

PRODUCT COSTING/JOB COSTING

COST CLASSIFICATION

Manufacturing Cost - Is the cost of manufacturing a product, it consists of direct and indirect costs.

Direct Costs - Are costs that are directly linked to a product/service e.g. raw materials, direct labour, direct expenses e.g. hire of special equipment.

Indirect Cost - Not directly linked to product/service, but must be included as part of the cost e.g. factory rent and rates, factory light and heat, production supervisors salary.

COSTS CAN BE BROKEN INTO FIXED AND VARIABLE

- Fixed - Remain the same where output level changes e.g. Rent
- Variable - The amount of the cost changes directly with the level of production e.g. raw material.
- Mixed Cost - Part fixed and part variable e.g. ESB Bill
- Cost Centre - A place within a business over which one person has responsibility and authority for expenditure.
- Controllable Costs - are costs that can be controlled by a manager in a Centre. The manager can make a decision about the amount of the cost and can be held responsible if a variance occurs e.g. raw materials.
- Uncontrollable Costs - are costs over which a manager has no control and cannot be held responsible for variances in these costs e.g. rates to the local authority

Cost Allocation

When a cost can be charged in total to a cost centre without being divided into smaller parts, it is said to be allocated. All direct costs can be allocated to cost centres.

COST ABSORPTION

Means that the fixed overhead costs are absorbed into the cost of the Product .

3 Methods of doing this

- (1) Amount per Unit
- (2) Amount per direct Labour hour
- (3) Rate per direct Machine Hour

Example:

Boyle Ltd estimates its fixed Production overhead costs next year will be €18,000 and that it will produce 3,000 tables incurring 4,000 Direct Labour/hours and 800 Machine/hours

(a) Per Unit: $\frac{\text{Total Overheads}}{\text{No of Units}} = \frac{\text{€18,000}}{3,000} = \text{€6 per Unit}$

(b) Per Direct Labour/hr = $\frac{\text{€18,000}}{4,000} = \text{€4.50 per Labour/hr}$

(c) Per Machine/hr = $\frac{\text{€18,000}}{800} = \text{€22.50 per Machine/hr}$

What happens if we produce more or less of the product and the Production Overheads are more or less than planned.

Take the above example: What happens if the actual overhead incurred was €16,200 and the number of Units produced was (a) 2,800 Units (b) 3,000 Units

(c) 3,400 Units (d) 1,900 Units

	2,800	3,000	3,400	1,900
Fixed Production O/h	16,200	16,200	16,200	16,200
Overhead Absorbed (Unit xRates)	16,800	18,000	20,400	11,400
Under/Over Absorbed	600	1,800	4,200,	(4,800)

OVERHEAD **APPORTIONMENT/ABSORPTION**

What happens if a firm has different departments (cost centre)?

Overheads must be apportioned (split) in a fair manner and then absorbed into the cost of the product.

There are a number of generally accepted basis for overhead apportionment to cost centres.

	<u>Expense</u>	<u>Basis of apportionment</u>
Example:	Insurance	Floor area
	Rent/Rates	Floor area
	Light/heat	Volume
	Administration Expenses	Number of Employees
	Depreciation	Book value of assets
	Machinery maintenance	Machine hours.

To summarise Direct Costs are allocated directly and Indirect Costs are apportioned first to a cost centre and then absorbed into the Product/Service.

PRODUCT COSTING

ROONEY LTD

Rooney Ltd is a manufacturing company with three Departments, A, B, and C.

The following are the monthly budgeted overheads

Department	Variable	Fixed
A	8,400	5,200
B	10,800	3,600
C	3,200	800

Budgeted hours for the month are:

Department	Hrs
A	800
B	1,200
C	400

The wage rate in Department A = €9 per hour

Department B = €6 per hour

Department C = €8 per hour

General administration overheads are expected to be €8,000 for the month.

The following relates to Job No 626, received from Tobin Ltd:

Material Costs 80 rolls @ €35 per roll.

Department	Hrs
A	50
B	120
C	26

You are required to:

- (a) Calculate the variable and fixed overhead absorption rates for each department in direct labour hours.**
- (b) Calculate the administration overhead absorption rate in direct labour hours.**
- (c) Calculate the selling price of the job if the profit is set at 20% of selling price.**
- (d) Give two reasons for product costing and explain each.**

SOLUTION ROONEY LTD.

(a) Department A	Variable	Fixed
Budgeted overhead costs	€8,400	€5,200
Budgeted labour/hr	800	800
	€10.50 per lab hr	€6.50 per hour

Department B

Budgeted overhead costs	€10,800	€3,600
Budgeted lab hrs	1,200	1,200
	€9 per lab hr	€3 per lab hr

Department C

Budgeted overhead costs	€3,200	€800
Budgeted lab hrs	400	4
	€8 per lab hrs	€2 per lab hr

(b) General Administration Overhead

$$\begin{aligned} \text{Overhead Absorption Rate per hour} &= \frac{\text{General Administration Overhead}}{\text{Total Budgeted Hours}} = \frac{\underline{\underline{\text{€8,000}}}}{2,400 \text{ hrs}} \\ &= \text{€3.34 per lab hr} \end{aligned}$$

(c) Calculation of Product Cost and Selling price of Job No 62

			€
<u>Direct Materials</u>	80 rolls x €35 per roll		2,800.00
<u>Direct Wages</u>			
Dept			
A	50 hrs x €9.00	450.00	
B	120 hrs x €6.00	720.00	
C	26 hrs x €8.00	<u>208.00</u>	1,378.00
<u>Variable Overheads</u>			
Dept			
A	50 hrs x €10.50	525.00	
B	120 hrs x €9.00	1,080.00	
C	26 hrs x €8.00	<u>208.00</u>	1,813.00
<u>Fixed Overheads</u>			
Dept			
A	50 hrs x €6.50	325.00	
B	120 hrs x €3.00	360.00	
C	26 hrs x €2.00	<u>52.00</u>	737.00
General Administration Overheads (196 hrs x €3.34)			<u>654.64</u>
Cost price of Job (80% of Selling Price)			7,382.64
Profit (20% of Selling Price)			<u>1,846.66</u>
Selling Price			<u>9,228.30</u>

(c)

- **To establish the selling price for the purpose of tendering**
- **To control costs – budget versus actual**
- **To help planning and decision making**
- **To ascertain the value of closing stock in order to prepare final accounts.**

JOB COSTING TALBOT LTD.

There are three different Departments in Talbot Ltd - Manufacturing, Polishing and Packing. For the year ended 2006 the following are the budgeted costs.

	<i>Total</i>	<i>Manufacturing</i>	<i>Polishing</i>	<i>Packing</i>
	€	€	€	€
Indirect materials	160,000	100,000	40,000	20,000
Indirect labour	220,000	120,000	60,000	40,000
Rent/Rates	45,000			
Light/heat	26,000			
Machine maintenance	18,000			
Plant depreciation	80,000			
Factory canteen	36,000			

The following information relates to the three Departments.

	<i>Total</i>	<i>Manufacturing</i>	<i>Polishing</i>	<i>Packing</i>
Floor space in square metres	9,000	4,000	3,000	2,000
Volume in cubic metres	30,000	16,000	10,000	4,000
Plant valuation in € at book value	500,000	270,000	130,000	100,000
Machine hours	60,000	30,000	15,000	15,000
Number of employees	90	40	30	20
Labour hours	120,000	60,000	40,000	20,000

Job No. 811 has been completed. The details are:

	Direct Materials €	Direct Labour €	Machine Hours	Labour Hours
Manufacturing	6,200	920	50	20
Polishing	2,400	2,600	20	80
Packing		1,400	8	27

The company budgets for a profit margin of 25%

You are required to:

- (a) Calculate the overhead to be absorbed by each Department stating clearly the basis of apportionment used.**
- (b) Calculate a suitable overhead absorption rate for each Department.**
- (c) Compute the selling price of Job No 811**
- (d) Name three overhead absorption rates and state why they are based on budgeted rather than actual figures.**

[80 marks]

SOLUTION TO TALBOT LTD.

(a) Overhead Analysis

Overhead	Basis of Apportionment	Total	Manufacturing	Polishing	Packing
Ind. Material	Actual	160,000	100,000	40,000	20,000
Ind. Labour	Actual	220,000	120,000	60,000	40,000
Rent/Rates	Floor space (4:3:2)	45,000	20,000	15,000	10,000
Light/Heat	Volume (8:5:2)	26,000	13,866	8,667	3,467
Mach. Maint.	Machine hrs (2:1:1)	18,000	9,000	4,500	4,500
Depreciation	Plant Valuation (27:13:10)	80,000	43,200	20,800	16,000
Canteen	Employees (4:3:2)	<u>35,000</u>	<u>16,000</u>	<u>12,000</u>	<u>8,000</u>
		<u>585,000</u>	<u>322,066</u>	<u>160,967</u>	<u>101,967</u>

(b) Overhead recovery (absorption) rate Manufacturing use Machine Hours

$$\underline{\text{Budgeted Overheads}} = \underline{\text{€322,066}} = \text{€10.74}$$

Budgeted Mac/hr 30,000 hrs

Polishing & Packing: use Labour Hours

	Polishing		Packing
<u>Budgeted Overheads</u>	= <u>€160,967</u>	= €4.02 per lab/hr	<u>€101,967</u> = €5.10 per lab/hr
Budgeted Lab/hrs	40,000 hrs		20,000 hrs

(c) Selling Price of Job No 811

		€
Materials	6,200 + 2,400	86,00.00
Labour	920 + 2,600 + 1,400	4,920.00
Overheads:		
Manufacturing	50 hrs x €10.74	534.00
Polishing	80 hrs x €4.02	321.60
Packing	27 hrs x €5.10	137.70
Cost Price	75%	14,513.30
Profit	25%	4,837.77
Selling Price	100%	19,351.07