COVER PAGE AND DECLARATION

	Master of Business Administration (M.B.A.)
Specialisation:	Entrepreneurship
Affiliated Center:	CEO Buisness School
Module Code & Module Title:	MGT510: Managerial Accounting
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Word Count:	3547
Date of Submission:	11 March 2023

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Introduction

Swipe 50 Ltd. Can use the managerial accounting report to perform many decision-making activities such as:

- Setting the price of the product in normal operation
- Special offers acceptance and pricing negotiations
- Estimate production capacity that allow maximum Profit Margin
- Calculate the product contribution into the operating income

In addition, much more important data, crucial for the management to take decision, can be acquired by applying the absorption and variable costing methods for calculating and analyzing the operating income and the product cost over a period of time.

Absorption costing, also called "full costing" allocates all direct and indirect costs, such as direct materials, direct labor and direct overheads. Moreover, indirect will be the selling and administrative expenses.

Variable costing, also called "contribution method". In this method, all of the variable direct costs are included in the cost of Goods sold "COGS". The fixed direct costs are allocated to operating cost, (THE INVESTOPEDIA TEAM, 2022).

Given and Calculated Data

According to the Data given by Swipe 50 Limited. We calculated the data required to perform the cost analysis using absorption and variable costing methods.

Given and calculated data		
	February	March
Beginning inventory	**0**	**1000**
beginning inventory Total cost Actual	**€ -**	**€ 6,712.00**
beginning inventory Fixed cost Actual	**€ -**	**€ 2,288.00**
beginning inventory Variable cost Actual	**€ -**	**€ 4,424.00**
Production (units)	12500	14500
Sales (units)	11500	15500
End Inventory	1000	0
End inventory Total cost Actual	€ 6,712.00	€ -
End inventory Fixed cost Actual	€ 2,288.00	€ -
End inventory Variable cost Actual	€ 4,424.00	€ -
Direct Materials	€ 29,000.00	€ 33,250.00
Direct Labour	€ 19,000.00	€ 22,000.00
Variable Production Overhead	€ 7,300.00	€ 8,500.00
Total Selling and Administrative Expenses	€ 44,500.00	€ 57,100.00
Variation in total selling and administrative cost	€ 12,600.00	
Variation in sold units	4000	
Variable selling and administrative cost per unit	€ 3.15	€ 3.15
Variable selling and administrative cost	€ 36,225.00	€ 48,825.00
Fixed selling and administrative cost	€ 8,275.00	€ 8,275.00
Fixed selling and administrative cost per unit sold	€ 0.72	€ 0.53
Total selling and administrative cost per unit sold	€ 3.87	€ 3.68
Production Capacity per month	20000	20000
Fixed Production overhead per month	€ 28,600.00	€ 28,600.00
Planned Fixed production overhead per unit	€ 1.43	€ 1.43
Actual Fixed production overhead per unit	€ 2.288	€ 1.97
Fixed Production over head variance per month	€ 10,725.00	€ 7,865.00
Variable production cost per unit	€ 4.42	€ 4.40
Total production cost per unit	€ 6.71	€ 6.37
Total cost per unit	€ 10.58	€ 10.05
Price	€ 22.00	€ 22.00

Data analysis

Production capacity and inventory

According to the data given, the month of February started with no beginning inventory and ended with inventory of 1000 units; during this period Swipe 50 Ltd. Couldn’t reach the maximum capacity of production with deficiency of 7500 units.

The difference between the actual production and the capacity of production will cause a variance in the fixed production cost.

It was budgeted for € 28600 to produce 20000 units, now this amount of money is divided on less number of units increasing the fixed production cost per unit from 1.43 to 2.29 € , and creating a variance of paid but unused Fixed overhead amount of € 10,725 during the month of February.

In the month of March Swipe 50 Ltd. Showed increase in production and sales , the month ended with zero unsold inventory , the unit Fixed production cost decreased toward the target to be 1.97 € .more over the Variable production cost per unit slightly decreased with the production increase as well.

Due to increase in production, the unutilized variance in fixed overheads decreases to be € 7,865 in the month of March.

Total Selling and Administrative Expenses breakdown

The total selling and administrative cost given does not identify its Fixed and variable components.

As the variation in sales will affect only the variable cost, we can calculate the variable cost per unit by calculating ratio between the difference in expenses over February and March and the difference in units sold over the same period.

$$\begin{aligned}&\mathit{Variable\ selling\ and\ adminstrative\ cost\ per\ unit}\\&\qquad=\frac{\mathit{Total\ selling\ and\ adminstrative\ cost}(\mathit{March}-\mathit{February})}{\mathit{Number\ of\ unit\ sold}(\mathit{March}-\mathit{February}\ )}\\&\qquad=\frac{€\quad 12{,}600.00}{4000}=3.15\ €\end{aligned}$$

From this calculation, we achieve the monthly variable selling and administrative cost related to the number of units sold each month; also, the fixed component will be € 8,275.00 monthly.

Absorption costing

Absorption method		
	February	March
Sales revenue	€ 253,000.00	€ 341,000.00
beginning inventory Total cost Actual	€ -	€ 6,712.00
Direct Materials	€ 29,000.00	€ 33,250.00
Direct Labour	€ 19,000.00	€ 22,000.00
Variable Production Overhead	€ 7,300.00	€ 8,500.00
Fixed Production overhead per month	€ 28,600.00	€ 28,600.00
End inventory Total cost Actual	€ 6,712.00	€ -
COGS	€ (77,188.00)	€ (99,062.00)
Gross Profit	€ 175,812.00	€ 241,938.00
Total selling and administrative expenses	€ (44,500.00)	€ (57,100.00)
Total operating Income	€ 131,312.00	€ 184,838.00
Total production cost per unit	€ 6.7	€ 6.4
Total cost per unit including sales and administrative.	€ 10.6	€ 10.1

Variable costing

Variable method		
Sales revenue	€ 253,000.00	€ 341,000.00
beginning inventory Variable cost Actual	€ -	€ 4,424.00
Direct Materials	€ 29,000.00	€ 33,250.00
Direct Labour	€ 19,000.00	€ 22,000.00
Variable Production Overhead	€ 7,300.00	€ 8,500.00
End inventory Variable cost Actual	€ 4,424.00	€ -
COGS	€ (50,876.00)	€ (68,174.00)
Gross Profit	€ 202,124.00	€ 272,826.00
Variable selling and administrative cost	€ (36,225.00)	€ (48,825.00)
Contribution margin	€ 165,899.00	€ 224,001.00
Fixed Production overhead per month	€ 28,600.00	€ 28,600.00
Fixed selling and administrative cost	€ 8,275.00	€ 8,275.00
operation cost	€ (36,875.00)	€ (36,875.00)
Total operating Income	€ 129,024.00	€ 187,126.00
Variable production cost per unit	€ 4.42	4.40
Total cost per unit including sales and administrative.	€ 7.57	€ 7.55

Reconciling

According to ALICIA TUOVILA (2022) ,Reconciliation is an accounting process that compares two sets of records to check that figures are correct and in agreement.

Fixed Production cost assigned to inventory will create the difference between the total operating incomes in both methods.

Reconciling				
Difference in total operating income (Absorption-Variable)	€	2,288.00	€	(2,288.00)
Fixed production cost (End - beginning) inventory	€	2,288.00	€	(2,288.00)

Break-even point and Profit Margins

The break-even point is the minimum quantity of sold units at which the price equal to the total cost including fixed and variable components, (Adam Hays 2023).

$$Breakeven\ quatity = \frac{Fixed\ cost}{Price - Variable\ cost\ per\ unit}$$

Swipe 50 Ltd. is doing much more sales than required for breakeven , however they must consider accepting special offers as the considerably high profit margin according to the variable costing method shows that lowering the price and increase the production to accommodate special offers that doesn't affect the fixed costs and within the capacity of production can be very beneficial.

Example: special offer during March up to the maximum capacity with 5500 extra unit, and price 20 €

The special offer will not cause any changes in the fixed costs,

$$the\ increase\ in\ revenue\ during\ March\ =\ 5500\,(20\ - 7.55) = 68475\ €$$

Break-even point and Profit Margins				
Per unit sales Price	€	22.00	€	22.00
Break-even point number of sold units		2556		2551
Sales of Full capacity Total cost per unit	€	9.7	€	9.5
Per unit Profit margin in case of full capacity sales	€	12.3	€	12.5
Per unit Profit margin % in case of full capacity sales		126%		131%
Total unit cost (absorption costing method)	€	10.6	€	10.1
Per unit Profit margin	€	11.4	€	11.9
Per unit Profit margin %		108%		119%
Total unit cost (Variable costing method)		7.57		7.55
Per unit Profit margin	€	14.43	€	14.45
Per unit Profit margin %		190%		192%

Absorption costing Importance

Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) require that an entity report its Financial statements using Absorption costing and disallow using Variable costing. External reporting is done using absorption costing method.

Every expense is allocated to manufactured products, if they are sold by the end of the period or even if they are not. (ALICIA TUOVILA , 2022)

All direct and indirect costs are calculated as part of the product cost including the direct materials , direct labors , direct and indirect overheads.

$$
\begin{aligned}
&Absorption\ cost\ per\ unit \\
&\qquad = (Direct\ labor\ costs\ +\ Direct\ material\ costs \\
&\qquad + Variable\ manufacturing\ overhead\ costs \\
&\qquad + Fixed\ manufacturing\ overhead)\ /\ Number\ of\ units\ produced.
\end{aligned}
$$

Fixed Overheads associated with goods still in ending inventory will not be included in the expenses on the current period's income statement; as a result, absorption costing will show more income than the variable costing in the income statement.

Advantages

- Approved by Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS)
- Best to be used for external reporting for the shareholders, Potential investors, and Government regulations agencies.
- Gives overview of the total cost of a product by including both direct and indirect costs.
- Identify the total actual cost of goods sold and the cost of inventory.
- The company can understand the full cost of each product or service provided.
- Gives information to the company management to decide the products prices and making decisions like continuing or discontinuing production of some products that are not profitable.

Disadvantages

- Cannot reflect in accurate way the costs associated with producing an extra quantity of a product for a special offer, as it includes fixed overhead costs that do not vary with production volume.
- The cost data will not be accurate if there are big changes in production volume.
- May not provide information for the management for short-term decision-making and special offers decisions.
- It can show high profitability for the company during a given accounting period, as not all fixed costs are deducted from the revenue unless all of the company's manufactured products are sold. Fixed costs hidden in the inventory do not appear I the income statement.
- Cannot be used for data analysis to increase operational and financial efficiency.
- Cannot be used for comparing product lines or different products contributions.

Types

Full Absorption costing

All costs related to the production of a product or providing a service, both variable and fixed costs, are absorbed over the number of units produced and included into the price of each unit.

Partial absorption costing

All variable costs and only a portion of fixed overheads are absorbed over the number of unit produced and included into the price , the remaining of fixed overheads are considered as period cost.

Important Note:

In of using Absorption costing while producing multiple products, the fixed overheads costs cannot be directly traceable to a specific product as they are distributed on all units of the different products.

However, the variable costs can be directly traceable to a certain product and include the direct material, direct labor, and variable overheads.

Variable costing importance

In Variable, costing the fixed manufacturing overhead is excluded from the production cost.

Variable costing cannot be used for external reporting approved by accounting frameworks such as GAAP and IFRS.

However, Variable costing is used for internal reporting to provide information needed for management decision-making. (CFI team, 2022)

Only variable costs will be included into the product unit cost, Direct Materials, direct labor, and variable overheads costs will for the total variable cost and excluding any fixed cost.

Examples of variable overheads: commissions, utilities, and shipping

$$Variable\ cost\ per\ unit = \frac{Direct\ labor\ costs\ +\ Direct\ material\ costs\ +\ Variable\ manufacturing\ overhead\ costs}{Number\ of\ units\ produced}$$

The variable cost per unit is constant for a product; however, the Total variable manufacturing costs of this product will vary depending on the production volume, the total variable costs will increase with the increase of production and decrease with the decrease of production.

Variable costing does not include the fixed costs to the inventory value, which is more realistic as the unsold stock does not absorb fixed overheads.

Advantages

- Variable costing gives clearer picture of costs as there’s no hidden fixed costs in the inventory
- Variable costing helps in managing the cost and determine profitable pricing, as only the variable costs will be included in the analysis that can help the operation management to reduce the real costs included in the production and create better profit margin with a competitive price. The separation between the variable costs and the fixed costs in the variable costing method can gives the management the necessary clear details to act upon reducing those costs.
- Variable costing is included in budgeting and planning for expansion or increasing in production, as the variable costs will be the most affected and will have significant change, while the fixed costs will have slight variation or can even remain the same.
- Using variable costing to determine the break-even point, margins and net income. As the break-even point is the ratio between the fixed cost and the contribution margin, while the

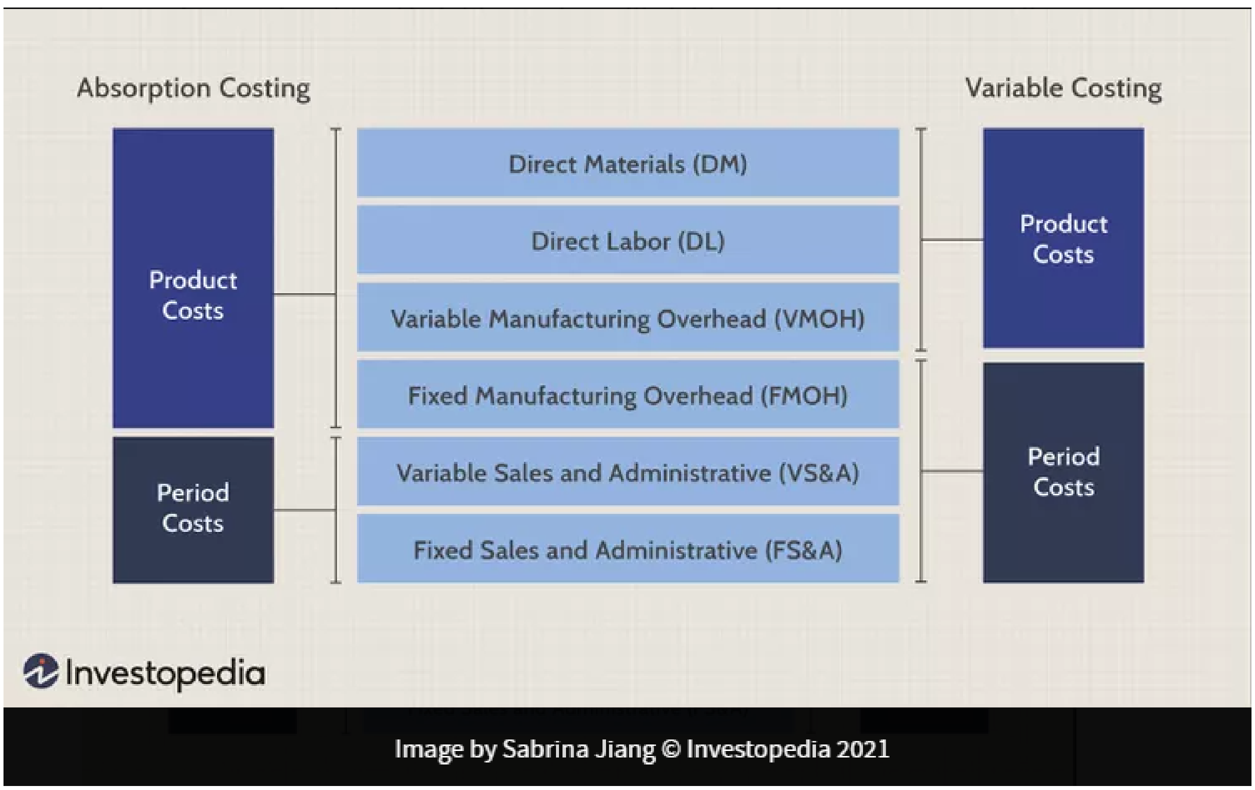
contribution margin is the difference between the revenue and the variable costs, variable costing can be used to determine the quantity of production needed to break-even or to achieve a targeted income. (Will Kenton, 2022)

$$Targeted\ quatity = \frac{Fixed\ cost + Targeted\ Income}{Price - Variable\ cost\ per\ unit}$$

- Variable costing helps in decision-making related to expense structure. Example : in case of out sourcing and renting a production line as fixed rent per month of or variable according to the number of units produced .This kind of managerial decisions will need all information required to compare between the two cases which will be only available using the variable costing method.

Disadvantages

- Not Approved by Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS), thus cannot be used in external reporting.



Accounting system Improvement

1- Use enterprise-level accounting systems

Swipe 50 Ltd. needs to use an enterprise-level digital accounting system, that type of Software can streamline the financial processes of the company and create faster and more accurate accounting reporting. (ANSI, 2021)

To use the accounting program to its full potential we need to apply the following procedures:

Understand the Company's Needs

Identify the gaps in performance, weaknesses in financial operations such as delays in generating invoices or in payments, the program needs to cover the current operations as well as the planning and budgeting operations to avoid misfit budgets and poor financial planning.

Assessing The Accounting Software System features

For Swipe 50 Ltd. to have strong accounting software system, it has to be equipped with the following:

- The software provides an easy to navigate dashboard with necessary information at a glance, to save management time.
- The software generate important reports to business owners in visually accepted format
- The Software generate reports for managers and department heads in the customized technical format according to the managerial level and the department needs.
- The software is equipped with error finding sub-programs to double check the data outputs for errors, and debugging module to allow the programmers to fix the errors.
- The software has a testing mode to test processes without affecting real data, and if successful, we can apply them in the operation mode.
- The software needs to be integrated system that work for all departments and provide smooth workflow and standardized reports and forms, or at least a compatible software to work with other systems used in other departments, which will help with more in data collection and analysis of all the company data.

Competent and trained team of accountants

The Accounting software program does not intend to replace the accountants but it needs excellent accountants to use it to the maximum potential. The software is a tool to make the workflow more efficient and accurate; Swipe 50 Ltd needs to train the accountants to use that tool effectively.

2- A standardized system

Swipe 50 Ltd needs a standard reporting and data management system that is required to generate reports for different functions and departments without duplications. Those reports can be for internal use such as decision-making or tax preparation or for external use such as financial statements.

For Swipe 50 Ltd to secure the funds they need for labor, new assets, and investing in research and development, their financial reports must be appealing and useful to the investors. High quality financial and accounting reporting compliant to standards show better and transparent information. Transparent, relevant, accurate information creates confidence at the investors and lenders to make better decisions about where to invest or lend their money.

3- Setting realistic profit margin goals

The management of Swipe 50 Ltd. can have monthly or quarterly profit goals, accounting department can be helpful to present the information concluded from actual data to show the current situation and how much can be the profit if we continue with the same performance. Accounting department can set the boundaries supported with data to keep the executives and managers' profit goals realistic.

The gross profit margin during a period time is calculated by subtracting the cost of goods sold (COGS) from a company's net sales over the same period and then it is divided by the net sales. Gross profit margin is expressed as a percentage.

Gross profit margin is an indication of the company's financial health to the investors, shareholders, analysts and other stakeholders

Big variation in gross profit margins may indicate that the company needs to make changes to the way it is being managed. On the other hand, it may indicate that the company's products needs to be assessed to satisfy the target market and increase sales. Alternatively, to make revision for the product costs to identify components that can be eliminated to create cost reduction and profit margin increase.

Managerial accounting consultant in industrial companies

Managerial accounting provides the data required for the managers and board directors to take their decisions, either strategic decisions or operation decisions. (Larry M. Walther, 2010)

For any management level to take the decisions, they will go through those three business processes: planning, directing and controlling. Effective and efficient execution of each of those processes creates the business value. Failure in planning or any of the other process can lead to complete business failure.

Management accountant provide and analyze financial information to give strategic analysis to management members and decision makers.

Management accountant roles

Analysis

Analyze the variance between the actual and the budgeted costs during a certain period to identify the errors in the production process. (Jeff Stover)

Perform Activity based analysis and process analysis to identify the cost of each activity then the cost of each step in the process in order to eliminate the unnecessary elements and reduce the overall cost of production to increase profit margins.

Identify and categorize the costs to create the cost sheets that will give the needed information to set the price that required achieving the company goals.

Planning

Using the data from the analysis, the management accountant can create forecasting models to meet the demand and provide real-time planning for the manufacturing company.

Create capital budget with detailed costs for future investments, projects, or purchases proposed, the management accountant highlight important factors as net present value and internal rate of return to participate with the decision makers to examine the proposals profitability and the proper ways for financing. (ALICIA TUOVILA, 2022)

Execution

Create strategies and executive plans for the different departments of a company to drive the company's profit and losses rather than only reporting them. (CIMA institute)

To execute those plans real-time performance tracking is necessary to help executive management to take fast decisions in case of performance deviation from forecast or budget.

Moreover, cash flow tracking and management is crucial to keep the operation flow steady and to pay the accounts payable, bills and other liabilities on time. (EVAN TARVER, 2021)

Conclusion

Swipe 50 Ltd. needs to use Absorption costing to create external reports compliant with Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) and can be published for shareholders and potential investors.

Swipe 50 Ltd. needs to use Variable costing to create internal reports for the managers and decision makers in the company to take executive decisions related to special offers , increase in production, and expansions .

Swipe 50 Ltd. needs to have an integrated accounting software program that can collect data from all departments and create multiple levels of standardized reports customized for each management level including only the necessary, relevant, and accurate data. The reports must be in a visually and technically appealing format.

Swipe 50 Ltd. needs to have trained and competent accountants to work with the accounting software program and optimizing the use of all its features to achieve highly efficient and effective workflow.

Swipe 50 Ltd. needs to have a management accountant or a management accounting consultant with enough expertise and experience to analyze the company financial data including the revenue, variable and fixed production costs and overheads. His role in Swipe 50 Ltd. will include planning of new budget and measure deviation from budget during production and control the root causes of the deviation to achieve cost reduction and increase profit margin.

Part of the role of management accountant in Swipe 50 Ltd is to forecast the production volume required to satisfy the market demand.

Additionally he has to consider special offers that can allow the company to reach its full production capacity by examining the profitability of the proposed offers even if the proposed price is less than the current price of the product.

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