Accounting for Financial and Managerial Decision and Control [AFMDC]

Unit 8
Managerial Accounting for Decision Making: Drop or Continue Decision and Sales or Further Processing a Joint Product Decision

Structure

- Decision regarding to:
    - Drop or continue
    - Sales or further processing a joint product

After the completion of this unit, you should be able to:

- Understand the concept of drop and continue
- Explain the concept of sales or further processing a joint product
- Make decision regarding to: Drop or continue and sales or further processing a joint product decision

8.1 Concept of Drop or Continue Decision

If a company has a range of products one of which is deemed to be unprofitable, it may consider dropping the item from its range. The decision to eliminate an unprofitable product is a special case of product profitability evaluation. An important factor in the decision to drop or continue a product line is whether it will increase or decrease the future income of the business after dropping the unprofitable product. If the overall profit of the company increases by dropping the product, that product should be dropped. But if the overall profit decreases by dropping, then that product should be continued.

Solution part of drop or continue decision

- Objective
    - Profit maximization
- Decision based on income statement (Variable income statement)
- Identify avoidable (relevant) and unavoidable (irrelevant cost), if product drop from product line
- Interlink between the products, if one or more products drop
    - Identify the effect of sales for existing products if we drop product from product line
- Think about capacity and alternative use of capacity if buy decision
- Key considerable factors – Capacity utilization
- Capacity utilization
    - Drop and keep capacity idle (unused capacity of drop product)
    - Use capacity to produce new product (identify avoidable cost from drop product and additional cost required for new product)

- Transfer capacity to other existing product(s) (identify avoidable cost from drop product and additional cost required for capacity transfer)

Illustration 1

The Bottlers Nepal Ltd; a producer of soft drink, produces three standard products called Coke, Fanta and Soda. The results of the operation for the last year ending 2021 are presented below in an income statement.

Products/Particulars	Coke	Fanta	Soda	Total
Number of Bottles Sold	10,000	10,000	5,000	25,000
Sales Revenue	Rs. 2,00,000	Rs. 2,00,000	Rs 1,00,000	Rs. 5,00,000
Less: Cost of Production				
Direct Material	Rs. 40,000	Rs. 40,000	Rs 20,000	Rs. 1,00,000
Direct Labour	Rs. 40,000	Rs. 40,000	Rs 20,000	Rs. 1,00,000
Manufacturing Overheads				
Variable Overhead	Rs. 20,000	Rs. 20,000	Rs. 10,000	Rs. 50,000
Fixed Overhead	Rs. 40,000	Rs. 40,000	Rs. 30,000	Rs. 1,10,000
Total Cost of Production	Rs. 1,40,000	Rs. 1,40,000	Rs. 80,000	Rs. 3,60,000
Gross Margin Available	Rs. 60,000	Rs. 60,000	Rs. 20,000	Rs. 1,40,000
Less: Other Costs				
Variable Selling and Adm. Cost	Rs. 10,000	Rs. 10,000	Rs. 5,000	Rs. 25,000
Fixed Selling and Adm. Cost	Rs. 20,000	Rs. 20,000	Rs. 20;000	Rs. 60,000
Total Other Cost	Rs. 30,000	Rs. 30,000	Rs. 25;000	Rs. 85,000
Net Income Before Tax	Rs. 30,000	Rs. 30,000	Rs. (5,000)	Rs. 55,000

The result of operation shows product Soda have suffered losses for years, therefore, the management is considering to drop out Soda from its production schedule. If it does so it will be able to avoid all variable costs associated with the product Soda and will be able to reduce its fixed manufacturing overhead cost by Rs. 10,000 as depreciation cost of specialized machine. All other fixed costs are allocated will remain there irrespective of decision but the company will loose its sales of other products by 5%.

Required: Should the company drop out Soda?

Solution:

Income statement (variable costing) after drop out the product "soda" from the product line:

Products/Particulars	Coke	Fanta	Soda	Total
Number of Bottles Sold	9,500	9,500	0	19,000
Sales Revenue @Rs.20	Rs. 190,000	Rs. 190,000	0	380,000
Less: Variable Cost				
Direct Material @Rs.4	38,000	38,000	0	76,000
Direct Labour @Rs.4	38,000	38,000	0	76,000
VMOH @Rs.2	19,000	19,000	0	38,000
Variable Selling @Rs.1	9,500	9,500	0	19,000
Total VC	104,500	104,500	0	209,000
Contribution Margin	85,500	85,500	0	171,000
Less: Fixed cost				
Fixed Manufacturing Overhead	40,000	40,000	20,000	1,00,000

Fixed Selling and Adm. Cost	20,000	20,000	20;000	60,000
Total Fixed Cost	60,000	60,000	40,000	160,000
Net Income Before Tax	25,500	25,500	(40,000)	11,000

Profit before drop product "Soda" = Rs. 55,000
Profit after drop product "Soda" = Rs. 11,000
Decreased in profit = Rs. 44,000

Decision: The production of Soda should not be dropped. By dropping the soda, the net income is declining by Rs. 44,000.

Illustration 2

The income statement of a multi-product company has been given below:

Product	A	B	C	Total
Capacity Utilization	40%	30%	30%	100%
Units Produced and Sold	5,000	4,000	4,000	13,000
Sales Revenue	Rs. 4,00,000	Rs. 2,40,000	Rs. 2,00,000	Rs. 8,40,000
Less Variable Cost	Rs. 2,00,000	Rs. 80,000	Rs. 1,60,000	Rs. 4,40,000
Contribution Margin	Rs. 2,00,000	Rs. 1,60,000	Rs. 40,000	Rs. 4,00,000
Less Fixed Cost:				
Join Fixed Cost	Rs. 80,000	Rs. 60,000	Rs. 60,000	Rs. 2,00,000
Department Fixed Cost	Rs. 40,000	Rs. 30,000	Rs 30,000	Rs. 1,00,000
Total Fixed Cost	Rs. 120,000	Rs. 90,000	Rs. 90,000	Rs. 3,00,000
Net Income/B.T.	Rs. 80,000	Rs. 70,000	Rs. (50,000)	Rs. 1,00,000

Seeing the state of product C, the company has been considering to drop the product and take the following alternatives:

Alternatives:

i. To drop product C and keep capacity unutilised and avoids departmental fixed cost by cent percent.
ii. To transfer the available capacity to produce product A and the result will be increase in production of A by 2000 units and increase in department fixed cost by Rs. 40,000.
iii. To transfer the available capacity of C product to produce product B. The result will be increase in production volume by 100% and an increase of variable cost for additional product by Rs. 10 per unit over and above the regular variable cost and increase in department fixed cost by Rs. 20,000.

Required: (a) Should the company drop product C if alternative II & III are not available.
(b) Which of the other two alternatives the company should choose and why?

Solution

(a) Income Statement after Drop Product C and Keep Capacity Unutilized

Product	A	B	C	Total
Capacity Utilization	40%	30%	0%	70%
Units Produced and Sold	5,000	4,000	0	9,000

Sales Revenue	Rs. 4,00,000	Rs. 2,40,000	0	Rs. 6,40,000
Less Variable Cost	2,00,000	80,000	0	2,80,000
Contribution Margin	2,00,000	1,60,000	0	3,60,000
Less Fixed Cost:				
Join Fixed Cost	80,000	60,000	60,000	2,00,000
Department Fixed Cost	40,000	30,000	0	70,000
Total Fixed Cost	1,20,000	90,000	60,000	2,70,000
Net Income (Loss)	80,000	70,000	(60,000)	90,000
Net Income Before Drop Out Product C				Rs. 1,00,000
Net Income after Drop Out Product C				Rs. 90,000
Net Decreased in Net Income				Rs. 10,000

Other Method:

Contribution Margin available from Product C	Rs. 40,000
Less: Saving on Departmental Fixed Cost after Drop Product C	Rs. 30,000
Net Decreased in Net Income	Rs. 10,000

Decision:

Rs. 10,000 will decrease the company's net income after drop out the product C from the product line. So the production of product C should be continued to maintain its total profit margin and its market share.

(b) Calculation of Profit Increase or Decrease under Alternative II and III

Alternatives	**II**	**III**
Increase in Sales Units	2,000 units	4,000 units
Sales Price per Unit	Rs. 80	Rs. 60
Less: Variable Cost per Unit	40	30
Contribution Margin per Unit	40	30
Increase in Total Contribution Margin	80,000	120,000
Add (Less): Others		
Avoidable or Saving Departmental Fixed Cost	30,000	30,000
Contribution Margin Loss due to Drop Product C	(40,000)	(40,000)
Increase in Departmental Fixed Cost	(40,000)	(20,000)
Total	(50,000)	(30,000)
Increase (Decrease) in Profit	30,000	90,000

Decision:

In alternative II, the profit is increasing by Rs. 30,000 and in alternative III, the profit is increasing by Rs. 90,000. Hence, alternative III is preferable.

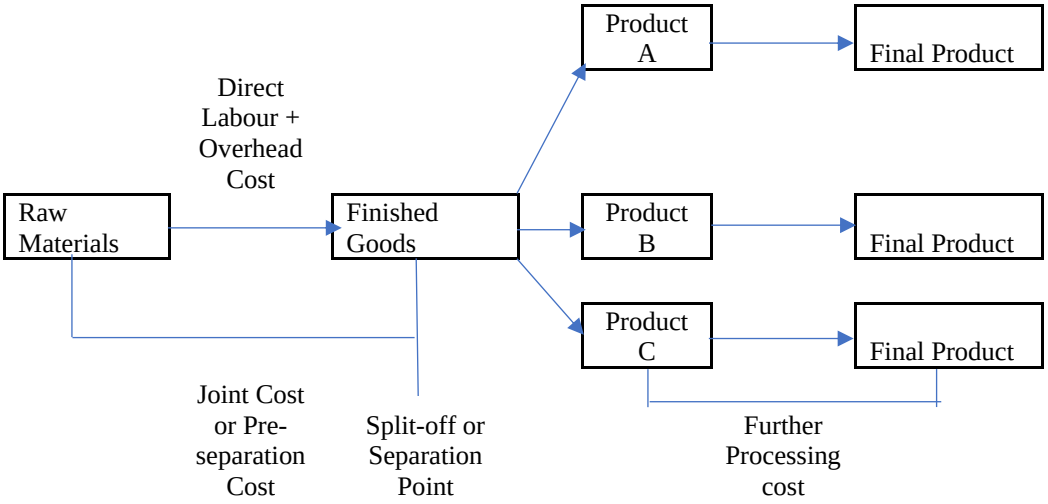
8.2 Concept of Sales or Further Processing of Joint Product Decision

When two or more products are manufactured from simultaneously from common inputs or common processing then they are known as Joint Products. Such products are common in chemicals, oil refining, meat packaging, dairy and agricultural product. In meat packaging

industry, for example, when a pig puts into manufacturing process, bacon, ham, pork roast etc. are made.

The firm can sell several different products at various physical stage of completion. The products are not recognizable as different individual products until a certain stage of production known as split-off point. The point of separation is known as split-off point. It is that point in the manufacturing process at which the joint products can be identified as individual product and can be sold to the customers. The manufacturing cost incurred prior to reaching the split-off point is called Joint Product Cost. From the split-off point joint cost inputs end and cost input identification with specific products begins. The joint costs are irrelevant cost whereas subsequent costs are relevant costs.

The manufacturer of joint products has to choose between the selling the product at the end of split-off point or processing it further with resources tied up in a further production stage. Decision of this type is known as sell or further process decision. Further processing requires additional cost on one hand on the other, it also increases the total revenue. Hence, the decision to process further depends upon whether the increase in total revenue exceeds the additional costs incurred for processing beyond split-off. Thus, in deciding upon which course of action to follow, the differential analysis can be applied for better decision.



(Source: Author)

A few examples of joint products are:

Industries	**Joint products**
Oil refineries	Petrol, Kerosene, fuel oil, paraffin, lubricating oil etc.
Milk product	Cream, butter, cheese, powder milk, ice-cream etc.
Meat canning	Hides, canned meat, fertilizers, skin etc.

Features of joint products

The main features of joint products are:

- Joint products are produced from same basic raw material

- They are produced simultaneously by a common process
- The products have more or less an equal commercial value
- They may require further processing after the point of separation

In addition to joint products, there may be manufacture by-products. By-product refers to any saleable or usable value incidentally produced in addition to the main product. By-products are produced along with main products and relatively the by-products have small value. By-products come up incidentally and unavoidably along with main products. Few examples of main product and by-products are as follows:

Industries	Main product	By-products
Meat packing industry	Mean	Bones, fats, hides, hair etc.
Sugar industry	Sugar	Bagasse, molasses
Cotton ginning	Cotton fiber	Cotton seeds
Soap making	Soap	Glycerin

Characteristics of by-products

The main characteristics of by-products are:

- By-products are come up in the course of manufacturing main products
- It is unavoidably produced and is low value in comparison to main product
- The quality of a by-product is less than the quality of main product
- A by-product may require further processing after it is separated from the main product

Thus, in this unit, we discuss decision making under alternative choices of sales or further processing both joint product and by-product.

Solution part of sales or further processing joint product decision

- Objective
    - Profit maximization (additional profit after further processing of joint product)
- Relevant cost (Further processing cost)
- Irrelevant cost (Joint cost)
- Proforma statement for evaluating sales or further processing joint product

	Product A	Product B	Product C
Sales revenue after further processing	xxx	xxx	xxx
Sales revenue at split-off point	xxx	xxx	xxx
Additional sales revenue after further processing	xxx	xxx	xxx
Less: Further processing cost	xxx	xxx	xxx
Increase (decrease) in profit after further processing	xxx	xxx	xxx
Decision			

Decision: If profit increases, joint or by product should sales after further processing. On the contrary, if profit decreases, joint or by product should sales at the split-off point (product separation point)

Illustration 3

Asian corporation uses a joint process to produce products A, B and C. Each product may be sold at its split-off point or processed further. Additional processing costs are entirely variable and are traceable to the respective products produced. Joint production costs were Rs. 50,000.

Relevant data with sales value and additional costs if processed further are as follows:

Products	Units Produced	Sales Value at Split-off (Rs.)	Sales Value after Further Processing (Rs.)	Further Processing Cost (Rs.)
A	20,000	45,000	60,000	20,000
B	15,000	75,000	98,000	20,000
C	15,000	30,000	62,000	18,000

Required: To maximise profits, which products should Asian corporation subject to further processing?

Solution

	Product A	Product B	Product C
Sales revenue after further processing	60,000	98,000	62,000
Sales revenue at split-off point	45,000	75,000	30,000
Additional sales revenue after further processing	15,000	23,000	32,000
Less: Further processing cost	20,000	20,000	18,000
Increase (decrease) in profit after further processing	(5,000)	3,000	14,000
Decision	Sales at split-off point (separation point)	Sales after further processing	Sales after further processing

References

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