Czech University of Life Sciences Prague

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Bachelor Thesis

Assessment of the Cost Calculation and Management Accounting in a Chosen Vietnamese Company

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

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Assessment of the Cost Calculation and Management Accounting in a Chosen Vietnamese Company

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Objectives of thesis

The aim of the thesis is to assess the cost calculation and management accounting in a chosen Vietnamese company with focus on cost allocation and specification of direct costs, overhead expenses, variable and fixed costs related to the business activity to identify the possible issues and problematic areas affecting the cost-volume-profit relationship and decision making.

Methodology

Methodology for the literature overview is based on data collection from the relevant legal framework, specialized publications and other written or online sources. The practical part of the thesis will be based on the information gained from the internal materials of the chosen company. The methods of analysis, synthesis, comparison and deduction will be used to formulate the results and conclusions of the thesis.

The proposed extent of the thesis

40

Keywords

management accounting, cost calculation, direct costs, overhead cost allocation, administration expenses, selling expenses, variable expenses, fixed expenses, profit, CVP

Recommended information sources

ATRILL, P. Management Accounting for Decision Makers. Harlow, UK: Pearson Education, 2018, 616 p., ISBN-13 978-1292204574

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Prague on 09. 03. 2021

Declaration of Honour

I declare that I have worked on my bachelor thesis titled "Assessment of the Cost Calculation and Management Accounting in a Chosen Vietnamese Company" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 15.3.2021 ________*Cung Thanh Viet Anh*__________

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Assessment of the Cost Calculation and Management Accounting in a Chosen Vietnamese Company

Abstract

This bachelor thesis deals with the cost calculation and management accounting in a chosen Vietnamese company which is an authorized distributor of Panasonic Communication Solutions in Vietnam.

The theoretical part deals with the definitions of the cost and management accounting, direct and indirect overhead costs, variable and fixed costs, contribution margin, break-even point and cost-volume-price analysis.

The practical part deals with the characteristics of the company and its expenses and revenues presented in the income statement, classification of expenses into direct and overhead costs and into variable and fixed costs and the calculation of the contribution margin and break-even point on an illustrative example.

The most important expenses influencing the profit of the company are the direct variable costs of Costs of goods sold and the fixed overhead of administrative and selling expenses.

Keywords: management accounting, cost calculation, direct costs, overhead cost allocation, administration expenses, selling expenses, variable expenses, fixed expenses, profit, CVP.

Zhodnocení kalkulace nákladů a manažerského účetnictví ve vybrané vietnamské společnosti

Abstrakt

Bakalářská práce se zabývá kalkulací nákladů a manažerského účetnictví ve vybrané vietnamské společnosti, která je autorizovaným distributorem produktů Panasonic Communication Solutions ve Vietnamu.

Teoretická část se zabývá vymezením nákladového a manažerského účetnictví, přímých a nepřímých režijních nákladů, variabilních a fixních nákladů, příspěvku na úhradu, bodu zvratu a analýzou CVP (náklad-objem- cena).

Praktická část se zabývá charakteristikou společnosti a jejích nákladů a výnosů vykazovaných ve Výsledovce, klasifikací nákladů na přímé a nepřímé režijní náklady a na variabilní a fixní náklady a výpočtem příspěvku na úhradu a bodu zvratu na modelovém příkladu.

Nejvýznamnějšími náklady, které ovlivňují výši zisku společnosti jsou přímé variabilní náklady "Náklady na prodané výkony" a fixní režijní náklady správy a odbytu.

Klíčová slova: manažerské účetnictví, kalkulace nákladů, přímé náklady, rozvržení režijních nákladů, správní náklady, odbytové náklady, variabilní náklady, fixní náklady, zisk, CVP

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1 Introduction

Management accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information. *(Drury, 2012)*

The main differences between the financial accounting and management accounting are related to the users of the information, legal framework, detail of information and reporting. The users of the financial accounting information presented in the published financial statements are external users like potential investors, banks, trade associates, the tax office or the general public. The users of the management accounting information are internal users who make decisions about the product mix manufactured or the disposal of products or services which doe**s** not generate profit. Other difference is related to the legal requirements. Financial accounting is based on mandatory requirements about the content or form of the financial statements or the book-keeping procedures. Management accounting is internal, not regulated by legislation. The detail of the information given to the user differs. Management accounting information is not published as this kind of information is a competitive advantage.

Cost accounting is a part of the management accounting. Cost accounting focuses on the cost classification for different purposes and from different point of view such as direct or indirect costs for product costing, overheads for budgeting and department responsibility regarding the costs.

One of the most important classification of expenses is related to their relationship to the volume of production. Variable and fixed costs are used for various decision-making tasks, like calculating the contribution margin or the break-even points.

2 Objectives and Methodology

2.1 Objectives

The aim of the thesis is to assess the Cost Calculation and Management Accounting in a chosen Vietnamese company with focus on cost allocation and specification of direct costs, overhead expenses, variable and fixed costs related to the business activities to identify the possible issues and problematic areas affecting the cost-volume-profit relationship and decision making.

2.2 Methodology

Methodology for the literature overview is based on data collection from the relevant legal framework, specialized publications and other written or online sources.

The practical part of the thesis will be based on the information gained from the internal materials of the chosen company. The methods of analysis, synthesis, comparison and deduction will be used to formulate the results and conclusions of the thesis.

3 Literature Review

3.1 Introduction to Management Accounting

3.1.1 Definition and scope of Management Accounting

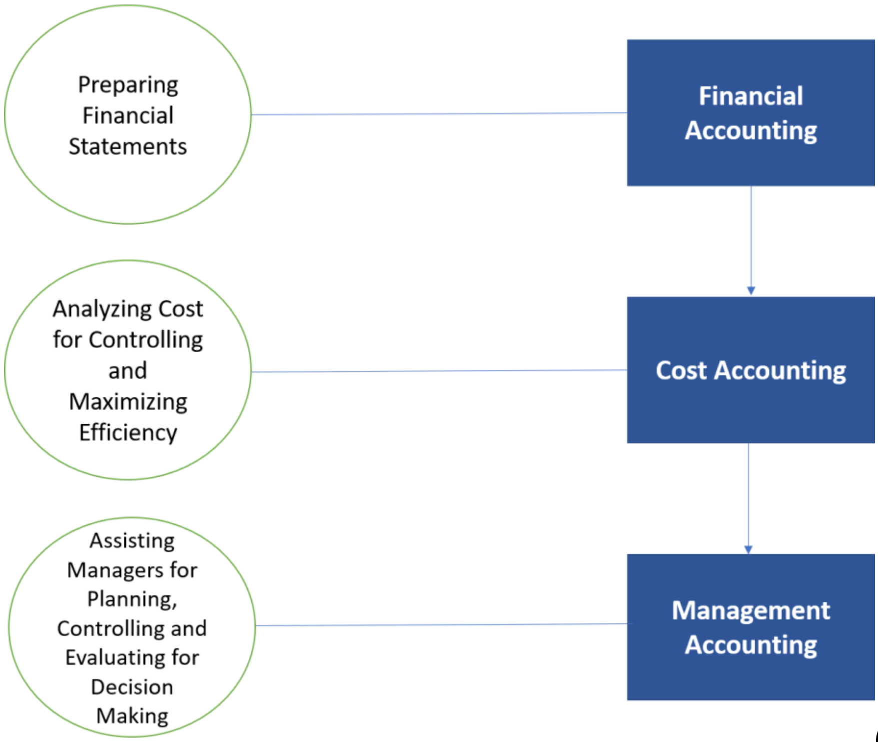
Accounting is the process of recording, classifying, summarizing business data and communicating the information to various parties related to the business. In order of accounting information type and the purpose of used information, accounting can be divided into three categories: *Financial Accounting, Cost Accounting and Management Accounting.*

Financial Accounting is mainly recording business transactions in the books of accounts for the purpose of presenting past Accounting period's final accounts to external parties such as investors, creditors and government agencies. *(Arora, 2009)*

Cost Accounting is a branch of accounting which provides detailed information of costs of products, services and departments. This information is mainly for internal use, excepting government, to whom the information may have to submitted. *(Berkau, 2020)*

Management Accounting is a modern concept of Accounting as a tool for managers, that provides accounting information for management activities such as planning/budgeting for future, controlling/monitoring and evaluating for decision making to keep the business on track. *(Graybeal, 2019)*

These three categories of Accounting are closely linked. Management Accounting uses information not only of Cost Accounting but also of Financial Accounting. For example, Profit/Loss account and Balance Sheet are important tools for planning and controlling. Cost Accounting is a more detailed application of Financial Accounting and provides detailed cost information of products, services and departments. Figure 1.1 shows the relationship of Management Accounting to Cost Accounting and Financial Accounting.



(Arora, 2009)

Figure 3.1: Relationship of Management Accounting to Cost and Financial Accounting

3.1.2 Three main functions of Management Accounting

Unlike Financial and Costing Accountings, General Management and Management Accounting focus on the entire company with broader scope in both short term and long term. Most of the responsibilities of a management fall into one of three categories: *Planning, Controlling, and Evaluating for Decision Making*. These are three main responsibilities of management or three main functions of Management Accounting.

Planning is the process of setting goals – or what the company wants to achieve over time, and objectives - or the targets that should be accomplished to achieve the goals. Planning takes place at all levels of Management. In Management Accounting, ***budgeting*** is used to plan how much resources (costs) needed to produce a quantity of products or services to achieve a certain profit – which is goals of the company. The resources could be time, money, number and type of employees needed. Budgeting can process both financial data, such as salary rates, and nonfinancial data, such as the number of clients an employee can serve in a time period. *(Graybeal, 2019)*

A budget is an approved cost plan, which meets the company's financial goals at lowest costs. A budget should include at least approved cost planning, revenue planning, profit planning and liquidity planning. Actual costs should not be greater than what has been budgeted, in order to achieve financial goals. Therefore, *Controlling* or *Monitoring* is needed.

Controlling or **Monitoring** is to track actual performance comparing to an approved plan, in other words, to measure the success of a plan. Without controlling, it is very uncertain that a plan would succeed, and it would be difficult to determine whether the plan was successful. Managerial Accounting is an effective tool in Management Controlling function, it not only helps to design and determine the appropriate controls for measuring whether a plan meeting targets or goals, but also assists managers by providing monitoring reports showing *variances* or *deviations* between planned and actual performances. In case of significant variances detected, variances would be analyzed to find reasons and corrective actions can be taken, that belongs to *Evaluating* phases. *(Berkau, 2020)*

Evaluating, also known as Analyzing, is the process of comparing actual results to expected results at various levels of a business, such as product, department, division, and company levels. When there are variances or deviations from the setting targets, the controls will be evaluated or analyzed, to determine appropriate modifications – which is for *decision making*. Management Accounting not only provides evaluating methods, but also assists Managers with reports and information needed to analyze the results of the evaluations. For damage reduction, noticing and understanding cost deviations as soon as possible is important. Hence, monthly cost recording and reporting are necessary for cost control, so managers would be able to make early corrections. *(Graybeal, 2019)*

Table 3.1 shows examples of Management Accounting functions in various business departments.

Table 3.1*: Management Accounting functions in various business departments*

	Sales	**Technical**	**Import-Export**
Planning	Monthly Sales targets for each product.	How much technical	Which and How much products to be imported?

	Budget of salaries and commissions for Sales.	components/spare parts to be ordered? Budget of technical training for the year.	Any product needs to be timely delivered?
Controlling	Whether Sales meets their targets? Whether anyone of Salespeople exceed/does not meet their target?	Whether technical materials are over/understocking significantly? Whether technical training goals are met?	Which product is over/understocking significantly? Or no longer in use (Obsolete inventory)? Any waybill is late?
Evaluating	How is the actual sales comparing to targets? Any corrections for Sales targets and Sales promotions? If further market/competitor analysis is needed?	Any other resource of technical materials? If outsourcing is needed and cheaper/faster?	Solutions for overstocking/obsolete products? Any alternative/better supplier with cheaper prices and faster delivery?

3.1.3 Comparison of Management Accounting and Financial Accounting

Firstly, we need to distinguish Management Accounting to Cost Accounting. Some authors consider these two branches are similar, even the same, while others separate them. One thing that everyone agrees on is that these two branches have no clear boundaries. In fact, the growth of Management Accounting is due to the limitations of Cost Accounting. Scope of Management Accounting is broader than of Cost Accounting as it provides all types of needed information for Management, including derived information from Cost Accounting and Financial Accounting. However, Management Accounting system cannot work properly without a Cost Accounting system. Therefore, Management Accounting and Cost Accounting can be seen as only one branch, which is Management Accounting including Cost Accounting in it. This section focuses on comparison of Financial Accounting and Management Accounting - which including Cost Accounting.

In fact, the growth of Management Accounting is due to the limitations of Financial Accounting. Financial Accounting information is mainly in the past and it is often derived too late to be useful for Management. Managerial Accounting works on specific and deeper level, and the information is more detailed and frequently updated. Because Managerial Accounting is for internal uses, it is not governed by legal rules, so the information and types of reports are more flexible. Table 3.2 shows the main differences between Management Accounting and Financial Accounting.

Table 3.2*: Main differences between Management Accounting and Financial Accounting*

	Financial Accounting	**Management Accounting**
Users of Reports	*Public External users*: shareholders, creditors, investors, regulators, etc.	*Private Internal users:* managers, officers, other employees.
Types of Reports	*Financial statements*: Balance sheet, Income statement, Cashflow statement, Changes in equity, Notes.	*Internal reports*: Sales performance, job cost sheet, production cost report, variance analysis of costs, etc.
Frequency of Reports	Quarterly, annually	As frequently as needed: monthly, weekly, or even daily
Purpose of Reports	Helps the external users make decisions: credit terms, investment, and others.	Assists the internal users in the planning, controlling and evaluating for decision making process.

Focus of Reports	Relates to whole company. Does not show information for individual product or department. Represents past or historical records.	Provides very detailed information of product, department, or any other responsibility centre. Future oriented by planning and forecasting.
Standard of Reports	Follows legal regulations and structures of IFRS, GAAP, EU Directives, or the others.	Flexible and not required by law
Nature of Reports	Monetary, such as net sales in USD.	Monetary and nonmonetary information – such as quantity of sold products, number of employees, number of working hours.

(Arora, 2009 and Graybeal, 2019)

3.2 Cost Behaviour, Cost Separation and Future Cost Prediction

3.2.1 Cost Behaviour and Cost Behaviour Patterns

In Management Accounting, different companies could classify a cost and use the cost information in different ways. Different cost classifications could lead to different Management cost planning and decision-makings.

Cost Behaviour is about behaviour or reaction of costs, how costs change with the output of the business (quantity of goods or service) or stay unchanged, and what drives costs (cost driver). Understanding ***Cost Behaviour*** and ***Cost Behaviour Patterns***, a manager can be able to classify costs, and predict future costs. Therefore, Cost Behaviour is essential in Management Accounting.

Direct and Indirect Costs

The costs are classified into direct and indirect costs based on the cost's traceability to a single product or service.

***Table 3.3**: Differences between Direct and Indirect Costs*

	Direct Cost	**Indirect Cost**
Meaning	The costs that can be directly attributed or traceable to a particular cost centre or cost object like product or service.	The costs that cannot be directly traceable to a single cost centre or cost object like product or service
Classification	*Direct material*: includes raw materials expenses to produce a product. *Direct labour*: includes pays to workers involved directly in developing a product. *Direct expense*: includes all other expenses than direct material or direct labour that can be linked directly to production of a product.	*Indirect material*: includes raw materials expenses to produce several different products. For example, metal screws in furniture production. *Indirect labour*: serves more or all products. For example, supervisor's salary, security service fee. *Indirect expenses*: for example, electricity expense.
Total of costs	The sum of direct materials, direct labour, and direct expenses is called ***Prime Costs***.	The sum of indirect materials, indirect labour, and indirect expenses is called ***Overheads***.

(Wikiaccounting)

Besides Prime Cost, another Manufacturing cost is ***Conversion Cost*** including Direct Labour and Manufacturing Overheads (Factory Overheads), that used to convert materials to finished products. ***Manufacturing Overheads*** include indirect labour and indirect materials, not any selling and administrative expenses. *(Berkau, 2020)*

Product and Period Costs

Product Costs are all those costs related to products can be put on stock, that include purchased products for resale and manufactured products. The costs are kept in inventory account until the products are sold and released from stock, they become an expense on the Income Statement: the cost of goods sold. By that, they are matched to the sales revenue income account. *(Berkau, 2020)*

Product Costs contain all Direct Costs (direct materials, labour, expenses) and Manufacturing Overheads (indirect labour and materials).

Period Costs are simply all expenses that are not Product Costs, such as all selling and administrative expenses. Period Costs are recorded as expenses in the Accounting period they occur in. *(Graybeal, 2019)*

Fixed and Variable Costs

Fixed and Variable Costs are the most important Cost Patterns, the foundation of cost classifications.

Fixed Costs are unavoidable operating expenses that do not change in total as the output changes, in the short run. Examples of fixed costs could be rent, insurance, manger's salaries. *(Berkau, 2020)*

Fixed costs remain unchanged in total but can be changed on a per-unit basis, as the output changes. For examples, monthly rent in total is unchanged, but average rent cost per product unit decreases, when the production output increases.

Unlike Fixed Costs, ***Variable costs*** directly depend on the output of business. Typical variable costs are direct materials (raw materials), direct labour (wages), and direct expenses (energy for machines) that change based upon the level of activity.

A ***Cost Driver*** is any activity driving a variable cost changing up or down. Examples of cost drivers could be direct labour hours, machine hours, produced units, and sold units.

In contrast to Fixed Costs, Variable Costs remain unchanged per unit, but changed in total related to the output of business.

Mixed Costs

Basically, those costs do not fall into Fixed and Variable Costs categories are Mixed Costs, that contain a fixed and a variable component.

$$Total\ Mixed\ Cost\ =\ Fixed\ Cost\ +\ Variable\ Cost$$

Mixed Cost equation:

$$Y = a + bx$$

where Y is the total mixed cost, a is the fixed cost, b is the variable cost per unit, and x is the output of business.

3.2.2 Cost Separation and Future Cost Estimation

It is important to separate fixed and variable cost components, in order to analyze them separately for decision making and the future costs estimation. The technique to separate cost components within Mixed Costs is called ***Cost Separation***. *(Berkau, 2020)*

There are three ***Methods for Cost Separation***: Scatter graph, High-low method, and Regression method.

Scatter graph shows scatter points representing costs in various outputs of business, then requires to manually draw a line (trend line) which crosses the most points or stay closely to the point. Because it is not accurate, Scatter graph is mostly used to determine if there is a linear cost behaviour, or linear relationship between cost and output. Then managers could do more analyses to separate cost components. However, if the relationship does not exist, then the other methods are not appropriate. *(Graybeal, 2019)*

Table 3.4 shows the cost data for Evencoat Paint in 2019

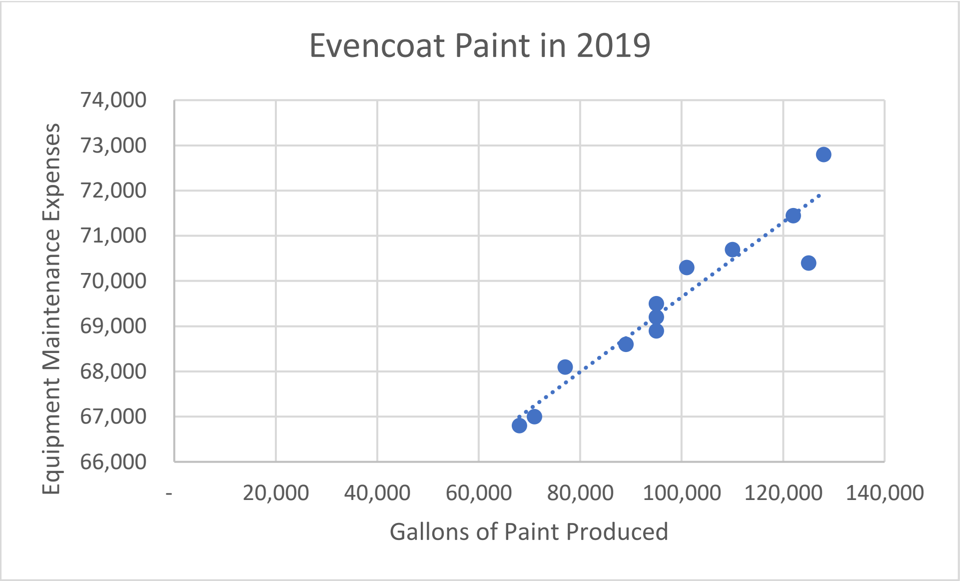
Table 3.4: Cost data of Evencoat Paint in 2019

Month	Gallons of Paint Produced	Equipment Maintenance Expenses
Jan	110,000	70,700
Feb	68,000	66,800
Mar	71,000	67,000
Apr	77,000	68,100
May	95,000	69,200
Jun	101,000	70,300

Jul	125,000	70,400
Aug	95,000	68,900
Sep	95,000	69,500
Oct	89,000	68,600
Nov	128,000	72,800
Dec	122,000	71,450

(Source: Graybeal, 2019)

Then we have Scatter Graph with a trend line as follows:

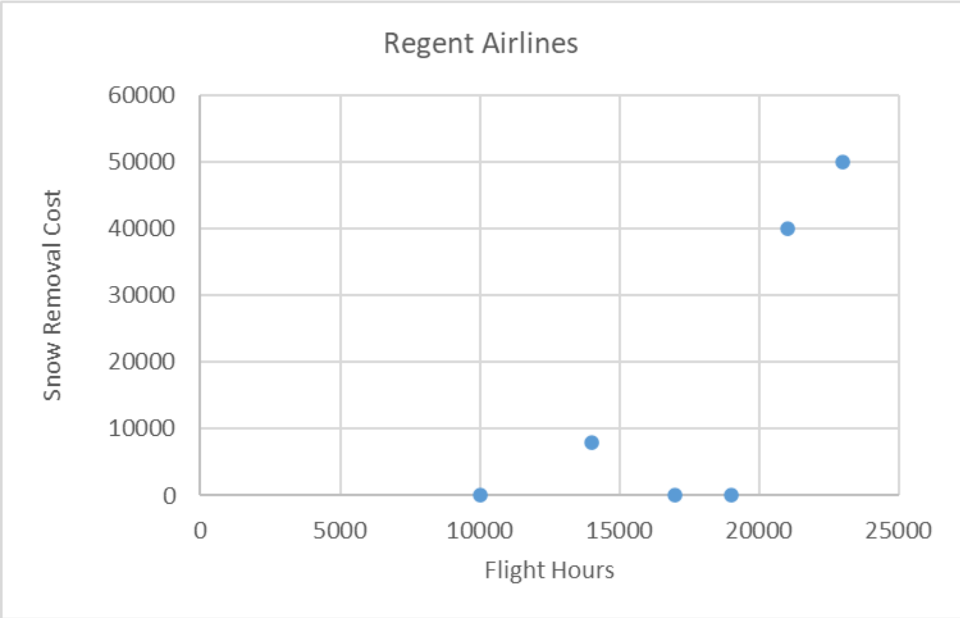


(Source: Graybeal, 2019)

Figure 3.2: Scatter Graph of Evencoat Paint in 2019

As we can see, there is a linear relationship between Equipment Maintenance Expenses (Costs) and Gallons of Paint Produced (Outputs).

Scatter Graph of Regent Airlines is an example of no linear relationship exists.



(Source: Graybeal, 2019)

Figure 3.3: Scatter Graph of Regent Airlines

High-low method uses the highest and lowest outputs of related costs to estimate the Variable Cost component of Mixed Cost. *(Graybeal, 2019)*

$$Variable\ Cost = \frac{Changes\ in\ Cost}{Changes\ in\ Outputs} = \frac{Y_2 - Y_1}{X_2 - X_1}$$

Where Y_2 is cost at the highest output, Y_1 is cost at the lowest output, X_2 is the highest output, X_1 is the lowest output.

Then the Fixed Cost component is calculated by subtracting Variable Cost from Total Cost.

Come back to the cost data of Evencoat Paint in 2019, we can calculate Variable Cost component:

$$Variable\ Cost = \frac{72{,}800\ -\ 66{,}800}{128{,}000\ -\ 68{,}000} = \$0.1\ per\ gallons$$

$$\begin{aligned} Fixed\ Cost\ &=\ Total\ Cost\ -\ Variable\ Cost \\ &= \$72{,}800 - (128{,}000 * \$0.1) \\ &= \$60{,}000 \end{aligned}$$

Now that we have separated both the fixed and the variable components, we can express Evencoat Paint's cost of equipment maintenance using the total cost equation:

$$Y = 60{,}000 + 0{,}1x$$

where Y is total cost and x is Gallons of Paint Produced.

This equation can be used to estimate the future cost.

Even though the method is used often, it is not reliable for Budgeting. Because it is based on only 2 points of cost data, and it could fail in case of exceptional cost data is chosen.

Regression method is more reliable to separate Mixed Costs into their Fixed and Variable components. Regression method is a statistical technique that minimizing the differences between the points of cost data and the function line, in order to make all the points are on or closet to the line. *(Berkau, 2020)*

3.3 Cost Volume Profit Analysis (CVP Analysis)

When a company first starts operations, Fixed cost is applied. Only after producing or selling a quantity of goods or service to cover all the Fixed cost, the company begins to earn a profit. For the management, it is important to know when the business becomes profitable.

Cost Volume Profit Analysis (CVP analysis) is also known as ***Break-even analysis***, which indicates the sales level to balance revenue with expenses, or at which sales level, revenue starts to exceed costs. (*Berkau, 2020*)

Our CVP analysis will follow these below assumptions:

i. *Costs are linear and can be separated to fixed or variable. Fixed costs are unchanged over the relevant period and Variable costs are unchanged on a per-unit basis.*

ii. *Selling prices per unit are constant and changed based on sales volume. In other words, no discount is applied.*

iii. *No changes in Finished goods, that all units produced are sold.*

To understand CVP analysis or Break-even analysis, firstly we need to know the concept of Contribution Margin.

Contribution Margin

Contribution Margin is the amount by which a product's sales price per unit exceeds its total Variable cost per unit. *(Graybeal, 2019)*

$$\text{Contribution margin per unit} = \text{Sales price per unit} - \text{Variable cost per unit}$$

The term "***margin***" is the difference between a product or service's sales price and its cost, can be used to determine how profitable a product or service is. For example, food in general is low margin with less profit than high margin goods, such as jewelry or beauty products.

Contribution margin can be calculated in percentage:

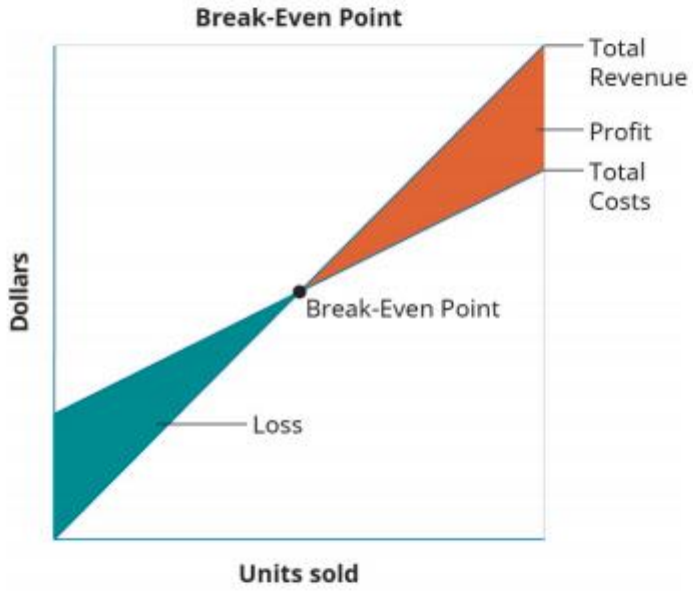
$$Contribution\ Margin\ Ratio = \frac{Contribution\ Margin\ per\ unit}{Sales\ price\ per\ unit}$$

Contribution Margin provides important information of how each product or service contributing to a business profit, which allows managers to make decisions to focus on products or services with higher margin, in order to maximize profit.

Break-Even Point

Break-Even Point is the Sales level at which a company balances their costs and revenue, or Total Cost = Total Revenue, meaning no profit or loss occurs at this point. *(Graybeal, 2019)*

Fig 3.4 shows Break-Even Point in graph



(Source: Graybeal, 2019)

Figure 3.4: Break-Even Point graph

To find the break-even point, we need to use *Contribution Margin* and determine how many contribution margins to cover the Fixed cost.

$$Break - Even\ Point\ in\ unit = \frac{Total\ Fixed\ Costs}{Contribution\ Margin\ per\ unit}$$

$$Break - Even\ Point\ in\ currency\ unit = \frac{Total\ Fixed\ Costs}{Contribution\ Margin\ Ratio}$$

Management needs to make decisions that helps the company reaching and exceeding the Break-even point as quickly as possible. Break-even analysis also can be used to determine a Target Sales level to make a desired profit. The desired profit is simply added to the fixed costs and then calculate a new break-even point.

$$Target\ Sales\ in\ unit = \frac{Fixed\ Costs\ +\ Desired\ Profit}{Contribution\ Margin\ per\ unit}$$

$$Target\ Sales\ in\ currency\ unit = \frac{Fixed\ Costs\ +\ Desired\ Profit}{Contribution\ Margin\ Ratio}$$

Another application of CVP analysis is for ***sensitivity analysis***, or ***what-if analysis*** which shows what happens if Sales price, Sales level, Variable cost, or Fixed costs change. Managers use this analysis to consider possible scenarios that assist them in planning and decision making. Table 3.5 shows an example of CVP sensitivity analysis:

Table 3.5: An example of CVP sensitivity analysis

Sales price, Variable Cost and Fixed cost change Analysis						
			Decreasing VC 0.05 and Increasing FC 400		**Increasing SP 0.2, Decreasing VC 0.05 and Increasing FC 400**	
Sales price per unit	$	3.75	$	3.75	$	3.95
Variable cost per unit	$	1.50	$	1.45	$	1.45
Contribution margin per unit	$	2.25	$	2.30	$	2.50
Fixed cost	$	2,475	$	2,875	$	2,875
Break-even in units		*1,100*		*1,250*		*1,150*
Break-even in dollars	*$*	*4,125.0*	*$*	*4,687.5*	*$*	*4,542.5*
Monthly Contribution margin Income statement						
Unit sales, expected		1,500		1,500		1,500
Sales	$	5,625	$	5,625	$	5,925
Variable cost	$	2,250	$	2,175	$	2,175
Contribution margin	$	3,375	$	3,450	$	3,750

Fixed cost	$	2,475	$	2,875	$	2,875
Net Income	*$*	*900*	*$*	*575*	*$*	*875*

(Source: Graybeal, 2019)

4 Practical part

The practical part of the thesis deals with the characteristics of the company and its departments, the overall expenses and revenues in the company, cost calculation for a key product, specification of overhead expenses, proposition of dividing the expenses into variable and fixed costs and calculating the contribution margin.

4.1 Characteristic of the company and its departments

The company A is authorized distributor of Panasonic Communication Solution in Vietnam. Since its formation in 1993, A has quickly developed as a key player within the Communication Solution industry in Vietnam, with 65% market share. Company A provides Panasonic products and solutions for Private Telephone Network used within a company or organization, security camera, video door phone, HD Video Conference System, with 1300 nationwide partners and Annual Revenue of 15 million USD.

The company has a headquarter in the North (the monitored company) and 2 branches in Middle and South Vietnam (these branches are managed separately).

The headquarter has around 35-40 employees for all departments: Technical, Administration, Sales, Accounting, Management, Import-Export, PR and Marketing, Warehouse and delivery.

Departments of the company

Technical (about 6 people) – provides technical services to customers: set-up and maintenance (expenses are related to the salary, tools and equipment). The technicians travel for work by their own motorbikes or company’s cars. There are 2 company’s cars what the management can also use (expenses are related to the company car´s depreciation, fuel, road tax). The customers can be 15-30 minutes far away, sometimes hours. Average price for fuel in Vietnam is 1 USD/litter.

Administration (about 4 people) – reception, Human Resources (HR), security, cleaning service, showroom and conference room management (expenses are related to the office material, depreciation of office furniture, showroom and conference room expenses, equipment, electricity and water).

All the offices use the equipment (products) which the company sells: telephones and telephony systems, printers, cameras, video conference system.

Sales (about 10 people) – face to face sales – they have to go to the partners for personal meetings almost every weekday, 2-4 hours per day (salary, social and health insurance of salesmen). Mostly they use their own motorbikes (they get compensation for using their own motorbikes). Telesales – telephone expenses are included into the internet expenses (the telephones are working based on the Internet). The company does not have an e-shop, advertisement is through Sales activities. Customers are not only end-users but mainly companies and agencies – they buy products for their offices and resell to end-users. If they use their own laptops and mobile phones they get a compensation.

All employees get full paid for lunch. Lunch expenses in Vietnam is not expensive (average lunch is 1.3 – 2.2 USD)

Accounting (about 3 people) – invoicing, taxes, financial statements, bank settlements (expenses are related to the salary, office equipment – computer, laptop, mobile phones, depreciation of accounting software, electricity, some travel expenses – to the bank, to the tax office, etc).

Management (about 2-3 people: the owner, CEO, Sales Manager) – expenses are related to the salary of management, office equipment, electricity, business trips – travel expenses, business lunch – representative expenses, mobile phones, office rent, depreciation of management's cars, road tax.

Import-Export (about 2-3 people) – communicating and making orders with suppliers or manufacturers, negotiating imported prices, being responsible for the documents related to customs, obtaining necessary certificates of products for selling in Vietnam, communicating with government offices (expenses are related to office equipment, mobile phones, fax machines, travel expenses, fees for the certificates).

PR and Marketing (1-2 people) - Being responsible for brochures, marketing equipment, product and brand images, big launching and marketing events for customers and partners. They cooperate with the Import-Export department and Sales and Accounting departments to support the Management (expenses are related to the office, material, expenses on the external services - they design brochures and other marketing products, then get final products from an external supplier).

Their Advertisement is through Sales activities (calling, meeting with agencies/customers), marketing events/workshops to launch new products, brochures, website, etc.

Warehouse and delivery (about 6 people) – managing the products in a 1000 square meter warehouse (not in the main building, expenses are related to the rent). They receive the orders from the Sales department and deliver to the customer. They have 2 vans and their own motobikes.

The headquarter has 8 offices for all 8 departments. Administration office is close to showroom and conference room which are also managed by the department.

Average sales of units of key product is 90 units per month.

4.2 Income Statement of the company

The development of the items in the Income statement (the Profit/Loss statement) of the company during the years 2016 - 2019 is shown in Table 4.1. The Income statement is prepared by dividing operating expenses by function. The main categories of operating expenses in the Income statement by function are the Costs of Goods Sold, Administrative and Selling expenses.

Table 4.1*: Income Statement for 4 years (2016-2019)*

(Currency in USD)

		2 019	2 018	2 017	2 016
1	**Revenues from sales and services**	18,144,362	18,398,782	19,266,108	19,322,630
2	**Costs of goods sold**	17,046,741	17,236,119	17,433,722	17,325,026
3	**Gross profit** (3 = 2 - 1)	1,097,620	1,162,663	1,832,386	1,997,604
4	**Financial Income**	1,290	3,684	5,553	5,553
5	**Financial expenses**	222,755	174,443	740,978	762,717
6	**Selling and Administrative expenses**	529,794	652,987	926,978	926,978
7	**Net Income** (froms sales and services) [7 = 3 + (4 - 5) - 6]	346,361	338,918	169,983	313,461
8	**Other income**	79	7,053	30,261	30,261

9	**Other expenses**	106	6,806	3,680	14,549
10	**Other profit** (10 = 8 - 9)	(27)	247	26,581	15,711
11	**Total expenses** (11 = 5 + 6 + 9)	752,655	834,236	1,671,636	1,704,245
12	**Total net profit before tax** (12 = 7 + 10)	346,334	339,165	196,564	329,172
13	**Current tax expense**	86,583	84,791	49,141	82,293
14	**Net profit after tax** (14 = 12 - 13)	259,750	254,373	147,423	246,879

(Source: own processing)

4.3 Direct costs (Cost of Goods Sold) and Overhead costs - Administrative, Selling and General expenses

Direct costs are the Costs of Goods Sold (COGS) which include the acquisition price of the sold merchandise. The acquisition price of the merchandise which include the purchase price, the shipping cost, the insurance and custom duties is shown in Table 4.2. When the merchandise is sold, the Cost of Goods Sold is the acquisition price of the sold merchandise.

The indirect overhead expenses are shown in Table 4.2 and are related to the rent of the warehouse, energy and utilities, depreciation, salaries of administrative and selling staff, salaries of employees in other departments and interest paid.

Table 4.2: Examples of the Overhead Administrative and Selling Expenses

(Currency in USD)

	Monthly	**Yearly**
Rent (warehouse and admin)	3200	
Energy and Utilities	870	
Depreciation	2536	
Salaries of administrative and selling	5300	
Salaries of Accounting	2250	
Salaries of Technical staff:	2950	

Salaries of Import-Export:	2050	
Salaries of Warehouse and Delivery	2150	
Salaries of Management	10 000	
Total administrative, selling, general costs		529,794 (from the year 2019)
Financial expenses – interest		222,755

(Source: own processing)

4.4 Costing and contribution margin for a key product

X is a key product of the company A, which is imported from Hong Kong and then sold/distributed in Vietnam.

Product X is a merchandise. The valuation of this merchandise includes the purchase price of the product and other expenses related to the acquisition, like transport, insurance, import tax and custom duties. The transportation is by sea freight service, using commercial transport ships, through Vietnam and Hong Kong port - Kwai Tsing Container Port. Examples of shipping company offering services between Vietnam and Hong Kong ports are MAERSK, OOCL, CMA CGM, Evergreen. The transport of the merchandise includes an insurance.

All expenses related to the costs of Goods sold are considered variable, because the expenses related to the acquisition of merchandise (transportation, insurance, custom duties) are included in the valuation of the merchandise.

Table 4.2 shows the costing of the key product X.

Table 4.3*: Costing and Profit Analysis of the key product X per unit*

1	Revenue with VAT	$ 171.00	x
2	Revenue without VAT	$ 155.45	x
3	**Total Cost (4+5+6+7+8)**	**$ 89.69**	
4	**Cost of Good Sold**	**$ 75.27**	

-	Value of imported good (FOB)	$ 68.00	Variable
-	Transportation cost (by ship)	$ 0.09	Variable
-	Insurance cost	$ 0.01	Variable
-	Import tax (0.05%)	$ 0.35	Variable
-	Custom duties for imported goods (10% for customs)	$ 6.84	Variable
5	Administrative and distribution costs	$ 10.88	Overhead and mostly fixed
-	Salary	*$ 2.88*	*Fixed or mixed*
-	Warehouse and admin building rent	*$ 2.00*	*fixed*
-	Electricity mostly fixed	*$ 2.00*	*Fixed or mixed*
-	Water mostly fixed	*$ 2.00*	*Fixed*
-	Outside purchasing services cost – general selling expenses (advertising,	*$ 2.00*	*Fixed*
6	Interest expense	$ 3.40	Fixed
7	Other costs (extra delivery cost)	$ 0.14	Variable
8	Income Tax	$ 15.55	
9	**Net Profit (1-3)**	**$ 81.31**	

(Source: own processing)

The expenses included in the cost of goods sold are the acquisition price of the merchandise.

Dividing expenses into variable and fixed allows the calculation of the contribution margin.

Contribution margin per product = Sales price per product – Variable cost per product

Sales price per product: $155.45

Variable cost per product: $75.27

Contribution margin per product: $80,18 or 51.58%

The contribution margin indicates, how much from the revenues from sale (in this case sales price per product) remains to cover the fixed costs and to provide profit to the company.

4.5 Illustrative example of using Fixed and Variable costs for calculating Break-even point

Dividing expenses into variable and fixed can be used for calculating the break-even point. Company A is a trading company, does not manufacture products, but buys and sells merchandise. Variable costs are related to the costs of goods sold and the fixed costs are related to the administrative, selling and general expenses (examples are listed in Table 4.3).

The illustrative example shows three selected products the company sells. These products are not representative of the overall merchandise the company sells, but they are key products, because they are unique in the market.

The fixed costs allocated to these 3 products are approximate, allocated according to the total revenues from sales of these products to the total revenues of sales of all products, which is approximate 10%.

The variable costs for these products (merchandise) are used from the individual cost calculations provided by the company (example of the cost calculation of product X is in Table 4.3).

Illustrative example to calculate the Contribution Margin and Break-even point for three selected products (merchandise) X, Y and Z for a month:

Total Revenues from sales and services: $18,144,362

85% of revenues are from sold merchandise $15,422,708

15% of revenues are from sold services: $2,721,654

The total revenues from the three selected products per year: $1,559,460

Total revenues from sold products per year: $15,422,708

Table 4.3: Fixed Costs Allocation of three selected products

	Monthly	Yearly
Total revenues from all sold products *(85% of the amount from the Income statement)*	x	$ 15,422,708.00
Revenues from the selected three products *(based on the volume sold and the individual selling price)*	$ 129,955.39	$ 1,559,464.68
Total fixed costs for the whole company *(selling, administration and general costs plus financial costs)*	$ 62,712.40	$ 752,549.00
Fixed overhead costs to be covered by the three products *(allocated in relation to the revenues from sale these products generate)*	$ 6,341.00	$ 76,092.00

(Source: own processing)

Allocation of the fixed costs to the selected three products (merchandise)

If total revenues from sold goods is 15 422 708………. 100%

Revenues from sale of selected products 1 559 464,68……….?

(1 559 464,68 * 100 / 15 422 708 = 10,11)

Approximately 10% of the fixed overhead costs is allocated to these three products.

Product X is the key product as a small telephone system, product Y is a corded telephone, product Z is a medium telephone system. Table 4.4 shows information of Sales and Costs of these three products.

Table 4.4: Information about the characteristics of product X, Y, Z

	X key product	**Y other product**	**Z other product**	**TOTAL**
Sales Volume in unit	90	11,023	29	**x**
Selling price per unit	$ 155.45	$ 8.50	$ 767.91	**x**
Variable costs per unit	$ 75.27	$ 4.10	$ 520.80	**x**
Fixed costs	x	x	x	**$ 6,341.00**

Total variable costs	$ 6,774.30	$ 45,194.30	$ 10,782.20	**$ 62,750.80**
Total revenues from sales	$ 13,990.50	$ 93,695.50	$ 22,269.39	**$ 129,955.39**

(Source: own processing)

Break even point for the structure

Fixed costs / (1 – variable costs per revenue*)

*Variable costs per revenue = Total variable costs / Total revenues from sales

0,48286 = 62,750,80 / 129,955,39

Break even point is 6341 / 1-0,48286 = $12 261,7

The company has to reach 12 261,7 revenues from sales from this mix of products (merchandise) to cover the related fixed costs. In this point, the profit is zero.

Calculating the break-even point in units for this mix of selected products is the following:

Product X = (revenues from sales for X / total revenues) * break-even point = amount / selling price of product X

Product X = ($13,990.50 / $129,955.39) * $12 261,7 = $1320 / $155.45 = 8,5 units (9 units)

Product Y = ($93,695.50 / $129,955.39) * $12 261,7 = 8 840 / $8.50 = 1040 units

Product Z = ($22,269.39 / $129,955.39) * $12 261,7 = 2101/ $767.91 = 2,74 units (3 units)

For these selected products, if the company sells 9 units of X, 1040 units of Y and 3 units of Z (at the same time, for the selling price indicated in Table 4.4), the fixed costs will be covered and the profit is zero. From this point the sale will generate a profit.

Calculation check:

Total expenses = Fixed costs + Variable costs

= 6341 + (75.27 * 9 units) + (4.1 * 1040 units) + (520.80* 3 units)

= 12,844.83

Total revenues from sale = 9 units of X * $155.45 + 1040 units of Y * 8,50 + 3 units of Z * 767,91

= 12,844.83

5 Results and Discussion

In this chapter the summary of the practical part is presented, the specification of direct and overhead costs, fixed and variable costs and their use and the most significant expenses influencing the profit.

5.1 Assessment of Direct and Indirect (overhead) costs

Direct costs in the company are related to the item: “Costs of Goods Sold”. These expenses are the acquisition price of sold merchandise. Expenses related to the purchase (like transport, insurance, custom duties) are included in the acquisition price of the merchandise and this acquisition price is recorded into expenses when the merchandise is sold. Direct costs are the most significant expense in the company´s Income statement.

Indirect overhead expenses are related to the administrative and selling expenses. Administrative expenses include the wages of the administrative staff and the wages of management, depreciation of the office equipment, office material consumption, depreciation of the cars of the management, utilities. Selling expenses include the rent of the warehouse, wages of the sales staff, advertisement. The wages of the sales staff are fixed, there is no variable part from sold merchandise.

5.2 Assessment of the Variable and Fixed costs and Contribution margin

It is necessary to divide the expenses into fixed and variable to be able to make decisions and to calculate the contribution margin. Examples of fixed costs in the company are the overhead expenses and financial expenses (listed in Table 4.2). Variable costs in the company are the Costs of Goods Sold, which is the acquisition price of the merchandise sold (example of costs of goods sold is shown in Table 4.3).

The contribution margin indicates what amount from the revenues from sale remain to cover the fixed costs and to provide profit to the company. The selling price should always cover the variable expenses, for each unit. The difference between the selling price and variable costs is what generates the profit for the company, after covering the fixed expenses.

The Contribution margins for three selected merchandises is shown in Table 5.1.

Table 5.1: Comparison of the Contribution margins of three selected products

	X key product	**Y other product**	**Z other product**
Selling price per unit	$ 155.45	$ 8.50	$ 767.91
Variable costs per unit	$ 75.27	$ 4.10	$ 520.80
Contribution margin per unit	*$ 80.18*	*$ 4.40*	*$ 247.11*
Contribution margin ratio	*51.6%*	*51.8%*	*32.2%*

(Source: own processing)

The most expensive merchandise (product Z) has the lowest contribution margin.

5.3 The most significant expenses influencing the profit

Cost of goods sold is the most significant part of expenses. These expenses are related to the acquisition price of the sold merchandise. The actual purchase price of the products is given by the suppliers. The possible ways how to reduce the total expenses in “Costs of goods sold” is to reduce some related acquisition expenses, like transport (shipping) and insurance. The custom duties cannot be influenced by the company as they are government related.

Other expenses influencing the profit are the administrative and selling expenses. These overhead expenses are mostly fixed (rent, salaries, depreciation of equipment and cars), but there are expenses which can be reduced, like office material consumption or more economical use of utilities (energy, water) and telecommunication services.

Focus on the products with higher contribution margin can enhance the revenues from sale thus increase the profit.

6 Conclusion

The aim of the thesis was to assess the cost calculation and management accounting in a chosen Vietnamese company with focus on Cost allocation and specification of direct costs, overhead expenses, variable and fixed costs related to the business activities to identify the possible issues and problematic areas affecting the cost-volume-profit relationship and decision making.

Cost accounting deals with the monitoring of expenses from different points of view, cost calculation for the products or services or merchandise sold and with budgeting. Direct expenses are expenses which are related directly to the manufactured products or sold merchandise. Overhead expenses are expenses related to the overall expenses necessary to run the whole company and are indirectly related to the production or sale or services provided. Variable costs are costs which change in proportion to the production output or merchandise sales or services provided. Fixed costs are expenses which does not change with changes in amount of goods or services produced or sold. Management accounting deals with providing information for decision making.

The thesis deals with the cost and management accounting in a Vietnamese company founded in 1993 which is an authorized distributor of Panasonic Communication Solution in Vietnam. The company provides Panasonic products and solutions for Private Telephone Network used within a company or organization, security cameras, video door phone, HD Video Conference Systems.

The headquarter of the company has around 35-40 employees and has these: Technical, Administration, Sales, Accounting, Management, Import-Export, PR and Marketing, Warehouse and delivery.

The income statement of the company shows that the most significant expenses are the Costs of goods sold. These expenses are direct variable expenses related to the acquisition price of the sold merchandise. Costs of goods sold include the purchase price of the merchandise and the related expenses (like shipping, insurance and custom duties). Overhead expenses are mostly fixed expenses and include expenses like rent, depreciation, wages of administrative, management and sales staff, utilities.

Dividing expenses into variable and fixed costs is fundamental in making management decisions. The contribution margin or the break-even point is calculated by using the variable and fixed costs and the selling price. The contribution margin shows what amount from the revenues from sale remain to cover the fixed costs and to provide profit to the company. The example of the contribution margin calculated in the thesis shows that the most expensive selected product for sale has the lowest contribution margin.

The most significant expenses influencing the profit are the expenses related to the sold merchandise and its acquisition price. Reduction of these expenses can be possible by using a different shipping and insurance company. Expenses related to the administrative and selling overhead may be reduced by more economical use of utilities, office material and telecommunication services.

Cost and management accounting is very important to internal users as the information regarding the costs, volume and price is a base on making decisions for the future.

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