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DETERMINANTS OF PRICING STRATEGIES FOR
ENGINEER-TO-ORDER MANUFACTURERS
A CASE STUDY OF UNITED SURINAME STEEL COMPANY

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DEDICATION
To my dear friend Derrick

Often it seems like forever

before we have a chance

to get together.

But when we finally do,

I enjoy it so much!

I guess that’s what makes you

such a special friend-

You understand

it’s not the quantity

but the quality of the time

you spend with someone.

And we have a unique

understanding of each other

that makes it possible

for us to be close

without seeing each other a lot.

Someday, I hope we’ll have

more time to spend together...

...because I really enjoy your company

and I think you’re

a wonderful friend.

- Suzanne Heins
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Around 1996, intending to do more about my level of knowledge in the sphere of business administration, I applied for the MBA study which was then to be organized by a local institute in coordination with an institute in Trinidad. Due to circumstances this program did not go through. I was immediately enthusiastic when in 2003 Mr. J.J. Healy Jr. encouraged me to follow the MBA program, now being organized by the FHR Lim A Po Institute of Social Studies.

The last two years can be described as stressful as if life passed me by, but they have been valuable and instructive, learning how to delegate and make efficient use of time.

Thanks to Robert, Richard and the rest of my staff for their support. In addition, my gratitude to my mother, family and my housekeeper Roxanne, who have to put up with me during these days. Special thanks for the management of VSH United Holding group who gave me the opportunity and full support to go through this phase of knowledge gathering.

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Last but not least, Jehovah, who I no longer serve on a daily basis but in my heart I will always stay his witness.
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LIST OF ACRONYMS AND ABBREVIATIONS

CARICOM – Caribbean Community
ETO – Engineer-to-order
GDP – Gross Domestic Product
ISO – International Standard Organization
VSHSTEEL – United Suriname Steel Company
WTO – World Trade Organization

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ABSTRACT

With this paper is tried to examine the possibilities to use price advantage as a tool to achieve competitive advantage in a liberalized environment, where purchase decisions are based on the price offered. However, over the past two decades the concept of price as part of the marketing-mix evolved from a number, set by the manufacturer based on cost to make the product added by a profit margin, to a set or series of total benefits, savings or satisfaction delivered by a product described as perceived value.

Strategic decision has to be made by management of companies in finding the balance between customer’s desire for good value and company’s objective to make a profit.

In the following paper the influencing factors on pricing strategies, focused on industrial products, are approached from different views in a chronological order. More importantly, the role of cost and value on pricing is also analyzed as well as high competitive market conditions.

The engineer-to-order (ETO) manufacturing companies with their characteristics are brought in to identify the problem of the case study company in broader sense and to clarify its currently used pricing strategy.

Based on a developed conceptual framework, a match between determinants of pricing strategies and the characteristics of ETO manufacturing companies, the research is pursued as case study. However, the findings, which are difficult to generalize, are that a combination of the variables ‘cost’, ‘competition’ and ‘customer’ have a prominent influence on price. A preferred pricing strategy for engineer-to-order manufacturers should be a combined approach based on the variables mentioned earlier and finalize this approach through a process of value negotiations to meet customer satisfaction in a given scenario.
CHAPTER 1
INTRODUCTION

1.1 Background
Price is what the customer or the end-customer pays for a product or service (Pricing strategies in marketing http://www.onevision.co.uk). Price, one of the four p’s of the marketing-mix, is an often overlooked marketing strategy, since many tend to focus on the other p’s. However, pricing is an important strategic issue, because it is related to product positioning and it in turn affects other marketing-mix elements (Pricing strategy, http://www.netmba.com/marketing/pricing). Companies miss the opportunity to actively influence customers’ perceptions in ways that can increase profitability and customer satisfaction, when they set prices in reaction to what customers are willing to pay without understanding the factors affecting that willingness (Nagle and Holden, 2002).

It is said that there are only three ways to increase profits: sell more, cut costs or raise prices, assuming increased demand. The first and second strategies involve considerable effort, but the last is easy – the price ticket is changed or the sales force is told to add 5%. By keeping the cost constant the seller can add this 5% to profit. Therefore, customers tend to buy either from a competitor due to a price increase, switch to a cheaper substitute or even stop buying at all. The fundamentals of value revolve around the trade-off between the benefit that customers receive from a product and the price they are willing to pay for it. ‘Customers do not buy exclusively on price but are driven on value buoyed by the disparity between benefits a product/service offers and the price that is charged’ (Full service market research, //www.b2binternational.com/pricing%20strategy).

Pricing strategies, however, can have a considerable impact on sales and more importantly on profit. Pricing is a difficult issue; at the same time there is no single standard to determine it (http://www.onevision.co.uk:pricing).

In the past, Zhang (2003) had argued, many companies would ‘set a price, stick to it and hope for the best’, which is not the best way to set prices. One reason companies took that approach is because pricing is difficult. A lot of managers want to have a say in their companies’ pricing

1 Other p’s of the marketing mix are promotion or advertising, product and place or distribution.
strategies but do not want to take the responsibility if things go wrong. Zhang remarked on this in his research citing the study by McKinsey in 1992.

The Advantage newsletter (2006) of the Pricing Solutions website also remarked that back in the 1980s, pricing was not a major issue for most manufacturers and their customers. More often than not annual price increases were the norm, as companies often achieved their financial targets through aggressive pricing activity. Prices were passed on down the trade channel and, while there was occasional debate, the end-users ability to pay was rarely in question. The 1990s have taught every business that pricing cannot be taken for granted, resulting from a global transformation as seen in industrial, business and consumer markets, towards buyers wanting - and demanding - better value.

In recent years, business people in general have paid attention to many things that can influence their companies’ success, Zhang (2003) concluded. Businesses have looked at organizational behavior, downsizing, benchmarking and reengineering, and companies cut costs drastically, but they have not spent as much time thinking about the best possible pricing strategies. According to Zhang, there is a lot of room for profit improvement through better pricing strategies.

Simon (2006, www.simon-kucher.com) from Simon-Kucher & Partners explains the profit disaster, when he claimed that after-tax margins of industrial firms are declining worldwide. According to Simon, the causes are due to high costs, low demand and little growth on the external company side and lack of will to make profit. Furthermore, he said that the declining of margins is caused by the company’s view regarding profit in relation to market share/volume and unprofessional pricing on the internal company side. Today’s manufacturing industry can also be characterized by declining markets, product abundance, growing power of the intermediaries and overcapacity on all levels of the value chain. As a result prices are increasingly used as buying incentives.

Sustainable competitive advantage is recognized as a critical factor for survival in the liberalized environments (Thompson and Coe, 1997). With the cost of raw materials determined by global forces, manufacturers in developing countries such as Suriname, are reaching tipping point. Manufacturers of products at the lower end of the value-added chain are particularly affected. They have no choice but to continuously absorb; they can do no more because the cost of raw materials has ‘bludgeoned’ both their margins and resolve (Lewis, 2005). They can by no means influence global changing forces which result from liberalization and they are dependent on the decisions of
the world giants. Liberalization brought low entry barriers to Suriname for international manufacturers. As it is believed that they have a competitive advantage through the larger volume they produce at lower costs, they compete mainly in price. Another fact is that the Surinamese government has agreed to the World Trade Organization (WTO) recommendations to liberalize the market, which will create fiercer competition resulting in Surinamese manufacturers improving their competitive advantage. One way to achieve this can be through strategic pricing.

Surinamese manufacturers working in the engineer-to-order (ETO) sector, who are dealing with this challenge will be the focus point of this research. Are these companies really left no choice? If not, what can these companies undertake in the pricing atmosphere? Global and regional changes as liberalization of markets such as the Caribbean Community (CARICOM) give rise to increasing competition and make intelligent pricing a business imperative. According to Thompson and Coe (1997), the limited use of pricing as a strategic tool to gain and hold competitive advantage has created an opportunity for companies willing to redesign their competitive portfolios and go with unorthodox strategy mixes. They argued that value pricing can be an approach that can be used to seize and drive competitive advantage and ‘can yield a price that minimizes the risk that buyers will not perceive value, at least equivalent to that provided by a reference product’. At the same time, the risk to sellers not achieving minimum margins can also be ‘controlled’ and the ability of management to develop dynamic and proactive strategies for pricing can be enhanced.

The importance of pricing strategy was also expressed by Simon-Kucher & Partners (2006) when they noted in their website that in their experience, pricing is 80% strategy, which can help companies achieve corporate and product goals by ensuring consistency and transparency throughout its pricing process.

1.2 Motivation for the study

In this study a local company will be used to apply the findings to the Suriname context. A practical example of an ETO manufacturing company in Suriname is the United Suriname Steel company (VSHSTEEL) which is established for the manufacturing of steel structures for buildings in 1982. As VSHSTEEL grew to such proportions that the organization could perform well on a local level, the company also developed a strategy to expand their markets abroad. The company succeeded gradually to export several constructions to hurricane areas, where heavier constructions were required.
At present the company wants to continue to grow its market in the CARICOM region. As result of fierce competition the company has supported its efforts by becoming ISO 9001:2000 certified. VSHSTEEL needs to look into their pricing structure to be competitive in the regional market as the location of Paramaribo, where the company is established, is logistically not beneficial in terms of shipping routes. A recent internal study conducted at VSHSTEEL revealed that final purchasing decisions are eventually made by the customers, based on an attractive order price (unit = per ton steel) for the steel construction. It is therefore necessary for VSHSTEEL to scrutinize their pricing structure and strategies to match an acceptable price. As indicated before the ETO sector of which VSHSTEEL is part, is facing the challenge to avoid a price-war.

1.3 Problem identification
In this research paper the focus will be on the currently used pricing strategies of ETO manufacturing companies in Suriname namely cost-plus pricing. It is assumed that cost-plus pricing is until now the commonly used pricing strategy.

Since price is, among others, the main determinant for purchasing decisions, the developing trend is that customers are not willing to pay the price based on cost. Cost to the customer is not necessarily the same as the price to be paid (Engelson, 1995). Therefore the margins are coming more and more under pressure and the matching of price to customer value is more evident. Especially when taken into account the single market of the CARICOM, which these companies are entering into, where stronger competition will have an affect on prices, in most cases lowering prices. In order to become competitive these companies have to assess their pricing strategies and use these strategies as a tool for competitive advantage, while finding the balance between the customer’s desire to obtain good value and the company’s need to earn profit.

1.4 Research objectives and the scope of the study
The objectives of this research are:
- to examine whether a change in the current pricing strategy can provide a competitive advantage in a liberalized environment.
- to define a more appropriate pricing strategy in the ETO sector, even with increasing cost of raw materials which they can not control.
- to examine the relationship between price and sales volume in manufacturing of steel.
The research topic was chosen for its relevance to the Surinamese ETO manufacturers who are dealing with the challenges of performing in the CARICOM. The construction sector of steel manufacturers will benefit the most, especially United Suriname Steel company - VSHSTEEL. This research will enable VSHSTEEL management to be more aware of pricing as a tool to gain competitive advantage in the export market. This ETO sector was chosen as it represents an important sector as part of the utility construction sector in Suriname, providing high rise buildings through which high capital investments are involved for, in most cases, the end-users.

1.5 Research questions
Based upon the research objectives stated above, the central question for this paper is as follows:
- What is the preferred pricing strategy for a Surinamese ETO manufacturing company in a liberalized market?

**Sub-questions**
The corresponding sub-questions are:
- What are available relevant pricing strategies and what are their determinants?
- What are the characteristics of the ETO manufacturing companies?
- What is their currently used pricing strategy?
- What is the appropriate match between the determinants of pricing strategies and the characteristics of ETO manufacturing companies?

1.6 Research Methodology
The central question and the sub-questions will be researched through literature to first establish a theoretical framework in the field of pricing methods (Van der Velde et al, 2004; Yin, 1984). Literature on the concepts and qualitative pricing strategies for manufacturers will be gathered from different textbooks, journals and the Internet (Desk research). The empirical data will be gathered through a case study in such a way that the company in the single case will be used as a reflection of the experience of other companies in Suriname dealing with the indicated challenge of survival through sustainable competitive advantage. Interviews, financial documents, archival records, direct observations will be the basis of this case study research, through among others cost-profit-volume analysis. However, the single case is considered to be subjective and less reliable, this report will be reviewed by key informants and referenced to the literature used during the study (Tellis, 1997).
1.7 Limitations of the study
The following limitations apply to this study:
- It is assumed that the ETO manufacturers do not look deliberately into theirs pricing strategies.
- Manufacturers of products at the low-end of the value chain are the focus of this study
- Financial figures and information are only from the single case. This company has agreed to give its full cooperation to provide all necessary information for the study.
- Pricing for services is excluded, also lifecycle pricing.

1.8 Structure of the study
In the following chapter, in which the concepts will be explained, the theoretical framework of pricing strategies will be investigated. Derived from the literature review a conceptual framework is described in chapter 3, including the research methodology. After having introduced the study company in chapter 4 and having described its problem and its background, the categorization of engineer-to-order will be explained. Then the current pricing strategy which is inherent to the current pricing policy will be researched whether it is sufficient and can be used as a tool for competitive advantage. The literature study delivers a basis for a set of measures which are to be compared with the current and to be recommended as adjustments where and how. Chapter 5 is about the analysis of the data of the study company and the interpretation of results. In the final chapter conclusions and recommendations with regard to pricing strategies for Surinamese ETO manufacturing companies in a liberalized environment follows.
CHAPTER 2
LITERATURE REVIEW

2.1 Introduction
In this chapter a taxonomy of relevant pricing strategies will be reflected with regard to manufactured products since in literature distinction is only made between consumer and industrial products. The product under review is categorized as an industrial or manufactured product.

First the concept of price and its impact on decision making will be described; and also its use as competitive tool. After theoretical pricing approaches for manufacturers are defined, the classification of pricing strategies starts with the first, recent available literature study for industrial goods by Laric. The next study on pricing strategies was undertaken by Tellis, who defined determinants on pricing strategies, however, for consumer goods but his study is further used as basis by different researchers: Duke, Noble/Gruca and Forman/Lancioni. Duke extended Tellis’s Price Strategy Matrix on behalf of product management and also indicated relevant determinant on pricing strategies. Noble and Gruca focused on pricing strategies for capital industrial goods, indicating empirical validated strategies for a single industrial product under multiple conditions. The literature review continues with Forman and Lancioni, who add international market conditions to their list with regard to determinants on pricing to take into account for industrial products.

Further the role of cost and value in pricing will be compared then the standard linear pricing process will be highlighted just like the influence of competitive market conditions on pricing especially when export activities are involved, which will be the case for the case study company (refer to chapter 4). In fact all influencing aspects on pricing strategies are discussed; first the basis and then supplements on the basis in the light of different situations and objectives.

2.2 The concept of price
Price in the context of this study may be conceptualized as the amount of money paid in exchange for a product or service or the sum of values that consumers exchange for the benefits received from a product or service. Other terms are also used, such as rent, rate, fare, honorarium, salary, income taxes or duties (Kotler et al, 2002). Price is value or worth; the amount of one thing that is exchanged in sale for another. It involves matching price to buyer value (Engelson, 1995).
2.2.1 The incremental importance of pricing

The ultimate objective of every business is to aim for overall business success such as profit, sales growth, return on investment, etc (Engelson, 1995). According to Simon from Simon & Kucher (2006, http://www.simon-kucher.com), as profit-driver price has become increasingly important over the last 20 years. By using the following economic equation (1) in figure 2.1, he stated that profit is determined through three profit drivers: Profit is price multiplied by volume after which cost is to be deducted.

Figure 2.1: The Profit Equation

\[ \text{Profit} = \text{Price} \times \text{Volume} - \text{Cost} \]

Simon (2006) explained that due to abundant suppliers, volume can be considered to have limited possibilities of increase (saturation of markets is a threat) and market share increase is in most cases not an option. Either fixed or variable cost has largely been exhausted since the trend during the last decade has been to control cost; most companies already have taken necessary measurements to control (=decrease) them. The conclusion can be drawn that the only profit-driver to be optimized is price, if others are held constant. In the appendix I an example of Simon (2006) demonstrates the impact of a price increase on profit in favor of an increase of sales volume.

2.3 Pricing as competitive strategy

Prices have been at the center of human interaction ever since traders in ancient Mesopotamia (the modern-day Iraq) began keeping records. At the same time the argument was about what something cost or what something ought to have cost. (Zhang, 2003, webpage). Prices were set through bargaining and negotiations between buyers and sellers. (Kotler et al, 1997).

From a study by Udell among 200 producers of industrial and consumer goods around 1964, it appeared that business management did not agree with the economic views of the importance of
pricing. Furthermore, half of the respondents did not select pricing as one of the five most important policy areas in their firm’s marketing success. Pricing ranked 6 out of 12 factors in marketing success. Product research and development was selected by almost 80% of the respondents as being the most important factor in modern day competitive strategy (Udell, 1964). The study reported that in those days market non-price facets of competition occupied a prominent role in America. Customers wanted product differentiation and sales promotion, which was perceived as giving a great deal of psychological satisfaction and utility. Not only was the price important, but also the product quality, distinctiveness, style and many other factors which led to both physical and psychological satisfaction. The emphasis on product and sales effort, however, did not imply that price was unimportant. It was ranked differently, mostly around 50% of the respondents selected price as most important policy.

Three factors, according to Udell (1964), probably account for the relatively low ranking of pricing. These are:

i. supply generally exceeds demand which forced the seller to price competition (as a result there was no freedom to deviate from market price in a competitive environment).

ii. the relatively well-to-do customers of those days were interested in more than just price.

iii. through successful product differentiation most manufacturers were obtained some pricing freedom (Products known to be identical must be priced identically in the market place).

Udell’s findings maintained that the company’s use of a non-price competitive strategy varied according to the nature of the business product and the characteristics of the buyers for that product (the market as a whole) not the market structure of the industry namely competitive, oligopolistic or monopolistic. Product service referred to those activities performed by a manufacturer in the attempt to guarantee that a product gives satisfactory performance to its users. That was the reason why product research and development were ranked no. 1 of 12. In fact the customer was by then already referring to something more than the number of the price, which is now referred to as value. The ranking of production and sales effort higher up than pricing already indicated the shift, which was developing towards value aspects such as product quality and service. These aspects will later become an integrated part of pricing strategies and of the value perception of the customer. The concept of pricing strategies will be explained in section 2.6.1.

The importance of price grew over time as a tool of marketing-mix. From the findings of Laric (1980) it can be concluded that the importance of price for decision makers increased, as the
development of the concept of price changed over time. In earlier years, price was defined as a number but derived from Laric’s studies it can be concluded that the meaning of price grew in importance, since price was perceived as more than a number. In Udell’s study (1969) price ranked six out of twelve, in the 70s Robichaux ranked price one out of twelve (Laric, 1980).

Raju and Zhang (2003), of Wharton’s Marketing department, published research which shows that firms do not always go about pricing the right way. They maintained that devising appropriate pricing strategies is more critical than ever in a world of hyper-competition. The research by Raju and Zhang (2003), suggested that pricing strategies can have a significant influence on company profits. They cited a study in 1992 of more than 2,400 companies by McKinsey, showing the impact that various decisions would have on the bottom-line or profit: a 1% reduction in fixed costs improves profitability by 2.7%; a 1% increase in volume will result in a 3.3% increase in profit; a 1% reduction in variable costs will prompt a 7.3% rise in profit; but a 1% hike in pricing can boost profitability by 11%. Refer to appendix II figure 2.2 (Marn, 2004) and figure 2.3 (Marn, 2004). Their research showed that many companies would ‘set a price, stick to it and hope for the best’. One reason this approach has been taken is because pricing is difficult. Raju stressed that pricing must be systematic and strategic and pricing needs to be an integral part of the plan for taking a product to market, not an ad hoc approach. Companies must recognize that pricing is a key tool to differentiate a product or service from those of the competition, since prices emit signals about product quality and exclusivity. Raju and Zhang (2003) also implied that a pricing strategy should be long-term in nature. In pricing decisions the overall goal is to look ahead and to stay a step ahead of the competition by laying out scenarios.

In Reibstein’s article (2004), an interview with Marn (2004) -a consultant at McKinsey & Co.-, Marn stated that even executives in successful companies may not fully appreciate how small changes in price can lead to large changes in profitability. Marn defined price advantage holistically as a superior capability to use price as a source of real competitive advantage. Prices do not necessarily have to be lower than the competition. Price advantage enables companies to realize the benefits of the other advantages they work so hard to create, such as, cost advantage and distribution advantage. Marn (2004) further argued that companies can achieve the price advantage only by making deep and lasting changes in their organizations, which shift takes time, but the effort can pay big dividends.
Forman and Lancioni (2002) focused on pricing strategies for international markets where they called pricing the one factor that explains the most variance in purchasing behaviors of consumers. Pricing does not require substantial investments and yet it accounts for company’s revenues. It is also pricing that determine what products will be produced and distributed. They even suggested that prices are the key factor in foreign economies in that they ultimately determine how resources will be allocated.

2.4 Pricing approaches for manufacturers

Several textbooks and journals give approaches toward manufacturers or as in most instances for industrial products. These approaches are divided into the following:

i) **Cost-based pricing:** This approach utilizes the product cost structure as product-driven rather than customer-driven. The benefit of this approach is the low chance of loss. However, the drawback is the risk of overpricing or underpricing which can occur (Kotler, 2002). Cost-based pricing is an accountants approach to pricing that adds a standard mark-up to the total cost of the product (http://www.en.wikipedia.org/wiki/Pricing_strategies), also called mark-up pricing. The mark-up could either be a fixed monetary amount, a fixed percentage or a certain profit margin. This method is internally orientated and frequently used in manufacturing environments. This approach is simple, fact based, easily calculated and administered. Another drawback is that the role of competitors is ignored (http://oakcats.ohiou.edu/~kz208595/pricingpaper.htm).

ii) **Value-based pricing:** By setting its target price based upon customer perception of product value, this pricing is customer- and value-driven (Kotler, 2002). To determine what customers are willing to pay for the product and set the price accordingly, market research has to be conducted (Raju, 2003).

iii) **Competition-based pricing:** As pricing relies on prices of market leaders or other competitors, this approach is used in pure competition or an oligopolistic competitive market structures (Kotler, 2002). A company figures out what its competitors are charging, then adjusts its prices either up or down. (Raju, 2003). It is a defensive, competitor-related pricing system.

In Appendix III an overview is given with regard to internal and external factors influencing price decisions (Kotler, 2002, Jeannett Hennessey, 2004).
2.5 The role of cost in pricing

Costs should never determine price, but they do play a critical role in formulating a pricing strategy (Nagle and Holden, 2002). However, the quantities sellers produce depend critically on their cost of production. The traditional mistakes most sellers make is not the cost-plus approach but, instead, of first evaluate what buyers can be convinced to pay and then choose quantities to produce and markets to serve, they do it in the opposite order. ‘Firms that price effectively decide what to produce and to whom to sell it by comparing the prices they can charge with the costs they must incur. Consequently, costs affect the prices they charge’ (Nagle and Holden, 2002). Similarly, changes in costs should cause producers to change their prices, not because that changes what buyers will pay, but because it changes the quantities that the firm can profitably supply and the buyers it can profitably serve. According to Nagle and Holden, not all costs are relevant for every pricing decision. There are incremental and avoidable costs. Incremental costs are the costs associated with the changes in pricing and sales. Avoidable costs are those that either have not yet been incurred or can be reversed. The opposite of avoidable costs are sunk costs, which a company is irreversibly committed to bear, such as rent or research and development. Another distinction is the variable and fixed costs. Fixed costs are costs of being in business such as overhead and product design. Variable costs are result of doing business, for example, the costs of raw material in a manufacturing process. Variable costs are always incremental for pricing, while most fixed costs are not incremental. The estimation of the relevant costs affected by a pricing decision is mostly a managerial decision.

As stated before, the most commonly used pricing technique for manufacturers is cost-plus pricing. Cunningham (1993) also stated that, in general, company’s pricing departs significantly from traditional price theory, which concentration is on the price and output of companies and on demand, supply and cost functions. According to traditional theory, profit maximization is assumed to be firms only aim. And if companies possess less sophisticated techniques for assessing market demand, price decision are based on simplistic “rules of thumb” cost-plus. The price is composed of direct materials, direct labor, factory overhead, selling and administrative costs plus the desired profit margin.

Zimmerer and Scarborough (2005) indicated a more useful technique for managerial decision making: variable or direct costing in which the cost of the products manufactured includes only
those costs that vary directly with the quantity produced. Variable costing includes only direct materials, direct labor and factory overhead costs that vary with the level of the company’s output of finished goods. Fixed factory overheads (such as rent, depreciation, insurance) are considered to be expenses of the period and are not included in the costs of the finished products. According to Zimmerer and Scarborough, when determining prices a manufacturer is to take into account the cost combination of selling price and sales volume that covers the variable costs of producing the product and that contributes toward covering fixed costs and earning a profit. Using full-absorption costing for this will cloud the true relationships among price, volume and costs, since fixed expenses will be included in the unit cost. A constant unit cost for the product will be yielded by using direct-costing basis, regardless the level of production. Establishing the direct-cost income statement will yield to determine the manufacturer’s contribution margin, which is the amount remaining, that contributes to covering fixed expenses and earning a profit, after subtracting the variable costs from total revenues. This contribution margin is a critical step in setting the minimum price through the direct-costing method at break-even. This minimum price will cover the variable cost of production. Any price higher than this minimum price will cover the fixed cost of operating the plant and earn some profit. Of course on the long run fixed costs can not be avoided if the company is to continue. Pong and Mitchell (2006) gathered evidence which also demonstrated that the selection and the knowledge between full and variable costing has a potential practical significance for some companies to determine their annual (reported) profits (overtime). According to Cunningham’s study, small manufacturing companies rated the importance of costs in price setting the highest among others at an average of 7.8 on a scale of 10(= most-important). Manufacturers mostly departed from cost-plus on the basis of large order, meaning that margins would vary according to the size of the order.

Because the engineer-to-order manufacturing companies- this will be explained in section 4.4- in Suriname also aims export activities Moustafa’s study (1978) was reviewed with regard to cost-price determination in these activities to examine management information techniques for companies in developing countries that undertake export activities with their manufactured products. This article gives insight in the different costing methods to determine the cost-price of the product. In export activities the composition of this cost-price has an important impact on the final price for which the product is sold to the foreign market. The impact of the costing methods on the profit of the company and on the profit as a result of foreign currency inflow is also highlighted. Developing countries which plan to export their manufactured products to foreign market should
not only take into account that there has to be an adequate market for their products but also that they might need to invest in their capacity. For these reasons the inflow of foreign currency for the acquisition of capital equipment is a necessity.

Moustafa’s starting point is that developing nation’s place is based on cost-price strategy. He then distinguished three types of costing methods which can be used to determine this cost-price: the full-cost method; the direct-costing method; and the differential cost method. The full-cost method determines the direct cost of manufacturing the product; a mark-up is added to cover an appropriate share of overhead costs plus a fair margin that will result in a desired return of investment. This full-cost method enables to offer safe and stable prices. Moustafa rejected this method as suitable basis for export pricing for, among others, the following reasons: practical difficulties limit to allocate the proper share of overhead costs to each product, these difficulties could be related to primitive and incapable accounting system and to the lack of internal support of the organization of a company or the government to provide the necessary accounting information; its failure to consider cost behavior in relation to volume of activity; the retreat process of discounting the export price by eliminating added mark-ups is an easy way out.

The direct costing method or the contribution margin method is, according to Moustafa, a more practical guide in export activities, because it relates to volume changes. Since the total fixed costs do not change with the volume in the short run, the variable costs establish a floor price or minimum price; the maximum price is determined by competition and the extent of demand, not by cost. This flexible export pricing range provides more detailed accounting information since a cost behavior pattern is delineated. Short-run and long-run effects on profit maximization can be better viewed by export managers. Underpricing can be a disadvantage on the long-run. The direct costing approach has special significance when the export business is small in relation to the domestic business, but when exports assume a greater portion of the total company business the cost element of the fixed cost become relevant. With regard to investments, especially necessary to increase production in order to meet the export demand, the fixed cost of this investment will have an impact on company’s costing method.

Moustafa promoted the use of differential or relevant costing method as powerful general weapon for making export pricing decisions. The direct costing approach showed the irrelevance of fixed costs in an export decision in the short run. The differential costing approach considers the fixed
costs when they are expected to be altered immediately or in the future by the decision, if a change in exporting activity level results in a need for additional supervision, plant equipment and insurance; then these new fixed costs are relevant. All costs elements which directly benefit the export operation have to be charged or considered in order to decide the impact on profits. Moustafa recommended a combined approach of direct-costing and differential-costing methods in order to establish a floor price which leads to both profit maximization for the company and dependent on management decision on cost elements to maximization of net inflow of foreign currency (the last mentioned is for the sake of national economic level).

2.6 ‘The many faces of pricing strategies’

2.6.1 The nature of pricing strategies

Tellis (1986) defined pricing strategy as a reasoned choice from a set of alternative prices (or price schedules) that aim at profit maximization within a planning period in response to a given scenario. Engelson (1995) described pricing strategy as the interdisciplinary bridge through all business functions: The final determination of value is in the mind of the buyer, while good pricing aims at enhancing the worth of the product so that the value is increased regardless of the price. Understanding of the value of the product to the business of the buyer is necessary while the current competitive situation and expectation of future competitor behavior has to be taken into account.

Noble and Gruca (1999) gave the definition a broader scope: ‘Pricing strategy is the means by which a pricing objective is to be achieved and implies a specific level or schedule related to costs, competition or customer’. Nagle and Holden’s (2002) description resembles Engelson: ‘the coordination of interrelated marketing, competitive and financial decisions to maximize the ability to set prices profitability’. Refer to the figure 2.4 in appendix IV.

Zhang and Raju (2003) defined it as a sophisticated and well-thought-out pricing structure that can help to prevent the product from being commoditized. They argued that, a company’s pricing strategy should always be comprehensive; by analyzing the pricing environment in which the company is operating; determining how much pricing discretion the company has, and determining the value the product or service has for customers. Only then can a pricing structure be developed

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2 Tellis (1986)
that will suit to the marketplace and that can enable the company to capture as much value as possible. All of these approaches make some sense, but not one alone is sufficient. They maintained that with pricing strategies, the whole really is greater than the sum of its parts. Mohammed (2005) said that the right way to think about pricing is as a series of strategies that serve and capture different profit margins from customers with different product valuations. It is a series of integrated strategies, which involves using market research to gain insights into the amount that customers are willing to pay for the product.

2.6.2 Taxonomy of pricing strategy studies
2.6.2.1 The standard linear pricing process
The conventional pricing process is linear, meaning that one-step-is-taken-at-a-time. In figure 2.5 below is illustrated what these steps involve. From company objectives; to company policy; to list or base prices; to discounts; to price adjustments; to end in the final selling price. By the pricing solution website it was investigated that the majorities of companies under their review were still operating at the standard levels of 1 and 2. It can be concluded that to establish a pricing policy and optimization is a worldwide problem (http://www.advantagegroup/articles):
- level 1: 30% of the companies have an ineffective pricing process.
- level 2: internal process in place: 40 % of companies
- level 3: value processes in place: 20 % of companies
- level 4: optimization processes in place: < 10% of companies
- level 5: excellence in execution: < 1% of companies
The linear processes are time consuming and are based on standard pricing information which mostly results in standard mark-up pricing. These common practices developed from pressures of daily work productivity, suggest the need for widespread and easy to use pricing techniques.

Figure 2.5: The Standard Linear Pricing Process

Source: Duke, 1994: p.17
In the next sections the literature with regard to the relevant pricing strategies for industrial products was studied in the following order to answer the research sub-question on available relevant pricing strategies:

- Laric’s strategic framework for industrial markets
- Tellis’ Price Strategy Matrix for consumer goods
- Duke’s Extension of Tellis, matching markets and objectives for product management
- Noble/Gruca's framework for industrial pricing strategy for capital goods based on Tellis
- Forman/ Lancioni’s determinants of pricing strategies in international markets also partly referring to Tellis.

2.6.2.2 Laric’s strategic framework

Laric (1980) concluded in terms of the number of written articles between 1965-1980 that industrial aspects of pricing only emerged as important in the 1970s. There was little written on strategic and long-term level. He continued that the fact that the marketing discipline only focused attention on the seller’s perspective of pricing in industrial markets, implying that marketing neglected the demand side in the industrial pricing area during that period of 1965-1980. Therefore he developed an overview of the marketing literature on pricing with the intention of developing a conceptual framework and classification system for different types of pricing strategies in industrial markets.

With this framework he strived to provide a more comprehensive basis for developing industrial pricing strategies as well as to identify the most relevant marketing literature appropriate to the needs of industrial marketers. Laric concluded further that the majority of articles dealing with industrial pricing considered two subjects: Bidding and Industry-wide aspects of pricing. Bidding falls under tactical decisions and Industry-wide aspects belong in the category of economy and industry environment aspects.

A useful categorization of pricing aspects made by Laric, helped to organize his study on available literature in pricing further. This categorization corresponds with the factors which are of influence on pricing decisions. Refer to table 2.1 in appendix V.

Because price is viewed as only one of the several components in the overall negotiations between industrial buyers and sellers, he developed a framework by linking aspects of strategic pricing with those of demand in order to develop a strategic approach to pricing for different specific purchase situations in a business to business environment. He argued that the rational of this approach
stemmed from the view that specific purchasing situations require different emphasis on price as a
determining factor. According to Laric, through the framework a seller can distinguish whether
price is an important variable in his dealings with a specific buyer or a variable of secondary
importance. Based on their use of the items purchased, the framework first identifies three broad
segments of industrial buyers. Based on the perception of the buyer’s strength relative to seller’s
strength, they can be broadly classified into three buyer segments: producers; re-sellers; and
government and other non-profit organizations. The sellers are classified into segments by the
major products they offer for sale: capital items and expense items. See table 2.2 in appendix V.
Producers: bulk purchase of this segment is used to manufacture directly, assemble and convert into
saleable products (direct cost). Reseller: bulk purchase for direct resale. Government: must
purchase by accepting the lowest bid tendered. The private sector (producers and sellers) are not
subject to public scrutiny and they may use bidding and contract negotiations. That is why a
company may decide to award a contract or accept a bid from a seller who did not give the lowest
price. This fact alone has important ramifications for industrial sellers, when considering the
strategic importance of price. The basis for Laric’s framework is negotiation. The basic principles
of this strategic framework will be taken into account for further review.

2.6.2.3 Tellis’ Price Strategy Matrix
Tellis (1986) demonstrated the variety of pricing strategies available to a company. Some of these
have an economic background, others are marketing related. Based on principles described in
literature, he classified the pricing strategies in a two dimensional framework: company’s pricing
objective and consumer characteristics. In the pricing objectives he included differential pricing,
competitive pricing and product line pricing. The relevant consumer characteristics he divided into:
search costs, price sensitivity and transactions costs. A nine box matrix was thereby created,
demonstrating, which are the necessary conditions for each pricing strategy, including special
strategic situations in each cell of the matrix. The complete framework is illustrated in appendix VI
in table 2.3 and the descriptions of all categories are included in table 2.4.

The three pricing objectives Tellis described as follows:
- **Differential pricing strategies**: One product is sold to different consumers, under a variety of
prices. The consumer differences refer to search costs, price sensitivity and transaction costs.
- **Competitive pricing strategies**: One product is sold to one or more market segment at the same
time. Company’s competitive position is here the central concern.
- Product line strategies: This strategy is applicable when a company has a set of related products. The aim is profit maximization through pricing products to match consumer demand.

Tellis recognized three types of consumer behavior:

- **high search costs** – consumer do not know exactly which firm sells the product desired and they have to search for it. They are willing to purchase without full product information.
- **low reservation price for the product** – price sensitive consumers, who do not need the product urgently enough to pay as high a price as others would.
- **special transaction costs** - These are different to search costs, such as traveling costs, switching costs, risk of investment.

Tellis constructed a unifying taxonomy of the many strategies described in the literature. Given that he (like the other researchers) concluded that theoretical explanations on pricing have not been presented adequately as yet and have not been developed formally, he developed a unifying taxonomy of strategies and their underlying principles, their relatedness or differences. He also suggested under which circumstances these strategies can be adopted. The basic principles of the shared economy or cross-subsidies are a common proposition: one consumer segment bears more of the average costs than another but the average price still reflects cost plus acceptable profit. The circumstances in Tellis’s nine cells are assumed to occur in this shared economy. The complex real world conditions, however, require adoption of a combination of these strategies. Additionally, legal environmental issues have been taken into account within his comparison in the nine box matrix. In appendix VI the different strategies are also explained.

2.6.2.4 Duke’s Extension: Matching markets and objectives

Tellis’s literature study was continued by Duke (1994). Like Tellis and Laric, he concluded that there were relatively less journals on pricing at a strategic level. Duke emphasized product management, since in literature there were no guidelines for product managers to choose quickly and with confidence, the appropriate pricing strategy for a specific set of consumer characteristics combined with varied company objectives. Duke’s matrix is a supplement on Tellis’s, not a replacement. He modified Tellis’s Price Strategy Matrix framework into the strategy matrix approach contrary to the conventional pricing strategy framework (compare the standard linear approach figure in section 2.6.2.1). Duke’s analysis and extension of Tellis’s Price Strategy Matrix regard the following: While the matrix provides a wide range of pricing strategies and tactics, it
permits comparison and application of varied strategies for issues both practitioners and academics are facing. He remarked as drawback of the original Tellis’s matrix was the intentional exclusion of managerial pricing issues such as price implementation and estimate of price. He also noted that Tellis’s matrix might give the impression that a single cell should be used to describe all of the strategy options for a certain situation. However, real world situations have more than one set of issues at the same time. The limitations of Tellis’s matrix also regard the assumption of the shared economies.

Duke’s extension involves additional pricing techniques for managerial decisions appropriate for multiple pricing ideas, for the objectives and consumer characteristics involved in each cell, whereby he added commonly used issues for product management and those of marketing textbooks. He also combined basic company strategies with market (external) environments in order to augment. Duke intended to provide a checklist of potential pricing issues, but he warned that cells are not meant to indicate an ‘exclusive’ or ‘singular’ approach to price management, since in real life decisions multiple issues may exist coincidentally and may require different actions. He further commented on his predecessor in, for instance, the penetration pricing cell which he regards as the only cell of the matrix which places heavy emphasis on cost as a basis of price. Duke finds cost the primary determinant of pricing levels when any type of target pricing is done.

Duke recommended that to implement the price strategy matrix as a proactive tool, current pricing strategies in a company are to be examined. Also it has to be considered whether market and competitive descriptions as well as consumer market characteristics are to match those with the products concerned. He also concluded that when strategies are appropriate for the market but are not compatible with currently expressed company directions, the company must consider either changing market strategies or changing company objectives. Contingency options for markets and positioning products can be considered by using this matrix as an analysis tool. Duke stated that the matrix does not show cells that are always mutually exclusive; multiple issues can be teased apart and their interactions can be considered logically. Refer to figure 2.6 in appendix VII.

2.6.2.5 Noble/Gruca's framework for industrial pricing strategy

Noble and Gruca (1999) presented an empirical framework for industrial pricing, which they validated through a national survey of pricing managers in capital goods industries. With this study they aimed to bridge the gap between the normative research on pricing and the actual managerial
behavior. They argued that product, company and competitive conditions determine which pricing strategies should be used in a given situation: stating that there can be one or more pricing strategies involved in a single pricing decision. Tellis’s literature review was, according to them, a notable exception on normative research on pricing, however, Tellis’s framework has not been empirically validated with actual practice. Their comment on Tellis is the same as Duke stated, namely that Tellis assumed that only one single strategy should be used in a given situation which is determined by only two conditions, while there are additional requirements associated with relative quality or costs that are necessary for the choice of strategy to be optimal. They referred to other empirical research on pricing objectives which showed multiple objectives applicable simultaneously and subsequently to the applicable strategies. It was found that managers often use more than one pricing strategy in setting price for a single product.

Noble and Gruca organized the existing theoretical pricing research into a new two-level framework (pricing situation/ pricing strategy) focusing on smaller set of industrial pricing problems for capital goods. This framework allows for multiple pricing strategies for a single product. They identified a reduced set of cost, product and information conditions under which a given pricing situation, namely new product, competitive, product line, and cost-based should be used, at the first level (theory). At the second level (managerial practice) they identified a set of unique conditions under which a pricing strategy within each situation should be used. For example, one pricing situation is competition while the pricing strategies within this situation are leadership, parity pricing or low-price supplier. Given the choice of pricing objectives of a company, which change over time and is related to the environment of the company, information can be provided on what a company is trying to achieve but not how it will accomplish.

Noble and Gruca identified a set of industrial pricing strategies and determinants following the example set by Tellis. They made some modifications to his original framework since they were focusing on industrial capital goods. They excluded the strategies used for consumer goods or commodities and for export markets but added cost-plus pricing and customer value pricing. Ten principal pricing strategies (see Table 2.5 in Appendix VII) were then put in a framework wherein the related strategies were included, which could be expected to occur under similar conditions and result in a similar price level.
Noble and Gruca found that some determinants are common to more than one strategy – these determinants being the internal and external conditions that determine managers’ choices of pricing strategies- and that some can be used to define a particular pricing situation or can be unique to a group of strategies. For instance: competitive pricing situation have as their focus the price of the product relative to the price of one or more competitors; with cost-based pricing situation the internal costs of the company are considered. In appendix XIII other strategies are described.

As result of their findings, they summarized different pricing strategies managers use under different conditions. For example, in a competitive pricing situation companies with relatively high costs are more likely to choose parity pricing while those with low capacity utilization are more likely to choose low-price supplier pricing. Customer value pricing is more important when price changes are hard to detect and the product appeals to a narrow market segment. They also found, cost-plus pricing to be the most often cited pricing strategy. It cannot be derived from their study if the strategies are chosen simultaneously or sequentially. The study implied that one third of the managers used a combination of cost-plus pricing and one of the other nine market-based strategies, indicating that managers are looking inward and outward to set their prices – a Janus faced approach.

2.6.2.6 Forman/ Lancioni’s determinants of pricing strategies in international markets

Forman and Lancioni (2002) also indicated that there is a literature gap in pricing especially in the field of industrial products in international markets. As a result they examined the underlying determinants that affect industrial pricing strategies in international marketing, whereby they drew a relationship between the determinants and the pricing strategies. Forman and Lancioni limited their research to U.S. multinational corporations and the sample was dominated by small to medium-sized firms (under $100 million in annual revenues). They also warned for the vast and dynamic nature of the complexities and selling industrial products internationally, which may limit the applicability of their findings in the long run.

The growing importance of international industrial commerce warrants increased attention, especially in the pricing area. Given that the usual pricing challenges faced domestically, are now

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3 Noble and Gruca (1999), p. 451
4 Forman and Lancioni (2002), p.30
added to more price competition relative to domestic markets, these will involve costs that differ from domestic competitive products. They indicated other uncertainties associated with the international business environment regarding tariffs, costs associated with special packaging, transportation costs (especially for exports), and additional paperwork.

Forman and Lancioni have touched an important issue for this study namely the difference between the pricing process of consumer and industrial products. The product associated in this study is considered an industrial product and not a consumer product. They named three differences between customers of these products: the relationship between price and quality may be more important for industrial products than for consumer products; industrial buyers are less price sensitive than final consumers; and the relative level of knowledge of the industrial customers who have more expertise about the product and the market than do the final customers. For these buyers, reference prices may play a more prominent role in purchasing decision making.

Forman and Lancioni also addressed the issue of export pricing, which is affected by various factors including the nature of the product industry, location of production facilities and governmental regulations.

Although Tellis’s “unifying taxonomy” objective is more based on the managerial approach for profit maximization from pricing for consumer products, his taxonomy is combined by Forman and Lancioni with Shapiro and Jackson’s\(^5\) approaches for industrial pricing, who made a distinction between cost-, competition- and customer-oriented approaches; and with Nagle and Holden’s findings. Forman and Lancioni classified the pricing strategies into four categories: competition-based; internationally-based; cost-based; and demand-related strategies. Refer to Table 2.6 in appendix IX.

Some relevant strategies named in their taxonomy will be explained shortly:
- The competitive pricing strategies regarding parity pricing, which is similar to pricing to market or a “middle of the road” strategy, where prices are neither significantly above or below the market. This strategy is used by companies in markets with insignificant market share.

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\(^5\) Cited in Forman and Lancioni (2002)
- The international pricing strategies are among others standardized and adaptive pricing. Standardized pricing across countries or adaptive (or decentralized) pricing dependent on local country characteristics are, according to Forman and Lancioni, part of an ongoing debate in the international marketing literature concerning marketing strategies. They said that industrial products may be more appropriate for a standardized marketing strategy, while variances in consumer habits, competitive positions and distribution channels across countries may require the adaptive approach. Local economic or financial conditions, interest rates or inflation rates and factory capacity utilization may also play an important role between the choice of adaptive and standardized strategy.

- Cost-based strategies are cost-plus pricing, which is the most, widely used pricing strategy for industrial pricing in international markets.

- Demand-related strategies are price skimming strategy and premium pricing, but not applicable to the scope of the study.

The next pricing determinants relating to international pricing were classified by Forman and Lancioni into four categories: environmental, company, marketing-mix and market-related determinants:

i) Environmental factors of the macro-operating environment of the company include governmental and economic milieu. The company factors are concerned with the organizational and cost structures of companies. The particular marketing-mix variables of individual companies that are associated with specific products are factors included in the third category. The market-related factors refer to the specific markets related to the products in which the companies sell their products. Refer to table 2.7 in appendix IX.

ii) The determinant of government intervention is referred to as’ the real or potential impediments that originate in the host or foreign governments. It also includes the non-monetary governmental maneuvers that inhibit foreign access to its home market such as price controls, antitrust legislation, non-tariff trade barriers or financial reporting requirements. In the CARICOM situation trade rules applies. Fluctuating exchange rates is also a factor of concern in pricing as is the size of the company. Large companies have different cost structures and access to greater amounts of capital than smaller companies and their goal is mostly to gain substantial market share.

iii) Marketing-Mix Determinants:

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6 Forman and Lancioni (2002), p.38
The-country-of-origin-of-manufacture determinant is, according to Forman and Lancioni, also of influence when customers are uninformed about the product. Stereotypes can exist in the minds of customers, usually based on the perceived level of economic development, political and social influences of foreign countries and specific to certain countries. These perceptions are then transferred to the products originating from those countries. The pricing strategies will change with the movement of the stage of product life cycle. When customers are highly price sensitive, they tend to view competing products as mere substitutes of each other; that is why the level of price elasticity is also a very important factor. If customers are not very price sensitive, they place less weight on the price component of products, which they view as being heterogeneous or differentiated from each other. Where there are no substitutes in the market, customers may also be less price sensitive. The determinant of product differentiation is linked to the price elasticity determinant. (Customers tend to become more price sensitive to homogeneous products).

iv) Market-Related Determinants:
Market structure determinants refer to competitive, monopolistic or oligopolistic market structures. Market contribution is defined as the percentage of the overall sales of a company that is represented by one particular product.

The following table 2.8 gives an illustration of the findings of Forman and Lancioni’s study with regard to the relationship between some of the determinants and specific pricing strategies. For instance, their research showed that smaller firms use more standardized pricing strategies while larger firms use more adaptive strategies; under the market-related determinants, market contribution rates were found good predictors of pricing strategies. Associated with international pricing issues market structure appeared to be a rather poor predictor. Another finding was that the market structure did not affect as result of the increased economic global integration, which fosters more intense competition both at the product and price levels. The product life cycle did not prove to be a very significant predictor of pricing strategies. This finding can be explained by the fact that products are often in various stages of the product life cycle in different markets. Refer to Table 2.8 in appendix IX. The concept of perception of customer value is discussed in section 2.7.
2.7 The role of value in pricing

Pricing is not a decision that can be driven solely by the numbers (Nagle and Holden, 2002). As a prerequisite to survive and prosper in turbulent liberalized environment, companies must identify and sustain competitive advantage (Thompson and Coe, 1997). According to Thompson and Coe, companies miss a strategic window of opportunity to utilize price to build competitive advantage and, at the same, achieve customer satisfaction and firm’s profit position. They encouraged also that the old dependence on cost-driven pricing must give way to profitable customer-driven procedures: meaning that the industrial seller must understand value from the buyer’s point of view to meet the demands of the industrial customers and use this information to determine price. According to Simon (2005), value-to-customer is the essential determinant of price, therefore, understanding and quantifying the value is critical for pricing and profit maximization. Mohammed (2005) emphasized the strategies of value-to-customer in his “Art of Pricing” and illustrated the strategies which can be conducted throughout the pricing processes (see section 2.7.1).

Yama (2004) also approached pricing from the value point of view. He set out his offensive strategy for the supplier operating in industries characterized by tough competition and costly negotiation. He advised setting the prices based on unique value that is delivered through the product and to negotiate value delivery instead of price. In this way the frontline of the organization has a role to fulfill to communicate value to the customer as a justification of pricing. He promoted value communication and value-based negotiation because in sales negotiation stakes are high as a result of the leverage price has on profitability. (Refer to table 2.9 in appendix X). Yama argued that selling is a negotiation game in which each side plays a role but not always by the same rules; and he stated further, that recognizing it as a game is critical to success, but the integrity of pricing must not be at stake. The critical issue in the negotiation game is to understand the willingness to pay based on customer’s perception of value. The focus of the seller should be to manage that perception by countering any aggressive negotiation games by the buyer, while forcing the buyer to acknowledge value delivery. The key to success is to maintain the connection between the willingness to pay and the value received by the product while the impact of the product on customer’s business (in a business to business environment) is seriously taken into account by the seller. He maintained that first value must be understood as to what the product means to the buyer then value can be communicated. Yama defined value as the dollar amount of how to help the buyer earn more revenue or reduce costs as a result of using the seller’s product.
Thompson and Coe (1997) defined the perceived value of a product as the price the customer is willing to pay for the total bundle of benefits the product delivers. Nagle and Holden (2002) referred to value as the total savings or satisfaction that the customer receives from the product.

Thompson and Coe (1997) stated that the approach to value pricing enhances the ability of management to use pricing in a more dynamic and proactive manner, especially relevant in an age of disinflation. The challenge in this environment is, therefore, to learn what customers are willing to pay for a product. They argued that instead of price being based on a company’s costs, price drives these costs. The customer-oriented focus of value pricing makes it suitable for use in this changed environment in which customers are more demanding in terms of price, value and quality. Yama argued, in fact, the same as Thompson and Coe: ‘price negotiations destroy value, offering negotiations builds value’. Managing buyer’s perceptions of value is necessary for properly establishing price in a negotiation and a key to improved profitability. Value pricing is also supported through: brand, technical performance and design (Simon, 2005).

On the other hand, a company’s pricing policies communicate important information about its overall image to customers. The secret of setting prices properly is based on understanding the firm’s target market, the customer groups at which the company is aiming its products. (Zimmerer, Scarborough 2006).

2.7.1 The value decoder

The Value Decoder (see figure 2.7 in Appendix X) is a framework for determining a product’s value. It enables the company to analyze the components that make up value and then shows to translate this analysis into the right price for the product.

The central idea of the value decoder is multi-price mindset: a series of strategies that allow the seller to serve the broadest range of customers and reap different profit margins based on the values customers place on the product. Mohammed maintains that the internal organization namely the culture of the organization is of important influence for the multi-price mindset to work. Every chain in the organization involved in pricing should develop a culture of profit to support a pricing strategy that is based on transparency and value offered to customers. He said that the fixed markup on production costs mistakenly assumes, intentionally or not, that customers base their willingness to pay for a product on how much it costs the company to produce it. On the contrary, he maintains
that customers choose the price they are willing to pay based on the value they *receive* from a product. He argues that the only role that costs should play is to act as a price floor: all value-based prices should at least cover a product’s incremental costs, other than that it is all about value. A multi-price mindset enables a company to profit from each customer’s unique product valuation: different customers have different valuations for the same product.

The first two steps of the value decoder ‘price and availability of substitutes’ and ‘characteristics relative to competitors’ are the most important in determining customer value. The remaining three components of value ‘Income’, ‘Price/Strength of demand for related products’ and ‘market environment’ come to play in understanding how a product’s value can change. In the first step potential substitutes are identified, the second step is to understand how company’s product measure up in terms of attributes, against those of their competitors. According to Mohammed, an income increase generally increases customer’s willingness to pay more. The following steps can be influenced from external factors, which in turn result in affecting customer’s value.

### 2.8 The influence of competitive market conditions

For this paragraph the article of Shipley and Bourdon (1990) is used as basis for the theoretical insight on competitive market conditions based on their study findings. However, the article is about distributors pricing, the competitive market conditions described are useful in indicating the influence of the environment on pricing. Their article discussed the findings on pricing practices by British industrial distributors operating in depressed markets, whereby multiple suppliers are marketing relatively undifferentiated product offerings, resulting in fierce price competition. Shipley and Bourdon found substantial downward price flexibility, extensive discounting, and widespread price competition.

They stressed that ‘effective pricing’ is essential for companies providing product or offering services that cannot be easily differentiated in markets that are often mature or declining and competitors are numerous. In such markets, price competition is likely to be fierce and pervasive. The consequence is that companies might start to cut prices to buy market share then ‘high cross elasticity of demand’ forces competitors to follow. The final result can end up in a price-war whereby profit margins of all participants continue to erode until some competitors are forced to exit the market.
Some background information on these British industrial distributors of engineered and paper products helps to get an insight into their operating environment. They are small or small-medium entrepreneurial businesses operating in local or regional markets, lacking extensive resources and managerial specialization. Start-up costs are relatively low so that market entry is reasonably easy and a market structure resembling local oligopoly or monopolistic competition typically prevails. Product differentiation for competitive advantage would be the next step according to marketing principles. However, the gradual trend toward concentration of ownership in industrial manufacturing and the consequent trend toward product standardization have limited the scope for product differentiation. Service requirements by users have generated high standards of service by distributors. Those companies unable to gain a product or service edge are forced to shave prices, and so the downward price spiral begins. Distributors' customers are price sensitive and willing to switch for lower prices. Other differentiated distributors are obliged to continue the spiral by lowering prices to preserve existing price differentials. Many distributors face high personal, ego, and financial barriers to exit, which encourage them to continue competing on price despite low profits.

The findings of the Shipley and Bourdon study indicate that distributors in highly competitive markets focus considerable attention on pricing. A wide range of *pricing objectives* are set but setting competitive prices is among the objectives the highest rated. The *pricing methods* used are multiple, indicating considerable pricing flexibility, which can be used as an effective response to environmental developments. As a result of the competitive nature most prices are set and *influenced by reference to prices of competitors*. Shipley and Bourdon also stated that the most commonly cited pricing method is contribution over direct costs. This is the most propitious of the practicable pricing techniques if the contribution level is responsive to changing conditions. Its use enables firms to accept orders with the highest prices and profits in favorable conditions but to increase competitiveness and/or attractiveness by pricing below average costs when conditions are adverse or opportune. Many distributors also use full cost pricing methods as a starting point in pricing.

Other results of the study by Shipley and Bourdon indicated high proportions of firms that do not *adjust price in response to* increases and decreases in *demand*. Although this was to be justified on arguments concerned with maintaining price stability, it was found as a major weakness. Holding prices when demand weakens may threaten volume, while holding them when demand strengthens may impair profit gains. *Reasons for price discounting* were identified; large majorities of
respondents provide discounts on competitive grounds. *Price following* is extensive among distributors.

With regard to willingness to accept prices at levels above direct costs but below average costs, competitive pricing and discounting appear to be a major cause. Sustaining pricing at these levels over the long term, however, cannot be profitable and may lead to firms having to withdraw from the market.

Since a price-war strategy needs financial depth, competitive pricing behavior as an industry-wide phenomenon, Shipley and Bourdon’s recommendations for long-term survival and profits are to build *competitive edge* by creating product or service advantages in the offerings of firms. Facing depressed margins on quasi-commodity product offerings would not make this easy. Investment in differentiation and allocation of all resources affordable for this purpose is recommended, together with seeking financial and managerial resources. It can be concluded that fierce competitive conditions have a high impact on pricing in the broadest sense of the word.

### 2.9 Summary and conclusion

The basics of pricing are discussed in terms of the elements it consists of and what is influencing it. The literature review is reflected in chronological sequence which makes it easier to follow the development in pricing studies. The incremental importance of pricing as a competitive strategy can be observed. Price was previously defined as a cost-driven number; over the last decade it has developed towards a value-driven set of measures, however, the cost factor is not out of sight.

In the literature review the influencing factors on pricing strategies are approached from different views. Starting with Laric who focused on pricing strategies for industrial markets compared to consumer markets in 1980; then Tellis who made a taxonomy of all pricing strategies based on consumer goods in 1986; and who was then supplemented by matching markets and objectives by Duke in 1994. Tellis’s literature study was again scrutinized and validated by Noble and Gruca with regard to capital industrial goods in 1999. Finally the research of Forman and Lancioni used Tellis as basis for their modified framework of pricing strategies for industrial goods now in international markets in 2002. In the last section the role of value on pricing was highlighted as well as high competitive market conditions.
In the next chapter a conceptual framework will be developed based on the findings of the preceding literature review. This framework will be used as a basis for the research study of pricing strategies for engineer-to-order (ETO) manufacturing companies, which concept will be explained in section 4.4.
CHAPTER 3
CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY

3.1 Introduction
This chapter integrates the concepts from the literature review in the preceding chapter and attempts to answer the fourth research sub-question of section 1.5. To provide the answer the applicability of pricing strategies with regard to engineer-to-order (ETO) manufacturing companies (for this concept refer to section 4.4) will be examined; the determinants of pricing strategies of chapter 2 will be discussed in more detail while comparing their role in relation to the characteristics of ETO manufacturing companies of chapter 4. First, the findings of all authors have been summarized to get an overview of the determinants relating to the type of product, the basic principle, environmental conditions and how these are to be fitted to the ETO manufacturing companies for application as a strategic tool in achieving companies’ goals and competitive advantages. As noted earlier, until now, literature has made a distinction between consumer and industrial products. Apart from that, there is no explicit formula for decision making on pricing strategies for ETO manufacturing companies. To fill this gap a conceptual framework will be developed in the next sections. The last section of this chapter explains the research methodology of the study company.

3.2 Overview of the determinants of pricing strategies
Table 3.1 gives an overview of the theoretical framework from chapter 2. The findings of Laric (1980), Tellis (1986), Duke (1994), Noble and Gruca (1999), Forman and Lanciaioni (2002), Yama (2004), Moustafa (1978), Mohammed (2005), and Shipley and Bourdon (1990) are summarized with regard to the determinants of price in relation to the type of product, the basic principle and environmental conditions. From the summary it can be deduced that specific and direct applicability for ETO manufacturing companies is inappropriate, since the literature does not give exact descriptions based on their characteristics. Their generated customized products comply best with those under the denominator of industrial products; therefore, the consumer goods are not taken into account. The only direct link can be made with the determinant where cost plays an important role. From the literature it can be concluded that the information on the cost structure of the production processes is significant for several strategic decisions. These decisions include product pricing policy, product mix decisions, factory facilities and elimination of non-value added...
activities. To carry out this relationship accurately, a number of factors will be taken into account to draw up a comprehensive overview of the major role of information on cost structure in the study company and to what extent this data affects strategic decision making. Additionally, the factors to be drawn up have a great influence on the role of strategic decision making. However, as indicated in the problem identification pricing decisions only based on the determinant of cost appeared not to be sanctifying for the customers who are the final purchasers of the product and who influence the demand. Nevertheless, the applicable strategies will be used to draw a conceptual framework. From the theoretical framework it can be concluded that pricing strategies are a strategic tool useful in decision making for achieving competitive advantage when applied to a given scenario.

<table>
<thead>
<tr>
<th>Table 3.1: Overview of the Determinants of Pricing Strategies</th>
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<tbody>
<tr>
<td><strong>PRODUCT</strong></td>
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<tr>
<td>LARIC (1980)</td>
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<tr>
<td>Industrial products versus consumer products</td>
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<tr>
<td>DUKE (1994)</td>
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<tr>
<td>General product management</td>
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</tbody>
</table>

| **PRODUCT**       | **DETERMINANTS OF PRICE** | **BASIC PRINCIPLE** |
| **DETERMINANTS OF PRICE** | **BASIC PRINCIPLE** |
| Capital industrial goods | Pricing situation versus pricing strategies, Product; company; and competitive conditions | First understand value then communicate it; Negotiating value |
| NOBLE AND GRUCA (1999) | **BASIC PRINCIPLE** |
| Industrial products | Environmental, company, marketing-mix, market-related versus pricing strategies: competition-; internationally-; cost- and demand-related |
| FORMAN AND LANCIONI (2002) | **BASIC PRINCIPLE** |
| Industrial products | Customer value perception; Customer willingness to pay |
| YAMA (2004) | **BASIC PRINCIPLE** |
| Industrial products | Customer value perception; Customer willingness to pay |

| **PRODUCT**       | **DETERMINANTS OF PRICE** | **BASIC PRINCIPLE** |
| MOUSTAFA (1978) | **BASIC PRINCIPLE** |
| Manufactured export product | International export conditions and regulations; Cost-price determination: full-cost; direct-cost; differential costing | Relevant costs: incremental; full-absorption |
| MOHAMMED (2005) | **BASIC PRINCIPLE** |
| Consumer and industrial products | Different valuation; Customer willingness to pay | Multi-price mind set |
| SHIPLEY AND BOURDON (1990) | **BASIC PRINCIPLE** |
| Distributors services | High competitive conditions | Price flexibility |

Source: Author’s Investigations

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Mohamed (2006), p. 39
3.3 Conceptual framework

In this section a conceptual framework is drawn in relation to the problem identification and based on the relevant determinants or variables of pricing strategies applicable for the research study. The basic principle will be the findings of the literature review. The conceptual framework consists of two major sections: internal and external determinants or variables. These variables consist of specific sub-variables. Interviews with customers, lecturers, experience of the researcher combined with the learned concepts of the literature review, the relevance of the variables are discussed in the following: the internal variables are cost-, company- and product-related issues as a result of production processes. The external variables are market-, competition-, government-, and transport-related issues. The customer is not only both an external and internal variable but is also the main determinant and therefore placed in the middle. (Refer to figure 3.1). Price is the main problem object for managerial decision making. The internal variables are interrelated to each other. The production processes affect the cost structure, which again is subject to company objectives. The external variables are also interdependent, but each has a direct impact on price. They are, therefore, directly linked to price. When deciding on which pricing strategies to be used, a distinction should be made between local and export projects. (Refer to figure 3.2). Additionally, analysis should be made between long-term and short-term profit making. For both local and export jobs the cost determinant is assumed to remain the starting point since the characteristics of ETOs dictate as such: the estimation is made on project basis and cost due to material usage and labor hours which are also assumed to be maintained as a basic principle. The difference in managerial decision making will be in the relevance of the allocation of these costs. The conceptual framework will be explained further.

Internal variables

Production processes– product– cost– company– price:

These variables can be put together under the denominator of technological and organizational factors. They are important factors for cost structure decisions which are the basis of price in the most conventional way. The underlying factors for the product are production processes, which are again closely related to production factors such as capital, land, buildings, labor and machineries. All these factors are necessary for the production of goods and lead to a special cost structure for the company. For instance, the capital brings along interest rates, whether it is “real” interest rates for loans and other means of corporate finance. The same applies for the land and the buildings, which further require taxes, insurance, etc. Labor and machineries are additional business costs. The
real and actual influences of all these factors depend on the individual circumstances, but there are always variable and fixed costs. The ultimate goal of the company is to cover the costs. The question is what price has to be charged to at least recover the costs. The price of a sold unit has to as a minimum recover the (marginal) cost of producing and selling this unit, which is a valid result. The information about the cost structure is the most fundamental variable for ETOs since direct and indirect cost has to be taken into account. The cost of supervising manufacturing employees and handling are good examples of costs that generally cannot be traced to individual projects and, therefore, are indirect costs for the project. Other costs, such as, direct labor hours and direct material need to be directly allocated to a project. This distinction between direct and indirect costs of production processes needs a good understanding of the company’s operation, for the sake of managerial decision making: thus full or variable costing.

Using automated machinery in processes such as the production processes can provide useful accurate information about sales, productivity and costs information, which can result in a direct costing approach.

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8 Mohamed (2006), p. 41
9 Pong and Mitchell (2006)
A company’s functions (human resource, financial accounting) that consume different resources to achieve performance objectives also have a strategic implication on cost structures when allocating different surcharges on costs. The surcharge on engineering, sales, production and top management is not an explicit sum. This variable calls for a *full-absorption* approach, but when strategically decided *direct costing* might be the result. A company’s strategy to invest in technology to remain a market leader and its policy to maximize profit calls for a conventional *cost-plus* approach. It has been noted earlier that focusing only on this approach can be a danger for survival when improvement moves from competition are not taken into account.

An analysis of all process activities (welding, purchasing, engineering) for adding value to the steel construction has to be conducted to determine their contribution to the final steel structure; this tends to a *variable costing* approach.

Clearly, it is assumed that even steel material can be substituted by reinforced concrete but this issue is for the context of this study considered a minor. While, on the contrary, steel complements are more significant.

**External variables**

The external variables can be brought under the denominator of environmental factors.

**Government**

For the export market the influence of government is assumed more important with regard to legislation and exchange rates for both Suriname and the foreign country. The weight of government influence has to be taken into account but its final affect on price is assumed to be not significant.

**Transport**

For the local market the influence of this variable is minor and is considered part of internal variables. Nevertheless, when steel structures are exported to the CARICOM, freight costs become *direct costs*, are considered external variables and, therefore, charged as the project costs.
Fig. 3.2: Conceptual Framework for Export Market

Market
The market determinants: demand, growth, switching costs, and market contribution are not considered to be excessively prominent. On the supply side, however, the elasticity of demand is playing a prominent role, hence the rise in price. Due to economic growth the demand for steel constructions is increasing.

These external determinants will not be taken into further account whereas ‘competition’ and ‘customer’ are considered to be important.

Competition
Competition, which refers to the intensity of the competition in the market of the company, can be considered a variable with an impact on the formulation of company’s strategy\(^{10}\). A higher level of intensity of market competition increases the importance of precise information of the cost structure of the company. A substitute product of the steel construction is more likely to appear from competitors of the same product than from other building materials. For the local market a strategy

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\(^{10}\) Mohamed (2006), p. 50
to apply would be *leadership pricing*, when focusing on a company’s strategy for remaining market leader. For the customer, this implies that the quotation of the steel structure has to offer a competitive edge since there are several local competitors who are producing the same construction. Differentiation in steel construction can be achieved in terms of attributes, delivery performance, quality treatment and construction design. For the export market, strategies like *geographic* and *penetration pricing* are the most applicable in new to enter markets in the CARICOM. These strategies can evolve in *parity pricing*. In a CARICOM market where the steel construction is a commodity, differentiation is a prerequisite.

**Customer**

The customer base in a market is more likely to have a significant influence on the price. In reality, there are probably almost as many different valuations of a good (a commodity) as there are customers. It would be profit maximizing to charge each customer exactly the customer’s valuation for the good, namely, the reservation price. A customer base can be an extremely positive contribution to future results of organizations when customers are satisfied and retained. In the steel business it means that the customers would promote the use of steel and the company behind it through ‘word-of-mouth’. It has been experienced that the end-customers normally do not purchase more than twice in a lifetime, while the intermediaries (architects, general contractors etc) may keep returning. Remarkably, the end-customers perceive this purchase of steel constructions as a capital item for their investment in a building; for the intermediaries this purchase is an expense item. The most likely pricing strategy to be used will be a result of negotiating value, which also indicates different profit margins from customers with different product valuation (*differential pricing*). For both local and export markets where the level of price sensitivity is high, abundant information about the function of steel, possibilities and development of steel construction is a necessity; since the steel construction is a superstructure and not an end product. Communicating value is a prerequisite, mostly in terms of quality, design detailing and also delivery performance.

With this framework an effort has been made to identify and delineate determinants that influence the pricing strategy, yielding optimal results to maximize profit. Based on the theoretical review a pricing strategy has to be focused on the long term and should accomplish the company’s goals, which will be explained in section 4.3.3. Profit maximization is the overall goal of the study company that should underlie the pricing decision. But for the long term this probably requires a series of different pricing decisions. Thus, pricing strategies are best described as a series of pricing
decisions that maximizes a set of objectives, aiming at achieving the underlying overall objective. From the following dimensions (refer to figure 3.3) the preferable pricing strategy can be delineated as follows:

Figure 3.3: Final Conceptual Framework for both Local and Export Market.

Four major determinants would drive the pricing strategy: production processes in direct link to cost, competition and customers. While the internal production processes prescribe a minimum price in order to be viable in the long term, the external market environment (customers and competition) sets a maximum price. The final price is influenced by the value negotiation with the customer, which should indicate the dynamism of the process, the environment and the strategy itself. However, this framework is general and theoretical, but it is provides a good starting point in strategic thinking about pricing decision.

3.4 Research methodology
The case study approach has been chosen since it allows research to be tailored to a specific company, and it allows more in-depth analysis, while enabling detailed information to be extracted. The individualistic and complex nature of pricing makes reliable quantitative analysis extremely difficult to obtain and to tailor a questionnaire for other companies. The case study approach leads
to more accurate results although, admittedly, they are less quantifiable and require more interpretation and analysis. A case study while less generalized, often gives more in-depth information in this, in fact, complex situation and sensitive subject (Yin, 1984).

In this research the current pricing strategy of the study company will be compared with the applicable approaches of the conceptual framework, which is a deduction of the literature review of chapter 2. The current pricing strategy, which follows the company’s objective of profit maximization for the long term, will be placed against a set of strategies suggested in the developed conceptual framework. The managerial tools of break-even analysis and sensitivity analysis will be used to investigate the suggested pricing strategies. The full costing versus the variable costing will also be investigated. The objective with this conceptual framework is to provide a strategic and competitive tool to increase profit in both the long and short term through, among others, increase of revenues. In chapter 5 the analysis will be further explained.

3.5 Summary and conclusion

The developed conceptual framework, which is a result of the literature study of the determinants of pricing strategies, provides a basis for the analysis proposed in chapter 5. The major determinants: production processes in direct link to cost (internal) and customer and competition (external) for both local and export projects provide a good starting point in strategic thinking about managerial pricing decision making. In the final section an approach is provided on how the current pricing strategy will be scrutinized through the research methodology of the case study in relation to the conceptual framework. In the following chapter the study company will be introduced and the third research sub-question about its currently used pricing strategy will be answered. Then the concept of engineer-to-order (ETO) will be explained in extenso to answer the second research sub-question in section 1.5.
CHAPTER 4

UNITED SURINAME STEEL COMPANY

4.1 Introduction

In the first section of this chapter the study company VSH Staalmij.- United Suriname Steel company–VSHSTEEL–, and its processes will be introduced. VSHSTEEL is part of the VSH United Suriname Holding group of companies from which its strategic structure will be explained hereafter. Then the categorization of an engineer-to-order (ETO) manufacturing company will be explained, because VSHSTEEL is part of this categorization. Background information of global forces, regional and local demand is also provided. Finally, the currently used pricing strategy of the study company is disclosed to examine whether a change in this can provide a competitive advantage in a liberalized environment as promoted in the literature review of chapter 2. The currently used pricing strategy will be placed against a set of possibilities used in the conceptual framework of chapter 3.

4.2 Corporate structure of United Suriname Holding company

The VSH United Suriname Holding group of companies comprises of a holding company with nine subsidiaries, eight of which are operating in Suriname and one in Miami. The group was established 47 years ago. The family philosophy of this first privately owned and equity funded corporation was to become a vital member of the business community of Suriname in diversified companies, while minimizing risk. As a result, consolidation in a holding seemed to be the answer. The diversification was set forward during the years by substantial investments in other sectors. The major activities of the holding company include shipping, trading and manufacturing of which VSHSTEEL is part. Other activities include real-estate development, management and investments in other local companies. The holding is a limited liability corporation and has been listed on the Suriname stock market from beginning of the financial year 2006. The holding participates fully in the capital of eight of its subsidiaries. There are substantial investment interests in insurance, the hotel business and a chemical manufacturing company (VSH United, 2006). There is a supervisory board in place and in above-mentioned subsidiaries “cross holding boards” to strengthen strategic positions. Below figure 4.1 depicts the hierarchy of its strategy. The parenting style is moving from the strategic planning style to strategic control style; the parenting structure is simple reporting and is of influence on VSHSTEEL, which can be considered as a subsidiary for technical production.
4.2.1 Linkages

Distinction can be made in the following levels of linkages:

i) Linkages from subsidiary to holding: The holding provides services to the subsidiaries such as financial administration, wages administration, information technology support, cash management, internal financial audits, human resource support, legal assistance, cross management in board of directories.

ii) Linkages between subsidiaries: The relationship between the subsidiaries with regard to VSHSTEEL is not product-related but is related to organizational, information technology and financial issues and is denominated as the following supporting services from:

Trading: involvement in purchase abroad, custom services and exchange money transfer

Transport: part of inbound and outbound logistics of VSHSTEEL

Real estate: VSHSTEEL leases land, fabric and office facilities from this subsidiary

Shipping: Since this subsidiary is the agent for a Dutch sea-freight company, VSHSTEEL books its freight for outbound supplies of raw material out of Europe.

iii) Other linkages: Between the holding and the subsidiaries there are other important connections: consolidated corporate annual reports; multi-annual policy plans are communicated in annual workshops; monthly management meetings regarding financial targets, it appeared that non-financial information can also useful; and equal human resources policies for all subsidiaries in such a diversified corporation, which is not always perceived as sanctifying.
4.3 Company structure of United Suriname Steel company

4.3.1 Organizational structure

VSHSTEEL is the largest of the nine subsidiaries in the VSH United Suriname Holding group of companies in Suriname and is located in Paramaribo. It was established in 1982 and employs approximately 50 employees. VSHSTEEL is responsible for 20-25% of the consolidated turnover of the holding. The organizational structure of VSHSTEEL is reflected in the chart in figure 4.2 below. The main functions and their activities that consume different resources to achieve organizational targets are: Sales (customers, negotiations, contracts, payments, procurement); Engineering (construction calculation, design, customer approval); Manufacturing (planning, processing, storage). The supporting functions are: Purchasing; Financial Accounting; Expedition/Logistics; and Human resources.

![Organizational Chart of VSHSTEEL](image)

Source: Author’s Investigations

4.3.2 Processes

VSHSTEEL designs and produces a diversified range of prefabricated steel products, such as structures for buildings, warehouses, storage tanks and barges. These customized (make-to-order) products are delivered to general building contractors, engineering consulting services, architects, individuals and the public sector. For this research the product focus will be on the production of the steel structures for buildings and the customer focus will be on the general building contractors, engineering consulting services and architects. VSHSTEEL is one of the largest companies in this...
sector in Suriname. Derived from national steel import figures from raw customs data which are compared with the production of VSHSTEEL it is assumed that this company is the market leader in the Surinamese steel business, which is another reason to further concentrate this research on this company as a single case study. Refer to Table 4.1 in Appendix XI for statistics about this matter. VSHSTEEL has a production factory in which raw steel materials (beams, plates, etc.) are manufactured through steelwork processes, such as cutting, welding, drilling, shot blasting and spray painting. The steel parts are finished with machinery so that linear elements can be mounted on the construction site into utility structures. Prefabrication of steel structures means shorter construction periods. Designs, details, construction calculations and shop drawings are made in-house by the design department with advanced computer-aided software based on the customer’s technical requirements. VSHSTEEL is a typical Surinamese engineer-to-order (ETO) manufacturing company; refer to section 4.4 with regard to this concept. The whole process can be divided into the following stages (figure 4.3):

![Figure 4.3: Process Stages of VSHSTEEL](image)

The following description indicates the quotation stage through to the production stage. The delivery and installation are not taken into account in this study, whereas the quotation stage influences the activities in the production stage. This study will focus on stage 1 with regard to marketing, in particular, the pricing strategy. In the next sections the description of the stages will follow.

4.3.2.1 Quotation stage

Due to the fact that the construction sector is very sensitive in Suriname and that the sector is influenced by economic and political developments (see section 4.5), the quotation stage can be very intensive time for the company. In this stage sketch drawings and the construction calculations are made which the customer has to approve. These drafts are based on the demands of the
customer and the additional advice of the company to meet the diverse needs and wants of the customer, which is often subject to changes. Despite the fact that the company spends a lot of time with the customer in order to meet their demands, resulting in an acceptable order for as well as the customer as the company, it often happens that the deal does not go through. The slow decision-making process of the customer has among others the following issues as reasons:
  
i) The demands of the customer regarding the order are diverse, resulting in many revisions;
  
ii) Financial aspects: immediate money availability by the customer to make a down payment;
  
iii) Customers may not agree with the price and/or might just wait for better ‘economic’ situations.

Table 4.2 in Appendix XI gives an overview of the amount of quotation requests versus the confirmed orders in a year. In most cases the decision whether to place takes about two years.

4.3.2.2 Job confirmation stage and internal administrative procedures

This stage has three sub-stages, which are in sequence of each other:
  
i) The initial payment: The customer has to make a down payment to place and confirm the order within a predetermined time.
  
ii) Order confirmation or awarding contract: This includes the terms of payments; expected date and terms of delivery; short project description of the steel construction accompanied by approved drawings; and other special agreed specifications.
  
iii) Internal administrative procedures: At this stage the job information ticket is made with the necessary administrative data.

4.3.2.3 Design stage

In the design stage the construction drawings are made for customers’ final approval. This approval is important because without it the manufacturing process cannot commence. It also occurs that after starting the manufacturing process revisions are still made resulting in process delays. These revisions might have a financial impact for the customer; the problem is that the customer does not always appreciate possible price changes.

4.3.2.4 Production stage

The production process of VSHSTEEL is an example of a basic job shop process\textsuperscript{11} layout where similar activities are grouped in small “work centers” according to the process or function they perform. Typical for this job shop is the low volume of each customer’s order and the possible

\textsuperscript{11} Russell and Taylor (2006), p.225
variety in sequence of operations required to complete an order. The production processes are scheduled in the following batches: sawing; drilling; cutting; punching; assembling of the construction parts; welding; and preservation including shot blasting and spray painting. After the final quality inspection the finished product is provided with a VSH label. The complexity of the steel construction and the accompanying production processes influence pricing.

### 4.3.3 Policies

With regard to the subject of the study the following policies can be distinguished at VSHSTEEL:

i) **General policy**: As a manufacturing subsidiary of the VSH United Suriname Holding group of companies the goal of the company is to maximize profit. Customer research (Source: Authors Investigations) shows that new projects are mostly initiated as a result of customer satisfaction of previously delivered projects (relationship marketing).

ii) **Export policy**: After serving mainly the local market for about eleven years, VSHSTEEL started with export activities. Suriname’s membership of CARICOM was announced on 1 January 1996, which was a challenge for the company since more markets in the Caribbean could open under special conditions. Competition in the newly found markets was fierce for there were many local and/or foreign players; hence VSHSTEEL’s price and quality ratio had to be optimal.

iii) **Pricing policy**: Apart from the sales, the design department and management, no other department within VSHSTEEL is involved with pricing. Only in the case of special projects the production department gets involved with empirical expertise, for instance, on complexity and delivery time schedules. An interdisciplinary approach of pricing is not in place. The general pricing approach in use is reflected by figure 2.5 in section 2.6.2.1. In section 4.6 the current pricing strategy is highlighted in detail.

Since price is, among others, the main determinant for purchasing decisions, the developing trend is that customers are not willing to pay the price based on cost. In fact the customer is looking for an ‘augmented’ price. Based on the background of the price raise for steel raw material, this result in margins that are coming more under pressure and the matching of price to customer value is more evident. Just like other companies this company is also entering the single market of the CARICOM, where stronger competition will have an effect on prices, which means a lowering effect in most cases. In order to become competitive this company has to assess its pricing strategies and use these strategies as a tool for competitive advantage, while finding the balance between the customer’s desire to obtain good value and the company’s need to earn profit.
4.4 General categorization of engineer-to-order companies

This section gives a theoretical background of the engineer-to-order concept, from which the case study company is part of and it also explains the second sub-question of section 1.5.

An ETO is an engineer-to-order company, make-to-order or make-to-contract company. An ETO manufacturer can be defined in terms of the products they produce since they are producing to customer specifications, which requires unique engineering designs or significant customization. Each customer order results in a unique set of part numbers, bills of material and routings. The interaction between suppliers and ETO manufacturers is more critical than between suppliers and their repetitive manufacturer customer. Lead times\textsuperscript{12} are typically compressed with tight scheduling leaving little scope for error (http://www.4eto.co.uk).

There are several key differences between standard, repetitive manufacturing make-to-stock and make-to-order, make-to-contract, or ETO. Estimates and quotations and not a sales order are required to win a job, order or contract of the tender for a project (Cutler, 2006). Customers are heavily involved throughout the entire design and manufacturing process and not only at the end when the product is completed. The manufacturing process is complex with regards to long lead times. Changes or revisions are a way of life. Material is purchased for a specific project and only a stock of standard material is kept as inventory. All actual costs are allocated to a project and tracked against the original estimate. Once complete, the product is typically installed at the customer’s site. In most cases, aftermarket services continue throughout the life of the product (Cutler, 2006). An ETO manufacturer receives stage payments and retentions and ships from work in progress, the made-to-stock ships from finished goods (http://www.4eto.co.uk).

Engineer-to-order indicates a style of manufacturing rather than a specific industry segment; other terms are ‘project-based’ or ‘custom’ manufacturers (Cutler, 2006). Installation of the product at the customer’s site, which is a specific geographic requirement, provides these manufacturers with a global competitive advantage. ETO companies consider themselves a hybrid of manufacturing and construction (Cutler, 2006). This being especially true for steel manufacturers as even the yellow pages of the telephone directory have difficulty in categorizing these companies. Sometimes they are categorized as part of the steel construction sector and sometimes they are part of steel

\textsuperscript{12} Lead times are the total length of time required starting from placing an order to delivery (Russell and Taylor, 2006).
manufacturers. The main business activities of the companies are the design, manufacture and construction of ‘capital structures’.

With regard to their interaction with customers, business processes can be broken down into three stages:

1. Marketing - A two-way process that evolves potential customers’ awareness of the company and its products. Market trends, technical and non-technical customer requirements including customers’ criteria and specifications for assessing competing offers can be identified based upon relationship marketing (Hicks, et al 2000). Marketing and manufacturing are interdependent functions in industrial production companies (Konijnendijk, 1994).

2. The response to an invitation to tender for a particular contract - The tendering involves the preliminary development of the conceptual design and the definition of major components and systems. A technical specification, delivery schedule, price and commercial terms are agreed committing approximately 75-80% of costs at this stage. The tendering success rate is often less than 30% according to the research of Hicks et al (Hicks, et al 2000).

3. After the contract has been awarded - These activities include non-physical processes, such as design and planning; and physical processes associated with manufacturing, assembly and commissioning (Hicks et al, 2000).

ETO companies respond to their markets in unique ways, mostly basing the product range on previous orders. Product innovation may be general, such as developing an underlying technology, or it may be specific to meeting the requirements of a particular customer or order. Another key competitive factor in ETO markets is delivery performance. The sector is characterized by large design content per order; the types of products produced; the business processes; and the nature of the markets. In spite of the emphasis placed on quality and delivery by customers, price and cost are key determinants on which contracts are awarded. ETO companies base their price on estimates of costs, in general, full cost or cost-plus.

In this research paper in the context of Suriname, the ETO sector is limited to make-to-contract, project-based design and manufacturing to the customer’s technical specifications of steel structures for buildings. Since these manufacturing companies are, in general, subcontractors of other general building contractors, engineering consulting services or architects, they prepare bids, of which price is a basic decision factor. However, the bidding strategy is not included in the scope of this research, but it is limited to the pricing issue in a business-to-business relationship with the customer. In many cases private companies are the customers or end-users. They make use of
general building contractors, engineering consulting services and architects as an intermediary but
the financial means originate from them. Engineering services and the design content are also part
of the Surinamese context of ETO but pricing for engineering services is not included in this
research. It is assumed that cost-plus pricing has been up until now the commonly used pricing
strategy of ETO manufacturing companies in Suriname. Reference with regard to pricing strategies
is made per order or contract price for the physical processes associated with manufacturing,
assembly and commissioning steel structures. The trends in globalization give options to request for
quotations for similar products elsewhere in the CARICOM. The highly competitive environment in
which these companies are performing is reflected in section 2.8. As the study company undertakes
export activities the strategy required for entry into the foreign market is also taken into account.

As can be deduced from abovementioned definitions the Surinamese ETO companies are a specific
group of companies that design and manufacture durable capital buildings and they can be
considered a hybrid of manufacturing and construction since they also install the steel structures at
the customer’s building site. For further research, the study will focus on pricing strategies for
industrial products, given that literature makes a distinction between consumer and industrial goods.
The study company is an empirical example of other ETO manufacturing companies in Suriname,
dealing with the challenge of survival through sustainable competitive advantage.

With regard to the characteristics of ETO manufacturing companies the applicability in relation to
pricing strategies is summarized in table 4.3 in Appendix XI. Issues related to company; product;
production process; costs; customer; competition; transport; and market which might affect price
are briefly reflected in the table text. The style of manufacturing with the product produced to
customer’s specification; a unique engineering design; material purchased on project-basis and
costs allocated to the specific project, calls for a cost-based or cost-related approach. As indicated in
the current pricing strategies of the case study company, in general, prices are set based on costs
and/or prices charged by competitors. But in most cases this will not yield optimal results. To be
competitive these approaches do not seem to be the solely match. Moreover, it is not only a static
but a dynamic decision, since prices change over time. The main goal of VSHSTEEL is to
maximize profits, and then all factors have to be taken into account that affects it.
4.5 The environment: global forces versus regional and local demand

In this section the global changing forces will be briefly observed to indicate the trend on the supply side of raw materials in the sector under discussion. As noted already the ETO manufacturing companies have no means to influence these global forces, making it necessary for them to put efforts into achieving competitive advantages.

In both developed and developing countries steel is the world’s preferred building material of choice for new warehouses and many other applications (www.steelbuildingadvice.com). The application is about 60% on constructions of buildings and bridges (Steel statistical yearbook 2005, www.worldsteel.org). Large steel producers almost rule the value chain for instance Mittal, with the recent takeover of Arcelor (//knowledge.wharton.com.cn). What is happening globally in the steel mills that are neither affected by traders nor can manufacturers play a role of significance. The availability of raw material has been under pressure due to the overheated economic growth of China during the last five years, which has inevitably resulted in price increases (//steelonthenet.com). Expectations at world market level are that the demand for steel raw material will rise in the years to come and prices will never return to the old level and as other markets, such as India, Brazil, will claim their share in industrial development.

It is often said that construction is a primary driver or gauge of the growth of an economy (//ccpsindia.com) indicating how the economy flows. Reversely, economic changes have a great influence on the construction sector. For this research special attention will be given to pricing strategies with regard to decision making on investments in fixed assets such as buildings and warehouses. Most economies in the CARICOM countries are showing a positive growing trend and the expectations are that the construction sector will follow this trend, which implies that as a result demand will increase. Not only developments at world level affect business performance but also local environmental factors. The steel construction sector is part of both the construction and the manufacturing sector\(^{13}\). Clearly, both global and local construction sector developments are of great importance to the Surinamese steel business.

\(^{13}\) Note from the author: The border between construction and manufacturing for the ETO, as indicated before, is not adequately defined.
4.6 The current pricing strategy

In this section the currently used pricing strategies of VSHSTEEL, namely cost-plus pricing, will be scrutinized through empirical data gathered from this ETO manufacturing company in Suriname. Cost-plus pricing can lead to similar prices across firms with similar cost structures\(^{14}\). It is assumed that “full-cost rule of thumb” is up to now the commonly used pricing strategy.

For this research the steel price is considered the amount of money paid for a psychical construction or the manufacturing of the steel structure according to customer’s technical specification. The unit price is expressed in metric tons. The importance of costs of raw material and of the production process is significant and evident, which justifies the current cost-based approach used on contracts. Competitive bidding is also used for these customized products.

The *cost-based price negotiations*\(^{15}\) are based on the cost structure of the company such as labor, materials, overheads and profit for steel constructions to be sold. In these cost-based price negotiations the objective of VSHSTEEL is to get a fair return (on sales, investments or both) and to minimize cost-factor risks. The objective of the customer is to negotiate a fair price and get the benefit of the company’s cost reduction that accrues through experience. With the contract-plus an amount of the costs is to cover fixed overheads and profit. The costs, that are directly paid, include labor and material. In the history of VSHSTEEL the overheads-plus profit is at times charged to the contract at some agreed-upon amount on a per-labor-hour-basis. Capital investments needed to do the work are amortized as part of the unit-price until they are completely written off. In some cost-plus contract the customer – the general contractor – negotiates audit privileges, in which they obtain the right to inspect the sub-contractor’s company’s cost records. Some contracts may provide for cost-factor escalation. These provisions allow for price adjustments as certain specified costs (labor and materials) may increase. The cost-escalation, practically defined as extra or additional work, is often determined by the extra tons of steel used.

When prices are not set through cost discussions with customers, they are set by *competitive bidding*\(^{16}\). The use of competitive bidding is sometimes required according to the purchasing company’s procurement rules and regulations. For example, three bids might be required for all procurements exceeding a given dollar amount, unless reasons for not doing so are documented.

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\(^{14}\) Cannon and Morgan (1990), p.22  
\(^{15}\) Corey (1990), p. 3  
\(^{16}\) Corey (1990), p. 4
The competitive bidding rule is a way of ensuring that customers probe for the lowest available price rather than routinely placing business with steel manufacturers they know best. Competitive bidding may be either sealed or negotiated. Under sealed bidding procedures, bids are due at a certain time and the award made to the lowest bidder if its specifications conform to the Request for Quotation. Late bids are disqualified as a way of ensuring that some steel manufacturers do not get information on competitive-bid prices before submitting their own quotations. Sealed-bid pricing results in a price selected on the basis of cost considerations and expectations about what competitors will do. This approach is based on the expected profit likely to be generated from a particular bidding strategy. It is considered a pricing strategy because a company might encourage its customers to take a sealed-bid approach. In negotiated bidding, the procedure usually calls for submitting bids by some specified date, to be opened at some appointed hour, with rules against accepting late bids. Further negotiations may be conducted with the lowest one or two bidders in an effort to get price reductions below the bidden amounts. Negotiated pricing is a profit-oriented method whereby the negotiation process presumably seeks to work out an optimal price for both buyer and seller on a case-by-case basis. Negotiated-bidding procedures are more characteristic of buying behavior in private corporations than in government agencies.

VSHSTEEL uses the typical standard linear pricing process, as noted in section 4.3.3. The cost estimated cost-price, which is necessary to determine values on the balance sheet and the profit (bottom-line), and decision making, is used as a starting point for quotations and estimates and setting of job price. The basis for these material estimates is drawings which reflect the desired construction design, details and size. The material usage is expressed in tonnages of steel. The actual material or production good cost-price is based on the actual purchasing price from the supplier, including freight cost and a surcharge percentage over the purchasing amount being local and handling charges. As result of the earlier mentioned job shop production process, the construction is designed and produced according to the customer’s technical specifications; therefore keeping large material stocks is not necessary. Special materials are ordered on project-basis, standard materials (= used on average construction elements) are part of the stock. The material costs are therefore direct costs, the surcharge percentage over material costs are indirect costs to cover the freight, local, transportation and import costs. This surcharge percentage is based on empirical estimates.

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17 Cannon and Morgan (1990), p. 22  
18 Corey (1990), p. 4
Labor costs are the amount of estimated hours multiplied by an average tariff per hour for production multiplied by the amount of tons of steel. Labor hours (or production hours) are calculated based on experience built up during the years and historical data of previous realized projects. The average man-hours per ton of steel used for production also depend on the type and complexity of the steel construction which is defined in a table. The table also provides for diminishing labor hours to be calculated based on an increasing quantity of tons steel estimated. In these estimated hours unproductive hours are not included. The average costs per hour for production is the total sales minus cost of production goods minus the personnel costs; total general and administrative costs; added by a surcharge over the own capital and divided by the total of production hours in a year. This indicates that depreciation and the expected return are included in the unit production tariff. (Refer to the example of table 4.4 in Appendix XIII). Tons of steel are the amount of production goods needed. Labor costs are also direct costs when they are only made to realize the project or job.

Remember, as result of the typical job shop production process the steel construction is manufactured according to customer’s technical specification, which entails that every construction is different from one another. This includes that the costs of every construction have to be estimated per project, dependent on the type and complexity of the construction. The quotation is submitted to the customer where after the negotiation starts, which is then mostly based on the cost-price calculation of the job. This job calculation is a cost estimate which allows the subsequent calculation management to decide on future improvements. A mixed form of the production process is also possible, that of job shop and batch. Costs made specific for a job are direct costs; those costs which are not job-specific (indirect) still need to be allocated and as mentioned earlier a surcharge is made based on historical data and experience.

As noted before the main goal of VSHSTEEL is profit maximization for its shareholders and the policy is to remain market leader. Based on subjective observation, data on quotations submitted to customers and data on jobs booked by VSHSTEEL, it can be concluded that the demand for steel constructions is increasing. Expectations in relation to developing projects from the government and the private sector are promising with ongoing investment in new bauxite mines and the favorable world market prices for gold, alumina and oil contributing to economic growth. The construction sector as a gauge and follower will also contribute to economic activity (VSH United, 2006). The market segment of VSHSTEEL consists of the general building contractors, engineering consulting services and architects, who are purchasing steel structures for buildings. In the near future, apart
from local competition, to remain market leader VSHSTEEL also has to take into account the highly competition from CARICOM because of the liberalization this brings with it in terms of pricing. That is the reason why VSHSTEEL has to scrutinize its pricing structure and strategy to take important managerial decisions. Table 4.5 in Appendix XIII illustrates the current pricing strategy, gathered from the production and financial data of VSHSTEEL. The figures are disguised due to the sensitivity of this information.

For export activities VSHSTEEL uses the same full absorption costing so that all costs (variable and fixed, direct and indirect) are covered, including sea freight and insurances. When taking the sea freight costs into account, which most of the time has an unfavorable effect on the final export pricing, the company tends to provide for price adjustments in labor costs, seldom in material costs. The company is aware that by continuing the cost-based approach, it prices itself out of the market, since this approach does not account for upcoming competition. Therefore it also uses a competitive pricing approach as result of the response of and negotiation with foreign customers and some market research. As soon as the company became aware that its product-oriented focus should make room for a more customer-oriented approach, this resulted in the International Standard Organization (ISO) certification, in which customer satisfaction is the central idea. This also resulted in a constant tension between the goal to achieve customer satisfaction and on the other hand profit maximization. The experience is that it is not easy to distinguish value-seeking from price-seeking customers\textsuperscript{19}. Communication of value to customers is limited to the quality standards of ISO certification. Price negotiation has become more of a daily activity.

4.7 Summary and conclusion

This chapter introduced the study company VSHSTEEL against the background of a dilemma: global forces which are determining the input (of raw materials) of this ETO manufacturing companies versus the growing demand for steel utility buildings as result of the positive economic development in the local and regional market. (This assumption is based the country’s GDP -Gross Domestic Product- information, which shows increments). Then the concept of ETO manufacturing was generally approached. In general, prices are set based on costs or prices charged by competitors, which is reflected by the currently used pricing strategy of the study company.

\textsuperscript{19} Yama (2004), p.3
These currently used strategies based on full costing are easy and they comply with the conventional part of the theories in the literature. The current contracts leave room for price negotiations. However, the way of these frequently price negotiations indicates that when the use of the cost-based approach is continued as *the* single strategy the result can be that the company prices itself out of the market, especially when taking the competition into consideration. Not all customers have time for negotiations. It also does not encourage the company to use its resources efficiently. It can be concluded that there is room for improvement to use pricing strategy as strategic tool as VSHSTEEL is for a great deal financially and product focused. The company acknowledges that there is a gap in using price advantage as a tool, which is why the company fully agreed to this research. Price advantage is especially pertinent at the international level, where price is the main determinant of purchasing decisions as there is a lot of choice from the competition.

In the next chapter the data from the study company will be analyzed with regard to its currently used pricing structure and its pricing strategies in relation to the conceptual framework developed in the preceding chapter. In the last section interpretation of the results will follow.
CHAPTER 5
ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

5.1 Introduction
In this chapter the current pricing strategy of the study company will be compared with the applicable approaches of the conceptual framework. The single approach of full costing will be placed against a set of strategies suggested in the conceptual framework. The reason for this is that the current strategy, which is in line with the conventional part of the existing theories with regard to the company’s ‘cost’-related objectives, is the only single strategy in use. This may limit sales and profitability opportunities of the company in the long run. However, with regard to the ‘competition-’ and ‘customer’-related determinant, there is also room for improvement.

The suggested strategies of section 3.3 are summarized as follows:
When taking cost as a basic principle, the suggested alternative is variable costing or direct costing. In especially export situations a combination of differential costing and direct costing is the alternative approach. For export, differential pricing with special attention for second market discounting and geographic pricing, penetration pricing and parity pricing are the suggested strategies. For local situations, the leadership approach is maintained. In a customer-focused pricing situation, the suggested strategies are for export a differential approach: second market discounting and adaptive pricing.

To validate the ideas of the conceptual framework, the following calculation based on applicable managerial tools, such as cost-profit-volume analysis and sensitivity analysis will be used to calculate profits on the short and long term. A competitors’ and a customers’ analysis will also follow in the coming sections. In doing so, the research objectives of section 1.4 can be achieved.

5.2 Analysis of data
The figures of the case study company are disguised, due to the sensitivity of the internal financial information.
Cost analysis

First the financial statements were investigated to analyze the current financial status of the company. These are illustrated in table 5.1, table 5.2, table 5.3 and table 5.4 in Appendix XIII, XIV and XV. The impact of the ‘cost’ determinant of the conceptual framework, which forms a basis for the suggested pricing strategy, was first investigated. The information on the cost structure will influence managerial decision making on how to control costs, just to increase sales volume or to adjust the selling price.

The next investigation regards the full absorption and direct-cost income statements (Horngren et al, 2005). The figures of the year 2005 were used and in table 5.5 in Appendix XVI the two income statements are illustrated. The following costs were considered variable: materials {100%}, direct labor {35% of total personnel costs} and variable operation expenses (manufacturing supplies {70% of the total}, services {75% of the total} and maintenance {30% of the total}). The fixed costs were considered as follows: manufacturing overhead {65% of total personnel costs}, selling costs, manufacturing supplies {30%} and services {25%}, operation expenses {rent, insurance, utilities, maintenance}, depreciation and interest. The gross profit margin is 37.57%, compared to the contribution margin of 33.10%. The variable costs are three times higher than the fixed costs, which result in an operating leverage of 30%.

Table 5.5 gives a contribution percentage of 33.10%, which means that variable costs absorb 66.90% of the total revenues or 33.10% of each sales euro is available for recovery of the fixed cost of € 288,075 and make a net income. Thus, variable costs should be 72.67% of the selling price of the steel construction. Through the cost-volume-profit analysis the break-even selling price was calculated by using the following equations (2) and (3):

\[
\text{Total sales} - \text{variable cost} - \text{fixed cost} = \text{operating income or} \quad (2)
\]

\[
\text{Break-even selling price} = \frac{\text{operating income} + \left( \frac{\text{variable cost/ unit} \times \text{quantity tons produced}}{\text{total fixed cost}} \right)}{\text{quantity tons produced}} \quad (3)
\]

The basic assumptions are the figures of year 2005 of the study company. Other assumptions on break-even analysis are also valid such as: steel constructions are the single product sold; there is a

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20 Note from the author: relevant information for the study is displayed.
21 The word ‘selling price’ is used for easiness, but the ETO sector is familiar with ‘estimated or job price’.
linear relation between price and volume; one capacity limit. Through the contribution margin method the break-even point can also be calculated. See equation (4):

\[
\frac{\text{Total sales} - \text{total variable cost}}{\text{Total number of ton sold}} = \text{unit contribution margin}
\]  

(4)

The equation method at break-even point will be used to analyze the changes in volume on operating income: substantial changes in volume at a fixed price result in increases of the variable cost at a constant fixed cost and a final increased operating income. The following table 5.6 illustrates the increase.

### Table 5.6: Changes in Sales Volume on Operating Income

<table>
<thead>
<tr>
<th>Volume in tons</th>
<th>700</th>
<th>1,000</th>
<th>1,200</th>
<th>1,500</th>
<th>1,800</th>
<th>2,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price in Euro</td>
<td>1,208</td>
<td>1,208</td>
<td>1,208</td>
<td>1,208</td>
<td>1,208</td>
<td>1,208</td>
</tr>
<tr>
<td>Sales</td>
<td>845,600</td>
<td>1,208,000</td>
<td>1,449,600</td>
<td>1,812,000</td>
<td>2,174,400</td>
<td>2,416,000</td>
</tr>
<tr>
<td>Variable cost/ton</td>
<td>808</td>
<td>808</td>
<td>808</td>
<td>808</td>
<td>808</td>
<td>808</td>
</tr>
<tr>
<td>Variable cost</td>
<td>565,712</td>
<td>808,160</td>
<td>969,792</td>
<td>1,212,240</td>
<td>1,454,688</td>
<td>1,616,320</td>
</tr>
<tr>
<td>Contribution margin</td>
<td>279,888</td>
<td>399,840</td>
<td>479,808</td>
<td>599,760</td>
<td>719,712</td>
<td>799,680</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>288,075</td>
<td>288,075</td>
<td>288,075</td>
<td>288,075</td>
<td>288,075</td>
<td>288,075</td>
</tr>
<tr>
<td>Operating income</td>
<td>-8,187</td>
<td>111,765</td>
<td>191,733</td>
<td>311,685</td>
<td>431,637</td>
<td>511,605</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations

A price decrease of 0.5% to 5% gives the following outcome on the operating income (see table 5.7). Or when defined at break-even point, it entails that a 0.5% decrease in price results in a minimum increase of sales volume of 1.6%. A discount of 5% results in a minimum sales volume increase of 18% to be able to cover fixed costs and make a profit. The impact of a price decrease on the minimum sales volume is illustrated in the next table 5.7.

### Table 5.7: Impact of Price Decrease on Break-even Volume

<table>
<thead>
<tr>
<th>Price decrease</th>
<th>0.50%</th>
<th>1%</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>New break-even volume</td>
<td>731.5</td>
<td>743</td>
<td>767</td>
<td>792</td>
<td>820</td>
<td>849</td>
</tr>
<tr>
<td>Percentage volume increase</td>
<td>1.60%</td>
<td>3%</td>
<td>7%</td>
<td>10%</td>
<td>14%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Author’s Investigations

A price increase, however, will yield the operating income as follows at break-even point: a price increase of 5% will decrease the minimum sales volume with 13%.
The next investigation is the impact of changes in both price and volume on operating income. In table 5.8 the results are reflected.

<table>
<thead>
<tr>
<th>Price</th>
<th>Contribution Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1008</td>
</tr>
<tr>
<td>Worse</td>
<td>900</td>
</tr>
<tr>
<td>Base</td>
<td>1200</td>
</tr>
<tr>
<td>Best</td>
<td>1500</td>
</tr>
</tbody>
</table>

Source: Author's Investigations

In the case of export pricing differential costing was applied. The relevant cost elements for export pricing were investigated. The limitation was that there were no separate figures from the study company available. So the actual figures are also considered valid for export situations. In this case the variable cost and the increments in fixed cost were analyzed. These were again divided into a local cost and a foreign cost component. The next table 5.9 gives a calculation example of the relevant cost elements.

<table>
<thead>
<tr>
<th>(in Euro)</th>
<th>Total Cost</th>
<th>Local Cost</th>
<th>Foreign Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable Cost</td>
<td>808</td>
<td>108</td>
<td>700</td>
</tr>
<tr>
<td>Incremental Fixed Costs</td>
<td>240</td>
<td>168</td>
<td>72</td>
</tr>
<tr>
<td>Total Incremental Cost Elements</td>
<td>1048</td>
<td>276</td>
<td>772</td>
</tr>
</tbody>
</table>

Source: Author’s Investigations, adapted from Moustafa (1978)

Local incremental fixed cost assumed 70% of the incremental fixed cost. In doing so a minimum floor price per ton for export was established equal to the variable costs. In table 5.10 the impact of the foreign cost component on export pricing will be explained in the case of there being no change in the existing production facility condition and if expansion in facilities is assumed.
Table 5.10: Impact of Foreign Cost Component on Export Pricing

<table>
<thead>
<tr>
<th>Variable cost</th>
<th>Condition</th>
<th>Decision</th>
<th>Yield of Foreign Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No change in existing condition 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is equal to or exceeds variable cost x&gt;808</td>
<td>Export</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is less than total variable cost and also less than the foreign portion of variable cost x&lt;808; x&lt;700</td>
<td>Do not</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is less than total variable cost but greater than its foreign components 700&lt;x&lt;808</td>
<td>Export Do not</td>
<td>Negative Positive Negative</td>
</tr>
<tr>
<td>Fixed incremental cost</td>
<td>Assuming expansion in facilities 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is equal to or exceeds total incremental costs x&gt;1048</td>
<td>Export</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is less than the total incremental cost and also less than the foreign components of incremental cost x=1048; x=772</td>
<td>Do not</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Revenue realized in foreign currency is less than the total incremental cost and also greater than its foreign components 772&lt;x&lt;1048</td>
<td>Export Do not</td>
<td>Negative Positive Negative</td>
</tr>
</tbody>
</table>

x = revenue
1) short-run analysis
2) assuming no alternative use for excessive capacity

Source: Author’s Investigations, adapted from Moustafa (1978)

Competition (Industry analysis)

With regard to the ‘competition’ determinant, a competition analysis in the industry sector based on Porter’s Five Forces (Wheelen and Hunger, 2006) was used to investigate VSHSTEEL current situation. The forces were assessed by VSHSTEEL’s management. The analysis was qualitative in nature. The results are illustrated in figure 5.1.

Barriers to entry – medium to high

In the steel industry capital requirements for a well equipped factory are high: a company that wishes to enter this industry needs to invest in expensive machinery and facilities. However, some small competitors provide low quality structures with limited equipment. The core product, with regard to steel processes, is basically the same and cannot be differentiated. Existing companies have the advantages of economies of scale, which would not be the case for new entrants. In Suriname the steel industry is tending towards the maturity phase, while the CARICOM market is still open for penetration. From the CARICOM point of view barriers will decrease by the end of
2006, this being the target effective date for the trade agreement signed by the Suriname government, regarding the import tariff structure between member states. The CARICOM barriers for Suriname to enter are considered medium; the only significant barriers to overcome are the infrequent sea freight connections.

Source: Author’s Investigations

Bargaining power of suppliers – very high
There are very few suppliers and mostly based in Europe, therefore, the raw material is delivered by sea freight. Furthermore, the amount of steel being purchased is relatively small: since VSHSTEEL purchases on a project-basis, they are in a minor position to negotiate prices from their suppliers. VSHSTEEL has created a certain relationship with its suppliers and can hardly switch, without high costs from other suppliers, which entails delivery and payment terms and very actual availability. Switching to suppliers from Brazil or USA has the unexpected consequence of higher logistic costs and unpredictable delivery times. The international steel supplier tendency is one of mergers.

Bargaining power of buyers – medium to high
In this industry buyers comprise a majority of general contractors, architects and consulting companies. About 19% of the jobs are from private customers (end-users). General contractors are responsible for 55% of the projects: consulting companies and architects take 20% for their account and 6% of jobs are from the government (See table 5.11). General contractors, architects and consulting companies act as intermediaries between VSHSTEEL and the end-user. As the purchase of the steel construction is a significant part of the cost of the total building costs and regarded as an
expense item by the intermediaries, they are very sensitive to prices. There are very low switching costs involved for them. Finally, they purchase on price and delivery performance.

Table 5.11: Category Percentage of Customers

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private customers</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Consulting companies and Architects</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>General contractors</td>
<td>55%</td>
<td>75%</td>
</tr>
<tr>
<td>Government</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations

Treat of substitute – medium

As the time factor is increasingly important for contractors, architects and consulting companies, substitutes are important. Wood (threat = low) and concrete (threat = medium) can become an important factor to consider, since the building industry is growing in Suriname. When the time factor is extremely important and the steel industry is not able to deliver the product on time, reinforced concrete would most likely be considered as the substitute. This is also due to the fact that in Suriname concrete has been thé building construction material for a long time. The raw material for the steel industry is imported, while raw material for reinforced concrete is 60% locally produced. As result of a shorter construction period, flexibility and lower construction weight, the current market favors steel. As the CARICOM protocol will come into effect at the end of 2006, the market will be more easily opened to import steel constructions from Trinidad.

Rivalry – medium

In Suriname the number of competitors is small (4), but the competitors are able to offer lower prices because these companies are small and thus have low overhead costs. On the other hand VSHSTEEL offers an augmented product, which might result in higher prices, while competitors do not offer this product. When considering the CARICOM market, Trinidad is the main competitor in the regional market. Trinidad has low energy costs and direct freight connections for both importing raw materials and exporting the steel constructions to the CARICOM community. The core competencies of VSHSTEEL are considered its advantage over its competitors.

Local competitor capability analysis (Wheelen and Hunger, 2006)

This competitor analysis is, in general, limited to the local market, since analyzing the competitors abroad requires more detailed information. Competition from the CARICOM comes from mainly Trinidad, since other than Barbados no construction companies facilities exist on the smaller
islands. From the author’s investigation it can be concluded that the advantage VSHSTEEL can have is shorter delivery times and lower prices especially the labour costs component.

The assessment of the local competition can be characterized by the following: no annual reports; no transparent policy; sole proprietorship; no overhead costs; low wages and no social policy for workers. This information is derived from customers, public tender information and “word-of-mouth”. A more in-depth assessment was made based on the ability to grow, the ability to adapt, quick response and the ability to fight.

*Ability to grow:* The local newcomers on the Suriname market have ability to grow in terms of people skills and plant capacity, since they possess land, but no capital. They need to look into the quality delivered. There are no financial figures are available. VSHSTEEL has noticed certain movements of the competitors towards specialising in other related product segments such as rust-free steel and pontoon building.

*Ability to adapt:* Since the competitors’ organization is smaller and they have no social policies in place, they can easily adapt costs. Leaving the business after so many investments is not an option. Also due to lack of overheads, they could easily cut costs.

*Quick response:* Borrowing power is low. Cash reserves are small and providing performance bonds during tendering are a problem most of time.

*Ability to fight:* Low, only on prices.

<table>
<thead>
<tr>
<th>COMPETITORS CAPABILITY (LOCAL)</th>
<th>weak</th>
<th>strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Distribution</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Marketing / Selling</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Operations</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Overall costs</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Financial strength</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Organizational</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Corporate portfolio</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>General management ability</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Author’s Investigations

Table 5.12: Local Competitor’s Capability Analysis

63
The table 5.12, a result of internal staff member’s analysis, indicates the state of affairs of the analysis of local competitor’s capability. The trouble VSHSTEEL has to deal with is the competitors’ prices, and the acceptance of low quality of the local customer. In doing so the importance of the support structure of the building which the steel construction performs is undervalued. The opportunity trend which VSHSTEEL has observed is increased quality awareness. The local situation is that VSHSTEEL is the mover, while the competitors are the followers. When quoting prices, the competition with their limited organization tends to go 5% below VSHSTEEL’s price. The message for VSHSTEEL is to find the balance between price and quality accepted in Suriname. The practical problem might also be in the export business and having two types of qualities seems not feasible.

Customer analysis

The ‘customer’ determinant is the most important but less easy to validate without a questionnaire. A subjective customer analysis was internally conducted. VSHSTEEL management assessed a list of items divided in ‘who’, ‘what’, ‘why’, ‘where’ and ‘which’ factors. The results of the internal audit are illustrated in table 5.13 in Appendix XVII.

5.3 Interpretation of results

The profits before taxes of the common-size income statement indicate a decline and a stabilization around 14%. However, the trend shows a significant increase starting from 2002, in particular, ‘general and administrative’ and the costs of ‘material usage’, compared to a relative sales increase in 2005. The problem identification complies with the result of these figures. The ‘material usage’ shows an increase which deviates significantly from ‘sales’ and ‘general and administrative’. Table 5.4 gives an additional overview on this matter (Basic year: 2002).

The relevant financial ratios will be analyzed: The current ratio indicates the company’s ability to pay its short-term liabilities from short-term assets. The figure around an average of ‘2’ indicates a normal situation. The profitability ratios are especially relevant for this study: the gross profit margin indicates the total margin available to cover other expenses than cost of goods sold and still earn a profit. The trend shows a declining percentage from 53% to 38%, which can be explained by the price rise of raw material. The net profit margin also shows a decline from 8% to 4.7% as a result of increasing production costs. The return of investment measures management’s efficiency and the return of all assets in its control, regardless of the source of financing. After a decline, the
Figures show a recovery. The most relevant of the activity ratios is the inventory turnover which shows the number of times that the average inventory of finished goods was sold during the year. The figures show a trend of increasing turnover (from 1.9 to 2.87) against a declining gross profit margin and fluctuating numbers for ‘days of inventory’ ratio.

In both the full-absorption and direct-cost income statements the material costs are considered a foregone conclusion since the price at the world market cannot be influenced by the company. The rise of these material costs is already indicated in section 4.5. Nevertheless, the high cost of direct material causes a relatively low operating leverage, which should indicate that small changes in sales volume have a smaller effect on the company’s net income than highly leveraged companies. This last alternative is more risky. The gross profit margin (37.57%) focuses on sales in relation to cost of goods sold, which after deduction of the operating expenses, gives a quick indication for the bottom-line results. The contribution margin (33.10%) focuses on sales in relation to variable costs. This last relationship gives more insight in the pattern of cost behavior, which complies more with day-to-day decisions made by operation managers. In VSHSTEEL’s case the variables to be scrutinized are the direct labor costs and the variable operating expenses. The highest fixed costs are that of the manufacturing overheads. The fixed operation expenses (the costs of period) and the manufacturing services which entail several outsourced activities are the next highest costs.

The break-even analysis (5) gives the following results.
Fixed costs are € 288,075; Production volume is 1,200 ton; Variable costs = € 969,800/ 1,200 = € 808.16 per ton.

\[
\text{Break even selling price} = \frac{0 + 969,800 + 288,075}{1200} = \€ \ 1,048.23 \text{ per ton} \quad (5)
\]

Thus, € 1,048.23 minus 808.16 = € 240.07 contributes to meet fixed production cost. Refer to the table 5.14 and graph in Appendix XVIII.

If the operating income is predetermined at 15% of the sales revenue, thus € 217,440, the break-even selling price (6) will be:

\[
\frac{217,440 + 969,800 + 288,075}{1,200} = \€ \ 1,229.43 \text{ per ton} \quad (6)
\]

The customer must be willing to purchase 1,200T at a price of € 1,229.43 to reach this target. Any price above € 1,048.23 will generate some profit, below € 808.16 would not cover the variable costs of production.
The break-even point (7) in tons of steel sold (=manufactured), is achieved at:
\[
\frac{288,075}{1,208 - 808.16} = 720.48 \text{ ton} \quad (7)
\]

The cost-volume-profit analysis predicts how decisions affect sales, costs and operating income. The distinction between fixed and variable costs gives a clear insight into how activities of the company affect its costs. These are rather influenced by the variance of volume of sales\(^{22}\) than by the activities of several business functions. The impact of changes in sales demand (volume) on operating income is exposed in Table 5.6. The role of the fixed cost behavior on operating income in the long run is also stressed. If fixed costs are reduced, the break-even point can be lowered. The direct costing is consistent with the way analysis in practice are used in decision making, meaning that the efficiency, on how to control costs during the manufacturing process that vary with the volume of production, is better revealed.

The changes in price and sales volume in table 5.8 mostly yield operating income due to the price increase, rather than the impact of volume increase. The impact of volume increase does not have a substantial impact due to the low operating leverage. However, the most feasible case is a volume increase to 1500 ton, but at a steady job price with a contribution margin not lower than 33%.

In the long run the volume in the differential costing on export sales should exceed total fixed and variable cost and possible loss of local markets. In this case € 288,075 + 969,800 + 50,000 = € 1,307,875. (The €50,000 is an assumed loss of local markets) At an assumed volume of 1200 ton the minimum selling price is € 1,082.67 per ton.

Porter’s five forces were analyzed to investigate the profitability of the industry sector. Taking this into account, it is not to be expected that a competitor of the CARICOM will enter the Suriname market to start a new company. Only with a particular product differentiation it is interesting for local competition to enter. However, the treat from Trinidad imports is a reality to deal with for VSHSTEEL. Differentiation by VSHSTEEL can be created in terms of attributes, delivery performance, quality treatment and design of construction detail by custom-made products, frequent communication with the customer which may result in relationship-building with the customer.

\[^{22}\text{Assume sales volume = manufactured volume}\]
The power of the suppliers will remain high, since mergers are the trend of the world market. In the end, higher prices are for traders and the manufacturers the worse case result to consider.

Buyers’ power is considered to grow since they have more options to purchase their steel constructions from the CARICOM (read Trinidad). The competitive advantage of local manufacturers is that they can provide direct and relevant information of their steel construction design, delivery and installation to their local purchasers, which is a way to build communication and relationships with general contractors, architects and consulting engineers. These last become the key intermediaries with the end users. Information supply to customers will take an important position in further price negotiations. For customers in the export market a differential approach will keep the customers interested in this ‘second’ market. This implies that sales revenue from the export has to exceed all increases in variable and fixed costs and loss of profits from the first (= local) market, and that price have to be below the competitors in the export market. Hereby more market research is required.

One important advantage of the use of steel as building material is the time-saving factor. Despite the actual steel availability problems, the developments in steel products have taken an enormous flight: steel supporting constructions in combination with reinforced concrete construction elements has become more popular, therefore, the threat of substitutes of materials is not considered important.

In the highly competitive market of the CARICOM which VSHSTEEL is entering, the suggested approach is differential pricing. The sea freight costs are considered direct costs to a typical export project. Therefore, the estimated price for the steel construction is to be added by real transportation costs. However, to remain competitive the price for the main product, the steel construction, is to be adapted to the pricing situation of the export country, which leads to the use of parity pricing. The specific costs, such as transportation costs and value-added taxes contribute to the use of this price decision-making. This implies that VSHSTEEL is to set its prices in a range in which most of the buyers would find the prices acceptable and appropriate; prices should neither be significantly above nor below the market price. One final factor that will contribute to the use of this strategy is factory capacity utilization; the local factory with excess capacity is in a position to lower prices to expand demand. This strategy can evolve into penetration pricing while market research are to be
conducted to set the accepted price. The minimum price to quote the customer is the result of the variable costing approach. The maximum price will be finally determined by the competition.

Although the competitors’ analysis is subjective the local competition needs to improve in terms of organizational, technological and production factors. With the threat of Trinidad and the opportunities of the CARICOM market, provided a form of concerted action of VSHSTEEL with local competitors would be a next step to consider enforcing strengths and reducing weaknesses in the steel sector. The leadership pricing strategy has therefore been maintained.

For the interpretation of the results of the customer analysis the ‘why’, ‘where’ and ‘which’ factors are considered relevant. The customer is an important intermediary between the end user and the company. The general contractors, architects and consulting engineers communicate the advantages of steel construction with regard to price, quality and delivery time. It is extremely important that information about the steel construction is communicated to and through them so they can advise the decision maker. The specific added value searched by customers is the ‘after market service’ (service after the project has been delivered) and supervising during installation on customers’ construction site. With regard to the second market discounting and adaptive pricing Porter’s five forces are applicable.

To compete in a liberalized environment cost-plus strategy is not sufficient as single starting point. The cost-plus strategy is easy, but does not urge the company to work efficiently to control cost. The information of the cost structure and its behavior encourages constant awareness of management and supports them in not only their daily, but also long term decision making. As can be deduced from the preceding comments, a price discount which is easy to apply in practice would have a substantial impact on net income. The most likely solution in this case is a sales volume increase at the same price while controlling the behavior of variable and fixed cost to yield a higher profit. The basic principle in the current environment should be a combined approach of cost-plus and the previously suggested strategies in a given situation to determine an acceptable price for the customers. This calls for a more flexible approach to increase sales volume. A flexible quotation, that follows customer’s technical specifications yields profit through a fixed price strategy rather than a simple direct price increase.
5.4 Summary and conclusion

This chapter has illustrated how a change in the currently used pricing strategy could provide a competitive advantage against the background of a liberalized environment. The strategies suggested in the conceptual framework were tested through calculations using managerial tools like full-absorption versus direct-cost income statements and break-even analysis.

Also more appropriate pricing strategies were defined even with increasing costs of goods sold, which results in combination of suggested strategies. Finally, the relationship between price and sales volume was indicated.

The final chapter provides conclusions, recommendations and suggestions for further research limited by various assumptions of this study.
CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS AND
SUGGESTIONS FOR FURTHER RESEARCH

6.1 Introduction
In this chapter the central question will be answered followed by conclusions, recommendations and suggestions for further research will also be given.

The central question is:
- What is the preferred pricing strategy for a Surinamese ETO manufacturing company in a liberalized market?

In the preceding chapters was attempted to answer the problem identification with the following sub-questions. The corresponding sub-questions are:
- What are available relevant pricing strategies and what are their determinants?
- What are the characteristics of the ETO manufacturing companies?
- What is their currently used pricing strategy?
- What is the appropriate match between the determinants of pricing strategies and the characteristics of ETO manufacturing companies?

6.2 Conclusions
As a result of the abovementioned study the following can be concluded: the currently used pricing strategy complies with the conventional theories of pricing but it appeared not to be sufficient given the actual circumstances under which the company is performing. Especially for future decision making this current strategy cannot be used as the single starting point. As result from the analysis of an ETO manufacturing company with a customized project-based product, the basis of the pricing strategy will remain a cost-based strategy, not as ‘stand-alone’, but supplemented with other appropriate pricing strategies for the given environmental conditions.

With regard to future competition the information of the cost structure of the pricing strategy of the steel construction is a prerequisite for among others commercial decision making. The different cost behavior patterns of variable and fixed costs are to taken into consideration. The choice and method
of costing determination depends on regular analysis of the ‘cost’, ‘competition’ and ‘customer’
determinant. The gross profit margin gives a quick indication of the bottom-line results; however,
the contribution margin method highlights the behavior of variable costs. In the study company the
high costs of direct material causes low operating leverage. A combination of changes in sales
volume and price mostly yields net income as result of price adjustment rather than sales volume
increases; however, the most likely situation is a volume increase to 1500 ton at a constant price
that will yield the most feasible profit improvements since the demand is feasible. Taking the key
position of the intermediaries to end-users into account, information supply to the customer and
relationship building should take an important position in price negotiations. Delivery performance
and ‘after market service’ are important augments to the steel product.

To enter the highly competitive CARICOM market a range of prices neither above nor below
market prices should be applied, which indicates that more market research should be conducted.

6.3 Recommendations

In the introduction of this paper was assumed that a simple recommendation to increase profit for
VSHSTEEL’s management would be to increase sales or price and reduce costs. The preceding
study indicated that a price increase does not belong to customer’s first expectations and that in the
real dynamic world it is not that simple. Company’s management should specify which cost
reduction measurements should be taken. In the study company fixed manufacturing overheads and
fixed operation expenses are to be further scrutinized. An example are the utility costs which are
considered fixed in Suriname and are extremely high for manufacturing companies in comparison
with the CARICOM. In this particular case a job is reserved for the Surinamese manufacturing
association. Engineering services are another high fixed manufacturing overhead component.

The single cost-plus approach should make room for a multiple approach of pricing strategies
which should yield sales volume increase further but at a steady price. In local market situation
VSHSTEEL’s management should strengthen its existing relationship with its customers by
frequently communicating with them and providing them with augmented service (customer
retention). Providing complementary products are an option. For customer acquisition in the
CARICOM, VSHSTEEL should be physically present there.
The focus on pricing strategies only as strategic tool for profit improvement will not be enough. Competitive conditions call for a combined strategic approach with other elements of the marketing-mix in a dynamic environment. The use of price as competitive advantage is not a project: it is a medium for a long-term journey, a day-to-day behavior. The culture of VSHSTEEL needs to become more customer-focused and understanding that price advantage cannot be created unless value is created for customers needs to be developed. This implies that the whole organization needs to be involved: production, marketing, design engineering and financial administration. Workers at all levels have to understand this advantage.

The basis of pricing remains negotiation. Preparation for that is essential; planning and training are tools for successful negotiations to come up with value based response against the integrity of the pricing. As mentioned before, total organizational involvement is required.

Providing sales representative with the flexibility to negotiate the offer and not the price, is the next step toward moving away from unstructured discounting. A flexible offer-fixed price strategy should provide sales representatives with an effective counter to customer price pressures and by doing so price integrity will no longer be an issue. Finally, frequent assessments by management of the company’s pricing strategy are a necessity due to changing in customer valuations and in the competitive environment.

6.4 Limitations of study and Suggestions for Further Research

This study has several limitations. The first relates to the study company being a single case from which all information was gathered and which may not necessarily represent all other ETO manufacturing companies. The individualistic and complex nature of pricing makes reliable quantitative analysis extremely difficult to obtain. The use of internal data of VSHSTEEL also reduces the generalizability of the study; whereas the research may be generalized within the Surinamese environment. To further extend the generalizability of this study, it would be useful to include a broader spectrum of ETO manufacturing products to enhance reliable general data. It is assumed that the ETO manufacturers do not deliberately look into theirs pricing strategies. Finally, the vast and dynamic nature of the complexities and of selling industrial products internationally may limit the applicability of the findings in the long run.
From studies in the literature review it appeared that gathering information on a company’s pricing is experienced as complex and sensitive. To get broader information the study must be conducted over several years and in combination with other products in the sector. From the previously mentioned reviews it also appeared that the size of the company and the stage of the product life cycle may play a role, which is not included in this study.

Next are suggestions for further research. The first suggestion for future research would be to get more companies to participate in this research when studying the relationship between determinants and pricing strategies. Another suggestion would be to examine the pricing strategies for engineering services. Considering the contribution of engineering for services to pricing it might give useful strategic insight into the whole problem identification, since the dynamics of this service is becoming more significant. In this research the costs from the supply side are a given fact, but research of the supply chain management combined with procurement issues may give another insight.

Another extension of the present study would be to examine the impact of e-commerce on developing export pricing strategies due to rapid technological changes in business- to-business e-commerce. A final direction would be to conduct a more comprehensive study focusing more on the significant interrelationships of various determinants of pricing strategies; a study of this nature could yield richer and more comprehensive findings useful for pricing managers, although more complex in nature.
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### APPENDIX I

#### Example: Impact of Price Increase versus Increase of Sales Volume

<table>
<thead>
<tr>
<th></th>
<th>Price: € 100</th>
<th>Variable cost: € 60 million</th>
<th>Fixed cost: € 30 million</th>
<th>Units sold: 1 million</th>
<th>Revenue: € 100 million</th>
<th>Profit: € 10 million</th>
</tr>
</thead>
</table>

A 10% increase in leads to a profit increase of

<table>
<thead>
<tr>
<th>Profit driver</th>
<th>Old</th>
<th>New</th>
<th>Profit</th>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>€ 100</td>
<td>€ 110</td>
<td>€ 10 m</td>
<td>€ 20 m</td>
<td>100%</td>
</tr>
<tr>
<td>Sales volume</td>
<td>1m</td>
<td>1.1m</td>
<td>€ 10 m</td>
<td>€ 14 m</td>
<td>40%</td>
</tr>
</tbody>
</table>

To read as follows: A 10% improvement in price brings price up to €110, everything else unchanged, this increases profit by 100% to €20 million.

Source: Simon (2006), p.15
APPENDIX II

Figure 2.2: Average Economics

![Average Economics: Global 1200 (2002)]

Source: Marn (2004): p. 4

Figure 2.3: Comparison of Profit Levers

![Comparison of Profit Levers]

## APPENDIX III

### Factors Influencing Price Decision

**Internal factors of a company:**

- **A. Marketing objectives:**
  - target market & market positioning
  - survival
  - profit maximization
  - market share leadership or gain
  - product/quality leadership
  - prevent or follow competition
  - loyalty/support
  - partial/full cost recovery
  - social price

- **B. Marketing-mix strategy:**
  - price to be coordinated with other p’s of the marketing-mix: product design, distribution and promotion
  - product positioning: target costing

- **C. Cost:**
  - types of cost: variable/fixed cost: transport costs, production costs, channel costs, profitability
  - different levels of production
  - as function of production experience

- **D. Internal organizational considerations**

**External factors:**

- **A. Nature of markets and demand:**
  - types of markets
  - consumers perception of price and value
  - price-demand relationship
  - price-elasticity of demand
  - price influence on profits

- **B. Competition:**
  - cost, prices, offers
  - income levels

- **C. Other environmental factors:**
  - economical condition:
    - foreign exchange rates
    - inflation rates
    - government regulations:
      - price controls
    - social concern

APPENDIX IV

Figure 2.4: The Domain of Pricing Strategy

Profit-driven

Value-based

Proactive

Price level

Pricing structure & Price

Marketing strategy

Competitive strategy

# APPENDIX V

Table 2.1: Laric’s Categorization of Factors Influencing Pricing Decisions

<table>
<thead>
<tr>
<th>INTERNAL FACTORS</th>
<th>EXTERNAL FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical pricing aspects dealing with methods/models</td>
<td>Demands and customers aspects dealing with:</td>
</tr>
<tr>
<td>• competitive bidding</td>
<td>• price-quality perceptions</td>
</tr>
<tr>
<td>• decision trees</td>
<td>• unit prices</td>
</tr>
<tr>
<td>• product line and product life cycle</td>
<td>• psychological pricing</td>
</tr>
<tr>
<td>• demand and competition oriented methods</td>
<td>• survey and statistical analysis of demand</td>
</tr>
<tr>
<td>• cost-oriented methods</td>
<td></td>
</tr>
<tr>
<td>Strategic pricing aspects dealing with overall pricing strategy:</td>
<td>Industry and economy environment aspects dealing with:</td>
</tr>
<tr>
<td>• role of price in marketing mix</td>
<td>• pricing objectives</td>
</tr>
<tr>
<td>• importance to long-range profitability</td>
<td>• relevance of competition</td>
</tr>
<tr>
<td></td>
<td>• legal aspects of pricing</td>
</tr>
<tr>
<td></td>
<td>• analysis of an industry’s pricing structure</td>
</tr>
</tbody>
</table>

Source: Adapted from Laric (1980)

Table 2.2: Laric’s Strategic Framework

<table>
<thead>
<tr>
<th>BUYERS</th>
<th>SELLERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private sector:</td>
<td>Capital items</td>
</tr>
<tr>
<td>1. Producers:</td>
<td>Expense items</td>
</tr>
<tr>
<td>- strong</td>
<td></td>
</tr>
<tr>
<td>- equal</td>
<td></td>
</tr>
<tr>
<td>- weak</td>
<td></td>
</tr>
<tr>
<td>2. Resellers</td>
<td></td>
</tr>
<tr>
<td>3. Government &amp; not</td>
<td></td>
</tr>
<tr>
<td>For profit organizations</td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Laric (1980)
## APPENDIX VI

Table 2.3: Tellis’s Classification of all Strategies

<table>
<thead>
<tr>
<th>Pricing objectives of company</th>
<th>DIFFERENTIAL PRICING</th>
<th>COMPETITIVE PRICING</th>
<th>PRODUCT LINE PRICING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of consumers (segments)</td>
<td>vary prices among consumer segment</td>
<td>exploit competitive position</td>
<td>balance pricing over product line</td>
</tr>
<tr>
<td>high search costs</td>
<td>Random discounting</td>
<td>pricing signaling</td>
<td>image pricing</td>
</tr>
<tr>
<td>low reservation price</td>
<td>periodic discounting</td>
<td>penetration pricing</td>
<td>price bundling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experience curve pricing</td>
<td>premium pricing</td>
</tr>
<tr>
<td>special transaction costs</td>
<td>second market discounting</td>
<td>geographic pricing</td>
<td>complementary pricing</td>
</tr>
</tbody>
</table>

Source: Adapted from Tellis (1986)
## APPENDIX VI (continue)

Table 2.4: Tellis’s Comparison of Pricing Strategies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Differential pricing</th>
<th>Competitive pricing</th>
<th>Product line pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Second market</td>
<td>Periodic Discounting</td>
<td>Penetration</td>
</tr>
<tr>
<td></td>
<td>discounting</td>
<td>Random Discount</td>
<td>and experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>curve pricing</td>
</tr>
<tr>
<td>Characteristics of price strategy: consumer segments, competitor in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>markets, product mix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics of consumers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product and cost characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevant legal constraints</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Tellis (1986)
APPENDIX VI (continue)

Explanation of Tellis’s Framework

**Differential pricing:**
One product is sold to two segments at different prices
economies of scale is exploited (each segment provides an economy to the other).

Second market discounting and periodic discounting:
One segment buys the product at a higher price and incurs more of the production costs so that the product is available at other segment at lower acceptable price.

Random discounting
Product is available at a lower price at random period (for searchers), while a lower average price can be provided to non-searchers.

**Competitive pricing**
One product is sold to one or more market segments at the same price.

Price signaling
Searchers provide an economy to non-searchers, who can get the quality desired (low or high) at an acceptable price.

Penetration pricing, experience curve and geographic pricing
The two segments provide a simple cost economy to each other; while the firm can exploit economies of scale or experience. For the penetration and experience curve pricing the common price is that of the more price sensitive segment. In geographic pricing the price is below competitors’ in second market segment. The lower the competitive price in geographic pricing in the adjacent market; the higher the price by the home market.

**Product line pricing**
The shared economies are primarily over the production or marketing of the products in the line.

Image pricing premium and complementary pricing
One product is sold at “loss” which is then recovered from the higher price of a complementary product sold to the same segment or a substitute product sold to a less price sensitive segment.

Price bundling
In price bundling, there is an asymmetric demand by two consumer segments over two non-substitute products. “A firm using the optimum price sells both products at the lower of the joint reservation prices” (Tellis, 1986). In this way the firm sells one product below the acceptable price of one segment, but compensates by selling both products to both segments.

Source: Tellis (1986)
APPENDIX VII

Figure 2.6: Duke’s Extension

Strategy matrix approach

<table>
<thead>
<tr>
<th>Company objectives and competitive situation</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer characteristics</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pricing situation</th>
<th>New product</th>
<th>Competition</th>
<th>Product line</th>
<th>Cost based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pricing strategies</strong>&lt;br&gt;Related strategies</td>
<td>Price skimming&lt;br&gt;Leadership&lt;br&gt;Complementary product</td>
<td>Leadership&lt;br&gt;Umbrella&lt;br&gt;Cooperative&lt;br&gt;Signaling&lt;br&gt;Razor-and-Blade</td>
<td>Complementary product&lt;br&gt;Razor-and-Blade</td>
<td>Cost-plus&lt;br&gt;Contribution&lt;br&gt;Rate-of-Return&lt;br&gt;Target Return&lt;br&gt;Contingency&lt;br&gt;Markup</td>
</tr>
<tr>
<td><strong>Pricing strategies</strong>&lt;br&gt;Related strategies</td>
<td>Penetration&lt;br&gt;Parity&lt;br&gt;Price bundling</td>
<td>Parity&lt;br&gt;Neutral&lt;br&gt;System</td>
<td>Price bundling&lt;br&gt;System</td>
<td></td>
</tr>
<tr>
<td><strong>Pricing strategies</strong>&lt;br&gt;Related strategies</td>
<td>Experience curve&lt;br&gt;Learning curve&lt;br&gt;Customer value</td>
<td>Low-price supplier&lt;br&gt;Parallel&lt;br&gt;Adaptive&lt;br&gt;Opportunistic</td>
<td>Customer value&lt;br&gt;Economy</td>
<td></td>
</tr>
</tbody>
</table>


Table 2.5: Noble/Gruca Abstract of their Framework

Source: Noble and Gruca (1999)
APPENDIX VIII

Pricing Strategy Description

**Low price supplier**: This is a pricing strategy whereby firms strive to be the lowest price in the market.

**Experience curve**: This is a pricing strategy whereby firms set low prices low in an attempt to pricing create sales volume large enough to reduce average costs per unit through accumulated experience.

**Leader pricing**: This is a pricing strategy whereby a firm usually initiates price changes in a market.

**Parity pricing**: This is a pricing strategy whereby products are priced to match the prices of the market leader or the market prices in the absence of a market leader.

**Second market**: This is a pricing strategy whereby prices charged in the foreign market are discounted to a price level lower than the domestic price levels.

**Counter-trade pricing**: This is a pricing strategy whereby products are accepted as partial or full payment for exports.

**Transfer pricing**: This is a strategy whereby goods are sold within a corporation (i.e., from one division to another in a foreign country).

**Cost-plus pricing**: This is a strategy whereby prices are developed by determining the costs of the product and adding a pre-determined markup to the cost.

**Complementary**: This is a pricing strategy whereby a main product is priced at a relatively low pricing strategy level and the complementary products (any associated accessories, supplies or parts, etc.) are priced at higher profit margins.

**Price bundling**: This is a strategy whereby two or more products are sold in a single “package” at a special price.

**Penetration pricing**: This is a pricing strategy whereby firms set low prices. Typically it is associated with the introduction of new products in an attempt to stimulate broad based interest and increase the market share of the product.

**Premium pricing**: This is a pricing strategy whereby firms cater to niche markets by charging higher prices for products with specific attributes to meet specific customer needs.

**Price skimming**: This is a strategy whereby a high price is initially charged when a product is introduced.

Source: Noble and Gruca (1999); Forman and Lancioni (2002)
**APPENDIX IX**

Table 2.6: Taxonomy International Industrial Pricing Strategies

<table>
<thead>
<tr>
<th>COMPETITIVE STRATEGIES</th>
<th>INTERNATIONAL STRATEGIES</th>
<th>COST BASED STRATEGIES</th>
<th>DEMAND RELATED STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity pricing</td>
<td>Transfer pricing</td>
<td>Cost plus pricing</td>
<td>Price skimming</td>
</tr>
<tr>
<td>Counter-trade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardized</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Forman and Lancioni (2002)

Table 2.7: Taxonomy of International Pricing Strategy Determinants

<table>
<thead>
<tr>
<th>ENVIRONMENTAL DETERMINANTS</th>
<th>COMPANY DETERMINANTS</th>
<th>MARKETING MIX DETERMINANTS</th>
<th>MARKET-RELATED DETERMINANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Intervention</td>
<td>Company Size</td>
<td>Country of origin</td>
<td>Market structure</td>
</tr>
<tr>
<td>Exchange rates</td>
<td></td>
<td>Of manufacture</td>
<td></td>
</tr>
<tr>
<td>Stage of product Life cycle</td>
<td></td>
<td>Level of price Sensitivity</td>
<td></td>
</tr>
<tr>
<td>Product Differentiation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Forman and Lancioni (2002)

Table 2.8: Relationship between Determinants and Strategies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pure comp</td>
</tr>
<tr>
<td>Counter-trade</td>
<td>Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardized</td>
<td>Small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive</td>
<td>Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost plus</td>
<td>Intro</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Skimming</td>
<td>Intro</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premium</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Forman and Lancioni (2002)
APPENDIX X

Figure 2.7: The Value Decoder

1. Price and availability of substitutes
2. Characteristics Relative to competitors
3. Income
4. Price/Strength of demand for related products
5. Market environment

Finding the right price

Source: Adapted from Mohammed (2005)

Table 2.9: Leverage Effect of Price on Profitability

<table>
<thead>
<tr>
<th>Leverage effect of price on profitability (Yama, 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>Price 100</td>
</tr>
<tr>
<td>Variable cost 15</td>
</tr>
<tr>
<td>Fixed cost 75</td>
</tr>
<tr>
<td>Profit 10</td>
</tr>
</tbody>
</table>

Source: Adapted from Yama (2004)
## APPENDIX XI

### Table 4.1: Market Information

**Source:** General Bureau of Statistics Suriname (ABS)

<table>
<thead>
<tr>
<th>Description</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profiles of Iron or steel (kg)</td>
<td>1,142,558</td>
<td>1,282,619</td>
<td>1,664,491</td>
<td>1,382,338</td>
<td>1,888,256</td>
<td>2,489,833</td>
</tr>
<tr>
<td>Constructions and construction parts of iron or steel (kg)</td>
<td>1,463,264</td>
<td>1,413,511</td>
<td>1,143,458</td>
<td>800</td>
<td>2,872,973</td>
<td>3,965,827</td>
</tr>
<tr>
<td>Prefabricated steel buildings (kg)</td>
<td>521,712</td>
<td>109,864</td>
<td>0</td>
<td>0</td>
<td>8,207</td>
<td>47,216</td>
</tr>
</tbody>
</table>

**Source:** Author’s Investigations (*= VSH Annual Reports)

<table>
<thead>
<tr>
<th>Metric</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public reported production of VSHSTEEL (annual reports)*</td>
<td>1,000,000</td>
<td>1,000,000</td>
<td>1,200,000</td>
<td>1,200,000</td>
<td>900,000</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Percentage of market share (= annual production/profiles of iron,steel)</td>
<td>88%</td>
<td>78%</td>
<td>72%</td>
<td>87%</td>
<td>48%</td>
<td>48%</td>
</tr>
</tbody>
</table>

### Table 4.2: Requests versus Confirmed Orders

<table>
<thead>
<tr>
<th>Year</th>
<th>Requests</th>
<th>Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>100</td>
<td>18</td>
</tr>
<tr>
<td>2002</td>
<td>83</td>
<td>15</td>
</tr>
<tr>
<td>2003</td>
<td>62</td>
<td>14</td>
</tr>
<tr>
<td>2004</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>2005</td>
<td>72</td>
<td>17</td>
</tr>
</tbody>
</table>

**Source:** Author’s Investigations

### Table 4.3: Overview of the Characteristics of ETO Manufacturing Companies

- **Company-related issues:**
  - Objectives: Mostly applied is profit maximization because of the type product produced
  - Management: Generally relationship marketing
  - Organizational factors: Hybrid of manufacturing and construction; type of development of project is not without risk; changes and revisions are common; product installed at customer's site; not applicable

- **Product-related issues:**
  - Unique engineering designs; large design content per order; product based on customers' specifications; hardly economies of scale; unique set of part numbers of bill of materials; low volume of each customer order; after market services throughout product life cycle

- **Production process issues:**
  - Make-to-order principle; customer heavily involved throughout entire design and manufacturing process; complex process due to long lead times; production process is hybrid of manufacturing and construction; job shop process; project-based raw material is purchased on project-basis; ships from work in progress; critical: delivery performance; all costs are allocated to a project

- **Cost issues:**
  - There are estimates and quotations; all costs are allocated to a project; costs are key determinant of price

- **Customer-related issues:**
  - Value perception: Product or construction project based on customers' specifications; customer heavily involved throughout entire design and manufacturing process; changes and revisions technical specifications; non-technical requirements: stage payments; delivery performance

- **Competition-related issues:**
  - Product installed at customers' site; stage payments and retentions; delivery performance

- **Transport-related issues:**
  - Product installed at customers' site; delivery performance

- **Market-related issues:**
  - Product range based on previous orders; relationship marketing; sensitivity to price; demand; growth; switching costs; market contribution

**Source:** Author’s Investigations

---

**Thesis SRFHR0204001 D. Baptist**

**November 2006**
APPENDIX XII

Table 4.4: Example of Hour Tariff Calculation

<table>
<thead>
<tr>
<th>In Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
</tr>
<tr>
<td>Costs of goods sold</td>
</tr>
<tr>
<td>Other revenues</td>
</tr>
<tr>
<td>Revenue from production</td>
</tr>
<tr>
<td>Personell costs</td>
</tr>
<tr>
<td>General and administrative costs</td>
</tr>
<tr>
<td>Marketing costs</td>
</tr>
<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Target Profit (return) surcharge own capital 10%</td>
</tr>
<tr>
<td>Cost-plus target return</td>
</tr>
<tr>
<td>Total hours per year</td>
</tr>
<tr>
<td>Tariff per hour</td>
</tr>
<tr>
<td>Total tons production per year</td>
</tr>
<tr>
<td>Tariff per ton</td>
</tr>
</tbody>
</table>

Source: Author’s Investigations

Table 4.5: Estimation Sheet

<table>
<thead>
<tr>
<th>ESTIMATION SHEET</th>
<th>Project : Steel frame 20 x 25 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quotation</td>
<td>QS/86</td>
</tr>
<tr>
<td>Mr Xang</td>
<td></td>
</tr>
<tr>
<td>Total weight of construction: 50.00 MT</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATERIAL COSTS (standard)</th>
<th>weight (MT) x</th>
<th>tariff in €</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>weight (MT) x</td>
<td>tariff in €</td>
</tr>
<tr>
<td></td>
<td>50.00</td>
<td>700.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LABOR COSTS = weight (MT) x manhours x</th>
<th>tariff in €</th>
</tr>
</thead>
<tbody>
<tr>
<td>full beam (table hour/ton)</td>
<td>50.00 x 35 x 18.00 = € 31,500.00</td>
</tr>
<tr>
<td>built-up truss (table hour/ton)</td>
<td>0.00 x 0 x 0.00 = € -</td>
</tr>
<tr>
<td>outsourced work</td>
<td>= € -</td>
</tr>
</tbody>
</table>

Subtotal 2 = € 31,500.00

Total price 1+2 = € 66,500.00

Price check (total price / total weight) = € 1330.00 per ton

Total estimated manhours = 1750

Project price = € 66,500.00

<table>
<thead>
<tr>
<th>TABLE hour/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>weight</td>
</tr>
<tr>
<td>construction type</td>
</tr>
<tr>
<td>calc.hours</td>
</tr>
<tr>
<td>0 - 10 ton</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>10 - 20 ton</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>20 - 50 ton</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>&gt; 50 ton</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Investigations

Thesis SRFHR0204001 D. Baptist

November 2006
## APPENDIX XIII

Table 5.1: Common-size Balance Sheet of VSHSTEEL 2002-2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tangible Fixed Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildings</td>
<td>32%</td>
<td>40%</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Machinery and Equipment</td>
<td>8%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Furniture and fixtures</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total fixed assets</strong></td>
<td>42%</td>
<td>54%</td>
<td>56%</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchandise stock (Inventory)</td>
<td>33%</td>
<td>33%</td>
<td>32%</td>
<td>28%</td>
</tr>
<tr>
<td>Debtors</td>
<td>20%</td>
<td>9%</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Other current assets</td>
<td>5%</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cash and banks</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td>58%</td>
<td>46%</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

| **Liabilities and Shareholders Equity** |      |      |      |      |
| Issued and paid in capital | 0%   | 0%   | 0%   | 0%   |
| Revaluation reserve       | 31%  | 37%  | 37%  | 37%  |
| General reserve           | 19%  | 18%  | 15%  | 12%  |
| **Result current year**   | 4%   | 3%   | 3%   | 4%   |
| **Total Shareholders' equity** | 54% | 58%  | 55%  | 53%  |

| **Provisions**            |      |      |      |      |
| Deferred taxes            | 15%  | 20%  | 19%  | 19%  |
| Warranties                | 3%   | 3%   | 4%   | 2%   |
| Postponed maintenance     | 1%   | 0%   | 1%   | 1%   |
| **Total Long term debts** | 19%  | 23%  | 24%  | 22%  |

| **Short Term liabilities**|      |      |      |      |
| Commercial creditors      | 3%   | 0%   | 4%   | 2%   |
| Income tax                | 0%   | 13%  | 15%  |      |
| Other                     | 24%  | 19%  | 4%   | 8%   |
| **Total current liabilities** | 27% | 19%  | 21%  | 25%  |
| **Total**                 | 100% | 100% | 100% | 100% |

Source: Authors' Investigations. Based on Wheelen and Hunger, 2006: p.359
## APPENDIX XIV

Table 5.2: Common-size Income Statement of VSHSTEEL 2002-2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales factory</td>
<td>53%</td>
<td>16%</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Material usage</td>
<td>61%</td>
<td>35%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel costs</td>
<td>32%</td>
<td>44%</td>
<td>43%</td>
<td>36%</td>
</tr>
<tr>
<td>General and administrative</td>
<td>35%</td>
<td>40%</td>
<td>51%</td>
<td>37%</td>
</tr>
<tr>
<td>Depreciation</td>
<td>8%</td>
<td>11%</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>-9%</td>
<td>-19%</td>
<td>-1%</td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td>85%</td>
<td>86%</td>
<td>86%</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Profit before tax</strong></td>
<td>15%</td>
<td>14%</td>
<td>14%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations. Based on Wheelen and Hunger, 2006: p.359

Table 5.3: Financial Ratios of VSHSTEEL 2002-2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquidity ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current ratio</td>
<td>2.10</td>
<td>2.48</td>
<td>2.10</td>
<td>1.79</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>0.92</td>
<td>0.72</td>
<td>0.59</td>
<td>0.65</td>
</tr>
<tr>
<td>Inventory to net working capital</td>
<td>1.07</td>
<td>1.19</td>
<td>1.38</td>
<td>1.45</td>
</tr>
<tr>
<td><strong>Profitability ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net profit margin</td>
<td>4.7%</td>
<td>4.4%</td>
<td>4.3%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Gross profit margin</td>
<td>38.0%</td>
<td>41.0%</td>
<td>49.3%</td>
<td>53.0%</td>
</tr>
<tr>
<td>Return on investment (ROI)</td>
<td>4.4%</td>
<td>3.2%</td>
<td>2.7%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Return on equity (ROE)</td>
<td>8.2%</td>
<td>5.6%</td>
<td>5.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td><strong>Activity ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>2.87</td>
<td>2.24</td>
<td>2.03</td>
<td>1.90</td>
</tr>
<tr>
<td>Days of inventory</td>
<td>206</td>
<td>276</td>
<td>355</td>
<td>193</td>
</tr>
<tr>
<td>Net working capital turnover</td>
<td>3.07</td>
<td>2.67</td>
<td>2.79</td>
<td>2.11</td>
</tr>
<tr>
<td>Asset turnover</td>
<td>0.93</td>
<td>0.74</td>
<td>0.64</td>
<td>0.54</td>
</tr>
<tr>
<td>Fixed asset turnover</td>
<td>2.23</td>
<td>1.37</td>
<td>1.15</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations. Based on Wheelen and Hunger, 2006: p.357
### APPENDIX XV

Table 5.4: Percentage Change Analysis of the Income Statements of VSHSTEEL 2002-2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales factory</td>
<td>234%</td>
<td>153%</td>
<td>132%</td>
<td>100%</td>
</tr>
<tr>
<td>Material usage</td>
<td>309%</td>
<td>192%</td>
<td>142%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>164%</td>
<td>110%</td>
<td>107%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel costs</td>
<td>147%</td>
<td>136%</td>
<td>129%</td>
<td>100%</td>
</tr>
<tr>
<td>General and administrative</td>
<td>154%</td>
<td>120%</td>
<td>148%</td>
<td>100%</td>
</tr>
<tr>
<td>Depreciation</td>
<td>132%</td>
<td>125%</td>
<td>121%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td>170%</td>
<td>116%</td>
<td>113%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Profit before tax</strong></td>
<td>138%</td>
<td>84%</td>
<td>83%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations (Relevant information is displayed for this study)
APPENDIX XVI

Table 5.5: Full-Absorption and Direct-Cost Income Statements of VSHSTEEL 2005.

<table>
<thead>
<tr>
<th>2005</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production volume (tonnes of steel)</td>
<td>1200</td>
</tr>
<tr>
<td>Cost of Raw Material per ton (Euro)</td>
<td>700</td>
</tr>
<tr>
<td>Sales price per ton (Euro)</td>
<td>1208</td>
</tr>
</tbody>
</table>

**Full-Absorption Income Statement**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Revenue of processed steel</td>
<td>100%</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>840,000</td>
</tr>
<tr>
<td>Direct Labor</td>
<td>65,000</td>
</tr>
<tr>
<td>62.43%</td>
<td>905,000</td>
</tr>
<tr>
<td>Gross Profit (margin)</td>
<td>37.57%</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td></td>
</tr>
<tr>
<td>Personnel costs</td>
<td>110,000</td>
</tr>
<tr>
<td>General costs</td>
<td>180,000</td>
</tr>
<tr>
<td>Selling costs</td>
<td>10,975</td>
</tr>
<tr>
<td>Depreciation</td>
<td>43,900</td>
</tr>
<tr>
<td>Interest</td>
<td>8,000</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>352,875</td>
</tr>
<tr>
<td>Net Income (before taxes)</td>
<td>13.23%</td>
</tr>
</tbody>
</table>

**Direct-Cost Income Statement**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Revenue</td>
<td>100%</td>
</tr>
<tr>
<td>Variable Costs</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>840,000</td>
</tr>
<tr>
<td>Direct Labor</td>
<td>65,000</td>
</tr>
<tr>
<td>Variable Operation Expenses</td>
<td>64,800</td>
</tr>
<tr>
<td>66.90%</td>
<td>969,800</td>
</tr>
<tr>
<td>Contribution Margin</td>
<td>33.10%</td>
</tr>
<tr>
<td>Fixed Costs</td>
<td></td>
</tr>
<tr>
<td>Fixed Manufacturing Overhead</td>
<td>110,000</td>
</tr>
<tr>
<td>Fixed Selling costs</td>
<td>10,975</td>
</tr>
<tr>
<td>Fixed General costs</td>
<td></td>
</tr>
<tr>
<td>Manufacturing supplies</td>
<td>8,320</td>
</tr>
<tr>
<td>Manufacturing services</td>
<td>13,500</td>
</tr>
<tr>
<td>Fixed Operation Expenses (Rent, Insurance, Utilities, Maintenance)</td>
<td>93,380</td>
</tr>
<tr>
<td>Depreciation</td>
<td>43,900</td>
</tr>
<tr>
<td>Interest</td>
<td>8,000</td>
</tr>
<tr>
<td>Total Fixed Expenses</td>
<td>19.87%</td>
</tr>
<tr>
<td>Net Income (before taxes)</td>
<td>13.23%</td>
</tr>
</tbody>
</table>

Operating leverage= fixed/variable costs 30%

Source: Authors’ Investigations.
## APPENDIX XVII

Table 5.11: Customer Internal Analysis of VSHSTEEL 2005

<table>
<thead>
<tr>
<th>Internal customer base analysis</th>
<th>Prepared by VSHSTEEL management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Type of product</strong></td>
<td>Steel constructions for buildings</td>
</tr>
<tr>
<td><strong>WHO</strong></td>
<td></td>
</tr>
<tr>
<td><strong>B. Customer category</strong></td>
<td>General contractors, architects, private individuals, government, land developers. (Local and export)</td>
</tr>
<tr>
<td><strong>C. Top 5 customers (20/80 rule):</strong></td>
<td>Depends on economic development in the country; 20/80 is not applicable here.</td>
</tr>
<tr>
<td><strong>WHAT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>D. Number of the customers:</strong></td>
<td>All architects, general contractors in Suriname</td>
</tr>
<tr>
<td><strong>E. Number of return customers:</strong></td>
<td>All architects, general contractors in Suriname</td>
</tr>
<tr>
<td><strong>F. Size of the jobs:</strong></td>
<td>Average size in tons of steel: 30-50 T</td>
</tr>
<tr>
<td><strong>G. Use of the steel construction:</strong></td>
<td>Support construction for utility buildings</td>
</tr>
<tr>
<td><strong>H. Estimated perception in value chain of customer</strong></td>
<td>Support structure, delivery performance</td>
</tr>
<tr>
<td><strong>I. Estimated perception of price customers are willing to pay</strong></td>
<td>Market conform</td>
</tr>
<tr>
<td><strong>J. The way steel constructions are being purchased</strong></td>
<td>Estimated quotation; customized</td>
</tr>
<tr>
<td><strong>WHY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>K. Why purchasing our steel constructions</strong></td>
<td>Price, quality, delivery time,</td>
</tr>
<tr>
<td><strong>L. Why purchasing at us and not our competitors</strong></td>
<td>Quality, price, relationship, delivery time, product familiarity</td>
</tr>
<tr>
<td><strong>WHERE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>M. Where information about steel construction is gathered</strong></td>
<td>Return customers, &quot;word of mouth&quot;, advertisement</td>
</tr>
<tr>
<td><strong>N. Where the steel constructions are promoted</strong></td>
<td>Realized projects, architects, folders</td>
</tr>
<tr>
<td><strong>O. Where the purchase decision is made</strong></td>
<td>Advisors: architects, end user as financier, family</td>
</tr>
<tr>
<td><strong>WHICH</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P. Specific added value searched by the customers</strong></td>
<td>&quot;After market service&quot;; supervising</td>
</tr>
<tr>
<td><strong>Q. Factors influencing the demand for steel constructions</strong></td>
<td>Price-quality, economic; hurricane circumstances</td>
</tr>
<tr>
<td><strong>R. Function of steel constructions by customers</strong></td>
<td>Support construction; status</td>
</tr>
<tr>
<td><strong>S. Important factors for purchasing decision making by customers</strong></td>
<td>Price-quality, delivery time; familiarity</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations
APPENDIX XVIII

Table 5.12: Break-even Analysis (APPENDIX XVIII)

**Breakeven Analysis**

**VSHSTEEL**

Amounts shown in Euros

<table>
<thead>
<tr>
<th>Sales</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price per unit</td>
<td>1,208.00</td>
<td></td>
</tr>
<tr>
<td>Sales volume per period (units)</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td><strong>Total Sales</strong></td>
<td><strong>1,449,600.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable Costs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor per unit</td>
<td>54.16</td>
<td></td>
</tr>
<tr>
<td>Direct material per unit</td>
<td>700.00</td>
<td></td>
</tr>
<tr>
<td>Other variable operation costs per unit</td>
<td>54.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total Variable Costs</strong></td>
<td><strong>808.16</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit contribution margin</strong></td>
<td><strong>399.84</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td><strong>479,808.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Costs Per Period</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Manufacturing overheads</td>
<td>110,000.00</td>
<td></td>
</tr>
<tr>
<td>Fixed selling costs</td>
<td>10,975.00</td>
<td></td>
</tr>
<tr>
<td>Manufacturing supplies and services</td>
<td>21,820.00</td>
<td></td>
</tr>
<tr>
<td>Fixed operation expenses</td>
<td>93,390.00</td>
<td></td>
</tr>
<tr>
<td>Other fixed costs</td>
<td>51,900.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total Fixed Costs per period</strong></td>
<td><strong>288,075.00</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Net Profit (Loss)</strong></td>
<td><strong>191,733.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Results:**

**Breakeven Point (units):**

720

**Sales volume analysis:**

<table>
<thead>
<tr>
<th>Sales volume per period (units)</th>
<th>0</th>
<th>120</th>
<th>240</th>
<th>360</th>
<th>480</th>
<th>600</th>
<th>720</th>
<th>840</th>
<th>960</th>
<th>1,080</th>
<th>1,200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price per unit</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
<td>1,208.00</td>
</tr>
<tr>
<td>Fixed costs per period</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
<td>288,075.00</td>
</tr>
<tr>
<td>Total costs</td>
<td>288,075.00</td>
<td>385,054.20</td>
<td>482,033.40</td>
<td>579,012.60</td>
<td>675,991.80</td>
<td>772,971.00</td>
<td>869,950.20</td>
<td>966,929.40</td>
<td>1,063,908.60</td>
<td>1,160,887.80</td>
<td>1,257,867.00</td>
</tr>
<tr>
<td>Total sales</td>
<td>0.00</td>
<td>144,960.00</td>
<td>289,920.00</td>
<td>434,880.00</td>
<td>579,840.00</td>
<td>724,800.00</td>
<td>869,760.00</td>
<td>1,014,720.00</td>
<td>1,159,680.00</td>
<td>1,304,640.00</td>
<td>1,449,600.00</td>
</tr>
<tr>
<td>Net profit (loss)</td>
<td>(288,075.00)</td>
<td>(240,094.20)</td>
<td>(192,113.40)</td>
<td>(144,132.60)</td>
<td>(96,151.80)</td>
<td>(48,171.00)</td>
<td>(190.20)</td>
<td>47,790.60</td>
<td>95,771.40</td>
<td>143,752.20</td>
<td>191,733.00</td>
</tr>
</tbody>
</table>

Source: Authors’ Investigations

November 2006
Graph 5: Break-even Analysis (APPENDIX XVIII continued).

Breakeven Analysis Chart

Source: Authors' Investigations

Thesis SRFHR0204001  D. Baptist

November 2006