

The logo of the University of Twente is positioned on the left side of the cover. It features a stylized yellow diamond shape composed of a network of lines, with a smaller version of the same shape below it. To the left of these shapes are several thin, curved lines in grey and black. At the bottom left, there is a cluster of black and red circles of varying sizes, with some red circles scattered below it.

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Bachelor thesis report

**Financial impact
of new pricing model**

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Industrial Engineering and Management

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Company X Corporation

Power Distribution Division

Title: Financial impact and measuring of new variables

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Management summary

In this report, we investigate the financial impact of the new pricing model proposed by Edens (2016). This new pricing model uses seven variables to calculate a new differentiation value. In this assignment, we examine the new model using five performance indicators: standard margin (%), operating profit (\$), hit-rate (%), sales turnover (\$) and RPI-value. These indicators are explained in Section 4.1. We calculate the differences between the potential situation and the situation when nothing is changed. The outcomes are shown below. The first three outcomes are for the Product Line X, including Product 1, Product 2 and Product 3. The last two are shown for Product 1 and Product 2.

	Sales turnover	Standard margin	Operating profit	Hit-rates	RPI-values
Current	<CONFIDENTIAL>	<CONFIDENTIAL>	<CONFIDENTIAL>	<CONFIDENTIAL> (Product 1), <CONFIDENTIAL> (Product 2)	<CONFIDENTIAL> (Product 1), <CONFIDENTIAL> (Product 2)
Projection	<CONFIDENTIAL>	<CONFIDENTIAL>	<CONFIDENTIAL>	<CONFIDENTIAL> (Product 1), <CONFIDENTIAL> (Product 2)	<CONFIDENTIAL> (Product 1), <CONFIDENTIAL> (Product 2)
Impact	+\$ X	-X%	+\$ X	+X% (Product 1), +X% (Product 2)	-X (Product 1), -X (Product 2)

With these outcomes, we give an answer to the main research question:

What is the financial impact of implementing the new pricing model in the Product Family X?

In the outcomes, we see that the total sales turnover and operating profit increase together with a decrease of the standard margin per product. The current low hit-rates increase much and the RPI-values do not change much. These outcomes are considered positive, because the operating profit or end-to-end profit increases and therefore the sales coverage improves.

To calculate the changes described, we investigate the new pricing model (Edens, 2016). Company X uses List Price multiplied with a List Multiplier to calculate the final market price. In the new situation, the List Multiplier is calculated with a differentiation value, using seven variables with all their own weights (W) and scores (S). These variables are: country, position, segment, customer relationship, volume, sales process and competitors. The final market price is calculated as follows:
*Final market price = List price * (0.735 + Differentiation value)*

This new systematic calculates the “right” price and the projects that are lost due to one of the seven variables should be won. The outcomes are calculated in six steps:

- Firstly, we calculate the new List Multipliers for every country. We consider four situations: worst-case (all variables are set at the lowest score), minimal (the current lowest list multiplier), calculated (all variables are set per most likely option per type of order) and best-case (all variables are set at the highest score).
- Secondly, we calculate the current hit-rate using the data gathering tools: C360 and Bid Manager, looking at the won volume and quoted volume per country. Because not all data are considered as 100% reliable, we design a priority rule to choose the current most-likely hit-rate. In this priority rule, we examine the number of entered orders in C360. If the number of orders meet the set minimal orders, the data of C360 are taken. If the number of orders do not meet this minimum, the data of Bid Manager are taken. We consider hit-rates above 50% as unrealistic.

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- Thirdly, we calculate the percentage of volume that is lost due to price, customer relationship and competitors (P.R.C.). We make an analysis in C360 and ask the sales persons, to use their approximation based on experience. We use the same priority rule, to choose between these percentages, to determine whether the data of C360 are reliable. Otherwise we use the percentages of the survey. We name this percentage and quoted volume after the priority rule as the hybrid numbers.
- Fourthly, we examine the potential sales turnover. Using the hybrid percentage and hybrid quotation volume, we calculate the new intakes, assuming that all lost projects due to P.R.C. are won with the new systematic. Furthermore, we design a volume based, permission boundary systematic to protect the profitability.
- Fifthly, we consider the profit margins. Company X has three levels of reporting their profit, namely standard profit (selling price-material cost-labour cost), manufacturing profit (standard profit-variances in the product process) and operating profit (manufacturing profit-supporting cost-/others). We calculate the standard profit per country and the manufacturing and operating profit for the Product Line Product Line X. After that, we compare the outcomes of the four situations with the Profit plan of 2017 and the expected 2018 outcomes, using the Compound annual growth rate (CAGR).
- Sixthly, we calculate the change in the RPI-values and analyse the feasibility to implement the new, very variable List Multipliers in this RPI-model. It was soon clear, that the feasibility was no big issue, because the model retrieves all necessary data from Bid Manager in which all orders are handled separately. We compare the 2017 July YTD RPI-values with the potential RPI-values. All these changing RPI-values and financial performances must be implemented in the expectations of subsequent years.

Finally, we made recommendations for the implementation of the new pricing model:

- Implement the new pricing model for the eighteen handled countries.
- The new pricing model must be tested, checked and analysed frequently.
- The data gathering tools must be adapted to the new variables and frequently be improved.
- Important projects with high value must have more attention in the starting phase, because these could have a huge financial impact. Start using the permission boundary systematic.
- A lot of communication should be done towards all related employees and Country Sales Organisations on the changes in tasks and the expected performances.
- Redesign the Transfer Multiplier policy and optimise the permission boundary systematic.

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Preface

This report is the result of my graduation assignment of the Bachelor of Science Industrial Engineering and Management at the University of Twente. After three years of following courses, it was time to do a bachelor thesis, in which the knowledge gained can be put into practice. I did this assignment at Company X Industries at the department of Product Marketing. The facility in City X is one of the main plants for the Power Distribution Division in Europe, in which both management and production department are settled. We analyse the financial impact of the new pricing model of Edens (2016). By knowing the financial impact, the success of this new pricing model is evaluated.

I learned a lot from doing this assignment and gained experience on how it is to do analysis at a company. I am curious about future developments, both long term as short term, resulting from my findings.

Firstly, I would like to thank Company X, to give me the opportunity to do my bachelor thesis at their company. I would like to thank in particular my principal, for his guidance, help, feedback and the educational experience. Furthermore, I would like to thank the other employees of Company X, who helped me a lot with their insights during my assignment.

Secondly, I would like to thank my supervisor Reinoud Joosten for his feedback, help and guidance during my assignment. Furthermore, I would like to thank Berend Roorda for being my second supervisor.

Thirdly, I would like to thank the other persons who helped with feedback, language checks and educational conversations during this assignment.

I hope that Company X can use my findings, and reading this report, will interest you.

Diederik de Bruin
September 2017, City X

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1. Introduction

In this chapter, we give a short introduction of Company X. Furthermore, the assignment description and the deliverables are listed.

1.1 Description Company X Corporation and Company X

Company X in City X is a facility of Company X Corporation, an international power management company and global technology leader. It delivers energy-efficient solutions to make electrical, hydraulic and mechanical power operate more efficiently, reliably, safely and sustainably. The company has about 95.000 employees and delivers to more than 175 countries all over the world (Wikipedia, 2016).

Company X offers many different products and services and is aiming at two sectors, namely the electrical and the industrial sector. Company X delivers approximately X% of its volume to customers in the utility segment (for example: Customer X) and X% of its volume to customers in the private segment, for example shopping areas and industries (Company X, 2017).

The electrical sector of Company X is called the Power Distribution Division. Company X is a global leader in delivering electrical products, systems and solutions (Company X, 2017). Within this sector, there are three regions. These are EMEA (Europe, Middle East and Africa), Asia & Pacific, and Americas. The facility in City X manufactures and delivers many different electricity-related products, systems and solutions. Figure 1 shows the organisation of Company X Corporation.

<CONFIDENTIAL FIGURE>

Figure 1: Organisation Company X (Company X 2016).

Company X took over four companies or divisions in Country 7, namely: Company A (2003), Company B (2007), Company C (2008) and Company D (2003). The building of Company D is in City X and is now Company X's property. Company D was an electrical division of the Company E. The facility in City X produces and develops products and systems in the areas of low and medium voltage switching technology (Company X, 2017). In addition, management and a Country Sales Organisation (CSO) are based in City X.

1.2 Assignment

My principal initially formulated my assignment as follows:

We (Company X) would like to implement the pricing-systematic as proposed by M. Edens in the organisation. However, before doing so, we would like to have identified the implications from various points of view including advice on how to deal with this. The points of view are commercially and financially related. You should think about the impact on our CRM and tender programme, but also the impact on our income statement and the tax system for several international sales offices.

Concluding, it is not clear what the influences and implications are on both internal and external processes, when implementing the new pricing model. Besides, after conversations with my principal and some key-employees, the focus of this assignment should be on the financial impact of the new pricing model, especially on the change in the operating profit or end-to-end profit. Furthermore, I

focus on the feasibility in the tool that measures the pricing changes (RPI-model). This tool relates to the data gathering tools: Bid Manager and C360, in which data of orders are stored and analysed.

1.3 Deliverables

In this bachelor assignment, I deliver the following components:

- Description of the current sales policy and related processes.
- Analysis of the new variable pricing model, price measuring tool and data gathering tools.
- Determination of the financial impact of the new variable pricing model.
- Excel document in which the financial impact is measured.
- Recommendations for further implementation of the pricing model.
- Recommendations for further research.

To determine the financial impact of the new pricing model, firstly we should understand the current sales policy and related processes. For example, what are the steps to be taken before delivery, and what are the steps to be taken to calculate the selling price. Secondly, we look for the possibility to implement the new variables in the RPI-model (Realized Price Index) and data gathering tools. Company X uses the RPI-model to measure their financial results per product. However, this model is not used sufficiently at Company X. But with this model, the new variables and other price-related modifications can be measured more precisely. Company X uses the data gathering tools to gather order data and do analyses. Thirdly, we look at the financial impact of this variable pricing model. The five important performance indicators are: sales turnover, operating profit, standard margin, hit-rate and RPI-value for both products in the Product Family X (Product 1 and Product 2). We calculate the expected outcomes for these five indicators and more relevant aspects when implementing the new pricing model. Fourthly, I design an excel document to do calculations which are all linked. We made input sheets in which Company X can change the data. In this way, Company X can use the model, if the reality is different than the data that were available during this assignment. Finally, we give recommendations that Company X should consider after implementing the pricing model and for further research.

2. Identification of problem and problem-solving approach

The setup for a bachelor thesis consists of three main stages (Heerkens, 2016):

- Stage 1: Problem identification and problem-solving approach.
- Stage 2: Theoretical perspective and theoretical model.
- Stage 3: Research design.

In this chapter the first step, has been described and explained. This is crucial for the research because without a good and clear identification of the core problem, it is hard to find solutions. To identify the core problem, a problem cluster is designed. After that, we explain the problem cluster and identify the core problem. In the last section, we describe the approach for this assignment.

2.1 Problem cluster

Figure 2 shows the problem cluster. The problem cluster is developed according the methodology of Heerkens & Van Winden (2012).

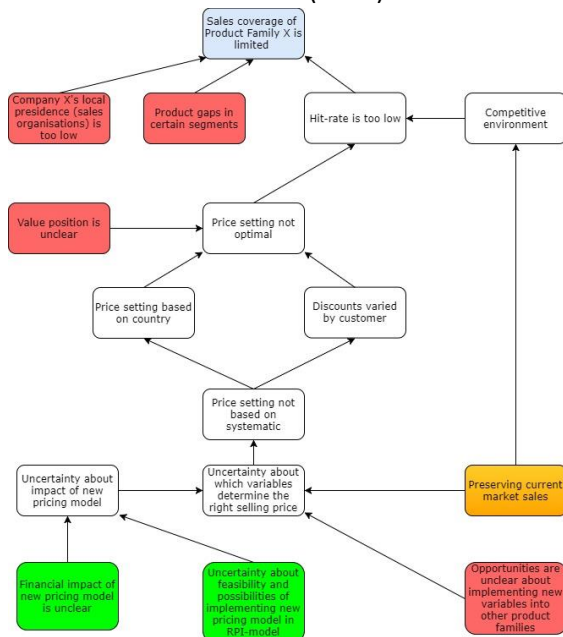


Figure 2 Problem Cluster.

We have used different colours in the problem cluster. These colours have the following meaning:

- Blue: Starting point.
- White: Intermediate steps in the causal relation.
- Orange : Important aspects to consider in this assignment.
- Red: Problems not handled in this assignment.
- Green: Problems investigated in this assignment.

2.2 Explanation problem cluster and motivation of core problem

The problem cluster has some overlap with the problem cluster of Edens (2016), who designed the new variable pricing model. The core problem of his research was: “It is not clear which variables determine the right price setting” (Edens, 2016). New knowledge problems have arisen because of his conceptual model. Company X does not know the influences and implications of this model. Before implementing the new price model, the financial impact of this model must be investigated. Maintaining the market position and financial performances must be considered because these are crucial for Company X. The new pricing model results in a lot of modifications for the company. All these financial changes must be known and calculated, to predict whether the new pricing model improves the market position and financial performances.

Company X uses the Realized Price index (RPI-model) to measure their selling prices compared to historical prices, given the pricing targets. The prices are measured and analysed, but according to Employee Z (Strategic Pricing Manager) the price measurement is not used sufficiently by the management. Furthermore, it is unknown whether it is possible to implement the new List Multiplier in the RPI-model. It is necessary to examine the RPI-model, because with a sufficient model the pricing performances can be calculated and targets can be justified more.

Company X wants to know whether this new way of pricing can be implemented in other markets as well. Company X sees a lot of potential but the management does not want to take unnecessary risk. This topic is not included in this assignment and can be used in further research.

2.3 Problem solving approach

To solve the core problem, I divide my research into six steps. The method we use to find information for these steps are mentioned in Section 5.3. The steps are shown below:

1. We must identify the core problem, by using a problem cluster.
2. We must understand the current pricing policy, related processes.
3. We analyse the new variable pricing model, the data gathering tools (Bid Manager and C360) and the measurement tool (RPI-model) of Company X.
4. We examine the financial impact of the new variable pricing model. Furthermore, we look at the feasibility of implementing this new way of variable pricing in the RPI-model and to which extent the RPI-value will differ because of the new variable way of pricing.
5. We give a motivated advice whether the new pricing model should be implemented or not and provide further recommendations for after this bachelor assignment.
6. Finally, we give recommendations for further research.

3. Research questions

With the information from the previous chapters, we can now start with formulating the research questions. Firstly, we formulate the main research question. After that, we divide this question in parts using sub-questions to give a systematic answer to the main research question.

3.1 Main research question

The main research question is formulated according to the core problem of Section 2 (identification of the problem).

What is the financial impact of implementing the new pricing model in the Product Family X?

In this assignment, we examine whether the new pricing model will lead to an improvement in the performance indicators. If this is the case, I shall advise Company X to implement the new pricing model.

3.2 Sub-questions

To answer the main research question, a couple of sub-questions should be formulated. The first couple of questions must give me insight in the financial theories, which are concerned when implementing the new pricing model. Secondly, the current policy needs to be analysed. Thirdly the new pricing model of Edens (2016) and the possible impact must be analysed. Finally, the financial impact and in which way the new pricing model can successfully be implemented, are examined. The sub-questions are listed below:

1. What literature is needed to support the research questions?
 - What does literature say about price elasticity of demand?
 - What does literature say about financials?
 - What does literature say about variable pricing strategies?

In this sub-question, we look at literature for related topics in my assignment. We apply this information to this assignment to get a better view of what the possible financial impact is of implementing the new pricing model. Furthermore, we look at the benefits and drawbacks of this type of pricing.

2. What is the current sales policy for the Product Family X?
 - What are the phases of the selling and pricing processes and which departments are involved in these processes?
 - In which way is the selling price calculated?
 - In which way are the price performances measured?
 - What are the current financial performances?

In this sub-question, we look at the current situation. So, the selling stages, data gathering, measurement tools, pricing policy and current performance rates are treated.

3. Which performances are affected by the new pricing model and what is the expected impact on these performances?
 - What are the new variables and in which way do they calculate the “right” selling price?
 - What are the expected profit and demand changes?
 - What are the expected changes in the RPI-measurements?
 - Which other important performances change because of the new pricing model?

In this sub-question, we look at the new pricing model, the changing financial performances and identify the most important other related changes.

4. How can Company X measure the results of the new pricing model successfully?
 - In which way, should the pricing measurement and data gathering tools be adapted to implement the pricing model successfully?

In this sub-question, we look at the needed modifications in RPI-model, C360 and Bid Manager.

4. Theoretical framework

In this chapter, we discuss the perspective and do a literature review that is useful to do various analyses in this assignment. Therefore, this framework aims to gain knowledge about related topics for this assignment. The type of research method is further explained in Chapter 5.

According to Leggett (2011) there are two types of construct in research, namely conceptual or operational. The conceptual definition is stated as: “Provides meaning to one construct in abstract or theoretical terms”. Concluding, the topic must be clear for the researcher. The operational definition of key construct in research is stated as: “Defines a construct by specifying the procedures used to measure the construct” (Leggitt, 2011). Concluding, to measure changes, numerals should be assigned to objects or events.

4.1 Theoretical perspective

In this section, we discuss the theoretical perspective, so from which point of view we look at the problem(s) and do research. From the initially formulated assignment, the points of view are mainly commercial and financial. These are very broad perspectives. Therefore, a more specific perspective must be formulated.

Company X wants to know what the financial impact is when implementing the new variable way of pricing in the Product Family X. It is expected that the RPI-values and financial performances change because of the changing Lis Multiplier. We measure five important indicators of the Product 1 and the Product 2 : hit-rate, sales turnover, operating profit, standard margin and RPI-value. In Table 1,

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we describe these indicators as used at Company X, and in Table 2 the current performances rates of both products in the Product Family X are listed.

Indicators	Explanation
Hit-rate	Ratio of awarded projects. Volume of won projects and contracts divided by the total quoted volume.
Standard margin	This term is explained differently in theory. In theory, the term that suits best with the way Company X uses this term, is gross margin. The standard margin is calculated by the total gross profit (revenue minus the material and labour cost) divided by the total sales turnover. The gross margin is explained further in Section 3.2.4.
Operating profit	This term is explained differently in theory. In theory, the term that suits best with the way Company X uses this term, is end-to-end profit. This margin ratio calculates the profit over the entire process. So, the total profit minus all cost (production and supportive). In the rest of this assignment, we use operating profit.
Sales turnover	Company X's (City X) total revenue. This represents the received value of goods and services provided to customers in a specific period. Sales turnover is explained further in Section 3.2.4.
RPI-value	The Realized Price Index value of the Product Family X. This index calculates the price performances of each product. This index is explained further in Section 3.2.2.

Table 1: Operationalization of key variables.

<CONFIDENTIAL TABLE>

Table 2: Performance rates (Company X, 2016).

With the new pricing model, it is expected that a better first offer is given to the customer. Because the first offer is based on a systematic, the selling price is adapted to any type of customer. In this way, the chance that the customer goes along with this offer or wants to negotiate, and the hit-rate percentage increase. The current hit-rate is calculated by the total sales turnover divided by total quoted volume. It is expected that the total sales turnover increases, because of more accepted offers. The current RPI-value of the Product 2 is not calculated yet. The operating profit is calculated for the entire Product Line (Product Line X), including the product Product 3. The most important indicator is the operating profit or end-to-end profit (\$), because an increase means more profit at the end. All indicators are further analysed in Chapter 6 and Chapter 7 per country or per Product Line.

In Table 3 we placed expectations for each indicator tested in this assignment. Firstly, we expect that the hit-rate and sales turnover increase, because more quotations are accepted. Secondly, we expect that the standard margin (%) per product decreases, because in most situation the average List Multiplier is lower than the current situation. The changes in operating profit and in RPI-value is unclear and must be investigated in this assignment. As already mentioned earlier, the most important indicator to analyse is the operating profit (\$). If the operating profit (\$) increases, more profit is generated and is therefore worth the efforts. Besides these five variables, more influences are handled in Section 7.3.

Variable	Hit-rate	Standard margin (%)	Operating profit (\$)	Sales turnover	RPI-value
Positive (+) or negative (-)	+	-	+/-	+	+/-

Table 3: Expected scenario.

4.2 Theoretical model

In the sections below we clarify three important subjects, which must be understood before we predict the possible financial impact. Firstly, the price elasticity of demand is explained to be able to indicate possible effects of the new selling prices, concerning price and demand. Secondly, I cover some financials, to be able to predict the impact on the sales turnover, profit margin and the operating profit (or end-to-end profit). Finally, we look at different variable pricing strategies and list the benefits and drawbacks of variable pricing.

Concluding, in this subsection the following sub-questions are answered:

- *What does literature say about price elasticity of demand?*
- *What does literature say about financials?*
- *What does literature say about variable pricing strategies?*

4.2.1 What does literature say about price elasticity of demand?

Firstly, we define the definition of price elasticity of demand as follows: “The percentage change in quantity demanded resulting from a 1% change in price” (Goolsbee, et al. 2013, p.43). It shows the price-sensitivity in a certain market for a specific product. The formula for the price elasticity of demand is as follows:

$$\text{The price elasticity of demand} = \frac{\% \text{ change in demanded quantity}}{\% \text{ change in price}}$$

Equation 1: Price elasticity of demand (Goolsbee, et al. 2013, p.43).

Products are classified into five categories (Gallo, 2015):

- **Perfectly elastic:** price changes have huge effects on the demanded quantity. When the selling price increases, the company’s product is not bought anymore by the customers. The absolute outcome of the formula is infinite for perfectly elastic product.
- **Relatively elastic:** price changes have effects on the demanded quantity. The absolute outcome of the formula is higher than 1 for relatively elastic products.
- **Unit elastic:** price changes result in the same change in demanded quantity. The absolute outcome of the formula is equal to 1 for unit elastic products. However, unit elastic products are very rare.
- **Relatively inelastic:** price changes have small effect on the demanded quantity. The absolute outcome of the formula is between 0 and 1 for relatively inelastic products.
- **Perfectly inelastic:** price changes have no effect on the demanded quantity. The outcome of the formula is equal to 0 for perfectly inelastic products.

Demand curve

The change in demand because of the change in price is shown in a demand curve. According to Goolsbee et al. (2013) a demand curve is: “The relationship between the quantity of a good that consumers demand and the good’s price, holding all other factors constant”. The X-axis shows the demanded quantity and the Y-axis shows the price. These demand curves can have many different shapes. Therefore, it is important to understand what these shapes mean. Given that the axes are the same, a steeper shape means less elasticity of demand, so inelastic. A more horizontal shape indicates a more elastic demand. The shapes can also be directly proportional. This means in the beginning a change in price does not have much influence on the quantity demand (inelastic). But on

a certain point a change in price leads to a great demand change (elastic). The demand curve can change because of inter-related aspects. For example, advertisement and substitute products.

Measuring methods for price elasticity of demand

To measure the price elasticity of demand, the two most used methods are:

- **Point elasticity method.** This method uses a linear or non-linear demand curve to calculate the price elasticity of demand. For linear functions, you take two points at the demand curve and calculate the change in price and change in demand (Wall & Griffiths, 2008, pp. 52-53). For non-linear functions, the same method is applicable. In this case, you draw a tangent line at a certain point in the demand curve. On this (linear) tangent line you take again two points and calculate the changes. With these two changes, you calculate the slope of the line and thus price elasticity of demand, using Equation 1.
- **Arc elasticity method.** This method calculates the 'average' elasticity between two points on a demand curve. This method is particularly useful when the demand curve is not a straight line (Wall & Griffiths, 2008, pp.53-54). This method is almost the same as the non-linear demand curve. However, in this method two points at the demand curve are selected and a line is drawn between these points. The formula of the arc elasticity of demand is as follows (Wall & Griffiths, 2008, p. 53):

$$\text{Arc. elasticity of demand} = \frac{\frac{\text{Price (1)} + \text{Price (2)}}{2}}{\frac{\text{Quantity (1)} + \text{Quantity(2)}}{2}} * \frac{\Delta \text{Quantity}}{\Delta \text{Price}}$$

Equation 2: Price elasticity of demand- Arc method.

Price elasticity of demand in this assignment

It is important to evaluate change in volume because of the change in price. Therefore, the price elasticity and selling price change (%) must be known, to predict the exact change in demanded quantity (%). However, during the analyses, we found that it is not possible to predict the price elasticity of demand for the Product Family X. Company X offers very diversified products against always a different selling price, with country and customer-specific List Multipliers. On top of that not all data are known for every project. These data are needed to calculate the price elasticity of demand following the methods as described in the previous sections. Therefore, assumptions must be made and a different approach is used. Instead of looking at the price changes we look at: the hit-rate, the ratio between awarded volume and total quoted volume, percentage of lost project due to price, relationship and competitor, and potential new intake. I use meetings with my principal and employees of Company X to check some of these assumptions. Furthermore, we look at what the selling price would be if the new pricing model had been used for some past successful deals between Company X and its customers. These are selected for which the data are better kept and known by the employees of Company X. In this way, the data are more reliable, resulting in better comparisons.

4.2.2 What does literature say about financials?

In this chapter I cover three important financials for this assignment. The revenue (or sales turnover), the profit margin and the contribution margin are examined. These financials probably will change after implementing the new pricing model. Therefore, it is necessary to understand these financials, before starting this assignment.

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Revenue (or sales turnover)

Firstly, we define revenue (or sales turnover): “the amount of money that a company receives during a specific period, including discounts and deductions for returned merchandise” (Investopedia, 2017). The total revenue can be divided into two parts (Jan, 2013):

- Operational revenues. These revenues are originated from main business operations. These revenues are usually from the sale of goods and services. These revenues are also described as net sales or sales revenue. This revenue is often calculated by the total sold units multiplied by the sales price.
- Non-operating revenues. These revenues are originated from secondary operations. So, revenues from non-typical activities of the firm (sale of goods and services). These revenues are often not predictable or recurring, for example the sale of fixed assets or receivables from investments.

The revenue is the starting point in most financial calculations, for example the income statement. All other receivables are added and all costs are subtracted to eventually determine the net profit (Investopedia, 2017). With the income statement, it is possible to calculate certain financial ratios, for example the profit margin. This ratio is explained in the next section.

The sum of all revenues generated by all these offers (contracts and projects) is the total revenue of Company X. The new pricing model calculates a new List Multiplier based on customer characteristics, resulting in a better final market price or selling price. It is expected that more customers accept Company X's quotations, resulting an increase in Company X's total revenue.

Profit margin

The profit margin is the ratio of the profit and the revenue (or sales turnover). Profit is a financial benefit that is calculated by subtracting all expenses from the total revenues. There are three major levels of profit (Brealey, et al. 2014, p.291):

- Gross profit: sales minus cost of goods sold.
- Operating profit: gross profit minus operating expenses.
- Net profit: operating profit minus all other expenses, including taxes.

These profits can also be calculated as a financial ratio (gross margin, operating margin and net profit margin). These ratios are calculated by dividing the corresponding profit by the total revenue.

EBIT (Earnings Before Interest and Tax) measures the profit that a company makes from its operations (sales minus cost of goods sold minus other operating costs). This profit indicates whether a company can generate enough profits from its operations (Brealey, et al. 2014, p. 506). This profit is used to analyse a company's earning potential. EBITDA (Earnings Before Interest, Tax, Depreciation and Amortization) measures the profit in the same way as EBIT, but also includes the fall in value of assets. Both EBIT and EBITDA indicate the financial operating profitability of a company (Brealey, et al. 2014, p. 597).

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It is also possible to divide the profit into accounting- and economic profit (Goolsbee, et al. 2013, p. 262-263):

- Accounting profit: A firm's total revenue minus its accounting cost (the direct cost of operating a business, including costs for raw materials).
- Economic profit: A firm's total revenue minus its economic cost (the sum of a producer's accounting and opportunity costs).

Economic profit is a more reliable profit because this profit also takes opportunity costs (the value of what a producer gives up by using an input) into account.

Company X uses its own calculation on determine their eventual operating profit (or end-to-end profit). This calculation is elaborated on and analysed in Section 6.4.

Contribution margin

Firstly, we define contribution margin according to Investopedia (2011): *"A cost accounting concept that allows a company to determine the profitability of individual products"*. This margin is important for this assignment to get a better insight in the calculation of the operating profit and therewith the financial impact of the new pricing model. The change in the end-to-end profit must be positive, otherwise it is not worth to produce and the deliver the product to the customer. Contribution margin per unit is calculated by the sales price per unit minus the variable cost per unit. The contribution can also be calculated in a percentage:

$$\text{Contribution margin (\%)} = \frac{\text{Margin per Unit (\$)}}{\text{Sales price per Unit (\$)}}$$

Equation 3: Contribution Margin.

If the contribution profit (\$) is less than the fixed cost (\$) in the long-term, it is not profitable to produce and deliver the product (Company X, 2006) However, the short-term profitability must also be considered, because cash issues can have negative consequences for a company. Therefore, it is important that the List Multiplier (and the obtained price) should be on such level that the contribution profit per product is above the average fixed cost. If more products are sold, the fixed costs are spread over these products, resulting in lower average fixed cost per product (economies of scale). The lower bound for Company X still makes profit, is for each order different because of market or customer characteristics. For example: legal environments and asymmetries of information. Therefore, when using the new price calculation (Edens, 2016), the contribution profit should be analysed and compared with the fixed costs.

4.2.3. What does literature say about variable pricing strategies?

In this section, we describe different variable pricing strategies, which come close to the new pricing model (Edens, 2016), and seek for the benefits and the drawbacks of these strategies. Firstly, we define pricing strategy according to Goolsbee et al. (2013), Yang et al. (2017) and Su (2010). Secondly, we define different pricing strategies: price discrimination, customer intimacy, dynamic pricing and variable pricing, according to Goolsbee et al. (2013), Treacy & Wiersema (1993), Nunes (2015), Sleeth-Kepler (2015) and Su (2010). In the conclusion, we list the benefits and drawbacks of variable pricing strategies.

Pricing strategy

According to Goolsbee et al. (2013) a pricing strategy is: *"A firm's method of pricing its products based on market characteristics"*. Setting different prices for different situations or periods to

maximise revenue or profit is a highly successful operations research technique with direct real-world application (Yang et al., 2017). Through optimal pricing, retailers can increase their gross-margin (sales minus cost of goods sold) significantly. However, by setting different prices, an important consumer behavioural aspect arises, namely the reference effect in purchasing decisions (Yang et al., 2017). The impact of the reference price is called the reference effect. Customers compare the new price with the initial price. Customers with a strong reference effect, see a price reduction from the initial period as an advantage and are encouraged to buy. A current price higher than the reference price might be perceived as “high” and a lower price might be perceived as “low” (Yang et al., 2017). After setting a fixed price, a firm can choose to mark-down (lower the price) or mark-up (higher the price). When the price is lowered (markdown), combined with a strong the customer reference effect, the demand increases and the profit margin per product, subsequently, decreases (Yang et al., 2017). Therefore, it is common to keep the price changes minimal, to make sure that such practices are acceptable to customers and no big demand changes occur. Furthermore, marking down prices should be done carefully. Because when offering a much lower price for the same product than before, customers could treat the price differentials as unfair (fairness effect). This can harm the goodwill of the company. Therefore, the management of the prices should be a top-priority (Su, 2010). Otherwise the customers will slowly transit to the competitor.

Price discrimination

The new pricing model can also be related to the microeconomic pricing strategy of price discrimination. Price discrimination is a strategy in which firms with a certain market power, charge different prices to customers based on their willingness to pay (Goolsbee et al., 2013). Using well-adjusted prices, a firm can increase its earnings. Price discrimination is divided into three categories:

- **First-degree price discrimination (perfect price discrimination)**
A type of direct price discrimination in which firms charge each customer exactly his willingness to pay (Goolsbee et al., 2013). In this way, for every customer a demand curve is developed and therefore each buyer’s price is equal to the buyer’s willingness to pay. To achieve perfect price discrimination, the firm must have information about its customers. Knowing everything of each customer is almost impossible for the firm. In most cases, perfect price discrimination is not possible. Therefore, a firm can also choose for second- and third-degree price discrimination.
- **Second-degree price discrimination (indirect price discrimination)**
A type of direct price discrimination in which customers pick among a variety of pricing options offered by the firm (Goolsbee et al., 2013). This type of pricing a firm can earn extra surplus by allowing the customers to choose among these options. In this way, the customer can choose the right quantity, quality or other specific order specifications, causing that customers are more attracted to choose for this firm. Quantity discounts are examples of second-degree price discrimination. Larger quantities or bulk quantities are available with quantity discounts. In this way customers are attracted to buy larger quantities, because the per-unit price is relatively cheaper.
- **Third-degree price discrimination (segmenting)**
A type of direct price discrimination in which a firm charges different prices to different groups of customers (Goolsbee et al., 2013). This type classifies the customers in different segments based on attributes and is used for clear different demand or price elasticity of demand between several groups. A firm can earn extra surplus by segmenting the customers

looking at the willingness to pay. This type of pricing is only achievable if one of the following conditions has been met:

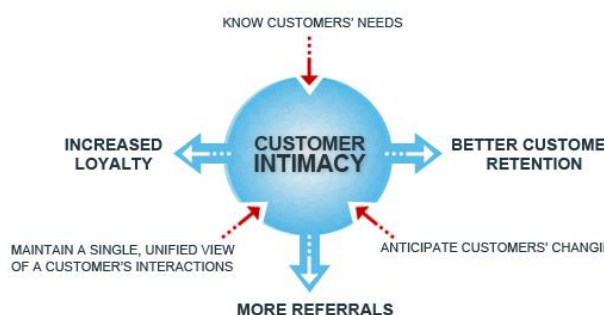
- The firm can directly identify specific groups of customers with different price sensitivities in segments.
- The customers classify themselves into one of those segments.

The difference with the first degree is that this degree determines the willingness to pay for the groups and not the individual.

- **Combination of degrees of price discrimination**

A type of direct price discrimination in which firms charge different prices considering the three types of price discrimination. A firm can vary the price by for example: type of customer or segment (third degree), location, volume (second degree), loyalty and many more variables. In this way, the customer surplus should be decreased and the firm's earnings should be increased, because the price is more adjusted to the willingness to pay.

Customer intimacy model



The customer intimacy model has been described by Treacy and Wiersema (1993). Customer intimacy concentrates on segmenting and targeting markets precisely and the tailored offerings to match the customer demand and shape the products and services (Treacy & Wiersema, 1993).

Figure 3: Customer intimacy model (Treacy & Wiersema, 1993).

Using the customer intimacy model, companies design operating models that allow them to address customers or segments of their market separately, considering the company's profitability and customer's satisfaction. Customers get different services and is considered as more effective, because not all customers prefer the same service. In the early phase, the company tries to understand this customer's needs for information and services (Treacy, M. & Wiersema, F., 1993). With customer intimacy, a firm can differentiate quickly and accurately among customers based on the service and the potential generated revenue and builds customer loyalty for the long term. It aims at the customer lifetime value (Treacy & Wiersema, 1993), so the revenues over the lifetime of the relationship with the customer. The profitability depends on how easily the company can differentiate accurately among their customers. Therefore, it is important to identify the type of service and the potential revenue or lifetime value. Customers with less potential revenue are routed to a less experienced employee. In this way, the employees with more experience can focus on the customers with more lifetime value.

This new system lets the firm operate with great efficiency. By arranging the customers into smaller groups based on characteristics, the firm can easily detect which customers are interested in a certain product or service. Another benefit from this system is that the employee, who communicate with this customer, can directly give a value-added service or product or intelligent recommendations, because the interest of the customer is known. According to Nunes (2005), these conversations can become expensive when customers are uninterested. Low-involvement customers are not interested in these dialogues. Therefore, the firm should recognise when a dialogue is

beneficial for the firm itself and the customer (Nunes, 2015). With well-designed dialogues and findings, the right balance for interested customers and low involvement customers, all parties emerge as winners. The firm increases the sales, the customer gets a fitting product for the right price and an enduring relationship (Nunes, 2015). The overall benefits of a relationship are also named the end-benefit effect. With a good relationship, costs can be reduced, which results in more net profit for the firm.

The customer information should be collected from a database. A good database can retrieve for each customer separately the following information: the purchases, category, product and an indication of how buying behaviour is affected by price, reductions and so forth (Treacy & Wiersema, 1993). In this way, the sales teams can operate in a structured manner using value-added ideas, selling tools and promotion packages for each segment. Furthermore, the firm can pinpoint which offices get which product to reduce the delivery times and inventories, because the sales teams know the needs of the customers in their segments.

This opportunity also gives a drawback. Because marketing operations should be adapted to this new system. Customised promotional programs need to be designed and managers should control the situations. Therefore, the marketing operation must be well evaluated, when implementing the new system. Another risk, mentioned by Nunes (2015), is that competitors can take advantage of the open way of communicating with this new system. Although values, like transparency, are normal in this time, managers must always keep in mind that competitors are listening (Nunes, 2015).

Concluding, a good customer intimacy policy, using data gathering systems, processes stress flexibility, responsiveness, pushes the new way of working through the operating model and all employees know the possibilities and modifications (Treacy & Wiersema, 1993).

Variable pricing

Just as customer intimacy, variable pricing is a theory applicable for the new pricing model. Variable pricing is an optimal pricing strategy, in which a fixed price is established with predetermined variables. This strategy should not be confused with variable cost-plus pricing, in which the price is determined with a mark-up to the total variable cost. According to Sleeth-Keppler (2015), it provides segments according to region, repeat purchases, or other types of data. In many cases the average margin increases. However, when changing the pricing policy from a fixed price to a variable price and increasing the price, it is likely that the customer gets angry. It is important to communicate to the customers why something becomes cheaper or more expensive. Both parties must be willing to participate to reach a profitable situation for both customer and supplier. Variable pricing increases the likelihood of coordination and improves organisational effectiveness. Careful management of information flow is necessary to implement variable pricing successfully. With variable pricing, the firm should aim at a point where no doubt arises and no variables are interpreted differently. The flow of information in variable-pricing models should always be considered and kept implementing variable pricing successfully. Furthermore, customer behaviour has a large impact on the successfulness. Therefore, the customers' willingness to pay and customers' satisfaction must be analysed and decisions should be based on these two facts (Sleeth-Keppler, 2015). Another drawback that occurs, because of variable pricing, is that the fixed costs are not considered, when establishing the price with the variables. Before implementing variable pricing, the impact on the profitability must be analysed (Sleeth-Keppler, 2015).

Variable pricing has no finite selling season and sets a fixed price using certain factors. Besides, it is possible to produce more and more products on order. Furthermore, the production capacity is no limitation for Company X. The quality of the variables (the extent in which Country Sales Organisation can interpret the criteria) must be considered. If some variables are not watertight, the management should supervise all deals, resulting in a well-determined and fair selling price. Because these characteristics match with the new pricing model, we conclude that Edens' model is closest to variable pricing.

Dynamic pricing

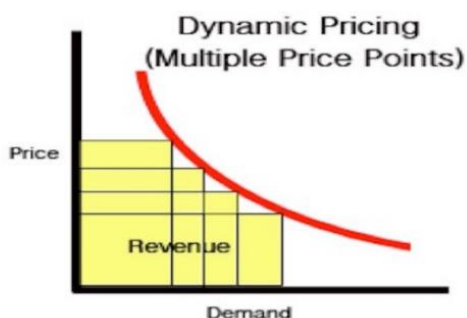


Figure 4: Dynamic pricing.

Just like variable pricing, dynamic pricing is an optimal pricing strategy. Dynamic pricing is often used in pricing of airline tickets. With dynamic pricing, the price is in tune with the willingness to pay of the customers. The time until the flight is the finite selling season and the number of seats the fixed capacity. These ticket prices change as response to variations in demand (Su, 2010). In Figure 4, we see that the product is offered four times to be more in tune with the customer willingness to pay.

The most important differences with variable are the facts that dynamic pricing has a finite selling season and a fixed stock or fixed capacity (Yang et al., 2017). With dynamic pricing, customers always try to get out advantageous. They examine the price changes and buy the product or service at the most beneficial moment. When this future price is lower than the current price, customers normally will wait. Concluding, dynamic pricing reactively updates their initial prices on variations and variable pricing set a fixed price, based on several criteria in advance.

Conclusion: benefits and drawbacks of variable pricing strategies

In this chapter, we evaluated different variable pricing strategies, which use customer or order characteristics to determine a good selling price. This literature review showed the following benefits of variable pricing strategies:

- Customers can be segmented into different groups or individually, which all have their own characteristics, service needs and product needs.
- Country Sales Organisations can use the database to develop value-added ideas and promotion packages for each segment.
- Likelihood of coordination, the firm can differentiate quickly and accurately among customers.
- Improves organisational effectiveness. Variable pricing strategies use a more structured and flexible operational model, in which better analyses and more data are available than before.
- Increases long-term revenues (with lower profit margin per products), because a firm builds customer loyalty for the long-term, in which is focused on lifetime value. The customers also emerge as winners because of the end-benefits.
- The firm can pinpoint which office gets which products or to which operations to reduce the delivery times and inventories, because the needs of the customers in each segment are more predictable.

This literature review showed the following drawbacks of variable pricing strategies:

- The implementations need, certainly in the early stages, regular attention, and generate costs to push the new system in the operational model.
- In the early stages, customised promotional programs need to be designed and managers should control the fulfilment of the criteria and the mode of operating, especially from the Country Sales Organisations.
- Not always practicable because of deficiencies in the information flow or unsuitable market characteristics or the presence of low involvement customers.
- Customer reaction not always predictable, because of the reference effect, when the prices increase. Success is dependent on customer behaviour.
- It can reduce goodwill of the company, because of price differentiation for the same product or service (fairness effect).
- All employees must be supportive to the new strategy, otherwise it will not be effective.
- Fixed costs are not considered. A lower variable based selling price than the fixed costs results in an unprofitable situation. Especially at the beginning, difficulties arise and can lead to unprofitable situations. The profitability comes when customer loyalty for the long term is achieved and everybody is convinced of the new pricing strategy. The sales increase and the fixed costs can be reimbursed.
- IT software must be aligned with the new pricing strategy. Without, it is very difficult to implement successfully.
- Competitors can try to get advantage out of the new situation. Competitors can set their price lower, given that Company X keep the same price. In this case, the competitor can steal the potential customers, resulting in financial problems for Company X.

5. Research design

In this chapter the third phase, the research design is described. Firstly, we mention the research objective and subjects. Secondly, we describe in which way I gather information for this assignment and in which way we analyse the information. Thirdly, we describe the scope (limitations and restrictions) of this assignment. Finally, we discuss the validity of this research.

5.1 Research objective and subjects

In this section, we describe my research objective and subject. As already mentioned in the problem identification, in this assignment, we examine the financial impact of the new pricing model and the feasibility of implementing the new variable way of pricing in the RPI-model. We give an indication if the new pricing model improves the chosen indicators.

We primarily focus on quantitative research, because we focus on the measurement of the early mentioned performance indicators. Besides, we use descriptive research to analyse the current situation, processes and the new pricing model.

5.2 Data gathering method

To collect and organise the data about the subjects mentioned in the previous section, we must find related information or literature. In which way, I find this data and in which step (see Section 2.3) the data gathering method is used is mentioned in the table below.

Data gathering method	Step	Explanation
Literature study	1, 2, 3	Design theoretical framework, read and understand the bachelor assignment about the new pricing model and understanding the RPI-model.
Interviews/meetings with employees	1, 2, 3, 4	Understand and gather information from different aspects.
Meetings with buddies, principal and supervisor	1, 2, 3, 4, 5, 6	Gather information, advice and feedback for this assignment.
Survey	3	Understand and gather different opinions of involved employees of Company X.

Table 4: Data gathering method.

Next to this, related, acquired knowledge from my study program (Industrial Engineering Management) can be very useful. A hard challenge is to apply all these new and acquired theories and seek for solutions.

5.3 Data analysis method

When we have all the information of this assignment subject and know how I gather my data, we can start with analysing these data. We should find some relevant information that will help me to solve the problem. The methods we use, to analyse the gained data, are shown in the table below.

Data analysis method	Phase	Explanation
Desk research	1, 2, 3, 4, 5, 6	Analyse all data gathered until then and write the bachelor report.
Meetings with buddies, principal and supervisor	1, 2, 3, 4, 5, 6	Analyse the data to get more understanding of a specific aspects.
Meetings with employees	1, 2, 3, 4, 5	Talk with employees to confirm assumptions or double check some aspects.

Table 5: Data analysis method.

5.4 Limitations and restrictions of research design (scope)

Before doing this assignment, we must identify the limitations and restrictions (or scope) in this assignment. Not every fact or opinion can be found within Company X or its customers within 10 weeks. I set the following limitations in this assignment:

- Only investigate the pricing policy for the office in City X.
- No investigation of correctness of the new pricing model.
- No investigation of correlation between the variables.
- No investigation of missing variables.
- No investigation of production capacity.
- Only investigate the Product Family X (Product 1 and Product 2).
- Focus on the financial performances (hit-rate, profit margins, sales turnover & hit-rates).
- Focus on the RPI-values.
- Look at the feasibility of implementing the new pricing model in the data gathering- and price measurement tools: RPI, C360 and Bid manager.
- Investigate possible drawbacks of the new pricing model, according to literature.
- Assume that the new pricing model, always calculates the “right” price and win the project or contract, which are previously lost because of one of the seven variables.

5.5 Validity and reliability of measurements

In this assignment, we measure the changes in performance because of the new pricing model. We predict the financial impact as accurately as possible, using literature, multiple insights from involved employees and stakeholders, self-study and critical thinking. Because of the limitations of 10 weeks and unknown facts, not every detail can be examined in this assignment. A good estimation of the possible changes is given but it is impossible to measure every detail or every aspect. A very important limitation that must be considered, is the fact that the price elasticity of demand is very difficult to measure. Because the absence of some important data, we should make motivated assumptions and seek for other ways to calculate the expectations. Despite my limitations, it is also possible that during the implementation of the new pricing model unexpected market changes occur. When eventually a new model is implemented, these market changes must always be considered. Therefore, the new selling prices must often be checked, especially in the start-up phase. Furthermore, during this assignment, we concluded that not all data are valid. Certain data were missing, incorrectly entered or were doubled. Therefore, the outcomes, which are based on these data, should be re-evaluated. When all data are entered sufficiently in the data gathering tools more precise estimations can be made. In this assignment, we used the information that was present and set priority rules to evaluate which data are marked as reliable. In the attached excel document, we linked all calculations which each resulting from the input on the green sheets. When Company X has more reliable data, it can enter the new values into the green sheets and excel calculates the new situation.

6. Current sales policy

In this chapter, we discuss the current sales policy of Company X. It is necessary to know the current situation to predict the possible changes. Firstly, we describe the processes, which are selling and pricing related. Secondly, we look at in which way the selling price is calculated. Thirdly, we look at the process of price measuring at Company X and in to which extent these calculations are used. Furthermore, we consider the data gathering tools in this sub-question. Finally, we calculate some financial performance indicators of the Product 1 products. In this section, we focus on hit-rate, operating profit, standard margin, RPI-value and sales turnover. In this chapter, we handle the following question:

What is the current sales policy for the Product Family X within Company X?

This question is divided into four sub-questions:

- *What are the phases of the selling and pricing processes and which departments are involved in these processes?*
- *In which way is the selling price calculated?*
- *In which way are the price performances measured?*
- *What are the current financial performances?*

6.1 What are the phases of the selling and pricing processes and which departments are involved in these processes?

In this section, we describe the processes that are related to this research and whether the new pricing model influences these processes. Firstly, the involved departments are described. Secondly, the main processes are described, which are related in the determination of the selling price. On top

of that, we describe the main changes within these processes, when implementing the new pricing model. We look at the moment that Company X and the customer have their first contact until Company X delivers the product to the customer. Therefore, we exclude the after-sales in this assignment.

Departments involved

Within Company X there are six important departments involved in selling and pricing processes and those are listed below. That is why, for example the production-related departments are not considered because these departments are out of the scope of this research.

- **Product (line) Management & Product Marketing:** Manage and analyse the selling prices (multipliers), growth, profitability, market shares and marketing and handle order related issues for different product lines. For this department, the main tools are: Bid Manager and C360. The price-measuring and order data are tracked using Bid Manager.
- **Business Development:** Manage the orders and seek for opportunities, risks for the contracts and projects for different countries. The Country Sales Organisations communicate mainly with this department.
- **Financial Administration:** Keep up and measure financial data, for example sales.
- **Research & Development (or Engineering):** Seek for new product opportunities for the products. This is maybe not directly related with the selling and pricing processes. But the R&D department seeks for possibilities in Company X's product, for which new prices must be stated.
- **Customer Service Systems and Components:** Keep up the customer relation during and after the delivery.
- **Country Sales Organisation:** communicate and negotiate with the customer. This department is the Country Sales Organisation for Country 7.

Within Company X there are tools that are accessible for most departments. These tools are Bid Manager, C360, SharePoint, Baan, and Obiee. In this assignment, my focus is on the first two tools, because SharePoint is for general information and last three are more used for the production departments.

Primary process

Firstly, we discuss the primary process of Company X. This process is the overarching process of all processes. This process is divided into nine divisions. All departments of Company X are involved in this process. In this section, we limit the scope especially on the third (business development/sales) and fourth step (front-end). In the third step, the opportunities and sales related topics analyses are handled. In the fourth step, the main activity is the communication to the customer. In all steps documentation is an important activity. As already mentioned, we only focus on the selling and pricing processes.

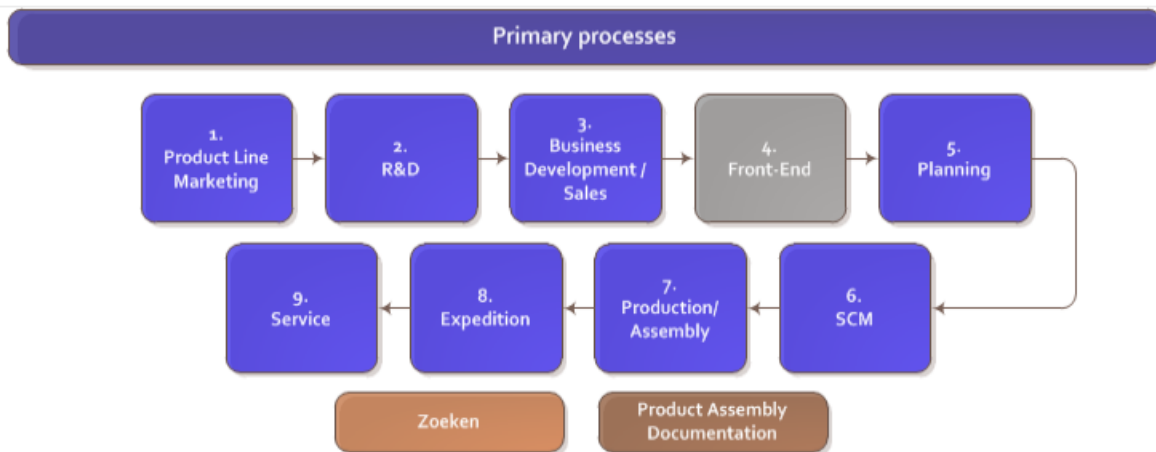


Figure 5: Primary process (Company X, 2015).

In the sections below, we mention the main processes and indicate changes when implementing the new pricing model.

Sales stages

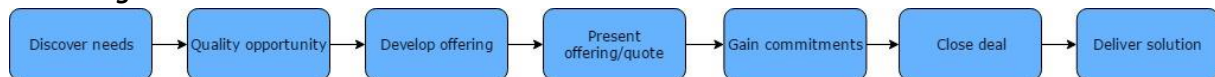


Figure 6: Sales stages.

The process of the sales stages is very important in the selling and pricing processes. Therefore, most departments are involved. Customers can enter at different stages. The later in the process, the less its potential of a profitable collaboration between Company X and the customer. Therefore, Company X aims to start a cooperation in first three stages. On average, the customers enter in the second stage (quality opportunity), in which Company X's helps with a solution for the company's problem, or the third sales stage (develop offering) in which tenders are created by the order processing department. Starting in the last three stages, it is very likely that the order will be lost.

When implementing the pricing model, the instructions for the employees in the Develop offering stage differ the most. This is because the way of determining the price is different. In the current situation, the selling price is based on country and experience of employees (management or sales persons). In the new situation, firstly all necessary data must be recorded, using Bid Manager and C360. With these data, the List Multiplier is calculated with the weights and scores as described in the new pricing model (Edens, 2016). This List price multiplied with the new List Multiplier, results in the new offering or quote that is offered in the fourth stage. Most customers enter the sales stage in the second or third stage. Therefore, updating the customer data should be a high priority. In the current situation, it is not obligatory to enter all necessary data or the data are incorrect. This must be improved to implement successfully the new pricing model. In Section 6.2 we describe the data gathering tools (C360 and Bid Manager) in more detail.

Order processing stages

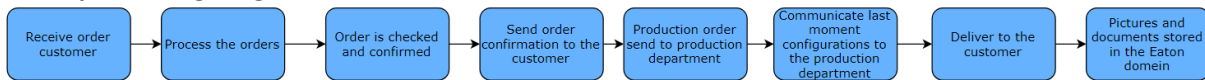


Figure 7: Order processing stages.

The order processing stages are important because in these stages the large part of the data gathering is done for every order for every customer. These stages are executed by the order processing department of Company X. In this process, they involve four other department, namely: Engineering (to see the technical possibilities), Business Development (see financial opportunities), Product Marketing (calculation of the multiplier) and Production (adding the order into the planning of production). In these stages, the following tools are used: Baan (production planning), Bid Manager, C360 and SharePoint (procedures).

Company X delivers two types of products: ETO (engineer to order) and ATO (assemble to order). These two types have different processes. The process steps, per type, are listed below.

ETO	ATO
1. Check order on price, technology and delivery conditions.	1. Check orders on price and delivery conditions.
2. Accept or decline order.	2. Accept or decline order.
3. Convert order to Baan (Intake).	3. Convert order to Baan (Intake).
4. Convert order to Baan through Bid Manager.	4. Convert order to Baan through Bid Manager.
5. Sent order process to Production.	5. Sent order process to Production and provide sufficient product information.
6. Sent order processed to Engineering.	6. X
7. Attend in progress and monitor delivery times meetings.	7. X
8. Sent order information to the customer.	8. Sent order information to the customer.
9. Ask for customer approval on documents.	9. Ask for customer approval on documents.
10. Organise and attend FAT (Factory Acceptance Test).	10. Organise and attend FAT (Factory Acceptance Test).
11. Deliver product to the customer.	11. Deliver product to the customer.
12. Occasional organise and attend SAT (Site Acceptance Test).	12. Initiate and follow up service orders for site activities.
13. If necessary, give feedback to quotations.	13. If necessary, give feedback to quotations.
14. Financially close the order.	14. Financially close the order as per contract obligations.

Table 6: Order processing steps ETO & ATO (Employee P, 2017).

In Steps 1, 2 and 4 are for a portion related to the selling and pricing processes. In these three steps, the information is gathered and the List Multiplier is determined. As already set in the paragraph above, the data gathering should be more aimed at the variables of the new pricing model, resulting in that the new List Multiplier is calculated.

Quotation pricing process

Figure 8: Quotation pricing process (Employee R, 2013).

The new pricing model probably has the greatest impact on the quotation process. In the quotation process the Country Sales Organisation negotiate with the customers about a good selling price. In this process a uniform, market based, pricing procedure is followed. Bid Manager works with a set of List Prices, which convert into net sales prices after applying a (sales) multiplier (Employee R, 2013). The List Price is a set price for each product with each addition and the multiplier is set for each country. It is possible that a customer only accepts Company X's tender below the minimal price. When this happens, the Country Sales Organisation consults the Business Development department to get approval to continue the order. In the figure above this Minimal Multiplier is shown with the red line. The target market List Price and minimum market List Price are determined per product, per country. For intercompany orders, a different calculation is used. In this case the market List Price is multiplied by a set List Multiplier per Country Sales Organisation.

When implementing the new pricing model, a couple of aspects change. Firstly, the range between target and Minimal Multiplier is used differently. The new pricing model calculates an improved starting offer, which should result in more willingness of the customer to go along with Company X's offer. In this way, the Country Sales Organisations use different List Multipliers for each customer. Because of this the organisations have a better starting point, when starting negotiations. The new List Multipliers are generated by the Country Sales Organisations themselves. To prevent a worst-case scenario from happening, we propose an order volume based quotation process, to maintain and keep track of profitability. This proposal is explained in Section 7.3.

6.2 In which way is the selling price calculated?

In this section, we discuss in which way Company X calculates its final market price and the data gathering tools.

Company X is active in the business to business market and has a reactive pricing policy (Edens, 2016). It calculates the selling price using a constant List Price (Reference Value) multiplied with a differentiation value. However, Company X aims to determine the selling price with a more value-

based strategy. This strategy uses the value the customer wants to pay and its features as bases for determining the final market price. This strategy is much promoted within the company. The formula of the Total Economic Value is as follows (Company X, 2006):

$$\text{Total Economic Value} = \text{Reference Value} + \text{Differentiation Value}$$

Equation 4: Total Economic Value (Company X, 2016).

The reference value, or List Price, is determined using market characteristics and the selling price of the closest available alternative offering for the product or service. The differentiation value is divided into positive differentiation value and negative differentiation value. The positive differentiation value is the sum of the benefits for the customer. The negative differentiation value is the value of the benefits that the closest competitor offers that Company X does not offer. In Figure 9, you can see the systematic.

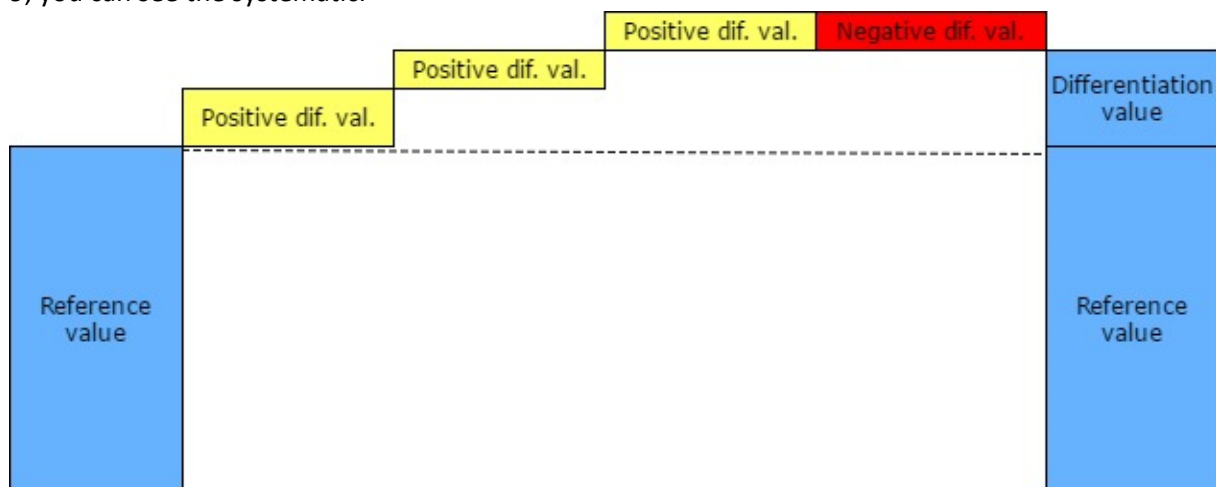


Figure 9: Total Economic Value (Company X, 2006).

Two situations can occur in the process of determining the reference value. The first situation is when the market price is known. In this situation, the selling price is based on competitors with comparable products. However, this situation does not often occur. Because Company X have very differentiated products, it is difficult to compare the products with competitors. So, in this second and more common situation the market price is unknown. In the current situation, the differentiation value is based on country and customer specific discounts, in which some variables were already included, but not following a certain systematic. With the new pricing model, this differentiation value is based on a systematic and calculates the “optimal” or “right” price for each order. This new pricing model is described in Section 7.1.

Bid Manager

Bid Manager is an online quotation and configuration tool. This tool is merged with C360. The information that is documented in Bid Manager. All prices and multipliers are listed in Bid Manager. Country Sales Organisations enter their order in Bid Manager and calculate their final market price. The supportive departments can use these data to track and check all orders and do analyses. The Country Sales Organisations must fill in the following information in Bid Manager: project name, current sales stage, project status, project type, tender date, expected purchase date, project location, (sub) segment, (sub) application, tender type, type of project and expected success rate. Furthermore, it is possible to fill in: currency, outcome reason, proposal completed, customer request number, country of Country Sales Organisation and the involved agent.

When all information is filled in, the orders are converted into a list with an overview of all projects. After that, all project information is converted into a code. The List Price is retrieved from Company X's database and the selling price is calculated automatically. The supportive departments (Business Development and Product Management) check these multipliers and adjust if the multiplier is too low or too high. If the multiplier is lower than the Minimal Multiplier, the Country Sales Organisation must ask permission of the supportive departments whether they can continue with their calculated List Multiplier.

In Bid Manager, the List Price is divided into four categories. These four categories are: standard product (switchgear), special materials for non-standard engineering, accessories and other (mostly pack and transport cost). It is striking that for many orders the List Multiplier is only used for the first category (the standard product or switchgear). The other three categories are in almost all cases multiplied with 1.0. When we start with calculating the volumes in US Dollars, we use the same method.

C360

C360 gathers information and status of every customer or project. This tool is merged with Bid Manager, therefore the employees who work with one of these tools can change the data in the other tool. Within C360, specific data of customer and project are stored. Examples are country, type of product, special requirements, List Price, and List Multiplier. Furthermore, an estimated chance that the order is continued is kept up. When the order is converted to C360, all actions are documented and if the customer does not go along with Company X, the reason why is kept up. The reason why the customer does not go along, is very important in this research. The lost orders due to price, competitor or relationship, should be won now because the new model calculates the "right" selling price.

When Country Sales Organisations convert the Bid Manager file to C360 the following fields must be filled in: project name, sales stage, project type, tender date, expected purchase date, customer name, segment (sales vertical), application, sub application and confidence percentage. Besides these obligatory information, there are also fields that are not obligatory. These fields are: outcome (won, lost or abandoned), currency, Country Sales Organisation, agent, tender version, project location, end-use segment and project type. If not, all obligatory information is entered in Bid Manager, the person who enters it, receives the message that required data are missing. Only after the required information is filled in, the order information can be converted to C360. This could lead to the fact that sales person guesses the required information to convert the information, which leads to inaccurate data. Furthermore, not all variables of the new pricing model are (obligatory) inputs in to convert to C360. To successfully implement and measure the new model, these variables must be added and made obligatory to convert to C360. I come back to these two points in the recommendations.

Two important limitations came forward in the interview with Employee Z (specialist in C360). The first limitation was the fact that the data are not always documented properly because of slackness, lack of personal interest or incomplete and unknown data. A second limitation that came forward, was the fact that some orders are entered late in the sales process. The main reason for this, is that the sales persons do not have to guess information, which is not known yet or because of laziness of the sales persons. Furthermore, whether an order has less potential, the sales persons do not enter

the information, because the plant would know that they are working on a low potential order and could be marked as time waste. This comes forward in the entered confidence levels of both products in C360. This confidence level is the chance of success of a specific project. This is respectively: X% and X% for Product 1 and Product 2. These are relatively high percentages compared to the current hit-rates. Therefore, we conclude that the projects are entered late in C360. Because of this, the performance measurements are not entirely accurate.

6.3 In which way are the price performances measured?

In this section, we describe the price measuring tool of Company X.

Price measuring tool

Company X uses the Realized Price Index to measure the current performance against a period average (Employee Z, 2016). The tool measures on a higher aggregated level and similar product ranges. The tool uses historical data (from Bid Manager and C360) to measure the price changes. The measurement is done monthly. However, the outcomes of the RPI-model are not used by the management. Although this model is very useful to ground, pricing targets for specific markets or products.

The RPI is calculated with the published price index (PPI) value, the List Multiplier, the constant price (price at start of measuring) and the obtained price (price of won order)(Employee Z, 2016). To calculate the RPI, all numbers in the equations must be known.

The RPI-values are calculated using two formulas(Employee Z, 2016):

$$RPI = PPI * List Multiplier \quad , \text{ where} \quad List Multiplier = \frac{Obtained price}{List price}$$

$$\text{and} \quad PPI(new) = \left(1 + \frac{List Change (\%)}{100}\right) * PPI(old)$$

$$RPI = \frac{Obtained price}{Constant price} \quad , \text{ where} \quad Obtained price = Price of won order$$

$$Constant price = Price at start of measuring (2010)$$

$$Constant price = \frac{List price}{PPI}$$

Equation 5: RPI calculations (Employee Z, 2016).

It is also possible to calculate a combined RPI (this can be used for a product family) (Employee Z, 2016):

$$Combined RPI = \frac{Obtained price (product 1) + \dots + Obtained Price (product N)}{Constant price (product 1) + \dots + Constant price (product N)}$$

Equation 6: Combined RPI calculation (Employee Z, 2016).

In the RPI-calculations, there are a couple limitations and points of attention to be considered (Employee Z, 2016):

- If you raise the list price, the PPI must increase with the same percentage to get an accurate RPI calculation. Otherwise an inverse relationship between the PPI value and RPI-value will exist.
- Because the data in C360 and Bid Manager are not used consistently for trade pricing, the accuracy of the RPI is not always reliable.

- Not many employees are familiar with this tool or use the outcomes of this tool, therefore this tool is not always used or correctly used.

The new pricing model calculates for every order a List Multiplier, which changes the RPI-values. In Section 8.1, we look at whether it is feasible to implement the variable List Multiplier in the RPI-measurements and to which extent the RPI-values will change for Product 1 and Product 2.

6.4 What are the current financial performances?

In this chapter, we evaluate the current (financial) performances of the Product Family X. It is important to understand the current financial performances, to evaluate the financial impact. Without the current situation, the new financial performances after implementation, cannot be compared and the improvements are more difficult to measure. Besides the financial performances also other relevant information are handled in this section. At the end of this chapter, we compare the List Multiplier of four won projects with the new List Multiplier. This section gives us an idea of what the exact impact on the selling price is and to which extent this differs to the won List Multiplier.

6.4.1 Contracts vs projects

In this assignment, we focus on projects, because contracts have only one moment of quotation for mostly multiple deliveries. Therefore, the contracts are filtered and excluded in further calculations. For this analysis, we use the report of Employee S (2017), in which for many countries the percentage of public and private customers are calculated. Countries with large net sales (\$) are also the ones with the highest percentages of public customers. In a meeting with employee X, we decided to set this percentage equal to the contract's percentage for each country. In Table 7, the percentages (%public/%private) for the concerning countries are shown (Employee S, 2017).

<CONFIDENTIAL TABLE>

Table 7: Contracts vs. projects per country.

* Unfortunately, not all percentages are handled in the research of Employee S (2017). Therefore, the countries with no percentage are considered 0/100.

6.4.2 Results and reasons lost, won or abandoned according to C360

In this section, we discuss the results of the analyses with the data of C360. Before starting the analyses, the big contractors are excluded. Examples of big contractors of Company X are: Customer X, Customer Y, and Customer Z (Employee S, 2017). In this way, the aim is more at the results of projects, resulting in more reliable percentages. After the filtering, we look at the distribution of the won, lost or abandoned revenue to determine the volume. This is evaluated in C360 because in this tool, the outcome and reason why, are stored for each entered order.

In the table below we can see the percentages of projects that are won, lost or abandoned. These data are retrieved from the data gathering tool: C360. According to Employee W (C360) not all data are valid because carelessness of the filler or because the fact the data are not known. For the Product 1 X orders and for the Product 2 X orders are analysed.

<CONFIDENTIAL FIGURE>

Figure 10: Results Product 1 and Product 2.

In the graphs below the reasons why a deal is lost, won or abandoned is analysed.

<CONFIDENTIAL FIGURE>

Figure 11: Reasons won, lost or abandoned for Product 1 and Product 2.

From both lost figures, we conclude that Company X lost many projects because of Company X's price and smaller but still notable number of projects are lost because of product offering and relationship. If we look at the deals won, Company X aims at the relationship with its customers. Also, the involvement of Company X in the decision-making process is shown in the percentage of won because of Company X's solution. The company aims to start in an early phase with the customer to discover the customer's needs to come up with a product which meets all properties. This is shown in the reasons why projects are won due to price, these were only X% and X% of the total won projects. Won due to relationship is by far the highest, namely X% and X% of the total won projects. Therefore, we conclude that Company X is not a price fighter and focus on customer relationship.

6.4.3 Current hit-rate

To calculate the current hit-rate according to C360, the won projects are divided by the total projects each month for the period of 2015-2016. So, the ratio of successful projects is examined.

Furthermore, we calculated the current hit-rate based on volume. To calculate this hit-rate, the intake of 2016 from C360 is compared with the total quotation value from Bid Manager and from C360. We have chosen to calculate further with the intake of 2016, because this number presents the amount of money that is won, without the consideration of delivery times and payment terms. So, when the project is won, this amount of money is added immediately to the intake.

However, the validity of the two data sources should be criticised. C360 is the most reliable source for the won projects, because often only the quotations with high potential are entered in C360. The most reliable source for the total quoted volume is determined by looking at the number of orders that are entered in C360. Some countries have too few orders to do a good analysis. Therefore, we consider C360 for the total quoted volume, if there is met to the minimal number of orders (the priority rule). Otherwise, the quoted volume of Bid Manager is used for further calculations. The drawback of Bid Manager is that quotations are sometimes entered multiple times or are just used as an indication.

Together with my principal, we decided which hit-rate is most likely and created the priority rule. For the countries in which C360 was often used, the C360 outcomes are taken seriously. When too few orders have been entered in C360, the quotation volume of Bid Manager is taken. Only for Country 17 the outcome was extremely high and unlikely (X%). Therefore, no further calculations are done with this hit-rate of Country 17.

Hit-rate with outcomes C360

Firstly, we discuss the calculations using only C360. The number of won projects is compared to the number of lost or abandoned projects for each month, from January 2015 until December 2016. This time range has been chosen because C360 was not fully operational at Company X before 2015. As already mentioned in the theoretical perspective the hit-rate is the ratio of awarded projects. The number of orders is listed in the table below for each month starting on January 2015 to December 2016. In the graphs below you can see that some hit-rates are 100% or 0%. In these months, mostly a few orders are placed and therefore all orders in these months are successful (100%) or not successful (0%). The average hit-rate is X% and X%, respectively for the Product 1 and Product 2, according to C360.

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Table 8: Number of entered quotations Product 1 & Product 2 2015-2016.

<CONFIDENTIAL FIGURE>

Figure 12: Hit-rate 2015-2016 Product 1 (C360).

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Figure 13: Hit-rate 2015-2016 Product 2 (C360).

In the graphs above, the average hit-rate is relatively high. This is because low potential orders are not always converted from Bid Manager to C360, because these are considered as a waste of time.

Order volume hit-rate using intake and total quotation volume

Another way to calculate the hit-rate is by involving Bid Manager. This calculation is done by dividing the intake of 2016 with the quoted volume of Bid Manager and C360. The projects do not have to be filtered in these analyses, because no contracts are concluded. Because of the two different sources, also two different hit-rates are calculated. This is a very different calculation from the calculation as done in the previous paragraph. In this calculation, the focus is on the volume of the projects instead of the number of projects that are won, lost or abandoned. The bold hit-rate percentages are the percentages that represent best the actual hit-rates. In the rest of this report, these hit-rates are named as most-likely hit-rate. The priority rule to choose the most-likely hit-rate is explained in Section 7.2.

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Table 9: Hit-rate Bid Manager.

6.4.4 Sales turnover

In this section, we present the sales turnovers of both products. Firstly, we look at the volume of orders won according to C360. Secondly, we look at the total sales turnover and intake per country for 2016. The intake of 2016 per country is used in further calculations.

Sales turnover per month (C360)

In the graphs below, we present the revenues (sales turnover), retrieved from C360, for the Product 1 and Product 2 plotted for the 24 months of 2015 and 2016. In these graphs, we see that in the last months of the year more revenue is achieved with several peaks. However, we must consider the number of the projects. Not all information has been entered in 2015. In 2016 more projects have been converted to C360 and this gives a better indication for the sales turnover.

<CONFIDENTIAL FIGURE>

Figure 14: Revenues Product 1 2015-2016.

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Figure 15: Revenues Product 2 2015-2016.

In the graphs above, some peaks arise. This could mean that many or big projects have been offered to Company X or many offers have been created. As already said in earlier sections, the data of C360 are not completely accurate. Not all orders have been entered in C360 and especially the volumes of lost revenues and abandoned revenues should be much higher, because many projects are not transferred from Bid Manager to C360.

Sales turnover and intake per country (C360)

In the table below the intake and sales turnovers are shown. Both are retrieved from C360. These numbers are taken as base for the calculations for the most likely hit-rate, which is discussed in Section 7.2.

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Table 10: Sales turnover and intake 2016 (Employee W, 2017).

In Table 10, we miss the following countries: Country 10, Country 11, Country 12 and Country 15. This means that no data were available for these countries. The sales have not been filled in in C360 or no sales have taken place at all. In further calculations, we continue with the intake (last column), because this presents best the won volume. The sales turnover is the amount of money received, after delivery times and payment terms. The intake gives us the sales when there is no time between agreement and payment.

6.4.5 Segments

The number of orders and the volume of each segment are investigated with two sources: C360 and the report of Employee S (2017). This evaluation is useful to get a better insight in which segment most projects are ordered to understand the impact per segment.

In Figure 16, the number of orders per segment are shown, retrieved from C360. Many projects are entitled as unknown, other or unspecified and is a very large category compared to the known segments. This is because many projects are filled in with carelessness or are set the wrong segment. Therefore, many segments have zero projects. Because these data are not entirely valid, it cannot be used in further calculations or an analyse per segment.

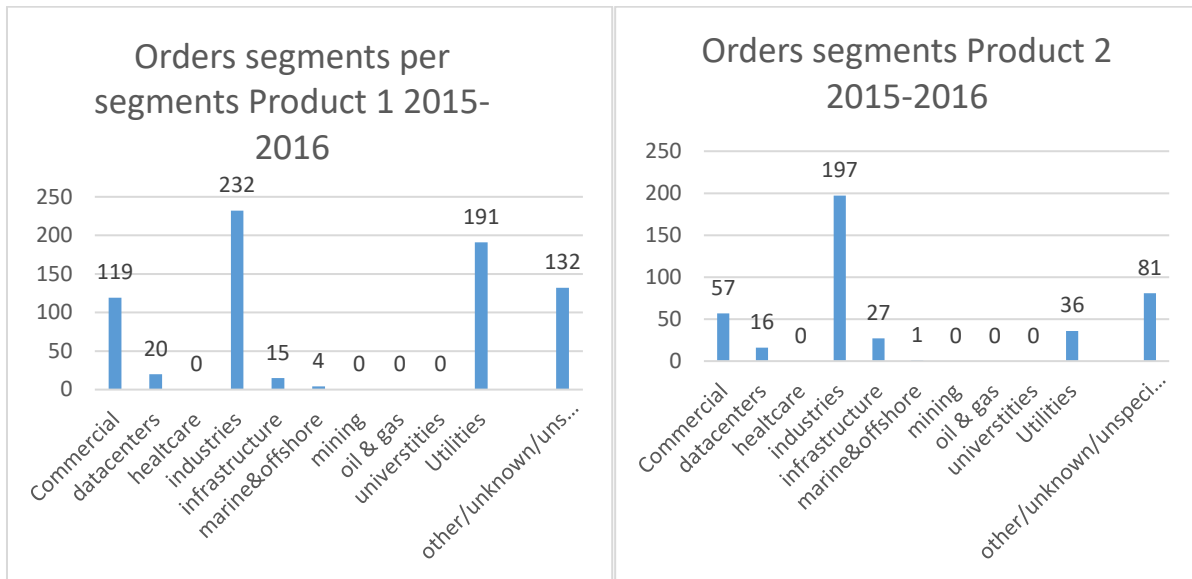


Figure 16: Orders per segment Product 1 and Product 2.

Besides the data of C360, also the report from Employee S (2017) is used to get a better understanding of the distribution of the segments. The distribution is shown in Figure 17.

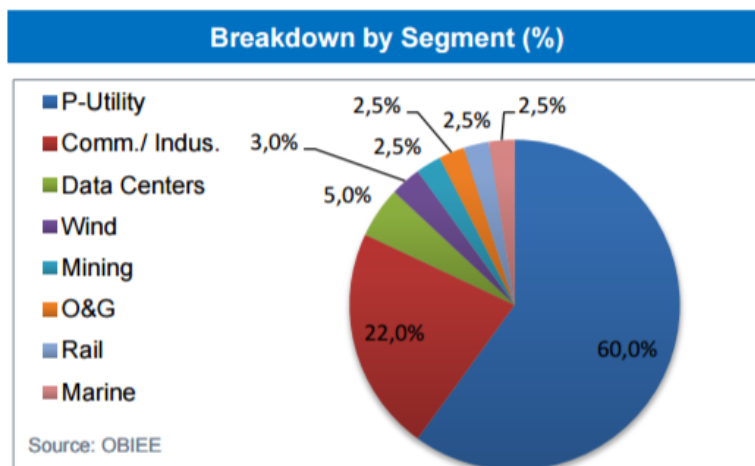


Figure 17: Breakdown by segment (Employee S, 2017).

These outcomes correspond to the outcomes of C360. Also, the utility, commercial and industries are in this report the largest markets for Company X. Therefore, we conclude that Company X has the largest sales in these segments.

6.4.6 Financial performances

In this section, we discuss the current financial performance indicators, current standard, manufacturing and operating profit. Furthermore, we explain the Transfer Multiplier.

Standard profit and margin

Firstly, we discuss the standard profit. As already mentioned in Section 4.1 the standard profit is the sales turnover or revenue, minus the material cost and labour cost. The material cost is the cost for the materials that are needed to manufacture the concerned product. The labour cost is calculated by multiplying the necessary working hours by the salary per hour. In the current operations, Company X aims to get a standard average margin of approximately Z% per order. This percentage is

chosen because with this percentage it is likely that there is an operating profit or end-to-end profit at the end. We took the average List Price and average material- and labour cost. Therefore, the only variable is the List Multiplier to calculate the standard profit of all countries.

Standard profit per product(\$) = *List Price * List Multiplier – Material cost – Labour cost*
 Equation 7: *Standard profit per product (\$)* (Company X, 2006).

If we fill this equation with the prices and cost for a standard Product 1 and Product 2(see Section 7.2) the Standard profit (\$) and the necessary, List Multiplier to achieve Z% standard margin is as follows:

- Product 1.

X * List Multiplier -Y.

Positive standard profit per product is achieved with a List Multiplier of Y/X=0.458. To achieve a Z% standard profit (profit/sales), to cover manufacturing cost and operating cost, the List Multiplier should be: $X / (1-Z) / X = 0.705$.

- Product 2.

x*List Multiplier-Y.

Positive standard profit per product is achieved with a List Multiplier of Y/X=0.433. To achieve a Z% standard profit (profit/sales), to cover manufacturing cost and operating cost, the List Multiplier should be: $Y / (1-Z) / X = 0.666$.

To calculate the current profit margins, the Product Line X May 2017 YTD document is used (Company X, 2017). The current overall standard margin is X%. In US Dollars, this means: \$X standard profit. The total overview and calculations of all current margins are listed in Appendix 1, in the column named: “2017 Profit Plan”.

Current manufacturing profit and margin

The manufacturing profit is calculated by subtracting the manufacturing cost (or net variance cost) from the standard profit. Because not all data have been stored of these cost per country, the overall manufacturing cost per product of Company X is used, retrieved from the YTD Actuals of May 2017. The overall manufacturing cost per product is X%-X%=X% of total sales (Company X, 2017). In US Dollars, this means: \$X manufacturing cost. The current overall manufacturing profit is \$X and the manufacturing margin is X% of total sales (Company X, 2017).

Manufacturing profit(\$) = *Standard profit(\$)* – *Manufacturing cost(\$)*
 Equation 8: *Manufacturing profit.*

Current operating profit and margin

Just as the manufacturing profit, the average of supportive cost per product of Company X is used, resulting from the YTD Actuals of May 2017. The average operating cost for the Product Line X is X% of total sales (Company X, 2017). In US Dollars, this means: \$ X operating cost. The current operating profit is \$X and the operating margin is X% of total sales (Company X, 2017).

Operating profit(\$) = *Manufacturing profit(\$)* – *Distribution cost(\$)* – *Administrative cost(\$)* – *Selling cost(\$)* – *R&D cost(\$)* – *other cost(\$)* + *other income(\$)*
 Equation 9: *Operating profit.*

Link with transfer multiplier

The supportive cost caused by the wages of the supportive employees (wages), wages of the employees of Country Sales Organisations and bonuses for the Country Sales Organisations, which are different for each order and product (variable cost). For standard projects or contracts a fixed percentage is taken to pay the Country Sales Organisations. When it is a special, mostly with more volume, the Country Sales Organisations are paid with X percent of the total sales volume, which is called Commit. Unfortunately, not all product lines are following this systematic, especially the Product Line X (including Product 1 and Product 2). These products have their own calculation of what the Country Sales Organisation can keep as their wage. For these products, the difference between the Transfer Multiplier and the achieved List Multiplier is payment for the Country Sales Organisations. So, the Transfer Multiplier is the purchase price for Company X's Country Sales Organisation. These Transfer Multipliers are mostly around X. For example, when a Country Sales Organisation won a project with a List Multiplier of X with a Transfer Multiplier of X, the Country Sales Organisation keep X percent of the total sales turnover. With these revenues, the Country Sales Organisation can pay the wages and all other variable and fixed cost. On top of that, it was agreed within Company X that each Country Sales Organisation should make approximately X percent profit margin. The overview of all Transfer Multipliers is listed below. Country 7 and Country 15 have no own Transfer Multiplier. This is because the sales for Country 7 are directly from Company X, and Country 15 uses the same Transfer Multiplier as Country 5.

<CONFIDENTIAL TABLE>

Table 11: Transfer Multipliers.

Every country has different Transfer Multiplier because every country has their own market characteristics and own customer's willingness to pay. The Transfer Multipliers are reviewed and adapted if necessary, every year by the financial and pricing departments.

6.4.7 Comparison won orders

Finally, we evaluate some won orders in the past. In this section, we compare the List Multiplier, with which the order is won and the List Multiplier following the new pricing model of Edens (2016). Furthermore, the difference in sales is calculated using the New Multiplier. The information to fill in all variables are obtained with employee U (Manager Business Support Commercial and Large Projects), employee Y (Manager Product Marketing Bid Manager) and Employee R (Manager Business Development Segments). These data are used to fill in the variables as stated by Edens (2016). Four recent orders are evaluated. These four have been selected because these contain a Product 1 or Product 2 order. Many orders were not included because the order was maintenance or partial renewal. In the tables below the plural comparison is made. Because there is also a different List Multiplier used for the accessories and others, we used 1.000 for this category. The calculated List Multiplier is used for the List Price of the Product 1 Switchgear.

<CONFIDENTIAL TABLE>

Table 12: Data four won projects/contracts.

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Table 13: Calculation new multiplier & difference in sales for four won projects/contracts.

In Table 12 the choices for every variable are shown, resulting in a new List Multiplier. This new List Multiplier is shown in the first column of Table 13. In the second and third column of Table 13, the List Multiplier is shown for which the order is won. As can be seen, the difference for the larger project or long contract is not very big (<10%). Therefore, we see no big implications for these two orders. For the small orders, there is a greater difference. Especially for SSE contracting, in which Eaton could miss almost three thousand US Dollars. Therefore, it is wise to check and analyse the orders with a large volume. In the recommendations, I come back to this. Four comparisons are too low to draw conclusions. Therefore, these comparisons should be extended in further research. With more comparisons, Eaton can test the new pricing model and link this with this assignment.

7. Financial impact of new pricing model

In this chapter, we evaluate the financial impact of the new pricing model (Edens, 2016). Firstly, we describe the variables of the new pricing model and in which way they calculate the “right” price. Secondly, we evaluate the margin changes. So, we compare the old margins (operating and standard margin) with the margins using the new pricing model. Thirdly, we give an estimation of the sales volume changes because of the new pricing model. All these outcomes are calculated using an Excel document. The assumptions and methods are described in concerning sections. Many outcomes are listed within this chapter. Summary sheets of all calculations and the Product Line statement are placed in Appendix 1. Finally, we look at other performances rates that changes because of the new pricing model. In this sub-question, we look for example at the change in RPI-value. The main question together with the sub-questions are listed below.

Which performances are affected by the new pricing model and what is the expected impact on these performances?

This main question is divided into the following sub-questions:

- *What are the new variables and in which way do they calculate the “right” selling price?*
- *What are the expected profit and demand changes?*
- *Which other important performances change because of the new pricing model?*

7.1 What are the new variables and in which way do they calculate the “right” selling price?

In this research, we must understand the bachelor assignment of Edens (2016) to gain a better understanding the modifications and the (financial) impact. Currently the selling price is determined with country and customer related discounts. Edens (2016) determines the price based on seven variables. These variables and the table with weights and score ranges are listed below.

Variable (i)	Explanation
1. Position	Five different scales for classifying the countries. The countries are classified using SF6 free, which is based on the Climate Change Performance Index. This index considers: emission level, development of emissions and climate policy. The better the country scores on this index, the higher the score for this variable.
2. Country	Customer's country of residence score based on purchasing power, surveys and a benchmark score. The higher these aspects, the higher the score for this variable.
3. Customer relationship	Four different states of customer relation: Long relationship (>5 deals in the past), short relationship (1-5 deals in the past), rejected (contracted but no deals in the past) and first contract (no contact in the past). The more contacts in the past, the higher score for this variable.
4. Volume	Five different volumes. Small project (<\$20000), medium project (\$20000-\$50000), large project (>\$50000), short contract and long contract. The smaller or shorter the project or contract, the higher the score for this variable.
5. Segment	Ten different market segments of customers. Because the average prices differ in different markets, key account managers and business development managers are asked to rank the segments. Fifth and sixth are the reference points and the upward or downward step size is 2,5%.
6. Sales process	Moment of customer contract. The phase in which the customer enters the sales stages, the higher the score for this variable.
7. Competitors	Number of competitors in the market in a certain area. This has five different states, namely: 0 competitors, 1 competitor, 2 competitors, 3-4 competitors and 5 or more competitors. The higher the number of competitors present in the market, the lower the score of this variable.

Table 14 New variables (Edens, 2016).

Variable	Weight (Wi)	Score range(Si)
1. Position	-	[0.00-0.07]
2. Country	-	[-0.08-0.08]
3. Customer relationship	0.349	[0.80-1.15]
4. Volume	0.156	[0.80-1.15]
5. Segment	0.068	[0.90-1.10]
6. Sales process	0.272	[0.80-1.15]
7. Competitors	0.156	[0.85-1.10]

Table 15: Weights and Scores per variable.

Each variable received a weight (Wi) and score (Si), in which all customers can be assigned to a specific multiplier (see table above). For the determination of the selling price, Company X first determines a List Price for every product. This List Price is set for every product with every type of addition to the standard product. When new features are added for a certain product, a new List Price is created considering the material, development and labour cost. According to Employee R (manager business development), this List Price is based on market prices of competitors and experience. The final market price for the Product Family X is calculated according to the following formulas (Edens, 2016):

$$\text{Final market price} = \text{List price} * (0.735 + \text{Differentiation value})$$

Equation 10 Final market price.

$$\text{Differentiation value} = S1 + S2 - (1 - (W3 * S3 + W4 * S4 + W5 * S5 + W6 * S6 + W7 * S7))$$

Equation 11: Differentiation value.

With this new way of calculating the differentiation value, the pricing policy is more variable and customised for each customer. The final market price is restricted to 0.470 on the lower side and 1.000 on the upper side (Edens, 2016). With this variable way of pricing, we assume that a better first offer is given to the customers and the objective to increase the operating profit can be pursued. But, this assumption must be evaluated and tested further in this research.

7.2 What are the expected profit and demand changes?

In this section, we estimate the possible financial impact of the new pricing model. To estimate the impact, we do calculations on the following aspects to estimate the (expected) financial impact: change in List Multiplier, change in hit-rate, change in sales turnover and change in profit margins. These calculations are done using the program Excel. In this way, all calculations are linked to each other. In the excel document, a summary sheet is created with all the main outcomes of all. Furthermore, the input sheets (labelled with a green colour), can be adapted by Company X, when better data are available. This makes it possible to use this model in the future.

7.2.1 Change in List Multiplier

In this section, we discuss the current List Multipliers and the List Multipliers calculated with the new pricing model. All these multipliers are plotted in the graphs further in this section. An explanation and the source and method of these multipliers are explained below for every multiplier.

- Firstly, we discuss the worst-case and best-case multiplier for each country, when following the new pricing model. The worst-case and best-case multipliers are calculated with the country specific variable scores supplemented with all minimal or maximal scores for each variable.
- Secondly, we discuss the current Minimal Multiplier. This multiplier is retrieved from the first revision of the Multiplier Overview made on 1st February 2017. In the current situation, all List Multipliers are defined per country. For every country, there is a target and minimal List Multiplier. Country Sales Organisations can offer Company X's product in this range (see Section 6.1). Often the used List Multiplier is close to the Minimal Multiplier. This is because the Target Multiplier is often not achievable. When the Country Sales Organisations only can sell Company X's products for a lower List Multiplier than the Minimum Multiplier, they should ask permission to the supportive departments. The higher the volume, the higher ranked employee who must give permission for the order.
- Thirdly, the quoted List Multiplier is retrieved from the RPI-calculations, which are retrieved from Bid Manager. Because only the Product 1 is measured with the RPI-model, only the quoted List Multiplier for the Product 1 is available. Therefore, this List Multiplier is excluded in the graph of the Product 2. The quoted List Multiplier is calculated by taking the weighted average of the period 2016-2017. Unfortunately, there were no data for the countries: Country 15, Oman, Country 11, Country 12 and Country 16 in the chosen time interval. This can have two meanings: no data have been entered in Bid Manager or there were no successful deals in the time interval. For these countries, the Minimal Multiplier is taken. In a conversation with Employee Z (Strategic Pricing Manager), these values are taken from the last entered data for each order. Therefore, it cannot be said with 100% certainty that these values are the locked and winning List Multiplier. The quoted List Multiplier is often near the Minimal Multiplier.
- Fourthly, the new List Multiplier is calculated, according to the new pricing model. The new List Multiplier is calculated by taking the country and position specific variable score,

multiplied by the weight for these two variables. For the other five variables, a different approach is chosen. the most common outcome per variable per type of order (project or contract) is chosen together with my principal. These outcomes for both projects and contracts are filled in and multiplied with the weight of each variable. These outcomes are summed for both projects and contracts. After that these outcomes are multiplied with the distribution of contracts and projects in each country. This weighted average gives a good direction for what the differentiation value is when implementing the new pricing model.

The outcomes of these five multipliers for each country can now be summarised in graphs. With these graphs, we can seek for striking results and make several comparisons. The worst case, new and best-case multipliers are the same for Product 1 and Product 2. However, the Minimal Multiplier is different for some countries. Both graphs are shown below.

<CONFIDENTIAL FIGURE>

Figure 18: Multiplier scenarios per country per product.

The first striking thing in these graphs are that the Minimal Multipliers of Country 1 and Country 2 are above the best-case List Multiplier. This means that, in the current situation the products in these two countries are offered for a too high List Multiplier. Therefore, there is much potential in these markets, when lowering the List Multiplier. All other Minimal Multipliers are within the bandwidth of the worst case and best-case List Multiplier. Furthermore, for many countries the Minimal Multiplier is above the new, calculated List Multiplier. This would mean that these countries can lower their price. All changes in percentages are shown in Figure 19 and Figure 20.

Another striking point is that the average quoted List Multipliers for some countries are below the Minimal Multiplier. This is remarkable because all the orders that are below the Minimal Multiplier must be communicated to the plant in City X and for the big differences even to the Product Line manager: employee X. Especially Country 3 is very remarkable. The quoted List Multiplier is 0.123 lower than the Minimal Multiplier. This would mean that for many order permissions should have been asked from the supportive departments in City X.

<CONFIDENTIAL FIGURE>

Figure 19: Difference minimal and calculated List Multipliers.

<CONFIDENTIAL FIGURE>

Figure 20: Difference minimal and calculated List Multiplier (%).

From Figure 19 and Figure 20, we conclude that the new List Multipliers decrease for most countries. Especially Country 1 and Country 2, which even decrease by X%. It should be said that these countries had a very high List Multiplier, almost equal to the best-selling countries. Therefore, it is not very strange that these two countries have almost no market shares.

7.2.2 Change in hit-rate

In this section, we look at the change in the hit-rate. During the assignment, we concluded that it is not possible to predict the ratio using the price elasticity of demand, because of the diversified product with very diversified prices for each country and customer. Therefore, we have changed the approach to calculate the hit-rate. We investigate the volume which is lost because of the variables

of the new pricing model. Not all countries have sales entered in Bid Manager and C360 in the period 2015-2016. Therefore, these countries are not considered further in the calculations and this assignment. The countries for which this is the case are: Country 15, Oman, Country 11 and Country 12.

Data gathering with C360 and Bid Manager

In Section 6.4, we calculated the current hit-rate using the intake (revenues from all completed projects) and quotation value from Bid Manager and C360. This calculation is more focused on the volume of the orders instead of the amount of orders which are successful, compared to the number of lost orders.

Intake 2016

To indicate the project volume per country we multiplied the intake of 2016 by the percentages of projects per country, according to Employee S (2017). In this way, we investigate the volume of the projects for each country. Contracts are excluded because they can have multiple payments, which results in an inaccurate comparison, because the quoted volume could be in earlier periods and the output in later periods. Even after the contracts exclusion still some unexpected results arise. This is because not many orders have taken place (for example Country 4), have been entered incorrectly, or have been entered twice. Therefore, the validity of these outcomes should be doubted. In the recommendations, we come back to this to calculate the intakes, when more reliable intakes are known.

Current most likely hit-rate and priority rule

For the quoted volumes of 2016 we consider Bid Manager and C360. For C360 the quoted volume of 2016 is calculated in two ways, namely using the data from total list of all orders and the data from the document, from which the intake and profit plan are retrieved. For some countries, the volume and number of orders were equal in these two documents but for most countries this was not the case. Therefore, both documents are used and the document with most orders is considered as most reliable. The reason why these documents are different is because the data are filtered on doubles, contracts or other aspects. Because no contracts are quoted in C360 in 2016, the quoted volumes of C360 do not have to be multiplied with the percentage of projects in the concerned country.

Together with my principal, we selected the most likely hit-rates for all 18 concerned countries, choosing between the data from Bid Manager and C360. We developed a priority rule to choose the most likely quoted volume, resulting in a most likely hit-rate. In addition, this priority rule is also used whether the outcomes for percentage of lost due to price, competitor and relationship is reliable. The data of C360 had the main priority when choosing the most likely hit-rate, despite some not entered data (especially lost orders). If there were enough observations (orders), C360 is used as source for the calculations. To do further calculations using the data of C360, we have chosen for a minimal number of 9 orders per country for 2016. In this way, the top-selling and medium-selling countries are calculated with the data of C360. When countries have less than 9 orders in 2016, we considered the quoted volume of Bid Manager. After that, the most likely hit-rate is calculated by dividing the intake 2016 (excl. contracts) with the selected quoted volume. We considered the most likely hit-rate, if the hit-rate is below 50%. So, the won volume should be less than the half of the quoted volume.

After this priority rule, for 17 of 18 countries a likable hit-rate is calculated. Only for Country 17 an unlikeable hit-rate came forward, namely X%. Because no data was available in C360, the data from Bid Manager must be taken. This would mean that Xpercent of all quoted volume is won by Company X. This is very unlikely, which is also strengthened by the percentage that is lost on price, relationship and competitor, according to the Country Sales Organisation (see Section 7.3). Therefore, we have chosen to set this most likely hit-rate as invalid. The average hit-rate for Product 1, using the priority rule is X%.

<CONFIDENTIAL TABLE>

Table 16: Most likely hit-rate Product 1 2016.

For Product 2 it was more difficult to calculate the most likely hit-rates because of more incompleteness of the data. The results are shown in the table below. Many countries have a most likely hit-rate of 0%. This indicates that no successful projects took place in 2016 and converted to C360. The average hit-rate for Product 2 using the priority rule is X%.

<CONFIDENTIAL TABLE>

Table 17: Most likely hit-rate Product 2 2016.

Now we know the current hit-rates and the priority rule, we can compare these numbers to the expectations for 2017 and 2018 using the new pricing model. This is elaborated below.

Growth potential

To predict the new hit-rates we take a closer look at the potential market shares and the part of the lost orders due to price, relationship and competitor. Because of the extra intake, the market share also increases. In the beginning, we assumed that all orders which are lost due to price, relationship and competitor are won, when using the new calculated List Multiplier. This extra intake is summed with the current market sales of Company X market and divided by the total market volume of the Secondary Switchgears. Especially the three top-selling countries with a market share above X%, should get extra attention, because these sales are very important for the profitability of Company X. It is difficult to predict precisely the new intake, because of the assumptions that have been made and many unknown side effects that play a role in winning an order.

Firstly, the percentage of lost orders due to price, relationship and competitors (P.R.C.) is determined. These three variables are included in the new pricing model and should be won now. The percentage is calculated by the number of projects that are lost due to P.R.C. divided by the total projects. During the calculations with data of C360 in Chapter 6, we came to the conclusions that not all data are available to calculate this percentage. Therefore, we have chosen to contact the Country Sales Organisations, to ask what they estimate based on their experience. For each country, one employee of the concerned country has been contacted. The findings of these contacts are listed below. Not all sales persons give the percentages of both products. When only one percentage is given, this percentage is used for both products.

<CONFIDENTIAL TABLE>

Table 18: Lost due to price, relationship and competitor according to Country Sales Organisations.

In Table 18, we see that the percentages are very high in most countries. Therefore, we conclude that there is much potential for all these countries. The outcomes of Country 1, Country 2 and Country 5 are remarkable. Country 1 has no up-to-date data, because Company X is abandoning this market and no new orders are taking place soon. Country 2 has just started with selling the products of the Product Family X and therefore, the data are insufficient to give a good approximation. Country 5 lose 0% on price, relationship and competitor. This is because the selling prices of the Country 5 are argued as very fine tuned with the market. In a conversation with Employee Z, we concluded that the outcomes of the above table do not perfectly represent the actual percentages. These sales persons look from their sales perspective and could deviate from reality. Therefore, these outcomes are only taken when the data of C360 are insufficient.

Secondly, the market share potential is evaluated. To calculate the market share increase, the intake increase must be calculated. This increase should be added to the current market sales of Company X. For these calculations, we use multiple sources, both internal as external. The potential is calculated by looking at the current market share per country, current market sales of Company X per country, total market volume per country (Company X, 2017), Intake of 2016 (C360), quotation volume from Bid Manager, quotation volume from C360 and percentage of which amount of orders are lost due to price, relationship and competitor (C360 & survey with Country Sales Organisations). The current market share is the current market share on the market of secondary switchgears. Besides the Product Family X, also more products are included in this market sales, but these products are not in the scope of this assignment. Because the markets sales are not separated per product, we use the market sales of this market sales as base and add the potential extra intake from the Product Family X.

As mentioned earlier, the data from Bid Manager and C360 are not entirely accurate. In Bid Manager, some orders are placed multiple times to check or because of other reasons, after which not all double orders have been removed and remained in the Bid Manager data. Together with employee Y, we have chosen to multiply the total quoted volume with a correction factor of 0.8 to calculate a more reliable quoted volume. The quoted volume of C360 is also not entirely reliable because not all orders are transferred from Bid Manager to C360. However, the orders that are transferred to C360, are considered as reliable.

Besides the calculations of C360 (lost because of P.R.C.) with C360 (quoted volume) and survey (C.S.O.) with Bid Manager (quoted volume), also a hybrid is created and calculated. For this hybrid, the same priority rule is used as for the most likely hit-rate. Therefore, firstly the number of orders of C360 is analysed. If the number of orders is more than 9 orders, the data from C360 are used. Otherwise the survey and the quoted volume of Bid Manager is used. The sales persons give their expectations on the total lost orders. To calculate the potential extra intake, this percentage must be corrected to a percentage on the total orders (see second possibility in Equation 12). Concluding the following formulas are used to calculate the intake increase and market volume increase:

1. *Potential extra intake(using C360 per country) = Lost due P. R. C. (C360) * Total quoted volume (C360)*
2. *Potential extra intake(using Bid Manager and survey) = Lost due P. R. C. (survey) * Total quoted volume (Bid Manager)*
3. *Potential extra intake(hybrid) = Lost due P. R. C. (Hybrid) * Total quoted volume(Hybrid)*

Equation 12: Potential extra intake (three possibilities).

$$\text{Potential market share} = \frac{\text{Current market sales} + (\text{new potential market sales} - \text{intake 2016})}{\text{Total market volume}}$$

Equation 13: Potential market share.

The current market share and the market share increases for all 18 researched countries with the new intake of Product 1 are shown in the table below.

<CONFIDENTIAL TABLE>

Table 19: Potential market share increase with new intake Product 1 and Product 2.

According to employee X, it is unrealistic that the top-selling countries (Country 8, Country 7 and Country 6) increase much. Maintaining the sales in these markets should be the main priority. Therefore, the top selling countries should get more attention, to avoid a lowering of the overall profitability. In the worst case, the current sales and market share decrease, because regular customers abandon Company X. To avoid such situation, I advise to have more supervision on the larger projects and contracts (>\$ 50,000) of the Product Line and Business Development department in City X. In this way, the profitability is more protected and improved, if possible. I come back to this in the recommendations.

Calculation potential hit-rate

To calculate the potential hit-rate, we formulated an equation. Because the assumption is made, that the new List Multiplier results in the “right” price, the orders that are lost due to P.R.C. are now won. Therefore, this percentage is added to the current most likely hit-rate. The hybrid percentage is taken because this is considered as the most reliable increase.

$$\text{Potential new hit - rate (\%)} = \text{Most likely hit - rate 2016 (\%)} + \text{Lost due P. R. C. (hybrid)}$$

Equation 14: Potential new hit-rate.

The outcomes of the potential hit-rates for Product 1 are shown in Table 20.

<CONFIDENTIAL TABLE>

Table 20: Calculated potential new hit-rate Product 1.

With the findings of Table 20, we see that there is potential in most of the markets when the orders which are lost due to price, relationship and competitor are won. The higher the percentage lost due to price, competitor and relationship, the higher the potential extra intake, given the total quoted volume. Some countries have very high potential hit-rates, Country 6 even above 100%. This is because all orders that are lost due to P.R.C. are added to current situation. Whether all these lost orders will be won, should be proven in practice. For Country 6, the current intake of 2016 summed with the potential intake is more than the total quoted volume of 2016. Therefore, we see again that the data are not entirely accurate.

In Table 21, the same method is used to calculate the potential new hit-rate for Product 2.

<CONFIDENTIAL TABLE>

Table 21: Calculated potential new hit-rate Product 2.

Just as the outcomes for Product 1, the potential hit-rates of Product 2 increase much. Furthermore, Product 2 has just been launched in many countries. This can also be seen in the current most likely hit-rates, which are zero for seven countries and are below 1 percent for many.

7.2.3 Change in sales turnover

In the previous section, we already calculated the potential extra intake, to calculate the potential market share. In this section, we calculate the new potential intake. The change in sales turnover is very important to measure the success of the new pricing model. We chose to calculate with the outcomes of the hybrid formula, because this formula considers the number of observations (orders) in C360, to calculate with a more reliable quoted volume. The potential intake volume is calculated using the following formula:

$$\text{Potential intake volume (hybrid)} = \text{Current intake 2016 (including contracts)} + (\text{Lost due P.R.C. (hybrid)} * \text{Total Quoted volume (hybrid)})$$

Equation 15: Potential intake volume.

Using the formula above for hybrid, the outcomes per product and per country are calculated and shown in Table 22 and Table 23.

<CONFIDENTIAL TABLE>

Table 22: New intake Product 1.

<CONFIDENTIAL TABLE>

Table 23: New intake Product 2.

In the calculated (ideal) situation the intake volume of Product 1 goes from \$X to \$X. So, an increase of \$X extra intake volume for the Product 1. For Product 2 the intake volume increases with \$ X to \$ X.

Not all data are 100 percent watertight, therefore we looked whether the increase is realistic. As already mentioned in the section of the market shares, Country 6, Country 7 and Country 8 have large market shares and are very important for the profitability of Company X. Therefore, large projects and contract should get extra attention, at the beginning. In this way, the profitability is more protected and the risks are lower. In the recommendations, we come back to this.

An extra calculation has been made without the three top-selling countries. In this case the current intake volume of Product 1 increases with \$X. For Product 2 this comes down to a \$X extra intake. Because it is, according to the calculations, possible to increase with the calculated amounts, the increase for the countries mentioned is included in further calculations.

Increases in sales turnover according to profit plan 2017

To test the calculated new potential intake, we look at the profit plan of 2017. In the profit plan, the expectations are shown what the sales turnover should be at the end of 2017. These expectations are examined per country and for the total market. On average, the increases are for respectively the Product 1 and Product 2: X% and X% of the current sales turnover. Furthermore, we look at the percentage grow per country, but these outcomes are not in line with previous data. On the other

hand, we have looked at which countries have high potential according to this profit plan. The concerned countries are divided into three categories.

- High potential sales (>100,000 sales increase): <<CONFIDENTIAL>>.
- Maintain sales (-100,000<profit plan<+100,000): <<CONFIDENTIAL>>.
- Low potential sales (>100,000 sales decrease): <<CONFIDENTIAL>>.

7.2.4 Change in profit margins

Now we know the change in intake volume, we can continue with the calculation of the change in margins. At the start of this assignment, we selected two profit margins as key indicators whether the new pricing model could be successful or not. As already mentioned in Section 6.4, Company X has three levels of profit margin, these are: standard profit, manufacturing profit and operating profit.

- The standard profit is calculated by the total sales turnover subtracted by the material cost and labour cost.
- The manufacturing profit is calculated by subtracting the manufacturing cost, such as failure cost or other variances that are unprofitable for the production process.
- The operating profit, or end-to-end profit, is calculated by subtracting the support cost and other costs. The support costs are expenses incurred in activities not directly associated with production. Examples of these supportive cost are: transportation and logistics.

To calculate these three profits, some aspects and assumptions need to be considered. These aspects and assumptions are explained further in this section. The profit calculations are shown below.

Total sales turnover			
Material cost	-		
Labour cost	-		
<hr/>			
Standard profit			
Net variances cost	-/+		
<hr/>			
Manufacturing profit			
Distribution cost	-		
Administrative cost	-		
Selling cost	-		
Research & development cost	-		
Other income and expenses	-/+	-	
<hr/>			
Operating profit			

Figure 21: Profit calculations Company X.

To calculate these margins and cost, we firstly discuss which List price and which cost structure we take to calculate the standard profit per country. After that, the standard profit is projected at the new intake volume. Knowing the new standard profit, we continue to calculate the manufacturing profit and the operating profit.

List Price and cost structure

In this section, we discuss the List Price and cost structure for both Product 1 and Product 2. To calculate these two aspects, we have chosen to do two calculations. The first calculation looks at the

historical data from Bid Manager. The second calculation is done by taking the List Price and costs for the most sold type of product. The most sold type is aligned with my principal (Product Line Manager). The average List Price and cost structure of these types are retrieved from Bid Manager. The types that are most sold for Product 1 and Product 2 are respectively: *Type X (Product 1)* and *Type Y(Product 2)*. For these two products, the prices are discussed. In the observation, we saw that the List price is divided in four sections.

Firstly, we discuss the average List Price and cost based on historical data from Bid Manager. 17 orders have been evaluated in a time interval of 90 days. This interval is chosen because this is the largest interval before entering a specific start and end date. Most of these orders were processed by the plant in City X. Most of the customers were in Country 7, because the plant in City X is integrated with the Country Sales Organisation for Country 7. Taking the average of all these orders, I calculated the average List Price and average cost (material + labour) per product.

<CONFIDENTIAL TABLE>

Table 24: Average list price and cost using historical data.

Secondly, we use a different approach to calculate the average List Price and average cost per product. Because every type has a different List Price and cost structure, we evaluate the most sold or most common Product 1 and Product 2. As already said in the Section about Change in List Multiplier, the List Price has four categories. Because we have chosen for the standard versions of the products the special materials for non-standard engineering is equal to \$X. The average List price and average cost per standard products are listed in the table below.

<CONFIDENTIAL TABLE>

Table 25: Average list price and cost using most sold product.

From Table 24 and Table 25, we see that the average List Price and cost of Product 2 are close to each other, but are very different for the Product 1. In the historical data, most customers were Dutch and we assume that these customers order often customised products with very specific features. Because all these additional features must be processed by Company X, the production cost and therefore the List Price are much higher than a standard version as in Table 25. Because the Product 2 is a specialised product on itself, the difference is smaller. The most sold products seem as an inexpensive product compared to the average order amount, but this product has no additional features and the average order amount sometimes includes multiple products, which result in not entirely valid data. Therefore, we use the List Price and cost structure of the most sold Product 1 and Product 2 for further calculations.

In the table above, the costs are summed for both products. However, these average List price and costs are divided into different categories. The List price is divided into: Switchgear, non-standard cost, other and accessories. The amount at Switchgear is most situations by far the most expensive and the only amount that is multiplied with the multiplier. The other three divisions are mostly multiplier with one. The costs are divided into material cost and labour cost. This information for the average Product 1 products can also be retrieved from Bid Manager. Because we have chosen to evaluate the most ordered Product 1 and Product 2, the costs of specials are normally much higher, because special materials or special labour must be added to the production. These products are therefore more engineered to order or ETO than the most ordered, which is more assembled to

order (ATO). The material and labour cost for the most sold Product 1 and Product 2 are listed below. The material cost the most determining factor for the cost structure.

<CONFIDENTIAL TABLE>

Table 26: Cost structure standard products.

The division for the determination of the List price is shown in Table 27. No special materials are needed for the standard version, so the amount is equal to zero in this representation.

<CONFIDENTIAL TABLE>

Table 27: List price determination standard products.

However, it should be considered that countries on average require other specifications, which results in an increase of the cost of non-standard materials. In the next section, we look at this average quote per order per country.

Average quote value per order per country

To indicate the average quote value per order per country, we looked at the quoted value per country divided by the number of orders. This gives an indication of which countries order more standard products or more featured product. Because the data do not show us the number of products that were ordered and which orders include maintenance, the average quote value per order per country is not reliable to take as average selling price per country. However, it gives an indication of the average largeness of the order volumes per country. No further calculations are done with these data.

<CONFIDENTIAL TABLE>

Table 28: Average quoted volume per order per country (RPI measurements).

The tables above show us the average quoted volume, according to historical data and the standard product. We can see that Country 8, Country 9 and Country 10 order relatively high volumes. This could be an indication, that these countries order more featured products. A remarkable point, is that the average quoted volume per order are the same for Country 11, Country 12 and Country 13. We expect that these three countries are taken as one country in Bid Manager and C360.

Standard profit and standard margin

As already mentioned in Section 6.4, the standard profit is calculated by the total sales turnover subtracted by the material and labour cost and is the first step in the calculation of the operating or end-to-end profit. If we use the calculated new List Multipliers as calculated earlier, List Price and subtracting the material cost and labour cost of a standard product, we calculate the standard profit and standard margin (see Table 29). Countries that were excluded before, are included again for the standard margins. The standard margin is calculated for the worst-case, minimal, calculated and best-case multiplier. These outcomes are shown in the graphs below the table.

<CONFIDENTIAL TABLE>

Table 29: Standard profit and standard margin per country Product 1.

<CONFIDENTIAL FIGURE>

Figure 22: Standard profit most common configuration Product 1.

<CONFIDENTIAL FIGURE>

Figure 23: Standard margin most common configuration Product 1.

<CONFIDENTIAL FIGURE>

Figure 24: Standard margin projection onto new intake most common configuration Product 1 (\$).

The expectation that the standard profit margin per product for most countries decreases because of the new pricing model is demonstrated by the graphs of Figure 22 and Figure 23. The line for the standard margin in the calculated situation is for 15 countries lower than the minimum situation. This comes down to an average decline in standard profit of \$X and an average decline in standard margin of X% per Product 1. A lower standard margin should be no problem, if the summed operating profit per country increases. This is examined in the section about the operating profit.

The same method is used for the calculation of the Product 2. The table and graphs are shown below.

<CONFIDENTIAL TABLE>

Table 30: Standard profit and standard margin per country Product 2.

<CONFIDENTIAL FIGURE>

Figure 25: Standard profit most common configuration Product 2(\$).

<CONFIDENTIAL FIGURE>

Figure 26: Standard margin most common configuration Product 2(%)

<CONFIDENTIAL FIGURE>

Figure 27: Standard margin projection onto new intake most common configuration Product 2(\$).

For Product 2 the standard margin in the calculated situation is in 13 countries lower than minimal situation. This comes down to an average decline in standard profit of \$X and an average decline in standard margin of X% per Product 2.

Using the two projections, the overall standard margins (%) are calculated for both products combining all countries for the four situations. These two standard profit margins are shown below. In the calculated situation, the standard margin (%) decreases, which was expected at the beginning.

<CONFIDENTIAL TABLE>

Table 31: Standard margins (%) four situations.

These calculated new standard margins are used for the projection on the manufacturing margin and operating profit, in which the calculations are done for entire Product Line (Product Line X). This Product Line also includes Product 3, but we assumed nothing changes with the sales and profit margins for this product when implementing the new pricing model.

Compound annual growth rate

To do a good projection for 2018, we must know what the sales turnover is, when nothing is changed. In previous sections, the minimal situation is marked as the situation if nothing is changed. But with the theory of the compound annual growth rate a better estimation can be made. We calculate a compound annual growth rate (CAGR) for all three products in the Product Line X. CAGR is

a critical quantitative concept with a very wide range of applications. The CAGR makes it possible to estimate future values with historical data (Chan, 2009). The formula is shown below:

$$\text{Compound annual growth rate} = \left(\frac{\text{Ending value}}{\text{Starting value}} \right)^{\frac{1}{\text{Number of years between ending and starting value}}} - 1$$

Equation 16: Compound annual growth rate (Chan, 2009).

With this formula, the CAGR for all three products have been calculated. Because Product 2 has just launched in 2012, the maturity rule of Company X should be applied. This maturity rule states, that the sales can be measured after four years of sales. Therefore, Product 2 is measured from 2016. The other two products are measured from 2009 until now (2017). The outcomes are listed below.

<CONFIDENTIAL TABLE>

Table 32: Compound annual growth rates.

These numbers are used to calculate the expectations for 2018 (CAGR). In this situation, nothing changes and the pricing policy is continued. This makes it possible to compare the expectations for 2018 more accurately. We see that the CAGR for Product 2 is very high. For this assignment, this approximation is used but for future years this should be calculated again.

Product Line X statement

In this section, we calculate the potential sales turnover and profit margins. The numbers (in thousands total sales) are corrected by the sales volume per product with the calculated situation as base. The '2018 CAGR' situation is handled as the situation with no adaptations on the pricing systematic. For all four situations, the new sales turnover, standard profit and standard margin is calculated. The minimal situation uses the 2018 CAGR situation as base, because current systematic is continued. To calculate the potential sales, this base is multiplied with the expected growth in sales. For the other three situations, the potential sales turnover is calculated using the numbers of the 2017 profit plan and the potential intake from Table 22 and Table 23. We made three different Product Line statements. Firstly, the new pricing model is adapted to the sales of only Product 1. Secondly, the model is adapted to the sales of only Product 2. Finally, both adaptations are adapted. The results are shown in Table 33.

<CONFIDENTIAL TABLE>

Table 32: Standard margin in Product Line X profit measurement, three possibilities, four situations.

In Table 33, we see that the standard margin (%) in the calculated situation is lower than the minimal situation, profit plan of 2017 and 2018 CAGR. However, the standard margin in US Dollars increases. This makes sense because the new average calculated List Multiplier is lower than the average Minimal Multiplier. Furthermore, this satisfies one of the expectations made in Table 3 in Section 4.1. Namely, the percentage of the new situation decreases compared to the minimal situation and the 2018 CAGR situation. To evaluate whether the new pricing is successful, the operating profit (\$) or end-to-end profit must be evaluated. This is discussed in the sections below.

Manufacturing profit and manufacturing margin

After calculating the standard margins, we calculate the manufacturing margins. The necessary data to calculate the manufacturing profit and operating profit have been documented in the financial reports of Employee Q (Product Line Controller systems & Services/Large Products). In this

assignment, we use the 2016 Actuals and 2017 May YTD. In these documents, the fixed and variable manufacturing and supporting cost have been calculated over the entire product line. Therefore, the manufacturing profit and operating profit have been calculated over the Product Line X and not per product. This product line includes Product 1, Product 2 and Product 3. In the current reports of 2016 Product 2 is not included. This is because Product 2 was first reported in another Product Line. From 2017, Product 2 is included in the Product Line X financial reports.

The manufacturing profit has been calculated by subtracting the variances and other manufacturing cost from the standard profit. The variances include failure cost and other unforeseen cost in the production process. To calculate the manufacturing cost and profit, the cost must be divided into variable and fixed. For these calculations, we use the numbers of the YTD of May 2017. The percentages variable or fixed cost of 2016 are not considered because these estimations are too high, according to employee X. The percentages of the variable cost are corrected with the change in sales turnover. Most of the manufacturing cost are variable. This is logical because normally, if the number of produced product increases, with a same production scheme, the numbers of failures and tests increase too. The fixed costs are calculated per month and afterwards extended to year, assuming that the fixed costs are equally distributed over the year. By subtracting these costs from the standard profit, the manufacturing profits are calculated for the handled four situations (worst-case, minimal, calculated and best-case). Furthermore, the profit plan of 2017 and 2018 CAGR is considered. With these extra columns, we compare the outcomes with the number of 2017 and the expected 2018 situation without implementation. The outcomes of the manufacturing profits are shown in Table 34.

<CONFIDENTIAL TABLE>

Table 33: Manufacturing profit Product Line X, three possibilities, four situations (Employee Q, 2017).

In Table 34, our expectations are shown. The manufacturing cost are increased in the calculated situation. This is because the total sales turnover increases much, resulting in an increase of the variable manufacturing cost. However, the manufacturing margin is already close to the percentages of the 2017 profit plan, 2018 CAGR and the minimal situation. This indicates that the volume increase would bring more end-to-end profit at the end than the volume increase would bring extra cost. If this is really the case, is calculated in the next section.

Operating profit and operating margin

After calculating the manufacturing margin, we calculate the operating profit or end-to-end profit. For the calculation of the operating profit, the supporting cost and other costs should be subtracted and other revenues should be added. For these supporting cost, other cost and revenues also the profit plan YTD of May 2017 is used. These numbers are expectations of employees with more knowledge of these numbers and are therefore considered as reliable. The supporting cost are determined in the same way as the manufacturing cost in the previous section. The variable costs are grown with the same ratio as the increase in sales turnover and the fixed are calculated converted over the year. The outcomes of the operating profit for all four situations (worst-case, minimum, calculated and best-case) and the 2018 CAGR current 2017 numbers, are shown in Table 35.

<CONFIDENTIAL TABLE>

Table 34: Operating profit Product Line X, three possibilities, four situations (Employee Q,2017).

In Table 35, we conclude that the operating profit (\$) and operating margin (%) increase. Firstly, we compare the minimal and calculated situations. The support expenses are in the calculated situation \$X higher than in the Minimal Situation. However, the operating profit is \$X higher. This indicates that the growth in supportive costs increases less rapidly than the extra sales, which results in a higher end-to-end profit. The operating margin increases by X%. Secondly, we compare the CAGR 2018 with the calculated situation. The support expenses are in the calculated situation \$X higher. Because of the higher volume, the operating profit is increased by \$X, under the assumption that all products that are lost due to price, relationship and competitor are won in the new situation. The operating margin (%) even increases by X%. This seems as a very big increase, but if we look at the increase from 2017 to 2018, this already indicates an increase of X%. Therefore, we conclude that the Product Line X has a lot of potential. Concluding based on this assignment, with all made assumptions, the new pricing model has a large positive impact on the profitability of this Product Line (Product Line X).

We must also consider the worst-case situation, because this would mean a very large decrease of the profitability for the Product Line X. Therefore, clear permission borders must be set to implement the new pricing model successfully. Large contracts (>\$ 300,000) could have huge impact on the profit margins and should therefore always be checked by managers. An important role for this is for employee X (Manager Product Lines) and employee T (Manager Business Development). These boundaries are described in the Section 7.3.

7.3 Which other important performances change because of the new pricing model?

In this section, we describe important other changes, because of the new pricing model. Firstly, we investigate the change in RPI-values. Secondly, the communications to the Country Sales Organisations are discussed. Thirdly, the Transfer Multipliers are discussed. Transfer Multiplier should be aligned with the new List Multipliers. For these Transfer Multipliers only a direction is given, which can be used for further research. Fourthly, we calculate the future development of the List Multiplier, if a customer orders multiple times by Company X. Fifthly, a proposal for a new permission boundary systematic is discussed, which shows at which volumes Country Sales Organisations must ask permission to continue with an order. Finally, some possible drawbacks from the literature review are applied to Company X.

7.3.1 RPI-values

According to Employee Z (Strategic Pricing Manager) only the normal Product 1 is measured with the RPI-model, because Product 2 has not been for sale until recently. Therefore, we look at the change of the RPI-values of the Product 1 and examine what is necessary to setup a RPI model for the Product 2.

To calculate the new RPI-values, four elements are needed:

- Product code.
- New List Multiplier.
- List Price.
- Percentage change of the List price.
- PPI of last year.

The product code is different for every product and every characteristic. For all these variants, a List Price is set in Bid Manager. In this assignment, we have chosen to take the List Price of the standards model for the Product 1 and Product 2. However, in the real situation the List Price depends on the features of the ordered product. All these prices for these features are set in Bid Manager. The List Multiplier is also different in every order as calculated and explained in the previous chapters. The List Multiplier has the direct relationship with the resulting RPI. The List Price changes every year with a determined percentage change of the List price. This estimation is made by employee X and Employee Z. The developments in the material prices (for example iron price) and the change in labour wages are considered. The PPI-value of last year is subtracted from Company X's Data. With this PPI value, the obtained price is calculated to a constant.

Four of the necessary five elements are already present, to start measuring the Product 2. The product code is already present in Bid Manager. The List Multiplier and List Price roll out of the order data. The Percentage change of the List Price is determined each year. Only the PPI of last year is not yet determined. Company X can choose to start all over with 1.00 or continue with the PPI of the Product 1 of last year (1.14). This depends on the starting point of measuring of the constant. If these is not present yet, I recommend starting with 1.00. If the management want to parallelise Product 2 with Product 1, 1.14 should be taken. However, the quality of the data must be checked before the start measuring.

Now we have the necessary information, we can start with the RPI calculations for Product 1. To evaluate the impact of the new pricing model on the RPI-value, we calculate the RPI-values using the minimal quoted and new multiplier. In this assignment, the List price of a most common Product 1 product is taken. These are respectively: \$X and \$X for Product 1 and Product 2. The percentage change of the List Price is set at +X% and the PPI of 2016 is 1.14. Therefore, the PPI of 2017 is $1.14 + (X/100) = X$.

To calculate the new RPI, we use the formulas from Equation 5 in Section 6.3. We calculate the RPI-values and constants for the mentioned three situations. The RPI-values for each country and the averages for situations are listed in Table 35 and Table 36. The outcomes for the RPI-values for the worst-case and best-case multiplier are listed in the summary sheets of Appendix 1.

<CONFIDENTIAL TABLE>

Table 35: RPI outcomes: Min., Quoted & Calculated.

<CONFIDENTIAL TABLE>

Table 36: Averages RPI-values Product 1 & Product 2.

The average calculated RPI-value for Product 1 is 0.053 lower than the minimal situation and 0.045 lower than the quoted situation. The average calculated RPI-value for Product 2 is 0.041 lower than the minimal situation. This is a very important outcome that must be considered during implementation of the new pricing model. This is because many Country Sales Organisations of Company X are evaluated on their RPI-value and margin (%). This is not a big problem, but it must be communicated to these organisations before implementation. In this way, a Country Sales Organisation can use these data for their profit plan for the next year, which is made in October or November. Furthermore, the new values should be completely understood by the Country Sales Organisations, because they must explain these data to their managers and supervisors. An

important role to play here, is for employee X. He shall start the implementation and should be the contact person for questions.

The Product 2 RPI-values are calculated in the same way as for the Product 1. When using a PPI of 1.00 the RPI-value is the same as the List Multiplier. However, Product 2 sales started in 2012. Therefore, the PPI should not be equal to zero. If we use the same PPI as for Product 1, the RPI new is the same as for the Product 1. The RPI-value of quoted List Multiplier is not available for Product 2 and the RPI-value of the Minimal Multiplier is the only outcome that is different. This is because not all Minimal Multipliers are the same. The correct PPI-value should be determined, before Company X starts measuring Product 2. In this assignment, we chose to take the same PPI as Product 1.

7.3.2 Communications to the Country Sales Organisations

To successfully implement the new pricing model, the performance indicators should change and this should be communicated to the Country Sales Organisations. The most important performance indicators are: change in sales turnover, change in margins and change in profit. The profit plan is made every year in October or November and includes the expectations concerning sales and profits per Product Line for 2018. Because the aim is to implement to new pricing model in 2018, it is important to communicate the new method to calculate the new List Multiplier and the expected changes. In this way, the sales organisations, can adapt this in their profit plans for 2018. This is important because the Country Sales Organisations and the plant in City X are reviewed on their profit margins in percentages instead of their margins in US Dollars or Euro's. The Country Sales Organisations should understand the possibilities and advantages of the new pricing model and always refer to the increasing profit in US Dollars instead of their percentages. In the recommendations, I come back to this.

7.3.3 Transfer Multipliers

For some projects, the new List Multipliers are already used. However, for these projects and in conversations with several employees of Company X, an important influence on the Transfer Multiplier is detected. Most List Multipliers will decrease because of the new pricing model and in this way, less profit is left over for the Country Sales Organisation. Therefore, it is likely that the Country Sales Organisations resist against this new pricing model. Therefore, the changes in working tasks and the protection of the interest of the Country Sales Organisations should be communicated in an early phase to these organisations. Together with B my principal and employee V (Regional tax manager) we recommend letting go the current Transfer Multiplier policy. The purchasing price should be moving together with the new List Multiplier. The Country Sales Organisations should pay a fair Transfer Multiplier and should not be financially disadvantaged by the new pricing model. It should be clear communicated that Company X takes responsibility for the outcomes of the new pricing model and the support to the Country Sales Organisations. The plant in City X is accountable for the success or failure of the new pricing model.

The new policy for the Transfer Multiplier does not fall within the scope of this assignment, but we discuss some possible directions to achieve the mentioned interest. Company X could use:

- The calculated List Multiplier: fill in all seven variables according to the new pricing model of Edens (2016).
- The average List Multiplier: use the List Multipliers as calculated in Section 7.2.
- A fixed pay-out per country: determine fixed pay-out per country in a way that the Country Sales Organisation can pay their costs and have a little profit.

All directions have their own drawbacks. Using the calculated List Multiplier takes a lot of time to fill in all variables. Using the average List Multiplier, the Country Sales Organisation could avoid the segments with a lower List Multiplier, because this would be unprofitable for them. Using the fixed price per country, the Country Organisations could be less motivated to close successful orders.

I recommended Company X to do further research on these possibilities and design a well-fitting new model for the purchase prices of the Country Sales Organisations and the rewards the Country Sales Organisations should receive, in a way these organisations are not disadvantages because of the new pricing model. This can be analysed and evaluated in, for example, a next bachelor assignment.

7.3.4 Future developments List Multiplier

Two of the seven variables are influenced by the number of contacts from customer with Company X. These two are the customer relationship and the entering stage in the sales stages. There are four possible paths in the variable of the customer relationship when following the categories of the new pricing model. Furthermore, we evaluate three paths for the variable of the sales stage. In these calculations, we take the List Price for most common Product 1 (\$X).

Customer relationship

- First contact to rejected

The first contact was unsuccessful and the customer contact Company X for the second time. In this way, the weight*score increases from $0.349 \cdot 0.8 = 0.2792$ to $0.349 \cdot 0.9 = 0.3141$. This increase in List Multiplier, results in a \$X increase in selling price.

- First contact to short relationship

The first contact gets a score of 0.8 which results in a $0.349 \cdot 0.8 = 0.2792$ to $0.349 \cdot 1.05 = 0.3665$. So, an increase of 0.0875 in the List Multiplier. This increase in List Multiplier, results in a \$X increase of the selling price.

- Rejected to short relationship

The second increase of the multiplier is when a customer who has ordered for the first time at Company X but started with contacted Company X with no successful order to the second order at Company X (short relationship). Their first weight*score of this variable was $0.349 \cdot 0.9 = 0.3141$ and goes to $0.349 \cdot 1.05 = 0.3665$. If This increase in List Multiplier, results in a \$X increase of the selling price.

- Short relationship to long relationship

The third increase is when the customer has more than 4 successful orders placed at Company X. In this case the score*weight increases from $0.349 \cdot 1.05 = 0.3665$ to $0.349 \cdot 1.10 = 0.3839$. So, an increase of 0.0175 in the multiplier. This increase in List Multiplier, results in \$X increase of the selling price.

In the table below the change in List Multiplier (increase in selling price).

Category	First contact	Rejected	Short Relationship	Long relationship
First contact	X	0.0349 (\$X)	0.0875 (\$X)	N/A
Rejected	N/A	X	0.0524 (\$X)	N/A
Short relationship	N/A	N/A	X	0.0175 (\$X)

Table 367: Change in multiplier because of change in customer relationship.

Sales stage

It is likely that a customer who already ordered by Company X, will enter in a later stage. Entering in the last three stages is likely unprofitable for Company X. Therefore, we calculate the changes until stage 4. The changes are calculated if a customer enter one stage further in the sales process. If more stages are skipped, the changes can be summed.

- Entering in the second sales stage instead of the first sales stage.

This different entering stage results in a $0.075 \cdot 0.272 = 0.0204$ decrease in the List Multiplier. This result in a \$X decrease in the selling price.

- Entering in the third sales stage instead of the second sales stage.

This different entering stage results in a $0.075 \cdot 0.272 = 0.0204$ decrease in the List Multiplier. This result in a \$X decrease in the selling price.

- Entering in the fourth sales stage instead of the third sales stage.

This different entering stage results in a $0.05 \cdot 0.272 = 0.0136$ decrease in the List Multiplier. This result in a \$X decrease in the selling price.

7.3.5 New permission boundaries systematic

In the current situation, Country Sales Organisations, should ask permission below a certain multiplier (see the Quotation process in Section 6.1). Because with the new pricing model this systematic disappears a new systematic should be designed. Especially in the start-up phase risky orders can take place. For example, a one million order in Country 3 is offered with a List Multiplier of 0.748 which results in \$748,000, but using the Minimal Multiplier (0.882), the sales turnover results in \$882,000. This is a large difference and could have big consequences for the plant in City X. Therefore, it is wise to base the new permission systematic on the volume of the orders, to keep track and maintain the profitability margins. Together with employee T (Manager Business Development), we distributed the permission systematic on the volume using the following boundaries.

Volume in US \$		Tasks Country Sales Organisations
\$ 0	\$ 50,000	Calculate new multiplier using the new pricing model. No request for permission has to be asked. However, all order details (variables) should be kept and eventually given to the Plant in City X.
\$ 50,001	\$ 300,000	Request permission from the Business Development department when the standard profit is beneath X%. Business development asks for the used variables and accept when nothing is deviant and the standard profit is above X%. Orders with a standard profit lower than X% must be passed through the Manager Business Development (employee T) and Manager Product Lines (employee X).
\$ 300,001		All orders must be requested using Company X's Deal Submitted Form (DSF). The permission must be given by the Senior Management.

Table 378: Tasks Country Sales Organisation.

The boundaries are chosen based on the new variables (Edens, 2016). \$50,000 is the boundary from medium order to large order and could have a large impact on the profitability. X% is chosen because this is the (average) standard profit when following the worst-case situation, as described in Section 7.2. To protect Company X that all orders are won with relatively low List Multipliers, this is boundary is set and Country Sales Organisation are not allowed to proceed without permission. \$ 300,000 includes all (big) contracts and needs permission of the Senior Management.

It is very important that all Country Sales Organisation fill in the variables, as discussed in the new pricing model. At the beginning of implementation, it is the most important to keep track of all data. When deviations arise, it is important to adjust the expectations from this assignment and calculate a more representative expectation. With these data, the Business Development together with my principal. My principal can do several analyses on all variables. In this way, the new pricing model and this analysis have more reliable input and therefore more reliable predictions can be made. I recommend Company X to start with this new method, but this is still a starting situation. Practice should show the threats and possibilities. This is very important task for employee T and employee X to be responding to all possible outcomes.

7.3.6 Preventing the drawbacks of variable pricing

In the literature review (Section 3.2.5) and in interviews with employees of Company X, some drawbacks of a variable pricing strategy have been mentioned. To implement the new pricing model successfully all these drawbacks must be considered and evaluated repeatedly.

- To implement successfully the new pricing model especially in the early stages, regular attention should be given to data gathering tools. In this way, the new pricing model can be used and analysed in practice. In this assignment, we noticed that based on the known information of each order, the new variables cannot easily be filled in. For example, the comparison with won orders in Section 6.4, multiple employees of Company X had to be involved, to fill in the variables. Besides not all data are filled in accurately. Therefore, it is important that the Country Sales Organisations carefully enter these data. If all data are available, the List Multiplier can be easily calculated and analysed per variable.
- A second very important possible point to consider is the willingness and interpretation of the Country Sales Organisations. The List Multipliers are lower than in the current situation. In this way, the Country Sales Organisations earn money, because Company X's products are bought-in against a fixed price. Lowering the List Multipliers together with no change in the Transfer Multiplier, the Country Sales Organisations will resist against this new pricing model. To solve this problem the Transfer Multiplier should be redesigned. This is outside the scope of this assignment and no recommendations are made.
- Company X should start with some educational briefings or mails towards to employees who will work differently and for whom the performances are going to change, because of the new pricing model. Especially the Country Sales Organisations are very important in these communications. Everybody should know that they take advantage out of this new pricing model because of the increasing operating profit.
- The customer's reaction to the new pricing model should constantly be reviewed and analysed. The results of this assignment are based on several assumptions, which must be proven in practice.
- At the beginning of the implementation, the loyal customers with high value should be approached with extra attention. In this way, the goodwill of the company is protected.
- Company X should always keep an eye on the reaction of the competitors. For example, if the competitors lower their prices, they can steal potential customers. Therefore, Company X should always be reactive to the market changes.

8. Price measuring at Company X

In this chapter, we investigate the modifications within the price measuring and data gathering tools. We handle the following question:

How can Company X measure the results of the new pricing model successfully?

This main question of this chapter is answered by answering the following sub-question:

- *In which way, should the pricing measurement and data gathering tools be adapted to implement the pricing model successfully?*

8.1 In which way should the pricing measurement and data gathering tools be adapted to implement the pricing model successfully?

In this section, we discuss the adaptations needed in the RPI-model and data gathering tools.

8.1.1 Adaptions in RPI-model

As already mentioned in Section 7.3, no big changes should be made in the RPI-model. The most important fact that should be considered, is that because of the decrease of the List Multiplier, the RPI-measurements decrease as well. In the conversation with Employee Z, this is no problem, if this is communicated to the Country Sales Organisations and other departments, which are reviewed on this measurement. When communicate this in an early phase, the Country Sales Organisations and department can implement and explain these numbers in their profit plan or expectations for the next year.

I recommend starting measuring Product 2 with the RPI-values. For this, two things must be in order: PPI value should be known and it should be possible to retrieve data filtered on Product 2, just as for Product 1.

In the beginning, we were afraid that it would be difficult to use the very variable List Multiplier into the RPI-model, but this is not the case. The RPI measurement retrieves the data from Bid Managers, and takes the List Multiplier as stated. All orders are measured separately and the weighted average is calculated for each period.

8.1.2 Adaptions in data gathering tools

To measure the new pricing model, the data should be valid and known for the management at the Plant in City X. As already mentioned in Chapter 6 and Chapter 7, the gathered pricing data are not always accurate. In the current situation, it often occurs that the data are not correct or specific enough to determine the selling price according to the new pricing model or do a valid analysis. Therefore, it should be communicated through every department that the new way of pricing is more profitable and the data are needed to do further analyses on the new pricing model.

Adaptions in Bid Manager

As already mentioned in the Section 6.2 about C360 & Bid Manager, some order details are obligatory to fill in. To measure successfully the new pricing model, the variables which determine the right price should be made obligatory when transporting the data to C360. So, the priority is to implement and track the following variables in Bid Manager for each order: country, segment or end-use application, volume, type of order (project or contract), number of historical orders (relationship), entering sales process and number of competitors. For these new variables, new

input boxes should be made, in which the variables can be filled in. Some of these variables are easy to retrieve from the customers (country, end-use application, volume and type of order and entering sales stage). According to employee Y most of the variables can be added to the product code, which is in the current situation 5,6 or 7 numbers or letters, in which country is included. Segment, volume, type of order and sales stages should be entered easily by the sales person. For the relationship, it is very important that the name of the customer is entered always the same. In this way, retrieving the number of historical orders can easily be retrieved from the database. The number of competitors should be known by the Country Sales Organisations and Business Development department. In this way, the Country Sales Organisation can fill in easily this variable in Bid Manager.

Furthermore, the multiple orders in Bid Manager should be reduced. According to Employee Z and employee Y, the data from Bid Manager are not entirely valid because of these multiplications of orders. This leads to the fact that the analyses with Bid Manager are not entirely valid. The sales persons know which order is the good variant. Therefore, it is important that these sales persons enter these data in Bid Manager. This should be communicated clearly and stimulated to the Country Sales Organisations. Another solution for this could be an extra button, which is selected when the order is the good variant of the multiple orders. In this way, the analyses can be done by filtering the orders in which this button is selected.

Adaptions in C360

It should be communicated to the Country Sales Organisations that it is very important to convert the order data from Bid Manager to C360. In this assignment, I concluded that there is a huge gap between the data from Bid Manager and C360. For example, the difference between the quoted volume of both tools is over 30 Million US Dollars, including possible multiplications in Bid Manager. The ideal situation is when all orders are converted to C360 and all orders are entered once, the both tools should give the same quoted volume. It should be communicated to the Country Sales Organisations, that even when an order is lost, still the order should be converted to C360. Even when the order is lost in a very early phase, the data that are known should be converted. Therefore, it is not ideal when all variables are obligatory to fill in. An extra option should be made. If the order is lost not all variables should be obligatory or it should be possible to select unknown.

When the new fields for the new variables are implemented, it can be converted into documents of C360. This new information should be inserted in the C360 documents as new columns. In this way, reliable analysis can be done per variable.

9. Conclusion and recommendations

In this chapter, we give a conclusion of our findings, answer the main question and made recommendations for after this assignment.

9.1 Conclusion

In this assignment, we investigated the following main question:

What is the financial impact of implementing the new pricing model in the Product Family X?

We measured the new pricing model, using five performance indicators for both products in the Product Family X. Four situations were calculated and compared with the 2017 numbers according to the Profit Plan of 2017 and the 2018 CAGR (Compound Annual Growth Rate). The four situations are: worst-case (all variables lowest as possible), minimal (current Minimal Multiplier is used), calculated (using the expected average per type of order) and best-case (all variables highest as possible). The profit margins are calculated for the Product Line X in which the product Product 3 is included. In this conclusion, we compare the calculated situation when implementing the new pricing model with the 2018 CAGR situation (the situation is calculated when Company X continues with their operations) for the first three indicators and with the minimal situation for the last two indicators.

- **Standard margin (%) -X%**

The standard margin (%) decreases because of the new pricing model. This is because of the lower List Multiplier and therefore less margin per product. The standard margin for Product Line X decreases with from X% (2018 CAGR) to X%, when the new pricing model is implemented for both Product 1 and Product 2.

- **Operating profit (\$) +\$X**

The operating profit or end-to-end profit increases a lot, namely from \$X (2018 CAGR) to \$X (calculated.) With the assumption that all orders are won which are now lost due to the variables of the new pricing model, the sales turnover increases much. The manufacturing costs and supportive costs grow less rapidly with the increase in sales turnover, which results in more operating profit.

- **Sales turnover +\$X**

With respect to the operating profit, the sales turnover has increased much compared to the 2018 CAGR situation, namely from \$X to \$X. This seems as a very large increase. However, compared to data in previous years, we saw that the Product Line X grows every year. Especially with the just launched Product 2, with a CAGR of X%, there is a great potential.

- **Hit-rate +X% (Product 1) and +X% (Product 2)**

Both hit-rates increase much because of the new pricing model. The “right” or winning price is calculated and therefore the previous lost orders due to price, relationship and competitors are now won. Therefore, the intake compared to the quoted volume increases.

- **RPI-values -X (Product 1) and -X (Product 2)**

The RPI-values are decreased because of the new pricing model. Compared to the RPI-values for the Minimal Multiplier, the RPI-values for the calculated situation, the RPI decrease from 0.864 to 0.819 for Product 1 and from 0.860 to 0.819 for Product 2.

Because of these findings, we conclude that the new pricing model has a positive financial impact on the profitability of Company X. Therefore, we recommend implementing the new pricing model for the Product Family X. However, to implement the new pricing model successfully, several steps must be taken. These are listed in the recommendations.

9.2 Recommendations after implementation

To successfully implement the new pricing model the following improvements, should be made:

Firstly, I recommend to check the new pricing model and the calculations in this assignment frequently, and to adapt when needed. In this assignment, it was not possible to consider every aspect that influences the financial performances and many assumptions have been made. These assumptions must be checked and if the results do not meet the expectations, the assumptions and the calculations, this must be adapted.

Secondly, I recommend Company X to improve the data gathering tools: C360 and Bid Manager. The new variables should be implemented, causing that every sales person can easily enter the new information and calculating the new List Multiplier in Bid Manager. Furthermore, the sales persons should be guided and encouraged in how the data gathering tools should be used to have reliable data to have more valid data and do detailed analyses.

Thirdly, I recommend Company X to be alert and attentive in the starting phase of implementing the new pricing model Especially for the top-selling countries (Country 6, Country 7 and Country 8) the impact could be enormous. Because of the assumptions that are made and the not 100% valid data, the expectations can differ from reality. I advise Company X to check and follow the permissions borders as described in Section 7.3. Especially in the beginning phase, do not accept large projects or contracts (>\$300,000) with low List Multipliers. This permissions boundary model should be evaluated continuously and adapted when necessary.

Fourthly, I recommend to Company X to put a lot of time in communication with the managers, Country Sales Organisations and other related employees of Company X. Managers must be convinced to change their policy and see the possibilities. The related-employees of Company X must know what they have to do and on which point their focus must be and which tasks differ with the new pricing model. The Country Sales Organisations are probably the key to success. A lot changes for them, and they must be aware of the change in their way of working, possibilities, the changing performance indicators (for example: profit margins, RPI-values and volume), why these are going to change, what the long term and short-term goals are of this new pricing model, how they must use the data gathering tools and the fact that Company X always is available for questions. Employee X and employee T must lead this project.

9.3 Recommendations further research

After this assignment, we have also some recommendations for further research, building on this assignment.

Firstly, I recommend checking the data and results repeatedly. As mentioned earlier, the data are not entirely valid and should therefore be adapted when more reliable data are known. Therefore, we made my calculations all linked with each other in the excel document (see for the summary sheets Appendix 1). The sheets with the green colour are used as input for the calculations and can be adapted when having more reliable data. We expect some difficulties for the availability of these data and therefore, I recommend doing further research how the data gathering can be more efficient and reliable, in a way that financial analyses can be done per variable.

Secondly, I would like to recommend that the Transfer Multiplier policy should be redesigned. The new List Multipliers are lower than the current Minimal Multipliers and with the same Transfer Multiplier policy the Country Sales Organisations disadvantage themselves when using the new List Multipliers. A new policy should be developed in which the Country Sales Organisations are not disadvantaged and Company X is accountable for the outcomes of the new pricing model. This can be done by letting the Transfer Multiplier move along with the new List Multipliers. However, the effect of this and the exact implications are for now unknown and should be analysed in further research.

Thirdly, I recommend doing further comparison with won projects and contracts in the past, using the new pricing model (see Section 6.2.4). In this way, the expected changes for that order can be analysed better.

Appendix

[Appendix 1. Screenshots Excel document](#)

In Appendix, we show the summary and operating profit calculation for both products and the Product Line X.

Product 1 summary Sheet

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Product 2 summary sheet

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Product Line X Summary sheet

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Operating profit calculations (new pricing model for both products implemented)

<CONFIDENTIAL TABLE>

CAGR Calculations

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[Appendix 2. Instruction guide Excel document](#)

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