COVER PAGE AND DECLARATION

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1- Introduction

In this assignment we will take the company Swipe 50 Ltd financial figures to prepare some profit statement within 2 methods, Absorption and Variable through FEB and MAR and we will check how the Gross margin or Contribution margin will be differentiate between those 2 methods, after that we will reconcile profit calculated using absorption costing to that using variable to know if our figures are right or not, then we will explain in details about what the difference of each method and what is the importance of it.

There more than way to improve the accounting system, so we will clarify 3 types of ways which will help Swipe 50 Ltd to improve its accounting system to enhance the taking decision of internal management.

At the end we will have a look about the managerial accounting history and the importance of it for the manufacturing company.

2- Swipe 50 Ltd Profit Statement

The most important methods of profit statement that are used in the finance are two, first one called Absorption Cost and the other is Variable Cost and everyone had its benefit which will be explained later after preparing statements for FEB and March for above mentioned company:

To create the profit statement for Swipe 50 Ltd we need to know the below information about the company:

Financial information for FEB (For MAR, it will be same way but need to take the figures of MAR);

Revenue Value is 22€ x 11,500 = **253,000 €.**

Production Cost/Units = (Direct material + Direct Labor + Variable Overhead) / Production units

Production Cost/Units = (29,000 + 19,000 + 7,300) / 12,500 = **4.424 €/Unit**.

Fixed Production Overhead per unit = Fixed Production Overhead / Production units.

Fixed Production Overhead per unit = 28,600 / 12,500 = **2.288 €/Unit**.

To calculate the Variable of Selling Administration and General cost need to go through the following:

The Difference of SA&G between FEB and MAR = 57,100 – 44,500 = 12,600 €.

The Difference of total sales between FEB and MAR = 15,500 – 11,500 = 4,000 €.

The Variable SA&G = 12,600 / 4000 = **3.15 €/Unit.**

COGS = Beginning Inventory + COGS Manufactured – Closing Inventory.

So, the Absorption statement for Swipe 50 Ltd during FEB and March is:

Absorption Cost for Swipe 50 Ltd			
	Description	FEB	MARCH
Revenue		253,000	341,000
Beginning Inventory	Production Cost/Unit x Beginning inventory Units	(0)	(4,424)
COGS Manufactured	Production Cost/Unit x Produced Unites	(55,300)	(64,148)
Closing Inventory	Production Cost/Unit x Available Unites	4,424	0
Fixed Production Overhead	Fixed Production Overhead per unit x Unit Sold	(26,312)	(30,888)*
Gross Profit		**175,812**	**241,540**
Variable SA&G	Variable SA&G per unit x Unit Sold	(36,225)	(48,825)
Fixed SA&G	Total SA&G – Variable SA&G	(8,275)	(8,275)
Operating Profit		**131,312**	**184,440**

* 30888 = 1000 x 2.288 + (28,600/14,500) x14,500.

Variable Cost for Swipe 50 Ltd			
	Description	FEB	MARCH
Revenue		253,000	341,000
Beginning Inventory	Production Cost/Unit x Beginning inventory Units	(0)	(4,424)
COGS Manufactured	Production Cost/Unit x Produced Unites	(55,300)	(64,148)
Closing Inventory	Production Cost/Unit x Available Unites	4,424	0
Variable SA&G	Variable SA&G per unit x Unit Sold	(36,225)	(48,825)
Contribution Profit		**165,899**	**223,603**
Fixed Production Overhead		(28,600)	(28,600)
Fixed SA&G	Total SA&G – Variable SA&G	(8,275)	(8,275)
Operating Profit		**129,024**	**186,728**

3- Reconciliation of absorption costing to variable costing

Reconciliation is an account process which enable us to compare between 2 records to know if the figures are right or not, so it is useful for showing what the difference between two financial records.

Since the expenses of the Fixed Manufacturer overhead in absorption cost depends on the sold unites (the inventory of fixed overhead expense is not involved), so we can reconcile the absorption cost to variable one to know if our absorption and variable reports are correct as below equal:

The Operating Profit through Variable Cost = The Operating Profit through Absorption Cost – Fixed Manufacturing Overhead in closing inventory + Fixed Manufacturing Overhead in opening inventory =

So, for our case of Swipe 50 Ltd, the reconciliation between absorption and variable cost for FEB and MAR will be as below:

Reconciliation of absorption to variable cost for Swipe 50 Limited		
	FEB	MARCH
Absorption Operating Profit	131,312	184,440
Fixed Manufacturing Overhead in closing inventory	(2288)	(0)
Fixed Manufacturing Overhead in opening inventory		2288
Variable Operating Profit	**129,024**	**186,728**

4- The Absorption Cost Vs. Variable Cost Statement

The above both methods are valuable for the finance or accounting people and every method had advantage and disadvantage depending on the usage of it, but before going through that, we will brief what is the figures used in this both methods.

Normally Profit Statement depends on 2 main figures, Revenue and Cost to know after that the situation of the profit.

The Revenue is depending on service or product sold and how much gain from the sold units but the Cost divides to below 2 main categories:

Cost of Goods Sold (COGS): is the same of product cost and consist of:

direct production material + direct labor + manufacturing overhead expenses.

But the manufacturing overhead expenses is divided to 2 sections also:

Fixed Expenses: which includes all expenses that are not affected by quantity of product or can be expressed as mentioned by Franklin, Graybeal and Cooper (2019) “Fixed costs are those costs that will not change within a given range of production” (Explain Contribution Margin and Calculate Contribution Margin per Unit).

Variable Expenses: Which includes all expenses that are related to the product and will be affected by the quantity of product and as mentioned by Franklin. et al. (2019) “Variable costs are those costs that vary per unit of production.” (Explain Contribution Margin and Calculate Contribution Margin per Unit).

Selling, General and Administration and (SG&A) Cost: will cover all other expenses to run the business and not related to the production of goods or service providing, like the salaries of supporting department (Marketing, IT, Admin….) in addition to the advertising, commissioning or offices rent, and as the overhead expenses, it is divided to Fixed and Variable expenses.

After having a look about figures of the income statement, we can brief the importance and the difference of the 2 methods, Absorption Cost and Contribution (Variable) Cost as below:

4-1 Absorption Cost: This method has many names as Total or Traditional cost and is required for Generally Accepted Accounting Principles (GAAP) report.

Absorption cost statement does not differentiate between variable cost and fixed cost, since it deals with the expenses according to the type of it, so the variable and fixed cost of production or manufactured products will be considered in Cost of the Goods (COGS) then we will generate the Gross Profit, after that we will deduct the Selling, General and Administration (SG&A) as total which means Fixed + Variable to get the operating cost.

But the very important thing needs to be considered in the calculation within absorption method that all calculation is based on the quantity of sold units.
So, in this method the management would like to know if the product is generating sufficient profit during this specific period of investment after absorbing related expenses of the product which is called Gross Profit, also the absorption cost is used for long term decision and pricing policy.

Absorption Cost	
Advantage	Disadvantage
Present the statement with more realistic of product expense since all manufacturing expenses are including in COGS.	Cannot be used for planning or monitoring since the fixed cost is involved in the COGS
Is the most suitable statement for the external users especially global association like GAAP, IFRS,	Cannot be used for the management decision-making

Absorption Cost	
Advantage	Disadvantage
The ending inventory has higher cost than Variable Cost since the calculation based on sold unit.	Does not provide the accurate performance of the company because the fixed cost will not be included until the product is sold.

4-2 Variable Cost: This method has other names also as Marginal, Contribution Cost, and is vital for internal management taking decision.

Variable cost statement differentiates between fixed cost and variable cost, so it considers the variable cost for the Overhead Production expenses and Selling, Administration and General expenses from the Cost of the Goods (COGS) to generate after that the Marginal or Contribution Profit after that we will deduct fixed cost of overhead and SA&G to get the operating cost which means in this method all variable cost will be separated of all fixed cost. So, the fixed cost will be considered as full amount and not depends on the product sold like the Absorption cost.
This way will help the management in budgeting and forecasting since it takes in consideration any change in the variable cost of product and the fixed cost will be constant.

Variable Cost	
Advantage	Disadvantage
Provide more clarity about the effective of fixed cost on the financial statement	Tax law request dealing with absorption cost method since all product cost are subjected to the gross profit.
It is vital for decision making for internal management and support in cutting cost or changing suppliers.	The production expense was not reflected exactly in the contribution margin due to miss of fixed production expenses, so cannot be used for long term pricing.
The operating income through the variable cost method is close to the flow of cash.	It is hard to separate between two manufacturer overhead cost (variable and fixed).

5- How Swipes 50 Ltd can improve its accounting system

Since the revenue of the Swipes 50 LTD is below 10,000,000$ that means it can be considered as midsized companies and the improvement of the accounting system should be vary in this range.

Also Swipes 50 LTD is a manufacturer company which means that the accounting system of it will be more complicated than the services company since it needs to track the product from the point of production till the time of sell, and that is matching what is mentioned by (Managerial accounting – Computerized accounting system, 2012) “Accounting systems are more complex for manufacturing companies because they need a system that tracks manufacturing costs throughout the production process to the point at which goods are sold."

Also Swipes 50 Ltd is considered as product line manufacturer company which means that it does not manufacture unique product and cannot record the cost of everyone.

After having a look on the size of the company and type of it we can forward to some ways that enable Swipe 50 Ltd to improve its accounting system.

5-1 Cost-Volume-Profit Analysis (CVP): since Swipe 50 Ltd is specialist in screen protector for laptop computers so we will explain the CVP analysis for single product company. This way is used to determine what's breakeven point (what the sales required to reach 0 cost) and target profit (how many products need to be sold to achieve the required profit) Also, because Swipe 50 Ltd sell products that can measured by units, so we will clarify only the breakeven point in unites and target profit and target profit in unites.

5-1-1 Breakeven Point per unit = $\frac{\text{Total Fixed cost}}{\text{Contribution Margin per unit}}$

Contribution margin per unit = (Total sales per unit - Total Variable cost per unit)
For our case, the breakeven will be as below:
Breakeven point per unit = $\frac{36{,}875}{22 - 7.574}$ = 2556 Units.
That means Swipe 50 Ltd needs to sell 2556 units to cover its costs and this is very vital information for the operating managers.

5-1-2 Target Profit per unit = $\frac{\text{Total Fixed Cost + Targeted Profit}}{\text{Contribution margin per unit}}$

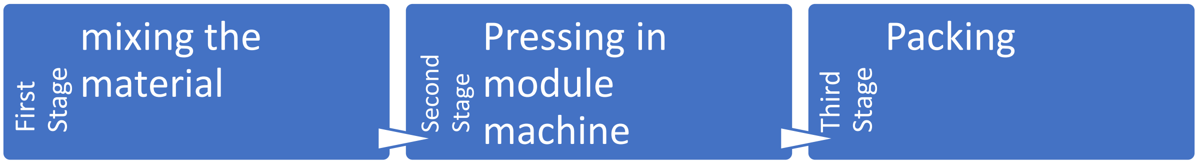
Targeted cost is set by management through budgeting.

5-2 Process Costing system: why do we go through this system not through Job Costing system, because our company is considered as product line manufacturer and cannot record the cost for every product and that is matched exactly what mentioned by Franklin. et al. (2019):

> "**Process costing** is the optimal costing system when a standardized process is used to manufacture identical products and the direct material, direct labor, and manufacturing overhead cannot be easily or economically traced to a specific unit. Process costing is used most often when manufacturing a product in batches." (Compare and Contrast Job Order Costing and Process Costing).

So, Process Costing system depends on the sequences of manufacturing process and divide it to process departments to assign the cost based on that, then each department will track its expenses to calculate the cost per unit as the end.

The process stages of Swipes 50 LTD can be defined as below.



First, need to clarify some expressions that normally used in the Process Cost way:

- **Unites to be account for**: is the total of unites in the beginning inventory and units in WIP inventory.
- **Equivalent Units:** every stage or department may utilize a percentage of main three sources {Direct material (DM), Direct Labor (DL) and Manufacturer Overhead (MO)} so we need to use a figure which reflect the percentage of completion for the sources that still in the Work in process inventory.
- **The weighted average method** is the method to calculate the average cost of the unit based on the beginning inventory and current period cost.

The Process costing system depends on 4 steps and the calculation will be carried out on Direct Material + Direct Labor + Manufacturer Overhead as below:

1. <u>Determine the Unites account for and calculate:</u>
   Unites to Be Accounted For = Beginning of the inventory for concern department + WIP Inventory during the specific period.
   Unites Account For = the Unites completed or transferred for other department + Unites in ending WIP inventory.
   Note: the total of Unites to Be Accounted For should be equal of Unites Account For.

2. <u>Calculate the Equivalent Units:</u>
   Equivalent unit is the number of the units that is completed multiply the percentage of unit completion, and can express of it by below equal:
   Equivalent Units = Number of partially completed units x percentage of completion.

3. <u>Calculate the cost as per Equivalent Unites:</u>
   $$\text{Cost per Equivalent} = \frac{\text{Total costs for Unites To Be Accounted For}}{\text{Total Equivalent Unites}}$$
   This should be calculated for every source DM + DL + MO, then put the total.

4. <u>Assign the Cost of transferred out unites and WIP Inventory:</u>
   Assign the Cost = Cost per Equivalent Unites x Equivalent units.

After finishing the four steps we can prepare the journal which clarify the transfer of the OUT of the mixing material department as an example, and it will be the IN for the next department which is pressing in module machine and same it will be applied for this department and next department which is packing one.

5-3 Allocating Overhead Cost to product: The cost of the material or labor is clear, but the expenses of the overhead normally are hidden and not clear, so that, we can mention three important reasons to use this way for managers:

1. Decision making: to know the overhead cost per unit then subject it to the direct material and labor to enable managers to set the price of product.

2. Increase the efficiency of resources usage: by understanding the cost of every activity in the production process, this will provide more chance for manager to utilize the source in better way.

3. Matching the requirements of GAAP: Material and labor in addition to the overhead expenses are required for of inventory cost purpose as requested by GAAP.

This way will depend on the below equal which is:

$$\text{Predetermined overhead rate} = \frac{\text{Estimated overhead cost (\$)}}{\text{Estimated activity in allocation. (unites or \$)}}$$

This rate will be calculated based on the budgeted overhead cost through the year or concern period divided by the budgeted activity for the same period, so when this rate is determined, it will be subjected to the direct labor and material to identify the total cost per unit.

For this way also we will clarify some expressions:

- **Cost pools:** is the costs of the overhead that are grouped together to be considered as same category as purchasing material, inspect product, assemble products….

- **Cost driver:** is the action or activity that consume the company's resources, like labor hours, machine hours, inspections….
  For more clarification of above expression, I bring an example that mentioned by Franklin. et al. (2019, Calculate Activity-Based Product Costs):

Activities and Their Common Cost Drivers

Cost Pool	**Cost Driver**
Customer order	Number of orders
Production	Machine setups
Purchasing materials	Purchase requisitions
Assembling products	Direct labor hours
Inspecting products	Inspection hours

Cost Pool	Cost Driver
Customer service	Number of contacts with customer

There are three methods for applying this way, and choosing the way depends on the managers decision how they would like to group the cost of the overhead and the product information cost accuracy.

5-3-1 Plantwide Allocation: called traditional method and it is the first method of allocating overhead to product, this method considers all overhead costs as one cost pool so it has only one predetermined overhead rate to overhead cost which could be machine hours, direct labor hours or direct labor cost.
This method is used when the company has simple operation with similar product, and management do not want to invest more for complex accounting system to know accurate cost products.

5-3-2 Department Allocation: it is like the Plantwide allocation but depends on the department, so it has more than cost pool and cost driver as per each department which will guide for different allocation base, so every department has its predetermined overhead cost, This method will be more accurate than the previous one and provide more flexibility in choosing the drive cost or allocation base.

5-3-3 Activity-Based Costing Allocation (ABC): this method is the most accurate one and normally adapted by big organizations, since every cost for the activity will be considered as cost driver, then it will be allocated to the product depends on usage of the product for this activity, so it will be more exactness but may cost more since need to collect more information about every activity and analyze them through the system.

There are five steps to complete this activity as mentioned by (Managerial Accounting - Using Activity-Based Costing to Allocate Overhead Costs, 2012):

- **Step 1. Identify costly activities required to complete products.**
- **Step 2. Assign overhead costs to the activities identified in step 1.**
- **Step 3. Identify the cost driver for each activity.**
- **Step 4. Calculate a predetermined overhead rate for each activity.**
- **Step 5. Allocate overhead costs to products.**

6- Importance of managing accounting for manufacturing companies

Accounting is very old science, and it is starting from the day that the human starts trading or using money, then it was improved to be adapted with the business complex and it is studied as one of very important science to analyze the business status and provide figures which measure the health of the business to take the right decisions.

The Accounting is considered as part of finance since it reflexes the finance statement but the improvement in the business creates new science which is called Managerial Accounting and has difference of Finance Accounting, it can be briefed here by:

Managerial Accounting concentrates on the financial reports that concern the internal company auditor or managers through any past short term to help them for planning or revieing procedure (controlling), while the Finance Accounting focuses on the financial reports which will be presented to the shareholders or investors through guidelines like US. GAAP (US General Accepting Accounting Principles) through long term (Quarterly, yearly).

So, since the Managing Accounting analyses all values related to the cost and revenues so it will be the best to provide the information for the mangers to take right decision for budgeting, planning, controlling, and evaluating of manufacturing operation.

With the improvement and complex of the business, the managing accounting system is mandatory for manufacturing companies to help in reducing operation costs, promote the control of cashflow by analyzing the data and improve the level customer service by identifying the right price which can compete in the market.

I fully agree with what is mentioned by McLean (2018, 6 REASONS WHY MANAGEMENT ACCOUNTING IS IMPORTANT FOR DECISION MAKING)**:**

"A management accounting department is one of the company's essential units, but most entrepreneurs don't realize it due to its "under the radar" style of work. Management accountants are insiders who create internal analyses to guide the overall business strategy."

7- Conclusion

As a conclusion, we can notice that the both types of financial statement (Absorption and Variable) provide us an idea about the profit of company and what's the amount of cost to generate this profit, then through the cost ways which should improve the accounting system, the management can take a decision how they can control the cost even if it is fixed or variable also it will help the operation mangers for their planning and budgeting.

The breakeven point provides managers the quantity of the products that need to be sold to reach to zero cost and by that they can decide if they need to relook on the pricing strategy or cutting the cost or may caring out more marketing to compete other competitors.

Also, we addressed the importance of managing accounting in every company specially the manufacturer company and what is the difference between it and finance accounting.

At the end, managing accounting is integral department to other departments in any company, and it will support to identify where is the strength and weakness in the operation by analyzing the cost and profit, also it will provide the operation managers the tools for planning and controlling in their department by choosing the right resources.

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