies were organized in the pricing process. The questions were formulated as open-ended questions to give the respondent the freedom to develop a discussion about the topic the question covered. When we had the impression that a question area was exhausted, we proceeded to the next. When the three question areas were passed, the respondents were asked follow-up questions which we had the impression of had not been fully answered in the first place. The interviews were held under time restrictions, and the decisions to shift question area were affected by the risk of running out of time with main questions still remaining unanswered.

The respondents were given the main questions in advance, but no follow-up questions. This was something that was requested from the respondents. There is therefore a risk that the answers were distorted to some extent. We did, however, experience that all of the respondents were sincere in their answers. To do on-site interviews often eases the gathering of the information that is sensitive to disclose due to the personal contact they lead to (Jacobsen, Sandin and Hellström, 2002). To get the respondents to talk as freely as possible, they were offered the opportunity to participate in the study anonymously. In addition, anonymity was something that was requested. The interviews were thus anonymously conducted. The respondents therefore did not have to be concerned about any consequences of what they said or that the information they gave could be used by others, e.g. competitors. Due to the anonymity, the companies are hereafter called Tool, Paper and Safety after the respective industries they are operating in. The respondents are called SPM, DEPM and MAM, which are their job title acronyms.

Company	**Respondent**
Tool	*Senior Pricing Manager* (SPM)
Paper	*Director European Product Management* (DEPM)
Safety	*Market Area Manager* (MAM)

The interviews were recorded and some notes were also taken during the interview, mainly drawings made by the respondents on whiteboard. The interviews were conducted in the following order: Tool, Paper, Safety and the time spent was 1,5 hour at Tool and 1 hour at Paper and Safety.

3.4 Data Analysis

To facilitate the structuring of the findings, the interview was transcribed in the same order as it was spoken with no rearrangement the day following the interview. We then structured the data with labels according to the question area in the questionnaire and to the appropriate question within it. This was needed as the respondents in some cases shifted spontaneously between the questions within the question area. Some questions were also partially answered when the respondent had longer expositions regarding other questions asked. The use of a semi-structured interview helped the structuring of the gathered data and in the extension; it facilitated the comparison of the companies.

3.5 Presentation of the Empirical Data

The empirical data is structured with the respective case company presented separately. The question areas are presented in correspondent order for each company. The pricing process is presented in a model for each company, which the authors have constructed by their own.

4. Findings

This section begins with a description of the individual NPD processes of each case company and how the company is organized in the pricing and NPD process. This contributes to a more complete understanding of why companies choose certain approaches to determine a price. It is followed by a description of the aspects which the respective case companies weigh against each other in order to reach the list prices and the final prices for a new developed product, and in addition we describe how the consideration between the aspects is done. The chapter ends with a description of negotiations conducted with the customers to reach the final price.

4.1 Tool

The first company, “Tool”, is a business unit in a multinational group. The group has an annual turnover of 75-100 billion SEK. Tool is a world leading supplier of tools for the metalworking industry and the company has a long history of developing new products and solutions. The interview was held with a *Senior Pricing Manager* (SPM).

4.1.1 The Design of the NPD Process

The company has a determined and defined product development process which is written down in a manual. It is a quite generic manual that the SPM does not think differs much from what other companies in the industry use. It begins with a pre-study, which is then followed by a phases where prototypes are developed and evaluated. The most promising one is chosen and further developed. When this is done, the production is scaled up and the product introduced to the market.

The pricing department’s participation during this process is also divided into phases. It begins with a business plan, where a perception of the market price and the estimated level of profitability are created. It is followed by a pre-study, where the analysis is refined by looking at the specific solutions chosen for the product. A project work is the next phase, where the estimated market price and the level of profitability are further refined. The analysis then leads to a decision to start the production. The pricing department’s work does not end with this phase. Follow-ups are conducted and activities maintaining the price level of the product are done with regular intervals in the future.

There are gates after every phase in the development process, where a control group, consisting of people from the Production, Product Management, R&D and Marketing, decides if the product manages to meet the set requirements, regarding e.g. functionality. Even if the product does so and the control group gives its approval, it is still not certain that it will proceed to the next stage. The pricing department has the final say and if they have the perception that the product will not meet the profitability required, the product will be stopped even if it is promising in other aspects. The SPM says that their power to stop a product is not always applicable, the president of Tool can of course go against what the pricing department decides. Another situation where a product may be approved despite its lack of predicted profitability is when it has a distinct strategic importance in the product group portfolio which Tool's products are divided into.

This procedure, with the need for approval after each phase in the NPD Process, is always followed, no matter the size and scope of the development project. The SPM, however, explains that, depending on their prior experience in the product segment, and the size and scope of the development project, the time each stage takes may vary a lot.

4.1.2 The Organization of the Company in the NPD and in the Pricing Process

The price is an important part of the marketing message. What the customer sees is the price, so every perspective has to be incorporated in it. For this to be successful, the SPM says that the pricing department has to collaborate very closely with the other departments. The pricing department is therefore the department at Tool which has the most exchange with other departments. It focuses a lot on cross-functional teamwork and information exchange. They have a close relationship with the financial department, sales department, product management, R&D and the production sites. Every department has its perception of the value and varying influence in the pricing decision, but it is the pricing department that makes the final decisions. Representatives from each department meet regularly and discuss the progress and arisen issues regarding the NPD. How much the different departments take part in these meetings depends on where in the NPD process the product is. The SPM gives an example of that the closer it is to the launch, the sales department more often takes part.

They have a rigorous documentation of their new product development projects, and this documentation is always turned into a price strategy for the product. The price strategy is the basis for the further communication material that is written and distributed to the different departments in the company as guidance.

The profitability requirement that is always present for the pricing department comes indirectly from the shareholders, but it is the management for the group that decides the specific requirements for each business unit, where Tool is one of several.

The control of the organization lies within responsibility areas for product sections. One individual is responsible for a certain product section, a system that suits the working procedures of respective departments, according to the SPM. Consequently, an individual is responsible for a single NPD project from start to finish if it lies within his or her product section.

4.1.3 Aspects in the Price Determination

4.1.3.1 Strategic Objectives in the Pricing

Tool does not use any of the price strategies described in the theoretical framework consistently for new products. There is only one chance to set the price and if a company misses that chance, they are in trouble. They have not experienced any positive effect from changing the price level subsequently as price skimming and penetration prescribe. They therefore put a lot of effort into maintaining the initial price set.

4.1.3.2 Competitor Aspects

The SPM is very clear that the customer always has a reference point to compare the offered price with. Even if the new product does not have any obvious competing product, there is always a product out on the market that satisfies the customers' current needs to some extent. The market is mature and the customers already have solutions of how to manufacture their products. This acts as a constraint when the price level is decided. They always have to take the price of the current solutions available in the market into account, even if their new product is objectively "better". The way to find the reference point on the market varies between occasions and product areas. The SPM says that they always have the official list prices of the competitors to look at, which are published in their product catalogues. The actual price charged is more difficult to estimate. Here, the sales staffs' and the product management's perceptions of the price contribute.

What it is all about, says the SPM, is to see how to offer a product that can solve the customer's production problems better than competitors are able to, and to have the ability to get the customer to understand this. This is done with mathematical calculations, where Tool computes how much their product will lower the cost or raise the productivity for the buying company compared to a competing solution. The calculation can include parameters such as product life-span, the operating precision and the operating speed of the tool. This may not be done completely objectively: the value conclusion will be quite subjective due to the lack of information about the competitors' products. This together is then summarized and shown to the proposed customer. The SPM gives an example of a potential customer which today manufactures products with a value of 100. Tool can, however, show that if the customer buys Tool's new product, this will raise to 120. Tool then sets the price with regard to this increased productivity. Some of the improvement is given to the customer in terms of that Tool's price is set some percentage below the increased earnings of the customer.

4.1.3.3 Cost Aspects

The cost aspect can never be something the company bases its pricing on. It is not possible for a value-based company to have a pricing that depends on costs, according to the SPM. A customer will hardly purchase a product with a price that does not meet the customer's value perception only because of an understanding of the costs the company had to produce it. The economical solution to this issue is to make sure that a constant maintenance of the price is carried out. With maintenance, the SPM claims the work with actively managing a price level. This maintenance also gives the company the opportunity to get through periods with difficulties, for example higher raw material cost, which is a critical variable in this industry, because it secures a good compensation from the product over time.

4.1.3.4 Customer Aspects

Customer research is made in form of market research and market analyses. The SPM calls it brand evaluations. Customers are contacted to get to know their view about the company but questions about price are not straightly formulated in these surveys. Instead, Tool conducts analyses of the market price internally. Indirectly, information about how the customer perceives them compared to other companies regarding price comes forth from the customer surveys and the company gets to know pros and cons with its service areas. Such information is also analyzed, for example by mapping customer profiles into segments and obtaining values on specific brands. However, the customer surveys are not a task for the pricing and marketing department; they are carried out by the management levels of the group, who thereafter decentralize the information with Business Intelligence systems.

The questions that are asked in the research for WTP concern above all descriptions of value from the customers. The value term is examined with questions about what the customers appreciate with the product and why someone would buy the specific product ahead of other products which constitute the reference point on the market. After the research, the pricing department ranks the product subjectively against competitors' products on a value-classification gradation. A tight cooperation with the Product management department and the sales staff is necessary within this work, where the worth of the total offering - including both the physical product, the size of the product line and added services - is defined from a marketing perspective. Testing of the performance of a new product is conducted in order to establish a relation between thought price and performance. An important aspect is to direct the research to the right people in the customer companies, i.e. those who are responsible for the buying decisions. The purchasing department often does not have the mandate to make the decisions even if they purport to have it, according to the SPM.

The SPM says that the company works in detail with monitoring the customers. Their own life-cycle is very dependent on the customers' life-cycles, because it is the latter that create new materials, which in turn requires that the company develops new tools that can manage these new materials. Because it often takes a good amount of time to develop something new for Tool, they check the final market constantly to identify demand shifts. They also check what the customers are in process of developing and have plans to develop. The preferred situation is to work close together with the customers' Research and Development departments.

4.1.3.5 The Interaction between the Aspects in the Price Decision

With the cost aspect omitted, the customer and competitor aspects remain to balance in the discussion about the pricing decision. The consideration between customers and competitors is reflected by the estimated value Tool finds its products to hold. They have to find a balance in how much they can consider their product to be worth. The competitors are always present, which is something to consider, but it is difficult and perhaps not meaningful to give them too much focus. The SPM says that they have to act with regard to that it is illegal to investigate what prices other companies have, other than look at their official list prices. Even if the customer offers to reveal the actual price they pay after various discounts, Tool is not allowed to receive it.

A solution to this is to put a lot of effort in finding the reference point from the market. Somehow, it is always possible to figure out what the customers pay today for the same needs that Tool plans to develop a product for. This is done in close cooperation with product management, where they observe the products and the substitutes which are available on the market at the moment, and try to define the value of their future product from a marketing perspective.

An overall product plan, for every product group, is established and assigned a profitability requirement. The SPM points out that they never origin from this profitability requirement when the price is determined. In practical terms, they look at whether they can afford to produce the tool given the price determined earlier.

Price levels for future products are planned and mapped. The price considerations are a basis for profitability judgments. The pricing is not necessarily long-term; it is the profitability requirements which are strategic decisions. Financial requirements about profitability are gotten from the group management, but the marketing strategy and the product strategy are very much up to the business unit managers themselves. The pricing department tries to examine which initiatives and products are able to meet the profitability requirements. If the products have difficulties living up to the strategic goals, a two-way discussion takes place between the group management and the pricing and marketing departments at the Business unit. When their ambitions differ and cannot be combined, one of the organizational levels adjusts its original ambition. The SPM claims that it is important that there is a well-argued dialogue with a broad underlay and where both of the parts can make adjustments because of convincing arguments from the other part.

The SPM believes that it is important to open up for a lively discussion between the sales staff and the rest of the company. The sales staff always believe that a lowered price will lead to higher sales and a better result. The SPM, however, says that there is no clear pattern that this should be the case, but welcomes the debate.

4.1.4 Price Negotiations

Negotiations with customers before transactions are very common at Tool. Every customer has its own final price. The outcome in price depends partly on how much in the transaction terms the customer can accept or perform itself. Discounts are frequently used in the company's industry and they are given when customers fulfill the requirements for performance, e.g. by buying a certain amount. List prices constitute a mainstay for them as well, because the list price is the basis for made frameworks of how large price deviations can be tolerated. The list prices can often be shown for the customer in negotiations. They try to control the sales staff quite strictly, setting boundaries for the mandates of this staff. The pricing department serves as a counterbalance to the sales staff and questions the arguments for lower price. The SPM believes that such discussions are positive for the company. Reducing relational elements in negotiations is an objective for Tool.

A mentioned challenge with price negotiations is the consideration about how much influence the purchasing department, which Tool negotiates with directly, really has in the buying organization. The SPM's opinion is that if you press the purchasing staff, it becomes clear that they do not have the mandate to make the final buying decision. To know which people really make these decisions is very important for Tool, since it tells them who to focus on convincing in the buying organization.

The SPM does not have the impression that the buying organizations have an advantage during negotiations due to better information. However, the SPM describes that the buying organizations have gained knowledge during the last years and have now reached an information level in negotiation situations that is approximately as high as Tool's is. There are aspects to consider about the size of the company with which the negotiation is conducted. When Tool sells to small and medium-sized companies, in most cases it is the CFO they negotiate with, and a CFO generally has less information available than professional purchasers have. And when the size of companies to negotiate with increases, the development is instead that they decentralize and open many sites in different countries. In these situations, one site often has insufficient information about how other sites in the same company act and how much they pay for products. This is something that Tool has been taking advantage of in negotiations, but the conditions have begun to change to a better overview for the buying organizations, i.e. with support of enterprise-wide information systems. For Tool, another advantage is the technical knowledge they possess compared to buying organizations. The large amount of technically similar products implies difficulties for the purchaser to compare products against each other, and in these situations they are forced to be guided by Tool's staff and Tool is not interested in helping a potential customer by mapping similar products from competitors together with their own product. The clear advantage held by the customers is the knowledge they have of the prices that all competitors offer, information which is illegal for Tool to gather due to the competition law. However, the SPM's opinion is that Tool compensates for this disadvantage by the value descriptions they make to the customers and by showing cost calculations in business cases. The business case proceeds from the value-classification gradation that Tool carries out earlier in the process.

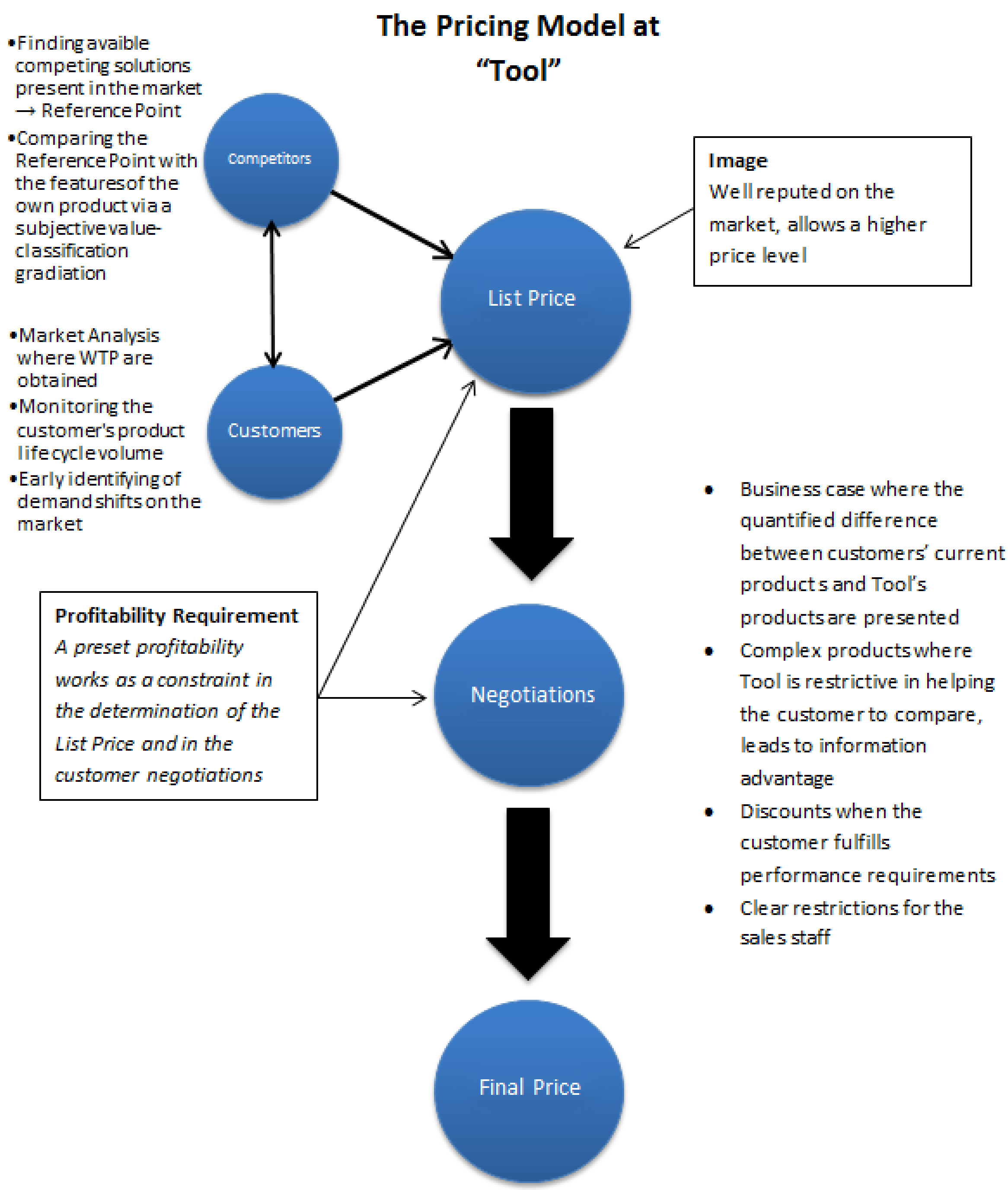

Figure 2. *The Pricing Model at Tool.*

4.1.5 The Price Entrance in the NPD Process

The price is something that is in focus from the very start in the NPD process and this is reflected in the fact that there is target cost established for every product. This target cost has its origin in an estimated market price. The creation of an understanding of how much Tool can charge on the market for a future product, is conducted before a profitability forecast is conducted.

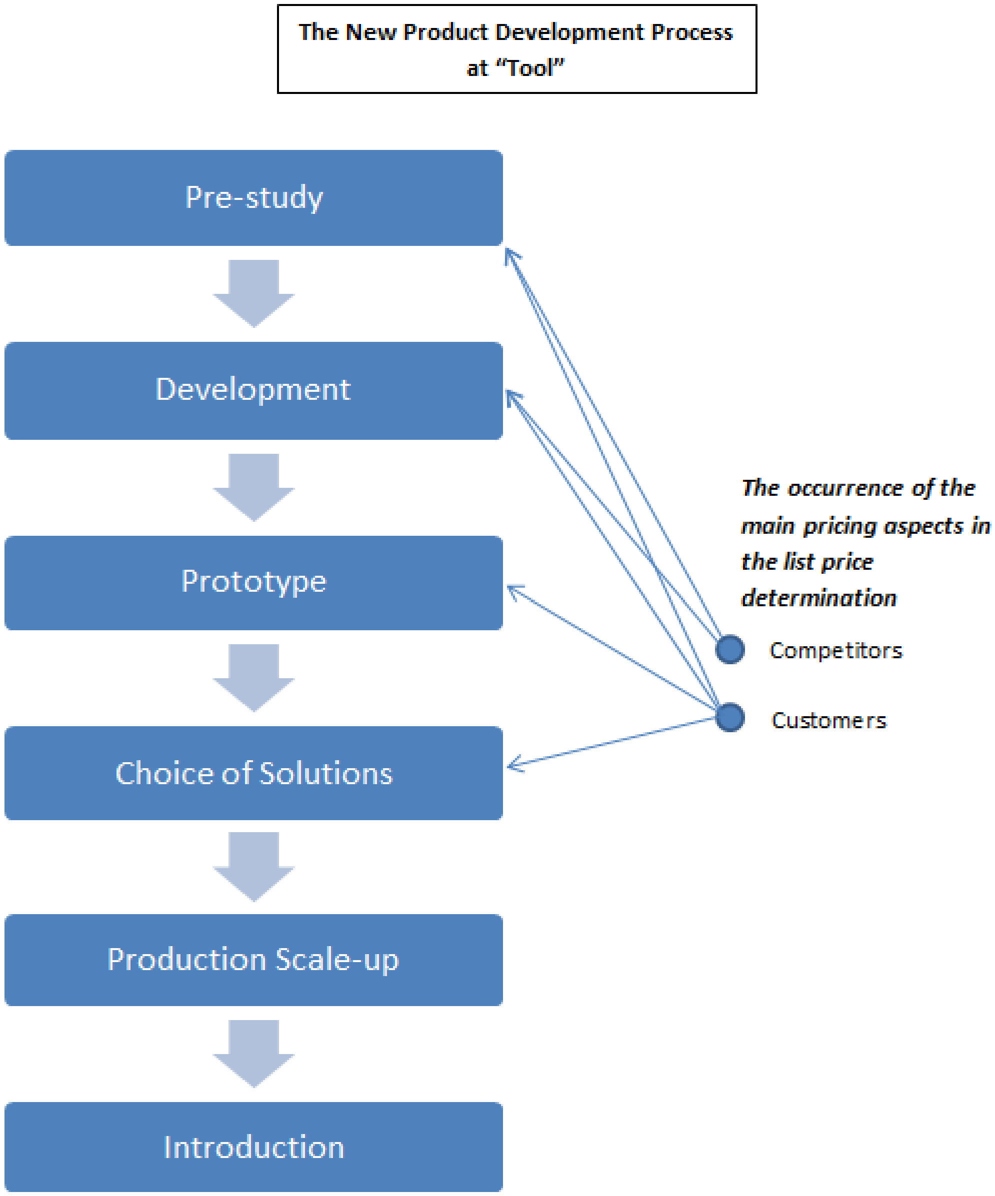

Figure 3. *The NPD Process at Tool.*

4.2 Paper

Company "Paper" is a world leading producer in the household goods industry with many brands. The targeted company is a business unit within a multinational group. The group has an annual turnover of 75-100 billion SEK. The interview was held with a *Director European Product Management* (DEPM).

4.2.1 The Design of the NPD Process

The company has a clear and defined NPD process - the company is overall process oriented, according to the DEPM. The NPD process consists of four phases, where the first one is a feasibility study. In this phase, the potential of the market is estimated via market surveys. The next phase is the concept development. Different product concepts with various features, materials and technical solutions are developed and examined. After this phase follows the development phase. The preferred previous developed features are selected, how to produce the product is decided, and the product is taken into production. The last phase is the launch. The whole development is well documented and illustrated, resembling a funnel. They try to have as many ideas as possible in the first phase and then sort out the projects which they believe have the best potential. There is a control group after each phase which has to approve the project before letting it pass. How this group is composed depends on the characteristics of the project. The responsible managers of the global category organization normally take part along with representatives from the regional markets (Europe is often represented by the DEPM). The global category organization was created some years ago with focus on growth, which should originate in e.g. product development.

4.2.2 The Organization of the Company in the NPD and in the Pricing Process

The development projects are internationally conducted and the company tries to, as far as possible, develop products that suit several markets. The two largest markets are Europe and the US, but the company is present all over the world. Previously, the two primary markets had their own product lines but Paper now tries to homogenize the product lines all over the world. They hope that this will lead to both higher sales and easier sales in the rest of their markets.

The strategic pricing is done in the international development projects. Until recently, this was done on a regional level, for example Europe. Information to make well-founded decisions is gained from the local units which are closer to the market. The company has product expertise groups which meet quarterly. These groups have members from five sales regions which convey the market information from the local units. Paper also utilizes external consultants for certain projects.

The information exchange in the organization regarding the price setting is rather informal but it is conducted via established formal forums. There is little spontaneous talking in the corridors where the staff exchange thoughts.

The DEPM says that each country has its own responsibility for achieving the assigned profitability goal, which is decided centrally, meaning that in the end, each country decides its own final prices for the products in the market. The decision order to reach the price is very clearly defined in the company. It is specified which departments and functions have the authority to make decisions. There are also guidelines which instruct who is to be consulted before a decision is made. The authority to make the final pricing decision towards the customer lies either on the Sales Manager or the Country Manager, usually the Sales Manager in practice. This depends much on the actual person who holds the office and differs from country to country. The Key Account Manager also has a crucial influence on the final price, as Paper has Key Account Managers for their large customers.

The DEPM finished the discussion by mentioning that the amount of forums occasionally makes it messy even for the staff themselves.

4.2.3 Aspects in the Price Determination

4.2.3.1 Strategic Objectives in the Pricing

Paper does not use any price strategy consistently for new products. The chosen price strategy depends on the situation for the company on the market, how the product line is composed and where the future product fits in the product line. They work with a product line strategy with three levels based on quality. A purpose with these strategies is to push prices upward, something that can be made because of more advanced products. Their overall strategy is to drive up profitability and price levels on the market.

Enticing prices is impossible to use in the industry, the DEPM says. It is important to avoid a too low price at the launch, because it is very difficult to get a price increase in a later stage accepted by the customers.

It is not possible to hold the price fixed during the whole life-cycle; it gets adjusted and the competition is influential for Paper's price.

4.2.3.2 Competitor Aspects

Paper pays attention to the competitors by scanning the market for similar competing products. They can approximately calculate the competitors' price levels because they often use the same distributors and are therefore able to observe which prices are charged by the distributors towards the end users. The price of the competitors is thereby seen as a starting-point for Paper, which they want to charge as a minimum. Initially, though, Paper has an ambition to raise the price compared to the level of the competitors, but how much they can differ is a difficult consideration. In deciding this, the assessed price elasticity for a future product, and to what extent Paper plans that the future product will be related to existing products in some sort of package, are important aspects. However, products are getting more generic with time and this implies tougher price competition. Much emphasis lies on the tactical level of pricing; the sales offices in every country are given responsibility for adapting the price to the competition situation. The strategic objective is to keep a high price as long as possible to avoid ending up in the bunch where products look similar and price erosion occurs. Paper seldom launches a product with a price lower than the competitors' prices consciously.

There are numerous examples of development projects where Paper searches for a solution that will result in a decreased consumption for the customer. To outweigh this, they raise the price compared to the predecessor product it replaces. They work on improving all the time and being ahead of the competitors regarding quality. They translate this objective into technical specifications by adding features and new attributes, for example better absorption, softer material or by manufacturing it with a stamp that can be related to the other products of the company.

4.2.3.3 Cost Aspects

The costs to manufacture have a directing effect on prices for a future product. The DEPM believes that the costs have too much effect on price in this industry. It is not a focus on mark-up levels for every product. It is rather the payback period of the investment that plays the important role in the decisions about investing in the NPD project or not. The focus should always be to secure the revenues that can pay back the investment amount in a given time period.

Because of the cost considerations and the will to be effective in the production, Paper is trying to reduce the product line and avoids chopping it into too small fragments. They are searching to launch a small range of generic products that can generate high sales volumes. This precludes setting high prices on too many products. A high price can imply a too strong limitation of the reachable market, according to the DEPM. The estimations of the sales volumes a future product can reach with certain prices are separately obtained from the various markets. The controllers analyze this information before taking the decision to go on with a development project.

4.2.3.4 Customer Aspects

The customer aspect is considered through much focus on looking at the existing product lines. They search for solutions that can facilitate for the customers and provide a higher value for them. How much new benefit, e.g. lowered consumption, the solution gives the customer is something that Paper assesses. If a new product has its aim to reduce the consumption for the user, as described above, the company calculates how much new benefit it gives the customer. The price is then set in relation to this new benefit, and that in turn is related to all the product offerings already available on the market.

Customer research is carried out with a lot of market research, where price is sometimes included as one assessment parameter in a whole concept. Regarding price, Paper looks at the customers' opinions about how much extra is reasonable to pay for types of solutions. The DEPM feels that by relating the future product to something existing, the willingness-to-pay can be obtained reliably. However, the acceptance of a complete concept is what Paper primarily focuses on in this research, thus ensuring that the products in development are needed by the customers. Which price levels are acceptable for the customers is one thing included in the concept investigated. They mostly conduct research on the end users, not the distributors. However, they have a dialogue with the distributors about issues regarding logistics and resource-handling.

4.2.3.5 The Interaction between the Aspects in the Price Decision

The DEPM claims that the customer's willingness-to-pay is the most central aspect in pricing, but concedes that the competitors' price levels "of course affects them". The costs are not mentioned by the DEPM in the reasoning about price considerations, except from the statement that they control whether a potential future product has profitability potential after reducing the distributors' profit margin from the end users' purchase price.

4.2.4 Price Negotiations

The R&D department at Paper does not work with price negotiations to any extent. This is an issue for the local markets. However, they very seldom negotiate prices on their refill products, i.e. those which are often consumed and which have low differentiation against the competitors' products. They instead negotiate the price on the containers for the refill products, because it is the containers that drive sales. The opportunities for buyers to discuss prices with Paper lie therefore on these products. The negotiations are strategy-based and this must be followed by the local sales staff. They are restricted within clear limitations, so there are only small variations in price between customers. The price discussions result in fine adjustments. The DEPM believes that price discussions are more of a mental thing for the customers where they want to be treated with respect and feel they have influence, and where they feel successful when reducing the price even slightly. This attitude is tolerated by Paper, since the price discussions on containers do not affect or risk Paper's price structure.

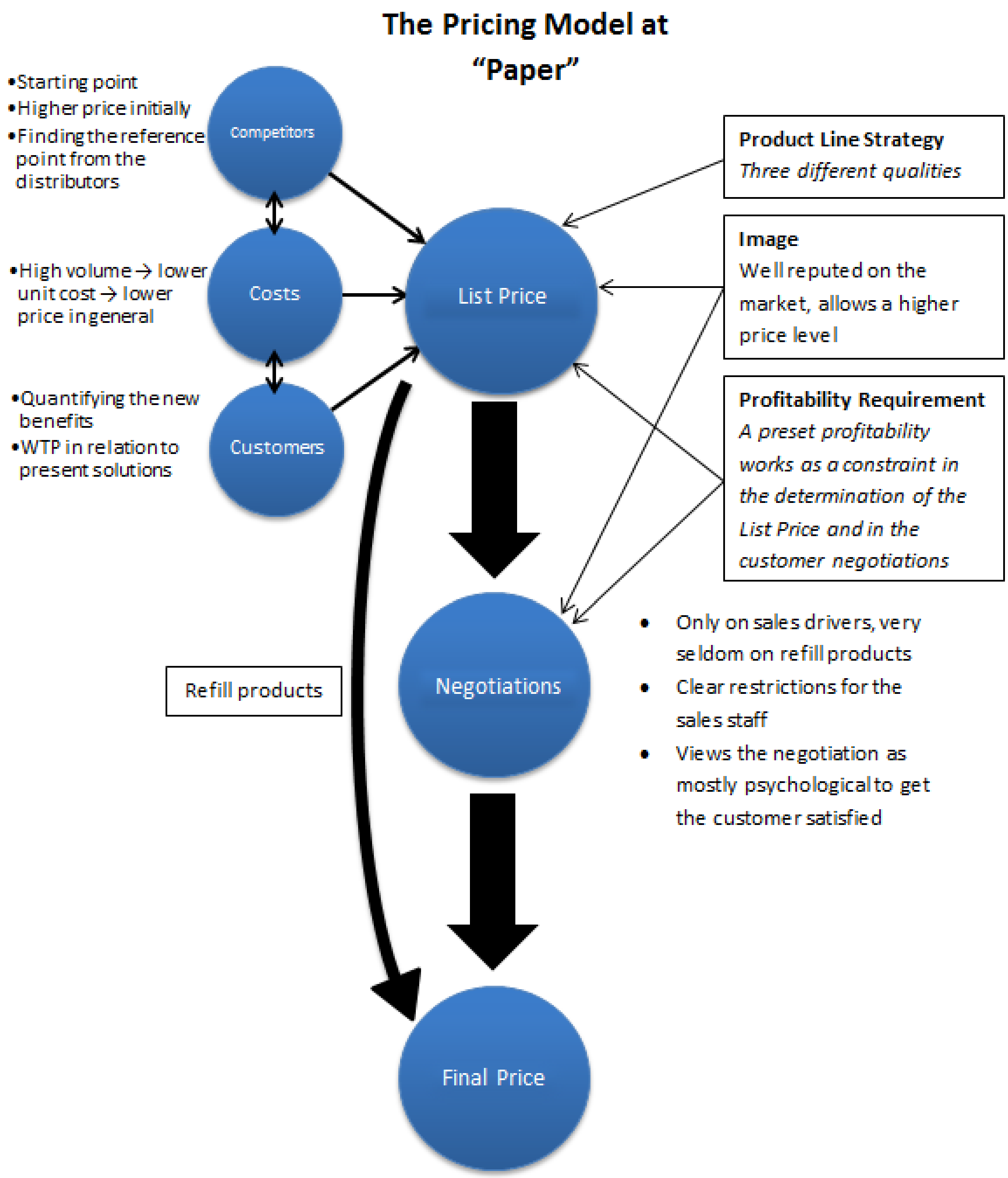

Figure 4. *The Pricing Model at Paper*

4.2.5 The Price Entrance in the NPD process

Paper is more conscious about the price today compared to just a few years ago, according to the DEPM. There is an attempt to shift towards introducing the price as a concern already in the first phase regardless of the product. However, the entrance of the price as a concern when developing new products largely depends on three situations. In the first one, when the company develops a new product whose aim is to replace a prior one, the price is something that they are very conscious about. The reason for the development is, in this case, often to reduce the price the customer faces. For this to be the result, a target price is established already at the beginning of the process. To achieve the target price, they prioritize work with cost reductions.

The second one is when the development depends on clear underlying driving forces. These can be, as the DEPM says, to develop a product that will work as a sales driver for other products and services in the product line offered. This sales driving force can apply to both products that are directly related and where one is needed for the other one, and for products that have a less clear connection but still have a positive effect of the sales volume of each other. Other underlying forces are the development for meeting a competitor's offering and also the aim to offer a full range of products in a market. Another driving force behind these projects is the distinct demand for less expensive products that certain customers have, and the working with costs is the means for achieving this. Consequently, the price awareness is in these cases present, but not as a target price.

Third, when a completely new product is developed, the price is not very often seen as the major aspect and therefore not introduced in the first phase. The development, however, has economic limitations. They do not work with any exact price limit, but there is always something to relate the new product to and the price of this reference product has to be taken into account. This reference product can be either one of their own or one offered by competitors.

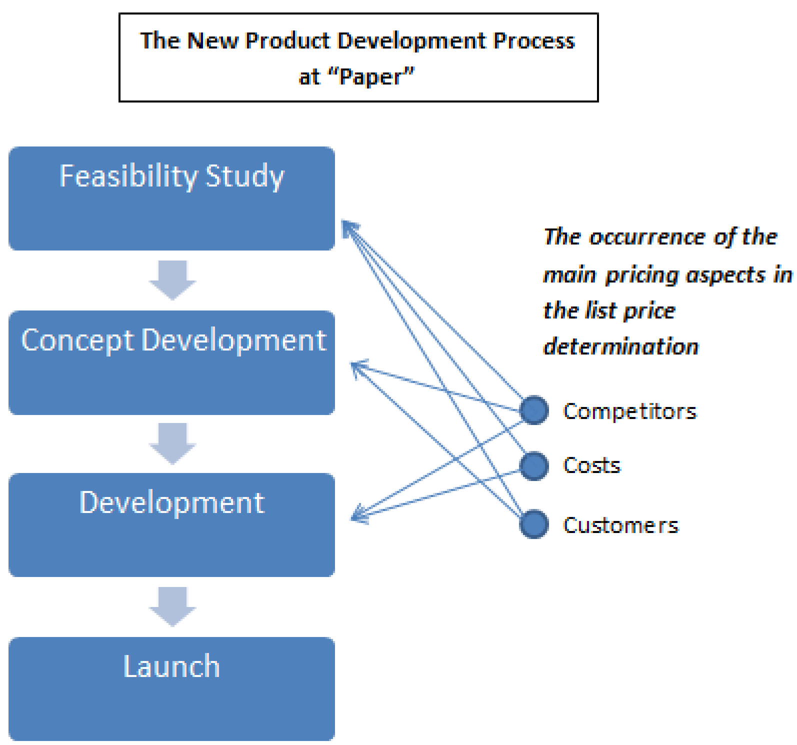

Figure 5. *The NPD Process at Paper*

4.3 Safety

"Safety" is a company active in the security industry. The targeted survey unit is one of several operating in different business areas under one multinational group. The group has an annual turnover of 5-10 billion SEK. They offer comprehensive solutions including both hardware and software. The target market is relatively unexploited with inexperienced buyers. The interview was held with a *Market Area Manager* (MAM).

4.3.1 The Design of the NPD Process

The company has a defined development process, but the process is not complex. As the MAM says, "We are not developing cars; we do not need 100 tollgates". The process consists of certain templates but they are still quite entrepreneurial. The industry is quite new, and therefore they strive to have a development that is open for thinking outside the box. The first phase starts with a meeting between the MAM and the R&D manager. They go through a template where certain questions are answered. These are, for example: What do we want the product to perform? Why do we want this product, what is the purpose? Is there any design requirements? How many do we assume we can sell? What will it cost to produce? What are the functional requirements? How long is the payback for the customer? What do we think about the price? This is then taken together into a document, a preliminary market/product specification, which is handed over to the R&D department as a help and guidance in their work.

The next phase is a feasibility study including a proof of concept where they look at if it is possible to do it technically. After this phase, an approval is needed from higher up in the organization; how high depends on the size of the investment needed. This is followed by what they call a product council. This council consists of the R&D manager, the Product Manager, a representative from the service organization and the sales managers from the five most important countries they are present in. The council establishes a priority list depending on the size of the project but also, to a certain extent, subjective assessments. At each meeting of the council, the five most important projects are selected and it is only these five who are taken further in the development process into what they call the development phase. The features of the product and how to produce it are decided in this phase, and prototypes are made. If it is a completely new product, Safety contacts possible customers and asks if they can test the prototype in a real environment for a couple of months and then come with feedback. In the next phase, a revision is conducted of the prototypes and the results of the previous phases. This review also includes the sales and service organization in order to hear their view and to come with feedback. The industrialization phase follows where the production site is constructed and the materials and final product design are chosen. The last phase is the launch where the point in time and the manner for introducing the product, e.g. at an exhibition, are decided, and the list price to the sales organizations is determined. The one responsible for the product during these phases is a product owner, usually the constructor. The product owner is then also responsible for the future maintenance and upgrades needed.

4.3.2 The Organization of the Company in the NPD and in the Pricing Process

The general price level is set by the Product Manager. The CEO of Safety then has to give its approval before the product is submitted to the sales companies. The managers of the sales companies then have the freedom to act within the frame the price level constitutes. If a sales manager considers that a customer is important and has potential, the price level may be undercut. For this to happen, a business case is written together with the MAM, where a consolidated margin first is calculated and both parties then can agree on offering the customer a price lower than the minimum price. This business case in turn requires its approval from the Business area manager.

4.3.3 Aspects in the Price Determination

4.3.3.1 Strategic Objectives in the Pricing

Safety does not use any of the new product price strategies described in the theoretical framework. The pricing is very dependent on Safety's strategic goal to have a consolidated profit margin on a given percentage. The consolidation comes from the production company and the sales company, which work with internal margins which are then added together in the organizational perspective. A perspective on the strategic pricing is the decisions regarding where in the company the margin is realized. The question is how the price for a solution should be composed to appeal to the customer. The price for a solution is divided between software, hardware and the service contract and Safety has a quite conservative view that costs for each component must be covered by revenues for it, because they serve as different result units at Safety. This can lead to lost sales opportunities when the customer is not satisfied with the subdivision of price.

Safety's price strategy is a pricing that varies from case to case, depending on how much additional sales volume Safety believes a given, low price level will provide and how much the customer can commit. Negotiations with each customer are one important part of the strategy.

4.3.3.2 Competitor Aspects

The sales staff contribute, to a large extent, with information on competitors' price levels. There is no systematic collection of information, but in meetings and negotiations with customers and in spontaneous discussions with competitors' sellers, Safety's sales staff ask and get information that is up to the company to evaluate the veracity level of. Safety uses a reduced amount of possible competing product solutions in order to find a fair reference point, because of varying characteristics of the product solutions in the industry. However, the MAM claims that the prices are difficult to compare against competitors anyway, because this industry provides products and solutions where the price can be divided in many different ways between hardware, services and software licenses depending on where the competing company wants to have its margin. Comparisons presented by the customers to Safety's sales staff are often unfair. It becomes crucial that the sales staff have the capability to see through these arguments. They begin a constructive business case together with the customer where they calculate how much their solution can save for the customer and what the payback time for the investment will be. The business case is intended to open up new perspectives for the customers, who often lack technical knowledge about the systems they buy and who have difficulties with evaluating the business case by themselves. The sales staff do sometimes come to the business area managers and try to convince them to decrease minimum prices on the systems. In these cases, it becomes an internal task for the managers to express their view of the comparisons for the sales staff.

Safety's ambition is to avoid competing on price, because, as the MAM claims, competition based on price would turn them into product sellers instead of solution sellers. But the MAM admits that for small customers who do not have the resources to acquaint themselves with all details, it often turns into a decision very much based on price and what other similar companies in the industry have bought. As the MAM states, "a statement is that we do take into account how the competitors act when we set the general prices, but a rather small account is taken in the single customer negotiation".

4.3.3.3 Cost Aspects

The costs are not a starting point when setting the price. However, the company has to check a product idea against the potential consolidated margin before the idea is turned into development, because it is a strategic objective from the multinational group. The cost level has a role as the lower limit which a new product is allowed to be priced at. The cost also has an impact in the preliminary market/product specification that the MAM and the R&D Manager establish in the first phase in the NPD process. The specification has an approximate target cost for how much the product is allowed to cost to produce.

Indirect considerations regarding costs are made when the company assesses the effect of production volume on overhead costs. Higher volumes per customer decrease overhead costs per unit and make lower unit prices possible for Safety to offer the customer.

4.3.3.4 Customer Aspects

Formal research methods are not employed by Safety. They rely on gut feeling and discussions with their own sales staff, who sometimes establish a positive contact with the customers in the ongoing customer projects. Then, they talk freely about the future products Safety is developing and the staff gets to know, for example, the approximate willingness-to-pay. They are not able to find the willingness-to-pay for future products with certainty, the MAM argues. The formula for success is, according to the MAM rather to have good relations with a couple of customers so that they can give feedback on questions about what is the benefit for them with a proposed solution and how much they estimate the usage of it to be worth.

Safety even has collaboration with large, important customers in the development and testing processes for new products. The collaboration is carried out with, e.g., roadmap discussions. They want to get feedback on the products. This is not a regular element at Safety; the roadmap discussions are at times employed as "a spice in the selling process".

4.3.4 Price Negotiations

At Safety, price negotiations occur for every sales contract. The strategic pricing has negotiations as one of its elements. As mentioned above, minimum prices are what the sellers are restricted to follow in price negotiations. If Safety perceives that a customer is ready to commit over time, they are in turn ready to give the customer a lower price. Safety works with two different types of agreements. First, there are framework agreements where a price is determined and the customer agrees on Safety as its only supplier but has the freedom to choose if it wants to buy or not. Second, volume agreements exist, where the customer is bound to buy a minimum volume every year. These are more attractive for Safety than framework agreements. The size of the customer does not have a clear effect on the price Safety offers; it is the level of commitment that is more decisive.

MAM believes that the buyers do not possess an overall information advantage in negotiations. Instead the parties have information advantages in different areas. The customer does not know that much about Safety's products because of the immaturity of the market, and the information advantage the customers may have regards their knowledge of the actual business processes in their industry. On the other hand, this knowledge could be problematic for a customer because it can make the organization sluggish and dubious to new types of processes. In Safety's role as a premium supplier, an aim for them is to create a discussion where they can highlight for the customer that it must do a comparison of alternatives that are similar. Otherwise it is difficult to charge a premium price.

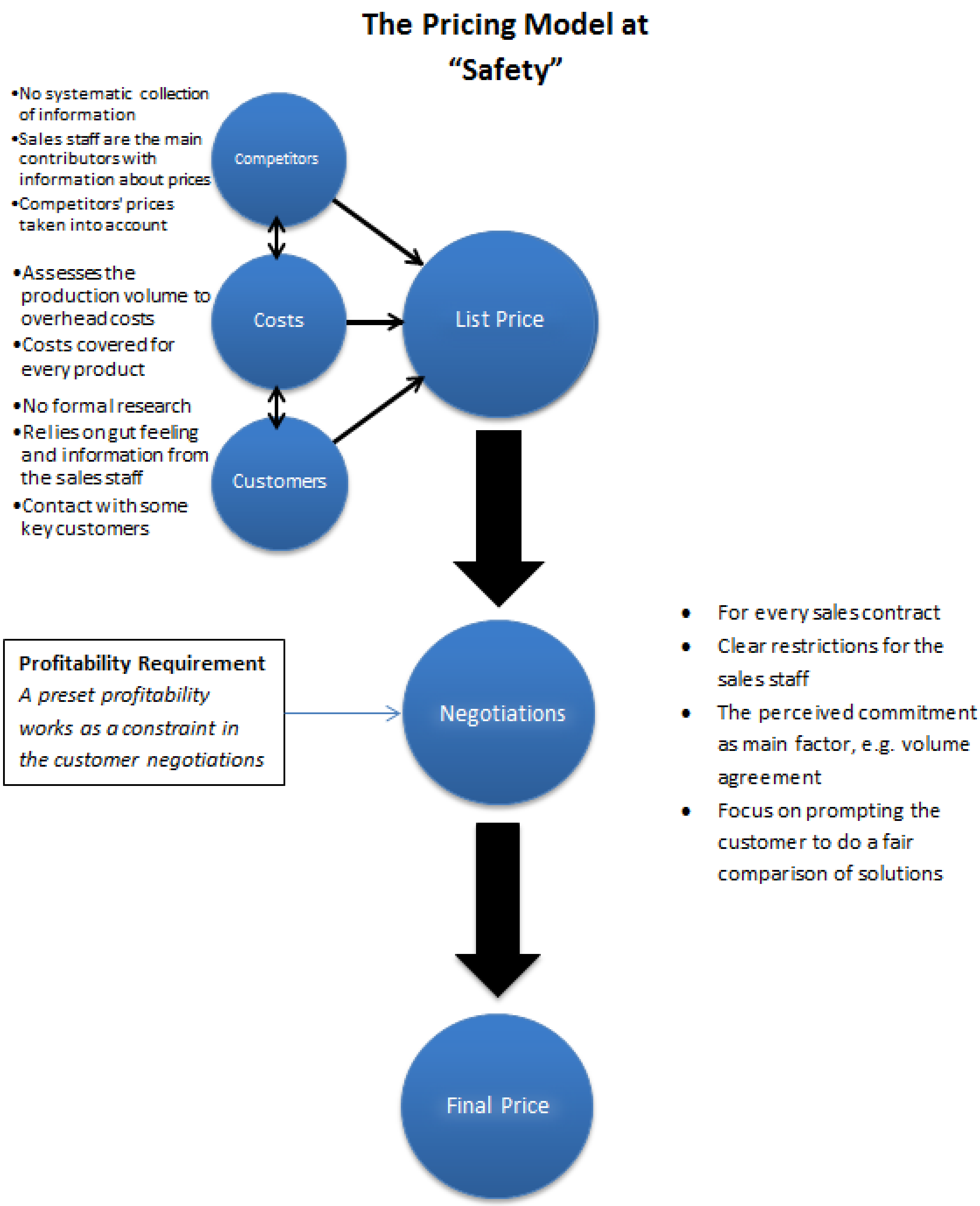

Figure 6. *The Pricing Model at Safety*

4.3.5 The Price Entrance in the NPD Process

Two years ago, Safety changed its focus from being mainly an entrepreneurial company towards a more prudent one. They realized that being too entrepreneurial could be economically disadvantageous. They do not want to let go of their entrepreneurial spirit but they realized that they also had to be more conscious about the economic aspects. One of the reactions was to begin with stating a target cost for every new product and another was to determine an estimated market price of it. These activities are done in the preliminary market/product specification document established by the R&D Manager and the MAM. This determined price takes its origin in Safety's executives' perception of the willingness-to-pay in the market. These "reactions" are then included in the market/product specification created in the first step in the development process. This has led to more tradeoffs between the functionality of the features included in the product and the cost of them. If half of the functionality can be achieved with just ten per cent of the costs, this solution will be chosen unless the customer disagrees to a large extent. The cost, indirectly the price that will face the end user, is now determined already in the first phase, down to a range of approximately 5000 SEK. The list price is though determined at the launch phase.

The MAM describes a development project prior to the changed attitude where a customer was involved in the project from its very beginning. The customer specified all the features it wanted but the development project ended up with a product that was too expensive, even though it had exactly what the customer had asked for, so the customer did not buy it. This, says the MAM, is one reason why they now try to have the price in mind already from the beginning.

Another reason for having the price as a starting point is that a price the customers perceive as too high will not lead to a purchase, regardless of the return on the investment. It is a mental constraint: it does not matter if it would be economically beneficial for them to buy the product. There is an unofficial goal that the payback for the customer should be no more than two years.

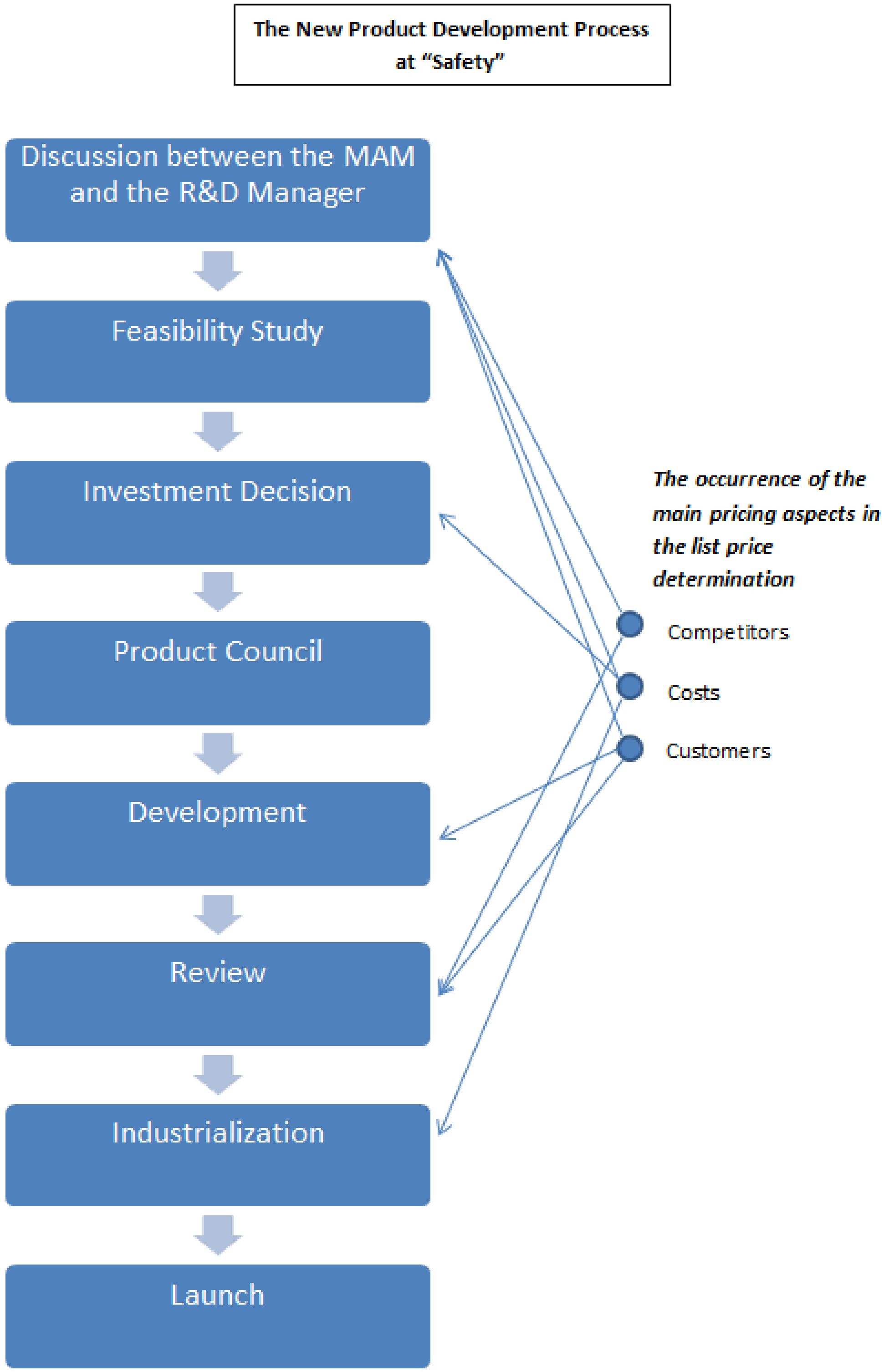

Figure 7. *The NPD Process at Safety.*

5. Discussion, Conclusion and Implications for Further Research

This chapter presents and discusses the results of the findings which answer the questions of the study. The chapter ends with a discussion about limitations of the study and implications for further research.

5.1 Discussion and Conclusion

The study deals with how pricing is conducted and which role it has, in the new product development process. One conclusion from the study is that the target price in the NPD process emerges throughout the process. It is not established as a fixed price in the first phase of the NPD process. A second conclusion is that the price of a new product is determined via two stages, where the first regards an establishment of a list price and the second regards the actual price each customer pays. Thirdly, the study shows that the use of individual final prices, reached via customer negotiations, is very common. A fourth conclusion is that the three main aspects of the theoretical framework, competitors, costs and customers, which are supposed to influence the pricing, interact when the list price is determined.

Target Price

The main contribution to the literature concluded from the findings is that the establishing of a target price early in the NPD process, which is described as necessary for a successful NPD in literature by Cooper and Slagmulder (1997), is not supported by this study. The target price can rather be seen as something that emerges throughout the NPD process to evolve into a list price. The determination of the target price is thus a highly dynamic process and not a one-time decision. We illustrate this dynamic process in the findings and recognize a mutual exchange between the pricing process and the NPD process.

All the case companies have NPD processes similar to the one described in the theoretical framework by Ulrich and Eppinger (2003), where the NPD process is seen as a sequence of phases. The names of the phases each company has are different compared to Ulrich and Eppingers' model, but the overall content is similar. The price as a concern in the NPD process for the studied companies does enter early in the NPD process, but not as an exact target price which the company relates to during the whole process and which cannot later be reconsidered. Although Tool purports to practice Target Costing, they also see the first estimation of the target price rather as a guideline in the product development. None of the companies have clear gates early in the NPD process where the target price is forced to be decided.

Another implication from the study is that companies do not use only one approach to how they act in the pricing of a new product. In the case of Paper, they act differently depending on the purpose of the product. A product that has a predecessor which it will replace has a target price established early in the NPD process, while a product that has no predecessor does not have this.

The absence of a target price can be explained by the assumption that when a completely new product is being developed, all the features may not be known beforehand. WTP research conducted before such a development project may therefore be difficult and costly. Because of this, the WTP may also be deficient and therefore nothing to base the pricing on. In this situation, the need of a target price is not as urgent as compared to when the aim of a development project is to reduce the price of a current product. The establishment of a target price may also hamper the creativity at the R&D department. Safety reflects over this issue when commenting that the entrepreneurship is one important basis for the company as they operate in an immature industry.

Pricing in Two Stages

The findings also show that the pricing process can be divided into two levels where the establishing of the list price is the former one and the establishing of the final price the latter one. The list price is used to show the customer the maximum price of the product since the products of the companies are non-custom made, which allows the establishment of list prices. The customer knows that it is a maximum price and counts with reaching a lower price after conducted negotiations. It also functions as an internal starting-point and something to relate to for the sales staff in customer negotiations.

The list price is mainly determined by the three main aspects while the final price is determined by a variety of factors such as the profitability requirement which constantly acts as a lower-limit constraint in the customer negotiation.

The Interaction between Aspects in the Pricing

The findings support the view that the three main aspects of pricing, competitors, costs and customers, are not to be considered individually but as aspects that together have an impact on and form the price (Shipley and Jobber, 2001; Daly, 2002). The companies, except Tool, treat them as a bundle but a conclusion is that all the companies have the higher weighting of the customer aspects in common.

To some extent the companies view their costs differently in the pricing discussion. At Tool, the costs are seen as something that can stop a product during the NPD if it is supposed that the product will not yield what is desired. It works as a constraint and not as something that directly influences the pricing. In the other case companies, we understand that the cost aspect is viewed more as one of the three main aspects and that they give it a clear influence. At Safety, it interacts with the customer aspects when the company balances the customer value with the features and costs of them. Since Paper operates in an industry which has traditionally focused on costs and still does, the cost calculation impacts price of a new product. The approximate price level is in most cases determined already before the actual NPD process starts, depending on the three situations described in the findings. The strive for having fewer generic products which can give the company economies of scale may counteract the strive of continuously raising the value for the customer and it thereby exists an interaction between the cost aspects and the customer aspects. If the cost level is low enough, it permits Paper to launch its new products at the competitors' price level and the costs thereby also interact with the competitor aspects.

In customer value research and discussions about it in the case companies, the reference point of the market, which substantially consists of the competitors' price level, is thoroughly discussed. The study indicates that the customer and competitor aspects interrelate to a high degree in the pricing.

Tool and Paper show elements of the pricing process described by Bernstein and Macias (2002). Both conduct activities which can be said to correspond to Portfolio Management, Value Analysis, Competitive Positioning and Customer Value Research described in the framework and Paper in addition conducts Value Segmentation. Safety's pricing process is not as predetermined as the process at the other two companies and therefore it could not be generally concluded if any of the activities in the model are practiced. However, we do not identify any activities at Safety, except Product Design, which can be directly coupled to the model of Bernstein and Macias.

Besides the main aspects there are, obviously, factors and strategies which also affect the pricing. However, these factors partially differ and so are not generalizable for the companies studied. Profitability restrictions exist at all the companies, but function rather as checkpoints which are present during the whole pricing process without constituting a direct input to the list price or the final price. Two of the case companies consider that they have a good repute and try to take advantage of this in the pricing. The image seems to be an influential aspect both for the determination of the list price and the determination of the final price in these companies.

Negotiations for Determining the Final Price

This study confirms the facts from literature (Daly, 2002; Kaplan and Sawhney, 2000) regarding that price negotiations play a distinctive role in determining a final price in B2B transactions. In two of the studied companies, the final prices were completely customer-individual and were negotiated before every sales contract. At two of the companies, the negotiations often revolve around business cases. The degree of commitment is decisive for the final price level and this commitment is partially expressed by the transaction volumes the customer buys, but simultaneously the final price depends on subjective evaluations from the sales staff regarding how high the future commitment from the customer will be.

It is expressed to the local sales staff at the case companies that they have to follow the strategic intention with the product, but in the case of Tool, the management does not need to describe the price strategy or the product line strategy of a product to the sales staff. The list price by Tool already expresses these strategies and the sales staff get clear restrictions regarding how much they are permitted to deviate from the list price.

The studied companies did not agree with the view of an informational advantage possessed by purchasers in price negotiations. Tool instead has the opinion that the information advantages for the parties are divided between the knowledge areas which affect the negotiation.

5.2 Limitations

The primary limitation of this study is that the data for the findings only comes from one respondent at each company. The NPD process and the pricing process involve several departments and positions which may have different views of the processes. The positions we have interviewed differ between the case companies and this can therefore imply biased data. Had we heard multiple perspectives within each company, it would have improved the reliability behind our conclusions. The external validity may also be questioned because of the small number of companies studied. The study results are not generalizable to other settings because of the general subjectivity limitation with the case study method.

5.3 Further Research

After the study was conducted, some areas were identified as interesting to get deeper and more reliable knowledge about in future research. As an answer to the above presented drawbacks, a study which includes a broader basis of respondents at each case company could give the research a more solid foundation for the analysis and conclusion and could thereby overcome the mentioned drawbacks. A study that explores how the size of a company influences which aspects companies do consider in the pricing would be interesting to take note of. Furthermore, a comparison study in which the products of the case companies are very similar to each other would be interesting to read as well. Such a study could further clarify the approach companies choose to take in the pricing of new products.

References

Ahmed, M.N. and Scapens, R.W., 2003. The Evolution of Cost-based Pricing Rules in Britain: an institutionalist perspective. *Review of Political Economy,* Vol. 15 No. 2, pp. 173-191.

Avlonitis, G.J. and Indounas, K.A., 2005. Pricing Objectives and Pricing Methods in the Service Sector. *Journal of Services Marketing,* Vol. 19, No. 1, pp. 47-57.

Bernstein, J. and Macias, D., 2002. Engineering New-Product Success: The New Product Pricing Process at Emerson. *Industrial Marketing Management,* Vol. 31, pp. 51-64.

Breidert, C., Hahsler, M. and Reutterer, T., 2006. A Review of Methods for Measuring Willing-ness-to-pay. *Innovative Marketing,* Vol. 2, No. 4, pp. 8-32.

Brennan, R., Canning, L. and McDowell, R., 2007. Price-setting in business-to-business markets. *The Marketing Review,* Vol. 7, No. 3, pp. 207-234.

Cooper, R. and Slagmulder, R., 1997. Target Costing and Value Engineering. Productivity Press. Portland, OR.

Daly, J.L., 2002. Pricing for profitability: Activity-based pricing for competitive advantage. John Wiley & Sons. New York, NY.

Dolgui, A. and Proth, J-M., 2010. Pricing strategies and models. *Annual Reviews in Control,* Vol. 34, pp. 101-110.

Dutta, S., Zbaracki, M. and Bergen, M., 2003. Pricing Process as a Capability: A Resource-Based Perspective. *Strategic Management Journal,* Vol. 24, No. 7, pp. 615-630.

Ellis, N., 2011. Business-to-Business Marketing: Relationships, Networks & Strategies. Oxford University Press Inc., New York, NY.

Ellram, L.M., 2006. The Implementation of Target Costing in the United States: Theory Versus Practice, *The Journal of Supply Chain Management*, Vol. 42, No. 1, pp. 13-26.

Hawes, J.M., Mast, K.E. and Swan, J.E., 1989. Trust Earning Perceptions of Sellers and Buyers. *The Journal of Personal Selling and Sales Management,* Vol. 9, No. 1, pp. 1-8.

Hinterhuber, A., 2004. Towards value-based pricing - An integrative framework for decision making. *Industrial Marketing Management,* Vol. 33, pp. 765-778.

Hinterhuber, A. and Liozu, S., 2012. Is it Time to Rethink your Pricing Strategy? *MIT Sloan Management Review*, Vol. 53, pp. 69-77.

Huimin, M. and Hernandez, J.A., 2011. Price Skimming on a Successful Marketing Strategy: Study of Ipad Launching as Apple's Innovative Product. *Proceedings of the 8th International Conference on Innovation and Management.* pp. 389-393

Ingenbleek, P., Debruyne, M., Frambach, R. and Verhallen, T., 2003. Successful New Product Pricing Practices: A Contingency Approach. *Marketing Letters,* Vol. 14, No. 4, pp. 289-305.

Ingenbleek, P., Frambach, R. and Verhallen, T., 2010. The Role of Value-Informed Pricing in Product Innovation Management. *Journal of Product Innovation Management,* Vol. 27, No.7, pp. 1032-1046.

Jacobsen, D.I., Sandin, G. and Hellström, C., 2002. Vad, hur och varför: om metodval i företags-ekonomi och andra samhällsvetenskapliga ämnen. Studentlitteratur, Lund

Kaplan, S. and Sawhney, M., 2000. E-hubs: The New B2B Marketplaces. *Harvard Business Review,* Vol. 78, No. 78, pp. 97-103.

Kotler, P. and Keller K.L., 2006. Marketing Management (12th edition). Pearson Education, Upper Saddle River, NJ.

Laitinen, E.K., 2011. Management Accounting in Pricing Decisions. In: Abdel-Kader, M., 2011. Review of Management Accounting Research. Palgrave Macmillan, New York, NY.

Lancioni, R., 2005. A strategic approach to industrial product pricing: The pricing plan. *Industrial Marketing Management,* Vol. 34, pp. 177-183.

Lester, T., 2005. Find the right pricing strategy. *Financial Times,* December 5, p. 16.

Noble, P.M. and Gruca, T.S., 1999. Industrial Pricing: Theory and Managerial Practice. *Marketing Science,* Vol. 18, No. 3, pp. 435-454.

Palmer, A. and Kavanagh, M., 2011. Principles of services marketing (6th edition. McGraw-Hill, New York, NY.

Piercy, N.F. Cravens, D.W. and Lane, N., 2010. Thinking strategically about pricing decisions. *Journal of Business Strategy,* Vol. 31, No. 5, pp. 38-48.

Schäder, G., 2006. Prissättning. Bonnier utbildning, Stockholm.

Shields, J. and Shields, M., 2005. Revenue Drivers: Reviewing and Extending the Accounting Litterature. *Advances in Management Accounting,* Vol. 14, pp. 33-60.

Shipley, D. and Jobber, D., 2001. Integrative Pricing via the Pricing Wheel. *Industrial Marketing Management,* Vol. 30, No. 3 pp. 301-314.

Simon, H., Butscher, S.A. and Sebastian, K-H., 2003. Better Pricing Processes for Higher Profits. *Business Strategy Review,* Vol. 14, No. 2, pp. 63-67.

Ulrich, K.T. and Eppinger, S.D., 2003. Product Design and Development (3rd edition). McGraw-Hill. New York, NY.

Woodruff, R.B., 1997. Customer Value: The Next Source for Competitive Advantage. *Journal of the Academy of Marketing Science*, Vol. 25, No. 2, pp. 139-153.

Wright, R., 2004. Business-to-Business Marketing: A Step-by-Step Guide. Prentice Hall, Harlow.

Appendices

Questionnaire

1. Hur ser er produktutvecklingsprocess ut?

2. Vid vilket skede i produktutvecklingsprocessen kommer priset med och in i bilden?

3. Om och när i utvecklingen av en ny produkt tas det kontakt med potentiella kunder?

4. Till vilken grad spelar långsiktig strategisk prissättning in för framtida produkter?

5. Hur påverkas prissättningen av underliggande avsikter med produktlanseringen (målen för produkterna, t.ex. ta marknadsandelar, maximera vinst, långsiktig överlevnad)?

6. Vilka kundundersökningar görs och i vilken form sker dem?

7. Vilka analyser görs med den informationen som inhämtats från kundundersökningarna?

8. Kan ni med dessa undersökningar ta reda på vad kunden är beredd att betala?

9. Hur tar ni hänsyn till era kostnadsnivåer vid prissättningen?

10. Hur tar ni hänsyn till konkurrenter vid prissättningen?

11. Vilken vikt läggs vid informationen som tagits fram om kunden, i förhållande till information om kostnadsnivåer och konkurrenter, vid prissättningen?

12. Hur utbrett är prisförhandlingar?

13. Hur är ni organiserade i prissättningsprocessen? Vilka olika funktioner har inflytande?