

Customer profitability tool for Helaform Oy

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<p>The main purpose of this thesis project is to provide the commissioning company, Helaform Oy, with a custom-built customer profitability tool that is both reliable and scalable. Helaform Oy is a Finnish SME that is known worldwide for its high quality products and outstanding technical service.</p> <p>The company's management team will utilize the tool to help develop the company's relationship with its customers towards a more profitable partnership. Even though the thesis tool can be utilised on all of the company's global customers, the target market for this tool will be the company's domestic market. This is the place where the profitability tool can provide the most added value for the company.</p> <p>The company's management team has not utilised this kind of a customer profitability tool before. Hence the tool will be designed to be as simple as possible, while still providing valuable data on whether the company's relationships with its customers are standing on a sustainable footing.</p> <p>The thesis will provide the commissioning company with a tool to analyse only the profitability of its customers. The tool enables the company to save time spent on manual profitability calculations. The tool will also enable the company to make quick estimates on the profitability of new projects.</p> <p>Under no circumstances will the thesis tool analyse the profitability of the commissioning company itself. Any non-public financial data related to the commissioning company will be redacted from this thesis.</p> <p>The thesis tool was built upon the theories and concepts of management accounting to provide it with credibility and continuity. The thesis tool also involves the information received during interviews. This allowed the thesis tool to be designed to match the needs of the commissioning company's business environment and user experience. The thesis was designed in six steps presented in the theoretical framework.</p> <p>The thesis process was finalized by providing findings and evaluating the outcome of the tool. Recommendations are provided to the commissioning company on how to improve the thesis tool in the future.</p>	
Keywords Customer profitability, cost management, cost accounting, cost-allocation, activity-based costing	

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1 Introduction

The main purpose of this thesis project is to provide the commissioning company with a tool to analyse the profitability of its business-to-business customers. The corporate customer profitability tool will provide the company's decision makers, along the sales personnel, with valuable data, and thus help with the decision making process. All concepts, theories and project management methods used in designing and building this thesis tool along with the tool's end-user's instructions will be included in this thesis.

This thesis is comprised of five chapters. The first (1.) chapter introduces the overall process of this thesis. It will also present the purpose for why this thesis is written as well as the boundaries within which the final thesis tool will be applied. The chapter will also introduce key concepts used in designing this thesis. This chapter will shortly present the commissioning company, and how this thesis will benefit it and the rest of the stakeholders. The second chapter (2.) focuses on the data collection methods, like how the data was gathered and utilized in this thesis. The third chapter (3.) presents the theoretical framework used in designing the thesis tool. In other words, this chapter opens up the key concept terms in a more detailed fashion. The last two chapters (4. & 5.) concentrate on introducing the tool as well as findings and recommendations the thesis writer has to give at the end of the process.

1.1 Background

As mentioned in the beginning of the first chapter, providing a tool to analyse the profitability of B2B customers is the main purpose of this thesis. Now the most straightforward way to calculate the profitability is to subtract the cost of goods sold from net revenue (the terms will be explained in chapter 3.) However, calculating the customer profitability this way ignores some customer-specific costs, and thus will make the final customer profitability calculation misleading and invalid. For example, if the commissioning company does not account for all the costs involved with a certain customer, then that customer might look profitable on paper even though in reality it is not. The commissioning company could even utilize the tool to analyse the profitability of not only its new customers but also its new projects with its existing customers. Since the commissioning company is mainly focused on selling to B2B customers, incorporating the allocation of customer-specific costs to the customer profitability tool will be one of the focal points of this thesis.

The objective and outcome of this thesis project is a customer profitability tool for Helaform Oy. To successfully achieve the objective, the process of this thesis project is

split into six different project tasks. Each task is important, and to achieve the objective it is vital to proceed from task 1 to 6 step by step. The overview of the tasks can be found in Table 1. There is also a more comprehensive overlay matrix at the end of this thesis paper in the Appendix 2.

Table 1. Project tasks

Project task #	Definition
PT 1	Defining the project outline for the thesis
PT 2	Studying the management accounting related theory
PT 3	Creating the tool
PT 4	Submitting the beta version of the tool for the test run at the company
PT 5	Adjusting the tool and creating the user instructions to operate the tool
PT 6	Analysing the project outcome and providing the recommendations

Since the commissioning company sells only to B2B customers, there are indirect costs – mostly related to customer service – that might vary from customer to customer. Currently these indirect costs are not being properly allocated to each specific customer. As such, providing a tool that tracks and analyses these costs – including possible price reductions – will supply the commissioning company with information about whether or not a specific customer relationship is worth continuing. As such, the tool will allow the commissioning company to benchmark different customers, and even projects, to identify where do the most profitable opportunities lie in.

In spite of the fact that the commissioning company has all the data available about the profitability of its customers, it does not have a tool to analyse and benchmark the customers. Hence, the customer profitability tool will be of great asset for the commissioning company.

1.2 Case company

The commissioning company for this thesis is a Finnish family owned small sized enterprise that is renowned worldwide for its high quality products and outstanding technical service (Helaform 2012). The company was founded in 1983 and its main office is located in Helsinki, Finland. The company mainly operates from its head office, but it delivers its products and services worldwide.

The commissioning company manufactures a wide range of products. The company produces for example:

- sliding and folding door systems
- various kinds of industrial curtain and cable carrying systems
- lightweight conveyor and greenhouse plant watering systems
- and welding and piano hinges.

In addition to these, the company offers technical service to its customers wherever they are located. The company made a revenue of 2.56 million euros and employed 11 employees in 2015. Since the company offers its products and services to both, domestic and foreign customers, it incurs a lot of costs related to the customer support services. Currently, the company lacks the ability to produce accounting data that links these costs to the customers originating them. The company does not view these untraced costs merely as a way to increase its sales but also as a cost of doing business – and maintaining one. During the interview, the managing director told that sometimes customers generate losses when these untraced costs are accounted for, but the company considers those losses as a cost of maintaining a positive corporate image. Nonetheless, tracking these costs to each individual customer is vital to understanding the overall profitability of each customer relationship and to making well informed decisions based on the facts.

1.3 Project scope

This thesis project focuses only on the profitability of the commissioning company's customers. This thesis will not contain any information about the profitability of the commissioning company itself, whether in the form of financial key performance indicators or raw data. The main idea behind this thesis project is to provide a tool that can help allocate the indirect costs – that are yet to be allocated – to each specific customers. The final scope of this thesis project was agreed together with the commissioning company.

The main criteria for the project was that the data collection process for the tool would not require excessive use of the company's resources, yet the tool's output could guide the company towards more profitable customer relationships.

1.4 International Aspect

The commissioning company, Helaform Oy, is a highly international company. It operates in any country its customer places an order from. Its international sales make up a significant portion of its total sales amount.

However, the target market for this tool will be the commissioning company's domestic market. According to the commissioning company, the domestic market provides a more useful ground for the tool and its output will be more beneficial to the company. However, this thesis tool is easily scalable to include any international customer from any country. As such, the thesis tool itself is not bound by any international market nor country.

1.5 Benefits

This thesis project will no doubt be of great benefit to the commissioning company. The tool will help the commissioning company gain visual insight into the profitability of its customers. The tool can also be made use of when making managerial decisions. With this tool the company can not only find the most profitable customers but also the unprofitable ones. This will help the company target specific customers that need some help in making their relationship more profitable to the commissioning company.

For the thesis writer the most educative part of this thesis was the tool building process. Building a tool in excel is a relatively straightforward process. The more difficult part is applying the theory to it, and making sure that the tool is easy and convenient for other people to use. This process helped thesis writer gain knowledge on how to build a tool that is not only convenient to use but one that can also be scaled up later on by different people.

1.6 Key Concepts

The concepts used in this thesis are briefly explained in the following paragraphs. These concepts form the bedrock of the theoretical framework that will be later discussed in more detail in chapter 3. The concepts are introduced starting with a more general concepts and moving on to more detailed ones. The majority of these concepts to be presented in this chapter are known management accounting concepts.

1.6.1 Management accounting

Management accounting provides a set of tools and ideas for producing and analysing both, financial and non-financial data, for the management decision makers. (Groot & Selto 2013, 3). The aim of the management accounting is to assist the management in making strategic decisions based on financial information (Groot & al. 2013, 20-21).

1.6.2 Cost allocation

Cost allocation is a process of tracing costs to their original sources. This process helps the management make better decisions by providing them more accurate financial data. (Bhimani, Horngren, Srikant & Rajan 2012, 135.)

1.6.3 Direct and indirect costs

Directs costs are costs that can be tracked to specific cost objects in an appropriate cost-effective manner. In other words, their origins are known and no cost allocation system is needed to allocate them. (Bhimani & al. 2012, 35.)

On the contrary, indirect costs are costs that are connected to a specific cost object, but cannot be tracked to them in a cost-effective manner. Hence, a costing system, like activity-based costing, is needed to allocate these costs to their respective cost objects. (Bhimani & al. 2012, 35.)

1.6.4 Cost of goods sold

Cost of goods sold, also known simply as COGS, relates to the cost of goods that are sold during a specific time period (usually a fiscal year). COGS is an important concept within management accounting theory. Cost of goods sold can easily be calculated by utilizing a following formula in Figure 1. (Murray 2016.)

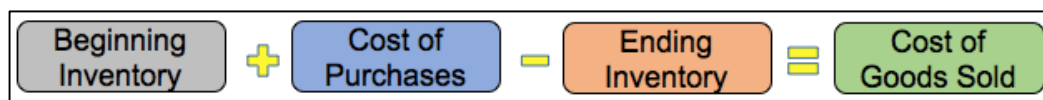


Figure 1. Calculation of COGS (Recreated from Murray 2016)

1.7 Risks

There are not many risks to this thesis project. The few major risks threatening this thesis project are stemming not from the tool itself but from how the data the tool uses are collected. The tool is heavily dependent on the activity-based costing system. Despite it being one of the most used costing systems in the world, it might be quite challenging to implement. It requires a set of well defined costing activities. It might take time for the commissioning company to collect all the necessary cost data, and thus make the tool's output more reliable.

Another challenge for this thesis tool is the quality of the cost data. The commissioning company lacks a cost accounting system that links all the cost transactions to specific cost centres. The cost centres are divisions that are responsible for particular activities within the company (Groot & al. 2013, 312). For example, the manager overseeing a marketing department is responsible for the cost centre assigned to the marketing department.

However, these risks were well-known in advance and were mitigated by building a tool that is easily modifiable, especially when it comes to the cost activities.

2 Data collection methods

This thesis relies on data that was gathered utilizing two separate data collection methods. During the first step the company’s managing director was interviewed by utilizing qualitative face-to-face interview. The second step in the thesis data collection process was the gathering of theoretical part of the data. This was done by utilizing desktop research method. This part was important, because it gave an understanding of what should be included in the final thesis tool. Every aspect of the collected data was analysed thoroughly – using management accounting principles – to get the maximum benefit out of it and a good start for designing the thesis tool. These steps – and their connection to thesis’ tasks – are illustrated in Figure 2 below.

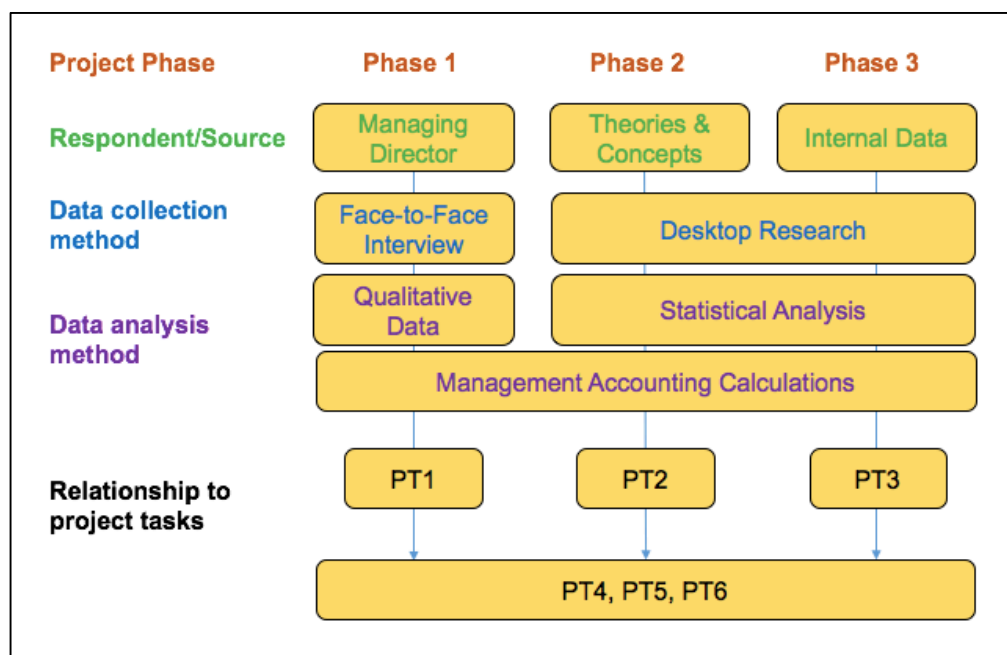


Figure 2. Project methods

2.1 Briefing meeting & interview

There were two times the thesis writer had been in face-to-face contact during the thesis process. The first meeting was about pitching the thesis topic to the company and finding the common ground on what the thesis tool should and should not include. The second meeting was an official interview, where the thesis writer asked a number of questions and received appropriate responses. This interview was audio recorded.

The first meeting – or briefing – was highly important to the success of this thesis project. Although conducted in informal manner, the briefing was a crucial step in recognizing the needs of the commissioning company. Especially the information regarding the customer

profitability was highly crucial, because it helped define what the tool's interface should look like. That information helped the thesis writer plan and design the beta version of the thesis project tool.

The official interview on the other hand was conducted on a formal face-to-face basis. This interview was conducted with the managing director of the commissioning company. Although these face-to-face meetings were important, the communication with the managing director of the commissioning company went on during the whole thesis process, mostly in the form of emails. This kind of arrangement was necessary due to the fact that the managing director was constantly business travelling.

Some of the information presented during the briefing meeting and interview was deemed as confidential, and thus will not be publicized in this thesis. The information that contains any non-public financial data of the commissioning company or its stakeholders, is highly confidential, and as such is completely redacted from the thesis project.

2.2 Desktop research

The desktop research was done by conducting the research and analysis of the management accounting related theories, concepts and methods. These theories and concepts form the bedrock of a convenient and sound thesis project tool.

3 Customer profitability theory

This chapter provides the theoretical framework utilized in this thesis. The main focus points of this chapter will be the introduction of all the relevant concepts, theories and models as well as how they are applied to the end-user's thesis product. Each subheading will be composed of theoretical and applicability part. Theoretical part introduces the main theory used in the subheading topic and the applicability part explains how the theory is applied in the thesis product.

In order to make a sound tool to analyse the customer profitability, it is crucial to include the methods of the customer profitability analysis (CPA) in the thesis. However, to get to the CPA stage, it is critical to explain the detailed components of the tool and the CPA as well as to provide an overview on a range of management accounting theories covering this thesis.

3.1 Sales revenue

Whenever the company trades its products and/or services, it receives something in return. Almost exclusively that something is money. In this case the money is an inflow of assets received in exchange for the company's products and/or services. This inflow of assets is also known as **revenue**. There are a great many things involved in influencing the final revenue. Two of these are the volume of the output (=production) and the selling price. These elements influencing the final revenue are also known as **revenue drivers**. The process of analysing the customer profitability usually starts with tracking the revenue to each specific customer. (Bhimani & al. 2012, 235.)

Helaform currently has an ERP (= enterprise resource planning) system where it records the revenue originating to its individual customers. This revenue will be used as a revenue input in the customer profitability tool. The instructions on how to input the revenue figure is provided in the user manual at the end of this paper as an Appendix 1.

3.1.1 Discounting

Discounting, also known as promotional pricing, is a revenue management technique that is used to boost sales by stimulating demand. Price reduction periods are usually brief and may appear numerous times in a year. The ultimate purpose of these price reductions is not just increasing sales revenue at any given time but rather support the sales level evenly throughout the year. For example, a movie theatre can direct some of its clientele

to attend a movie during low demand weekdays with discounted tickets rather than high demand weekends. In this case, the movie theatre will prevent demand from exceeding the capacity and still collect revenues on those movie goers who would have been left out on weekends. (Huefner 2011, 79.)

In order to be able to conduct a thorough customer profitability analysis, it is vital for the company to analyse the effect of discounts on its sales revenue. Sometimes the price reductions have an opposite effect on the customer profitability. One of the main reasons why some customers turn out to be unprofitable is exactly the price discounts given in the hope of materializing the customer's future potential. (Bhimani & al. 2012, 390-391.)

Despite the fact that price reductions can have a positive effect on attracting customers and generating revenue, companies should still be careful on how they utilize promotional pricing. Price reductions should always be planned ahead to prevent them from disturbing full-price business. One of the main issues with price discounting is its occurrence. Many companies and industries alike have eliminated any positive influence of promotional pricing, because they have applied it so frequently that customers have learnt to expect it. Thus when companies roll back the sale period, customers are no longer buying the products for normal prices. However, this problem can be avoided by utilizing rather infrequent sale campaigns. (Huefner 2011, 79-80.)

Unlike in consumer business, price discounts are very common in business-to-business (B2B) related markets due to the heavy price negotiation resulting from large transaction values and volumes. However, even in these markets sellers cannot endlessly engage in continuous discounting, because it is ultimately a race to the bottom. Discounting helps companies develop revenue growth only so far. (Huefner 2011, 80.)

Of course not all companies are in the same position. The effect the discounts have on profits greatly varies based on the cost structure of the company. It is therefore highly important for any company engaging in competitive price discounting to have an internal system in place to monitor the development of revenue and profit growth. (Huefner 2011, 80-81.)

3.1.2 Net sales

This is the sales revenue figure that is subtracted of discounts and product/service returns. This is the most essential revenue figure for the commissioning company, because

it states the real net inflow of assets from each of the commissioning company's customers. It is worth noting that the net sales amount is most likely to be different compared to the sales revenue amount. Hence, this net sales-sales revenue correlation can be a very useful indicator for the commissioning company, because it highlights the effect the discounting and promotional pricing policies have on the net inflow of assets.

3.2 Gross profit & gross margin

Gross profit indicates the amount that is left over after the cost of goods sold (COGS) is deducted from the net sales. For the commissioning company, the cost of goods sold is made up of the manufacturing costs, including the fixed manufacturing costs. (Bhimani & al. 2012, 249.) The following Figure 3 below illustrates the explanation above.

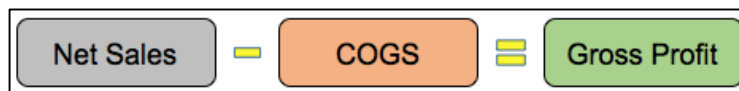


Figure 3. Gross profit calculation

While the gross profit returns the profit amount in absolute terms, the gross margin calculates the percentage of the gross profit out of net sales. Hence, it measures the relativity of the two. Gross margin is quite a useful component in the profitability calculation, since it enables better comparisons between different sizes of companies. The Figure 4 below illustrates the explanation of the gross margin above.

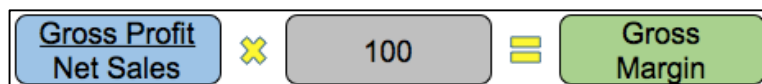


Figure 4. Gross margin calculation

Both the gross profit and gross margin are equally important to the commissioning company. Although they do not include any operational side costs, they still provide the company with a reliable figure that shows how much discounts are been given and/or how many returns the company is receiving. Most importantly, these calculations can pin point individual companies that receive the most discounts or return the products most often.

3.3 Operating profit & operating margin

Operating profit is the profit that the company makes from its main business operations. It is also the next profit-level after the gross profit. While the gross profit was calculated by

subtracting the cost of goods sold from net sales, the operating profit is calculated by summing up total costs from operations and deducting it from total revenue from operations. Operating profit is also commonly known as EBIT, referring to earnings before interest and tax. While operating profit returns an absolute amount, the operating margin on the other hand calculates the percentage of operating profit out of net sales. (Bhimani & al. 2012, 235.)

Operating profit and margin are the most important things that the customer profitability tool will provide for the commissioning company. At the moment the company gathers operational cost data company-wide. But with his tool, the company will be able to track the operational cost data to each specific customer. Hence the company will be able to tell exactly whether a customer is profitable or not. However, even the operating profit will not tell the whole story.

Sometimes the company might have a large customer that accounts for a chunk of its profits. At this point this is a good situation. However, there are many situations in which large customers require extra discounts and extra customer service, like customer visits, additional warranty, free maintenance packages and so on. This all adds up to the operating costs, and thus lowers the operating margin. In order to take the maximum advantage of the customer profitability tool, the company should constantly look for customers with low operating margins. Then the company should analyse the corresponding costs and see whether there is some space to enhance the profitability of those customers.

3.4 Cost management

Before jumping straight to the topic of cost management, it is crucial to get to know briefly to the concept of cost accounting. It is a building block of cost management, like an instruction manual or a rule book. It also forms one of the bedrocks of the management accounting that protects and increases the shareholder value by helping the company's senior management make the right strategic decisions. More specifically, the cost accounting focuses on the company's utilization of resources. This data is then provided to the company's key personnel in management and financial accounting. (Bhimani & al. 2012, 3.) The overall objective in understanding the company's utilization of resources, or simply costs, is to know when to curb the excessive spending and where to curb it (Bhimani & al. 2012, 33).

Now that the company's senior management is aware of how the basic cost accounting works, the next step is to figure out how they can assign the costs appropriately to specific

cost objects, like customers, products or services. This is the role of cost allocation. There are two different types of costs, direct and indirect. Direct costs are the ones that are traced to specific cost objects. Indirect costs are on the other hand the ones that need to be allocated to specific cost objects by using an appropriate allocation method. (Bhimani & al. 2012, 34-35.)

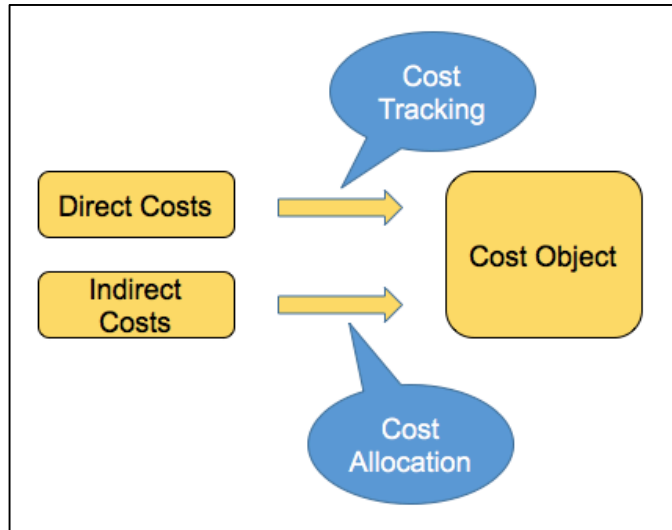


Figure 5. Cost allocation illustration (Recreated from Bhimani & al. 2012, 35)

The company's senior management also needs to be aware on how these cost allocation methods are created and what is the basis of their calculation. They should also be up to date on any changes done to the allocation methods. This is highly crucial due to the fact that any misallocated or miscalculated cost can have a negative impact not just on the company's long term net income, but also on the efficiency of the production process. For example, due to a misallocation of labour costs, the company's production team might:

1. rely disproportionately on the external supplier instead of in-house production
2. keep a too close an eye on direct labour hours instead of expensive direct materials
3. even reclassify existing direct labour hours as indirect labour hours. (Bhimani & al. 2012, 152.)

The danger here is that these false cost allocations can create situations where some products are reported to cost less than they actually do, thus making them look profitable even if they are not. This can negatively affect the company's net income. (Bhimani & al. 2012, 153.)

Whenever the company's senior leadership will act upon on the data provided by the cost accounting, whether it be cost cutting or preferring a certain product over another, it is called cost management. Since the decisions done by the company's managers have a

long lasting effect on the future costs, cost management is usually a key component of the general management strategy. (Bhimani & al. 2012, 4.)

Cost accounting is the main aspect in the customer profitability tool. Since the commissioning company's business model is focused on B2B customers, there can be various services provided to the customer with no additional cost. Since the commissioning company does not allocate customer-generated indirect costs to the customers responsible for them, the company has sort of a blind spot in rooting out the unprofitable customers. Hence, the allocation of these indirect costs provides the company with visibility into customer-specific profitability.

3.4.1 Activity-based costing (ABC)

There are many ways to allocate costs to their respective cost objects. The most straightforward way is to calculate the averages of total costs and divide them evenly by cost objects. This is also known as cost smoothing. However, this process does not take into account the fact that different cost objects require different amounts of resources. Hence, the cost objects may seem to require more (overcosting) or less (undercosting) consumption of resources than they actually need. Thus, it alters the true state of the profitability. (Bhimani & al. 2012, 336.)

As mentioned above, the cost smoothing process is just one of the costing processes. In order for any company to have a clear understanding of the resources consumed by the company's cost objects, a more advanced costing system is needed. One of the most commonly used costing systems is activity-based costing (ABC). This system calculates the cost of individual activities used to produce a good or service. An activity can be a unit of work, certain task or specific event. (Bhimani & al. 2012, 341.) A simple illustration of an ABC process is shown in Figure 6 below. It shows the simplified process of how costs are allocated to cost objects by utilizing activities.

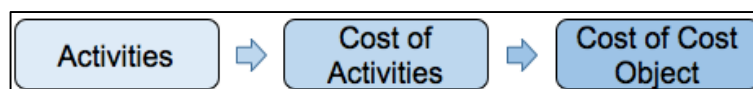


Figure 6. Simplification of activity-based costing system (Recreated from Bhimani & al. 2012, 342)

For example, if the company sells a service (cost object), it requires a certain amount of labour hours (activity). Those labour hours have a cost (cost of activity) determined by the

company. Thus by calculating labour hour cost times labour hours spent, the company gets labour hour costs needed to produce the service. In the case of the commissioning company, the customer profitability tool focuses on a customer as a cost object. (Bhimani & al. 2012, 342.)

When the company decides on the implementation of the ABC system, the implementation process should follow through a seven-step approach presented in Figure 7. The very first (1.) step in the process is to identify the cost objects. These can be services, products or customers, all depending on the business sector the company operates in. The second (2.) step is to identify the direct costs affecting the cost objects. For example, in the manufacturing business these direct costs can be direct materials and direct manufacturing labour hours. (Bhimani & al. 2012, 345-348.)

The third (3.) step is about determining the cost-allocation bases for allocating indirect costs to the cost objects. Cost-allocation base is a unit of measure for activity. For example, if the company operates manufacturing machines, then the manufacturing operation is an activity and machine-hours can be the cost-allocation base. It is also vital to choose a proper cost-allocation base so that the data for it is available and measurable. The fourth (4.) step is about finding indirect costs and assigning them to each selected cost-allocation base. Here the company assigns indirect costs to the manufacturing operations (activity). Sometimes the relationship between the cost-allocation base and activity is too complicated. This could hinder the effort to assign the costs. (Bhimani & al. 2012, 345-348.)

The fifth (5.) task is to determine the unit cost of the cost-allocation base. This is calculated by dividing total indirect costs of activity (step 4) by the number of cost-allocation bases per activity (step 3). For example, if it takes the company 100 machine hours (cost-allocation base) to produce a product, the total indirect costs (i.e. \$100 000) associated with the manufacturing operations (activity) is divided by the number of machine hours. Thus, each machine hour costs the company \$100 ($\$100\,000 / 100$ hours). (Bhimani & al. 2012, 345-348.)

The sixth (6.) step is about calculating total indirect costs of activities consumed by the products, services or customers (cost objects). The last (7.) task is to determine total costs of cost objects by adding up together all direct and indirect costs assigned to the activities of cost objects. (Bhimani & al. 2012, 345-348.)

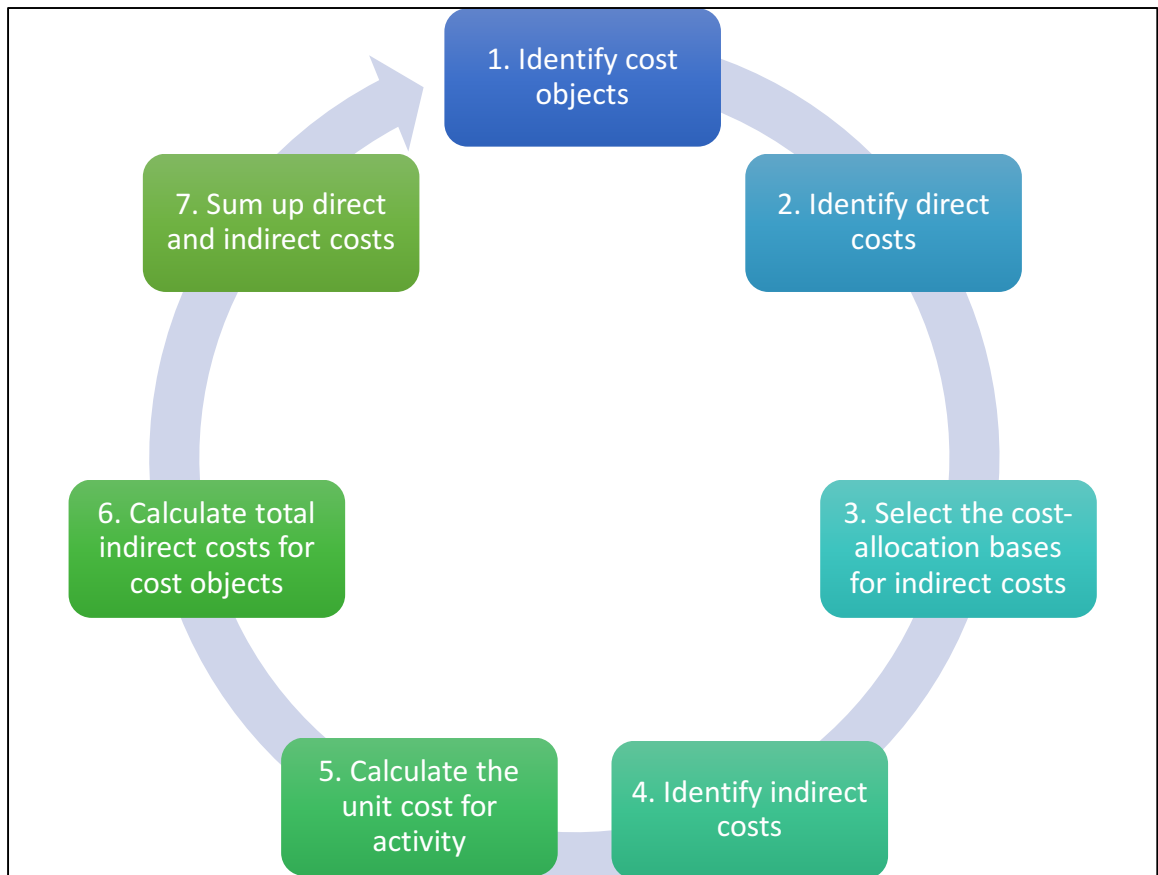


Figure 7. The seven steps of ABC process (Recreated from Bhimani & al. 2012, 345-348)

Activity-based costing is of high importance to the customer profitability tool. Although the commissioning company sells mostly manufactured products, the nature of these sales requires additional customer service. Since the costs of these extra customer services are unallocated and can clearly be tracked to specific customers and activities, the ABC system is by far the best system to use in both the tool and allocation process. The thesis writer and the commissioning company jointly chose the first activities to be used in the thesis tool. It was important for the company to be involved so that only the most appropriate and useful activities would be chosen. It is worth noting that these activities are just a start and may change over time with the needs of the commissioning company.

3.4.2 Activity-based management (ABM)

While activity-based costing provides a framework on how to allocate costs, activity-based management on the other hand is a management concept based on ABC. For example, when a company makes a decision to cut costs based on the information received from ABC, that decision can be attributed to ABM. The various managerial decisions and actions done within ABM usually involve decisions about the pricing, product-mix, cost reduction as well as overall process improvement. (Bhimani & al. 2012, 351.)

During the briefing meeting the commissioning company listed unprofitable customers as one of its main worries. Activity-based costing system can help the commissioning company establish links between the value of customers' purchases and costs resulting from their usage of the company's services. This will guide the commissioning company in identifying which of their customers are profitable and which unprofitable.

3.4.3 Activity-based costing in customer profitability analysis

Most of the costs incurred by the customer related activities need to be allocated to each specific customer by using some kind of costing system – preferably activity-based costing (ABC). In this thesis, the activities related to customers are mostly sales related. The goal of utilizing the ABC system in customer profitability is to generate an overall picture of customers' profitability by tracking their usage of the company's resources (activities). (Cokins 2015.)

A company can single out the unprofitable customers by adding up all the costs associated with each customer's usage of activities. After identifying the unprofitable customers – or those barely breaking even – the company can take steps to alter the purchasing behaviour of those customers. For those customers who are completely unprofitable, the company can either increase prices or levy an extra fee for additional services – wishing the customer would leave the company. For those customers that are barely profitable, the company could try decrease the causes for additional services, simplify its delivery processes and even give incentives to customers for requiring less service demands from the company. (Cokins 2015.)

To help visualize the process steps of how ABC is utilized in customer profitability analysis, a simplified Figure 8 is provided below.

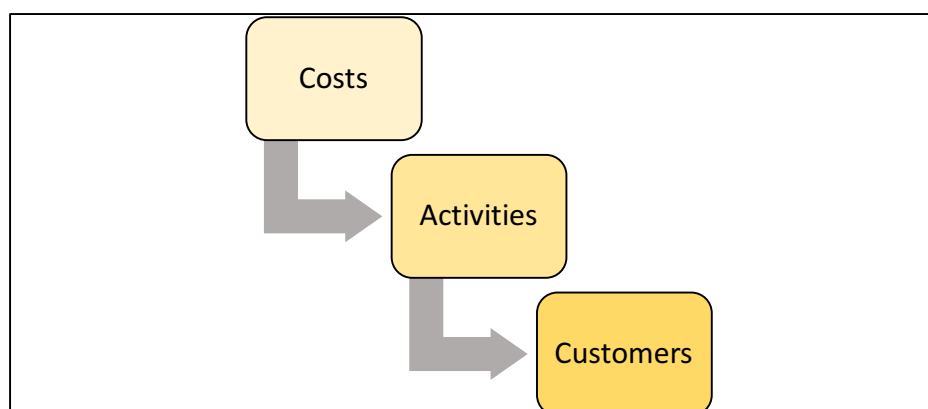


Figure 8. Process steps of ABC utilization in customer profitability (Recreated from

Cokins 2015)

The very first step in the process is to identify all the costs associated with the customers. The second step is to trace these costs to the relevant activities. The third step is to calculate customers' usage of activities and multiple them by the cost of each activity.

It is crucial to note that the data coming out of the customer profitability tool might not be 100% accurate. Despite the fact that the tool offers great potential in providing visibility into the costs incurred by the customers, the tool itself is dependent on the data that is provided for it. For example, the process of determining a cost for a specific activity greatly impacts the end-result the tool will provide. Not using the tool on every selected customer can also lead to a decrease in tool's accuracy. One important feature of the tool is that it provides the ability to benchmark the customers.

3.4.4 Categorization of customer costs

In order to make the process of allocating costs as simple and rational as possible, the costs ought to be grouped together based on either their similarity or their cause-and-effect relationship. This concept is also known as customer cost hierarchy. Banding similar costs together into a group (cost pools) helps in analysing their effect on total costs. There are four different cost hierarchy groups that can be utilized specifically in this thesis for the commissioning company. These cost hierarchy groups are (1) customer output unit-level costs, (2) customer batch-level costs, (3) customer-sustaining costs and (4) distribution-channel costs. The explanation of these customer groups is presented in Table 2 below. (Bhimani & al. 2012, 153 & 391.)

Table 2. Customer cost hierarchy groups and their explanation (Recreated from Bhimani & al. 2012, 391)

1	Customer output-unit level costs	Resources needed to sell a single unit to a customer
2	Customer batch-level costs	Resources needed to sell a single batch of units to a customer
3	Customer-sustaining costs	Resources needed to preserve a customer, for example by a customer visit or general customer service
4	Distribution-channel costs	Resources needed to manage a specific distribution channel

Although all the four customer cost hierarchy groups presented above can be utilized in this thesis tool, only three of them will be. Hence the final thesis tool will have all the costs classified into three different cost pools: customer output-unit level costs, customer batch-level costs and customer-sustaining costs. This will help analyse the effect different cost categories have on total costs. It is important to note that the tool to be presented in this thesis project will only include a handful of cost activities. The idea is to make the tool scalable so that the commissioning company can later on add new activities or replace the older ones.

Customer output-unit level costs include the cost of processing returned products. Customer batch-level costs is comprised of order processing. Customer-sustaining costs are on the other hand related to the customer acquiring/retention activities, like sales visits, product education/training and other sales activities.

3.5 Customer profitability analysis (CPA)

In order for a company to build and strengthen the loyalty among its profit critical customers, the company has to first identify these valuable customers and provide resources to support them. A common way to achieve this is by doing a customer profitability analysis. It is a process of analysing revenues and costs of each customer. (Bhimani & al. 2012, 390.)

It is a well known fact among companies that 80% of company's revenue comes from 20% of its customers. This is also known as the 80-20 rule. However, a customer that brings in a lot of revenue might actually cost a lot to service and thus lower the profitability of that customer. Whereas a customer that contributes less to the revenue might actually be much more profitable percentage-wise. Hence when analysing customers, the focus should rather be on the margins. A study conducted by two Harvard professors, Robin Cooper and Robert Kaplan, paints an even grimmer picture. They found that 20% of the company's customers contributed 225% of the company's profits, while the majority of the customers were barely break-even. The last 10% of the customers were responsible for the stunning loss of 125% of the company's profits. It is worth to note that the study was conducted on only one company. Nevertheless, the conclusion of the study highlights the significance of recognizing the profitable and unprofitable customers. (Huefner 2011, 111.)

There are many reasons why some customers are unprofitable. Some of the customers manage to negotiate lower prices, some require disproportionate support services and for some it just takes too long to pay the bills. All of these are characteristics of an unprofitable customer. Recognizing and converting these customers from being unprofitable to being profitable should be the main focus of any company. If both parties, a company and a customer, fail to produce a solution to this unprofitability issue, the company may not have a choice but to cancel its agreements with this customer. (Huefner 2011, 111-112.)

4 Customer profitability tool

It is important to reiterate that the main objective of the customer profitability tool in this thesis is to provide a means to collect and analyse customer profitability data for the commissioning company. That being said, the tool is built to be as convenient and smooth as possible in order to maximize its user friendliness and cost-efficiency. Nonetheless, the theories, concepts and methods of the management accounting that were used in building the tool provide a sound foundation that give the tool the credibility and reliability.

The beauty of the tool resides in the fact that it can be modified and/or updated to meet the current and future needs of the commissioning company. The company can for example add (or remove) new activities to analyse customer profitability in more detail. The tool can even be used to benchmark customers. The tool can also be utilised for analysing the commissioning company's future projects. In fact, by combining the management accounting theories with the simplicity and reliability of the tool, it can be used practically in any other B2B oriented company. Now before going into more detail about the tool, it is important to highlight that all the figures used to introduce the tool are hypothetical and are not derived from any actual data.

4.1 The design of the tool

The tool is designed to be easy and convenient to use. Therefore, every sheet the tool uses in Excel has a purpose and is well named. The tool is basically divided into two different sheets. The first sheet is the one where the customer data is inserted and stored. The second sheet, also known as a graphical dashboard, will aggregate the data in the first sheet and show the outcome of the tool's various calculations in pivot charts.

4.2 Activities calculator

Activities calculator						
Cost hierarchy group	Activity	Unit cost	Unit	Total units	Total cost	
Customer batch level	Order processing	50,00 €	per order	200	(10 000)	
Customer output-unit-level	Product returns processing	100,00 €	per product returned	8	(800)	
	Sales visit	500,00 €	per day	20	(10 000)	
	Sales activities	40,00 €	per hour	200	(8 000)	
Customer sustaining	Other sales activities	25,00 €	per hour	35	(875)	
	Payment reminder	5,00 €	per reminder	10	(50)	
	Product training	250,00 €	per training	12	(3 000)	

Figure 9. Activities calculator sheet in the customer profitability tool

The very first sheet in the profitability tool is an input sheet for activities that are used in the cost-allocation process of the ABC system. As shown in Figure 9, the activity sheet is

comprised of six different columns of which all but two are painted. The colour coding is used to make the reading and using of the calculator easier. The two white columns, unit cost and total units, are the ones where the data is input by the commissioning company. The output of the activities calculator is the total cost for each activity that can be used as an input in the customer profitability dashboard. If the commissioning company would need more activities to be analysed, the user can create new activities by inserting new rows to the calculator. This will be shown in user instructions in Appendix 1.

4.3 Customer key data input

As shown in Figure 10, the structure of the dashboard is pretty straightforward. In addition to colour coding, the dashboard is also divided into four different parts: Sales Figures, Direct costs, Indirect costs and Formulas.

The user will insert the data into the first three parts. Sales figures consists of revenue, COGS, discounts and returns. Direct costs consist of marketing materials and other materials, of which the latter one can be renamed/replaced for any other cost the commissioning company deems worthy to analyse. Indirect costs also consist of several items as shown in Figure 10. Here the user can either input the data directly into the dashboard, or calculate them first in activities calculator and then add the total amounts into the dashboard. The formulas part is only comprised of formulas. That part of the profitability dashboard is protected and cannot be altered with. As with the activities calculator, if the commissioning company will need more cost brackets, or items, the end-user can simply create new fields by inserting empty rows to the dashboard. This will also be shown in Appendix 1.

The dashboard highlights the gross and operating margins. These two figures are probably the most important value adding items for the commissioning company, since they will instantly tell which customers are profitable and which unprofitable. Therefore, the author of this thesis decided to highlight those figures with a special green and red colour coding, depending on whether the value is a positive or negative.

Customer profitability dashboard								
Euros (€)	Customer	ABC	DEF	GHI	KLM	NOP	N/A	N/A
Sales figures	Revenue	400 000	360 000	500 000	300 000	700 000		
	COGS	(250 000)	(225 000)	(225 000)	(150 000)	(350 000)		
	Discount	(75 000)	(50 000)	(50 000)	(30 000)	(100 000)		
	Returns	(40 000)	(50 000)	(50 000)	(50 000)	(50 000)		
Direct costs	Marketing materials	(8 000)	(4 000)	(4 000)	(3 000)	(10 000)		
	Other materials	(25 000)	(8 000)	(8 000)	(8 000)	(10 000)		
Indirect costs	Order processing	(5 000)	(8 000)	(8 000)	(8 000)	(10 000)		
	Product returns processing	(1 500)	(500)	(500)	(500)	(800)		
	Sales visit	(20 000)	(18 000)	(18 000)	(18 000)	(10 000)		
	Sales activities	(4 000)	(2 000)	(2 000)	(2 000)	(8 000)		
	Other sales activities	(800)	(500)	(500)	(500)	(875)		
	Payment reminder	(500)	(500)	(500)	(500)	(50)		
	Product training	(2 700)	(2 000)	(2 000)	(2 000)	(3 000)		
Formulas	Discount %	19 %	14 %	10 %	10 %	14 %		
	Returns %	10 %	14 %	10 %	17 %	7 %		
	Net Sales	285 000	260 000	400 000	220 000	550 000	-	-
	Gross Profit	35 000	35 000	175 000	70 000	200 000		
	Gross Margin %	12 %	13 %	44 %	32 %	36 %		
	Direct Costs	(33 000)	(12 000)	(12 000)	(11 000)	(20 000)		
	Indirect Costs	(34 500)	(31 500)	(31 500)	(31 500)	(32 725)		
	Operating Profit	(32 500)	(8 500)	131 500	27 500	147 275		
Operating Margin %	-11 %	-3 %	33 %	13 %	27 %			

Figure 10. Customer profitability dashboard

4.4 Graphical dashboard

The graphical dashboard sheet contains seven different pivot charts. Whenever the user enters this sheet, all the pivot charts within it are automatically refreshed. The pivot charts mostly measure and visualise the relativity of the different items presented in Figure 10 above.

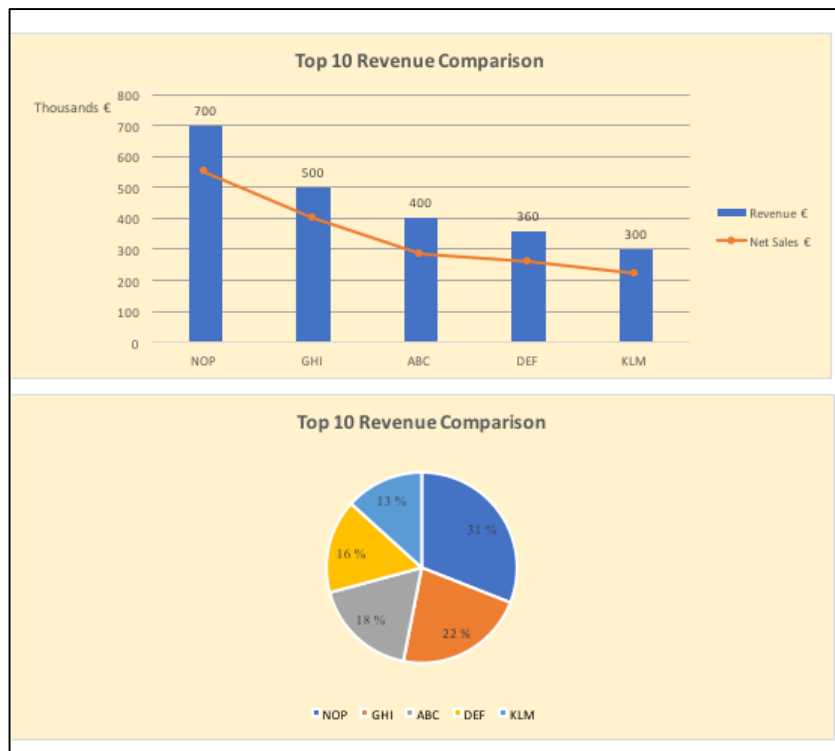


Figure 11. Top 10 revenue comparison graphs

The two pivot charts shown above as Figure 11, rank the customers according to their revenues. Although the name suggests that the amount of customers should only top 10, the commissioning company is free to change that parameter at will.

The Figure 12 below on the other hand shows the gross margin and operating margin analyses between the customers. These are highly useful indicators for the commissioning company, since these two charts, especially the latter one, show the absolute value customers will bring to the commissioning company.

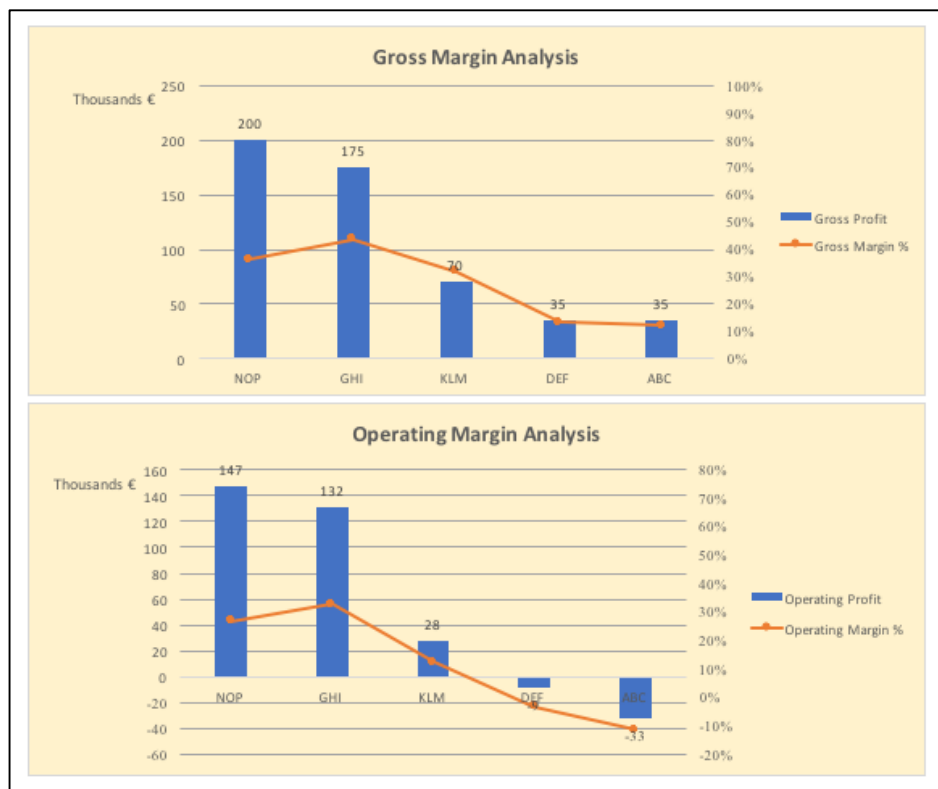


Figure 12. Gross & operating margin analyses

It is also useful for the commissioning company to monitor of how the relativity between the gross and operating margin develops. By quickly looking at the Figure 13's upper chart, the company can determine which customers have high operating costs compared to others. If the difference between the gross and operating margin is small for a certain customer, it means that the customer requires less service demands, such as sales visits, and thus is more profitable to the company, if everything else stands equal. The sales figures analysis shortly highlights the relation between the revenue, discounts, returns and COGS.

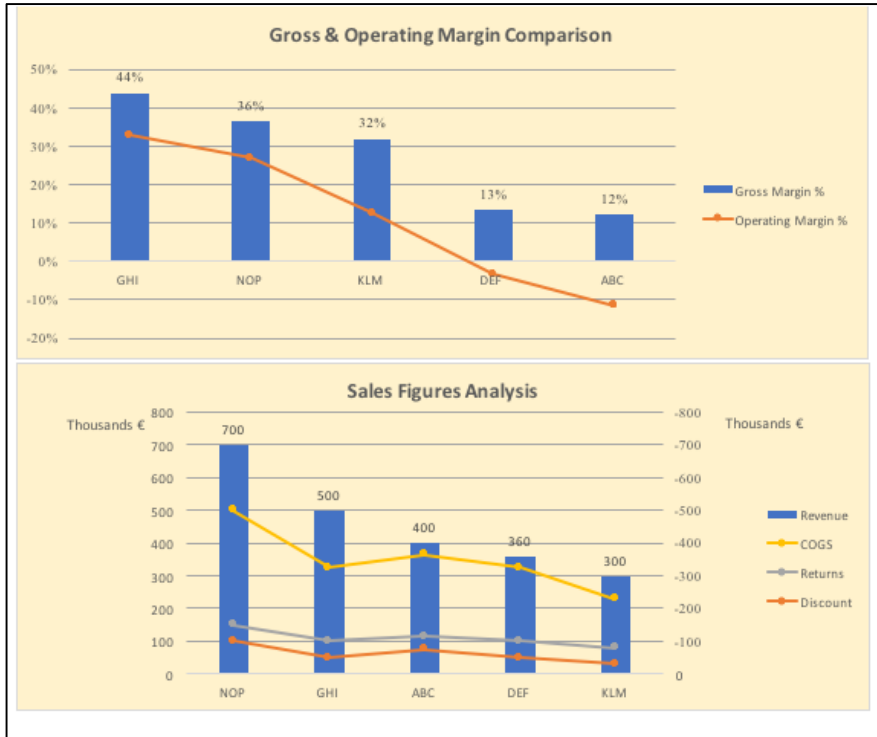


Figure 13. Gross & operating margin comparison and Sales figures analysis

The Figure 14 below can also be quite beneficial for the commissioning company, since it allows to benchmark the relativity of the Net Sales, Direct and Indirect Costs between the customers.

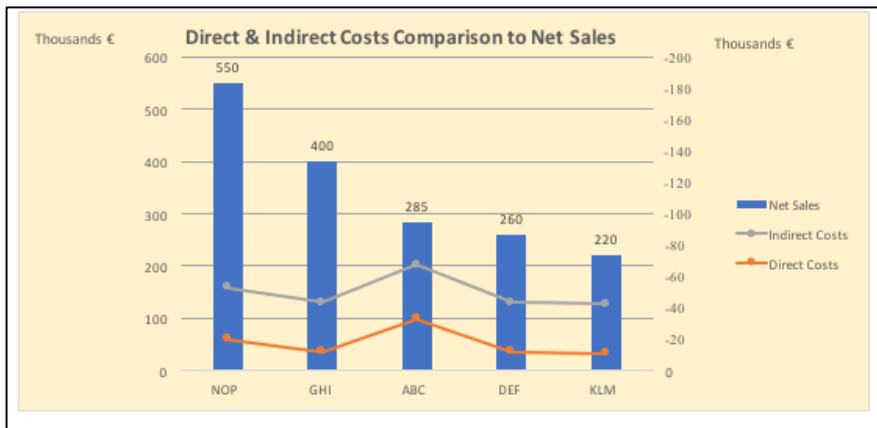


Figure 14. Direct & indirect costs comparison to net sales

5 Findings and recommendations

This chapter provides the findings and recommendations the author has to give, which he gained during the whole thesis process.

5.1 Product assessment

The ability for the commissioning company to analyse the profitability of their customers is the added value the profitability tool will provide. The tool will provide additional visibility into the costs involved with serving the customers. This tool also highlights the sustainability of the company's relationship with its customers. Hence the tool will boost the company's long-term competitiveness by enabling it to make better informed short-term decisions.

The profitability tool cannot be considered to be that of high-end. Rather the tool provides a simple and cost-efficient solution to get more in-depth information about customers' profitability. Due to the end-users' Excel knowledge and the company's wishes, the profitability tool was built to be as simple and easy as possible. However, to give the tool the reliability it needs, management accounting theories, concepts and methods were widely used in the process of creating the tool.

5.2 Process assessment

During the thesis process, the author studied various management accounting theories, concepts and methods starting from the more general management accounting theories to more detailed customer profitability theories. This was required to create a robust theoretical framework for this thesis.

The author wrote this thesis in accordance with the project task plan explained in the first chapter. The author gained more knowledge about the customer profitability and activity-based costing system. The author also managed to grasp with how the management accounting theories are applied to the real-world applications. The process of applying the theoretical knowledge learned during the financial specialization studies to a real tool was one of the biggest steps in the author's journey from a student to a professional.

The author managed to develop his Excel skills further. The author learned a lot about how to build templates, tools and dashboards on Excel with various functions and pivot tables. The author also learned the importance of simplicity in Excel tools, especially when it comes to building a tool that is easy for other people to learn and use.

5.3 Recommendations

The author recommends that the commissioning company develop a thorough cost accounting system. For example, this profitability tool would be much more powerful and accurate if there was a cost accounting system in place– with chart of accounts – that would link every cost transaction to a designated cost centre. This would ease the process of inputting the data to the tool as well as provide real time information about the profitability of the commissioning company’s customers.

5.4 Future development of the customer profitability tool

The author designed and created the customer profitability tool only for the use of the commissioning company Helaform Oy. Since the tool was created with simplicity and cost-efficiency in mind, the author recommends the commissioning company to further develop the tool and enhance the quality of the data used as inputs. After all, the tool is as accurate and reliable as the data provided for it.

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Appendices

Appendix 1. Tool manual

Cost hierarchy group	Activity	Unit cost	Unit	Total units	Total cost
Customer batch level	Order processing	50,00 €	per order	200	(10 000)
Customer output-unit-level	Product returns processing	100,00 €	per product returned	8	(800)
Customer sustaining	Sales visit	500,00 €	per day	20	(10 000)
	Sales activities	40,00 €	per hour	200	(8 000)
	Other sales activities	25,00 €	per hour	35	(875)
	Payment reminder	5,00 €	per reminder	10	(50)
	Product training	250,00 €	per training	12	(3 000)

Create new activity by inserting a new row by right clicking on the row number and inserting a row.

Insert the unit cost and total units

Euros (€)	Customer	ABC	DEF	GHI	KLM	NOP	N/A	N/A
Sales figures	Revenue	400 000	360 000	500 000	300 000	700 000		
	COGS	(250 000)	(225 000)	(225 000)	(150 000)	(350 000)		
	Discount	(75 000)	(50 000)	(50 000)	(30 000)	(100 000)		
	Returns	(40 000)	(50 000)	(50 000)	(50 000)	(50 000)		
Direct costs	Marketing materials	(8 000)	(4 000)	(4 000)	(3 000)	(10 000)		
	Other materials	(25 000)	(8 000)	(8 000)	(8 000)	(10 000)		
Indirect costs	Order processing	(5 000)	(8 000)	(8 000)	(8 000)	(10 000)		
	Product returns processing	(1 500)	(500)	(500)	(500)	(800)		
	Sales visit	(20 000)	(18 000)	(18 000)	(18 000)	(10 000)		
	Sales activities	(4 000)	(2 000)	(2 000)	(2 000)	(8 000)		
	Other sales activities	(800)	(500)	(500)	(500)	(875)		
	Payment reminder	(500)	(500)	(500)	(500)	(50)		
Formulas	Product training	(2 700)	(2 000)	(2 000)	(2 000)	(3 000)		
	Discount %	19 %	14 %	10 %	10 %	14 %		
	Returns %	10 %	14 %	10 %	17 %	7 %		
	Net Sales	285 000	260 000	400 000	220 000	550 000	-	-
	Gross Profit	35 000	35 000	175 000	70 000	200 000	-	-
	Gross Margin %	12 %	13 %	44 %	32 %	36 %		
	Direct Costs	(33 000)	(12 000)	(12 000)	(11 000)	(20 000)	-	-
	Indirect Costs	(34 500)	(31 500)	(31 500)	(31 500)	(32 725)	-	-
Operating Profit	(32 500)	(8 500)	131 500	27 500	147 275	-	-	
Operating Margin %	-11 %	-3 %	33 %	13 %	27 %			

Insert values for these fields

Insert new customer

Appendix 2. Project tasks

Project task #	Project task definition	Theoretical framework	Method	Output
PT 1	Defining the project outline for the thesis		Briefing meeting	Outline of the thesis
PT 2	Studying the management accounting related theory	Management accounting theory, concepts and academic literature	Desktop research	Theoretical framework and models
PT 3	Creating the tool	Theories and the interview data		The customer profitability tool
PT 4	Submitting the beta version of the tool for the test run at the company	The customer profitability tool	Qualitative interview / Feedback	Feedback
PT 5	Adjusting the tool and creating the user instructions to operate the tool	Feedback from interview		The final tool
PT 6	Analysing the project outcome and providing the recommendations	Thesis		Recommendations and final thesis

Appendix 3. Company interview

Questions asked in an interview with Tiia Lahtinen, managing director of Helaform Oy, on 13 February 2017:

- What kind of data are you currently gathering about your customers?
- How do you currently analyse the data you are gathering from your customers?
- What kind of information regarding the customer profitability do you think would provide the greatest benefit to your company?
- What are your predominant activities related your customer service?
- What kind of direct costs do you currently incur in serving the customers?
- What is the level of your readiness to implement and utilize a customer profitability tool based on Excel?