

**Athena Co** makes two products, Phones and Laptops.

Phones take 2 labour hours each to make

Laptops take 5 labour hours each to make

What is the overhead cost per unit for Phones and Laptops if overheads are absorbed on the basis of labour hours?

**Step 1** Estimate the overhead likely to be incurred during the coming period.

Athena Co estimates that the total overhead will be \$50,000.

**Step 2** Estimate the activity level for the period.

Athena Co estimates that a total of 100,000 direct labour hours will be worked.

**Step 3** Divide the estimated overhead by the budgeted activity level.

Absorption rate =  $\$50,000 / 100,000 \text{ hrs} = \$0.50$  per direct labour hour

**Step 4** Absorb the overhead into the cost unit by applying the calculated absorption rate.

	Phones	Laptops
Labour hours per unit	2	5
Absorption rate per labour hour	\$0.50	\$0.50
Overhead absorbed per unit	\$1.00	\$2.50

The budgeted production overheads and other budget data of **Bridge Co** are as follows.

***Budget***

Overhead cost \$36,000

Machine hours 10,000

Labour hours 18,000

Units of production 3,000

Absorption Rate per machine hour =  $\$36,000 / 10,000 = \$3.60$

Absorption Rate per labour hour =  $\$36,000 / 18,000 = \$2.00$

Absorption Rate per unit of production =  $\$36,000 / 3,000 = \$12.00$

The following data relates to one year for **Classic Co**

Budgeted machine hours – 25,000	Actual machine hours – 20,000
Budgeted overheads - \$350,000	Actual overheads - \$360,000

Absorption Rate per machine hour = Budgeted overheads / Budgeted machine hours  
Absorption Rate per machine hour = \$350,000 / 25,000 = \$14

Overheads absorbed = Actual machine hours \* Absorption rate  
Overheads absorbed = 20,000 \* \$14 = \$280,000

Under/Over Absorption = Overheads absorbed – Actual overheads  
Under/Over Absorption = \$280,000 - \$360,000 = - \$80,000

If Negative then UNDER Absorbed  
Thus \$80,000 UNDER absorbed

The following data relates to one year for **Delta Co**

Budgeted labour hours – 50,000

Actual labour hours – 60,000

Budgeted overheads - \$1,000,000

Actual overheads - \$1,100,000

Absorption Rate per labour hour = Budgeted overheads / Budgeted labour hours

Absorption Rate per labour hour = \$1,000,000 / 50,000 = \$20

Overheads absorbed = Actual labour hours \* Absorption rate

Overheads absorbed = 60,000 \* \$20 = \$1,200,000

Under/Over Absorption = Overheads absorbed – Actual overheads

Under/Over Absorption = \$1,200,000 - \$1,100,000 = \$100,000

If Positive then OVER Absorbed

Thus \$100,000 OVER absorbed

Using a predetermined absorption rate:

1. Avoids fluctuations in unit costs caused by abnormally high or low overhead expenditure or activity levels.
2. Offers the administrative convenience of being able to record full production costs sooner.

## Target Costing

Target Selling Price = \$100

Target Profit Margin = 40%

Estimated Cost = \$70

Target Profit = Target Selling Price \* Target Profit Margin

Target Profit = \$100 \* 0.4 = \$40

Target Cost = Target Selling Price – Target Profit

Target Cost = \$100 - \$40 = \$60

Cost Gap = Estimated Cost – Target Cost

Cost Gap = \$70 - \$60 = \$10

## Break Even Point (BEP)

Selling Price per unit = \$200

Material Cost per unit = \$40

Labour Cost per unit = \$60

Fixed Costs = \$500,000

Planned Production = 6,000

Target Profit = \$200,000

Variable Costs per unit = Material cost per unit + Labour cost per unit

Variable Costs per unit = \$40 + \$60 = \$100

Contribution per unit = Selling Price per unit - Variable Costs per unit

Contribution per unit = \$200 - \$100 = \$100

BEP = Fixed Costs / Contribution

BEP = \$500,000 / \$100 = 5,000 units

Margin of Safety (MoS) = Planned Production - BEP

Margin of Safety (MoS) = 6,000 - 5,000 = 1,000

Target Profit Production = (Fixed Costs + Target Profit) / Contribution

Target Profit Production = (\$500,000 + \$200,000) / \$100 = 7,000

# Product Life Cycle

1. Introduction – the product is introduced to the market, revenue rises, but losses are still made.
2. Growth – revenue rises faster and the product becomes profitable.
3. Maturity – The rate of revenue growth slows but good profits are still made
4. Decline – Revenue declines, partly due to intense competition, and profits fall.