



WIRC of ICAI

presents

Overheads: Costing for PCC

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Date : 01 May 2009

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Overheads

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Overheads: Intro



- Overhead costs includes indirect material, indirect labor and all other indirect expenses
 - collectively referred to as 'Overheads'
- Overheads are
 - indirect costs
 - incurred generally, not specifically
 - not directly identified to end product or service

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Overheads: Classifications



- Functions:
 - Factory/ Production/ Manufacturing
 - Selling & Distribution
 - General & Admin
- Nature:
 - Fixed
 - Variable
 - Semi variable

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Cost Allocation

- Cost allocation
 - process of charging direct expenditure to cost centers
- Cost allocation refers to
 - allotment of
 - all items of cost
 - directly to various cost centers



Cost Apportionment

- Cost apportionment
 - process of charging indirect expenditure to cost centers
- Cost apportionment refers to
 - allotment of
 - proportion of items of cost
 - to various cost centers
 - on an equitable basis



Cost Apportionment

- Service depts (e.g. Repair & Maint. dept, Labour & Welfare dept, etc) help the production depts
- Service dept costs apportioned to production depts
 - Service depts to only prodn depts
 - Service depts to prodn & service depts
 - on a non-reciprocal basis
 - on a reciprocal basis



Cost Apportionment

- Overhead costs of service depts are apportioned to production depts thru either of the methods
 - Simultaneous equation
 - Step ladder
 - Repeated cycle/ continuous distribution
 - Trial & error



Cost Apportionment

- Basis of apportionment
 - Labour hours
 - Machine hours
 - Space area occupied
 - HP rating/ HP hours consumed
 - Electrical points
 - Employee nos
 - Personnel cost
 - Asset value
 - Volume of work

Absorption Costing



Cost Absorption

- Cost absorption
 - process of absorbing estimated overheads
 - over the expected normal volume of production
 - during the period
 - using a scientific basis (recovery rate)
- A mechanism to release overhead costs in the Costing P&L



Absorption methods

- Recovery rate options
 - per unit of production
 - per labour hour
 - per machine hour
 - percentage of direct material cost
 - percentage of direct labour cost
 - percentage of prime cost
- Overheads mentioned in cost sheet are absorbed overheads, not actuals



Absorption methods

- Depends upon
 - industry type
 - nature of product/process
 - nature of expense, etc.
- May use a combination of recovery rate for different cost elements



Absorption Costing

- Method for
 - charging to Costing P&L
 - all estimated and expected
 - overhead costs
- Includes ‘all’ costs for arriving at cost p.u. (per unit); does not differentiate between fixed and variable
- Also referred to as “Full-Cost” technique



Under-/ Over-Absorption

- Under-absorption of costs
 - when actual overheads incurred
 - are higher than those absorbed in the production cost
- Over-absorption
 - when overheads absorbed in the production cost
 - are higher than actual overheads incurred



Under-/ Over-Absorption

- Reasons could be faulty estimation of
 - overhead costs
 - cost drivers
 - production/activity level
 - capacity utilisation levels
- Treated in Costing books by
 - use of supplementary rates
 - w/o in Costing P&L
 - c/f to subsequent year



Advantages of Absorption Costing

- Considers all costs related to business activity, whether fixed or variable



Disadvantages of Absorption Costing

- Any change in planned activity levels can put the costing in disarray
- Difficult to find suitable bases of administrative OH absorption rates
- May involve substantial clerical work
- Not very conducive to decision making
- Has restricted use today

Teasers



Teasers

- XYZ Ltd absorbs overheads based on units produced. In one period,
 - 23,000 units were produced,
 - actual overheads were Rs276,000 and
 - there was Rs46,000 under-absorption
- Budgeted OH absorption rate p.u. was
 - 10
 - 12.5
 - 13
 - 14



Teasers

- Zee Ltd absorbs overheads on the basis of DL hours. Details of budgeted and actual figures for the latest period are as follows:

	<i>Budget</i>	<i>Actual</i>
– Overheads	350,000	400,000
– Output units	70,000	60,000
– Labour hours	35,000	30,000

- Which ONE of the following statements is true?
Overheads were
 - **A** 50,000 over-absorbed
 - **B** 50,000 under-absorbed
 - **C** 100,000 over-absorbed
 - **D** 100,000 under-absorbed
 - **E** None of the above

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Teasers

- X Ltd operates a standard costing system and absorbs overheads on the basis of standard machine hours. Detailed figures are as follows:

	<i>Budget</i>	<i>Actual</i>
– Overheads	1,250,000	1,005,000
– Output units	250,000	220,000
– Machine hours	500,000	450,000

- Which ONE of the following statements is true?
Overheads were
 - **A** 95,000 over-absorbed
 - **B** 95,000 under-absorbed
 - **C** 120,000 over-absorbed
 - **D** 120,000 under-absorbed
 - **E** None of the above

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Teasers

- X Ltd currently uses marginal costing to calculate profit. Opening and closing stocks for the period were 10,000 and 12,000 units respectively
- If absorption costing principles had been used and the fixed overhead absorption rate was Rs30 per unit, the absorption costing profit for the period compared to the marginal costing profit would have been
 - **A** Rs30,000 lower
 - **B** Rs30,000 higher
 - **C** Rs60,000 lower
 - **D** Rs60,000 higher

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Exam Questions



Exam sum: Fixed vs Variable Ohds

- Maintenance costs incurred in a machine shop and corresponding machine hours during six months are as under:

	M1	M2	M3	M4	M5	M6
Rupees	3,500	3,700	3,200	3,900	3,300	3,400
M/c hours	300	320	270	340	280	290

- Analyse the maintenance cost into fixed and variable elements



Exam sum: Calc M/c hr rate

- A machine shop has 8 identical Drilling Machines manned by 6 operators. The machines cannot be worked without an operator wholly engaged on it. The original cost of all these 8 machines works out to Rs800,000. Work out a comprehensive machine hour rate for the machine shop

Half-yearly info		Annual info	
Normal available hours per month	208	Repairs & Maint. (% of m/c value)	3%
Absenteeism (without pay) hours	18	Depreciation (% of m/c value)	10%
Leave (with pay)-hours	20	Insurance	Rs40,000
Normal idle time unavoidable-hours	10	Sundry others	Rs12,000
Avg wage rate per day of 8 hours	Rs20	Appportioned mgt exps	Rs54,530
Production Bonus (% of wages)	15%		
Value of Power consumed	Rs8,050		
Supervision and Indirect Labour	Rs3,300		
Lighting and Electricity	Rs1,200		



Exam sum: Apportionment of Ohds

- Selfhelp Ltd. has gensets and produces its own power. Data for power costs are below

	Production depts.		Service depts.	
	A	B	X	Y
HP Hours				
Needed capacity prodn	10,000	20,000	12,000	8,000
Used during Apr09	8,000	13,000	7,000	6,000

- During Apr09, costs for generating power was Rs9,300: of which Rs2,500 was fixed. Service dept X and Y render service to A, B and Y in the ratio 13:6:1 and 31:3 respectively. Given that DL hours in depts A and B are 1650 hours and 2175 hours respectively, find the power cost per labour hour for each dept



Exam sum: Apportionment of Ohds

- K Ltd. has undertaken two jobs in the current quarter, details whereof are as under:

	Job A	Job B
Selling price	107,325	157,920
Profit as % on cost	8.0%	12.0%
Direct Materials	37,500	54,000
Direct Labour	30,000	42,000

- Company policy is to charge
 - Factory OH as % of DL
 - Selling and Admin OH as % on Factory cost
- K Ltd. has received a new order for a similar job. The estimate of DM and DL relating thereto are Rs64,000 and Rs50,000 respectively. A profit of 20% on sales is required
- Compute:
 - Rates of Factory OH and Selling & Admin OH to be charged
 - Selling price of the new order



Exam sum: Nov 1998 Reapportionment

- Overheads distbn summary of prodn and services depts is as under:

P1	P2	P3	S1	S2
13,600	14,700	12,800	9,000	3,000

- These are distributed as under:

	P1	P2	P3	S1	S2
S1	40%	30%	20%	-	10%
S2	30%	30%	20%	20%	-

- Apportion these OH to Production depts



Exam sum: StepLadder Apportionment

- Deccan Ltd. have three depts which are regarded as production depts. Service depts' costs are distributed to production depts using "Step Ladder Method" of distribution in the order of P, Q, R S. Estimates of factory OH costs to be incurred in the forthcoming year are as follows. Data required for distribution is also shown against each dept

	X	Y	Z	P	Q	R	S
Factory OH Rs000s	193	64	83	45	75	105	30
DL hours	4,000	3,000	4,000	1,000	5,000	6,000	3,000
No. of employees	100	125	85	10	50	40	50
Area in sq. m.	3,000	1,500	1,500	500	1,500	1,000	1,000
Apportionment basis				Emplo yees	DL hours	Area	DL hours

- Prepare a schedule showing the distribution of overhead costs of the service depts to the production depts; and
- Calculate the overhead recovery rate per DL hour for each dept



Exam sum: Reapportionment

- Find total cost of product X, given that its DM cost is Rs50 and DL cost is Rs.30, if 'X' is produced thru production depts P1, P2 and P3 and service depts S1 and S2; details as under

	P1	P2	P3	S1	S2
Direct Wages (Rs.)	3,000	2,000	3,000	1,500	195
Working Hours	3,070	4,475	2,419	-	-
Value of Machines (Rs.)	60,000	80,000	100,000	5,000	5,000
HP of Machines	60	30	50	10	-
Light Points	10	15	20	10	5
Floor space (sq.ft.)	2,000	2,500	3,000	2,000	500
Processing hours of 'X'	4	5	3		
S1 apportionment	20%	30%	40%	-	10%
S2 apportionment	40%	20%	30%	10%	-

Rent	Lighting	Ind wages	Power	M/c depn	Sundries
5,000	600	1,939	1,500	10,000	9,695



Exam sum: Reapportionment

- E-books.com, an online book retailer, has four depts. The two sales depts Corporate Sales and Consumer Sales conduct merchandising and marketing operations independently. The two support depts are Admin and InfoSystems. Data for Apr09 is as under:

	Corporate Sales	Consumer Sales	Admin	Info System
Revenues	1,667,750	833,875	--	--
Employees	42	28	14	21
Processing time (mins)	2,400	2,000	400	1,400
HP of Machines	60	50	10	-
Costs incurred	1,297,751	636,818	94,510	304,720
Apportionment basis	2,000	3,000	Employees	Processing time

- Allocate the support department costs to the sales departments using the direct method and the reciprocal allocation method.



Exam sum: Calc of m/c hour rate

- Gemini Enterprises undertakes three different jobs A,B and C. All of them require, the use of a special machine as also the use of a computer, hired @ annual rent of Rs420,000.
- Other expenses regarding the machine are estimated as follows:
 - Rs17,500 – Quarterly rent
 - Rs200,000 – Annual depreciation
 - Rs150,000 – Annual indirect charges
- During the first month of operation the following details were taken from the job register

No of machine hours	A	B	C
• With use of computer	400	600	1,000
• Without use of computer	600	900	0

- Compute the machine hour rates
 - For the firm as a whole for the month when
 - the computer was used and
 - when the computer was not used
 - For the individual jobs A, B and C

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Exam sum: Calc of m/c hour rate

- PQR Ltd has its own power plant, which has two users, Cutting Department and Welding Department. When the plans were prepared for the power plant, top management decided that its practical capacity should be 150,000 machine hours. Annual budgeted practical capacity fixed costs are Rs.900,000 and budgeted variable costs are Rs.4 per machine-hour. The following data are available

2008-09	Total m/c hours	Cutting dept	Welding dept
Actual usage (m/c hours)	100,000	60,000	40,000
Practical capacity (m/c hours)	150,000	90,000	60,000

- Allocate the cost to the cutting and welding depts using
 - a single rate method in which the budgeted rate is calculated using practical capacity and costs are allocated based on actual usage
 - the dual -rate method in which fixed costs are allocated based on practical capacity and variable costs are allocated based on actual usage
 - the dual-rate method in which the fixed-cost rate is calculated using practical capacity, but fixed costs are allocated to the depts based on actual usage. Variable costs are allocated based on actual usage

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Exam sum: Calc of m/c hour rate

- MN Ltd. having 15 different types of automatic machines furnishes following info
 - Rs960,000 for Factory rent for 80,000 sq.ft.
 - Rs450,000 for heat and gas and
 - Rs1200,000 for supervision.
 - Rs480 for daily wages (8 hours) for operator. He attends to one machine when it is under-set up and two machines while they are under operation
- In respect of a machine B following particulars are furnished:
 - Rs450,000 being capital cost of machine
 - Rs50,000 being scrap value at end of its useful life of 10 years
 - Rs30,000 being annual expenses on special equipment attached thereto
 - 3,600 hours being its estimated operation time
 - 400 hours being its set up time
 - 5000 sq ft being the floor area occupied
 - Rs20 per hour being the power costs while machine is in operation
- Calculate comprehensive m/c hour rate of machine B. Also find out costs absorbed in respect of its use on following work- orders
 - Work – order 31, requiring set up and operating time of 10 and 20 hours
 - Work – order 32, requiring set up and operating time of 90 and 180 hours

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Exam sum: Under-/ Over- absorption

- In a factory, OH of a particular dept are recovered on the basis of Rs5 per machine hour
- In April09, total expenses incurred were Rs80,000 for 10,000 actual m/c hours
- Of the total, Rs15,000 became payable due to an award of Labour Court and Rs5,000 was a prior year expense
- 40,000 units were produced, of which 30,000 were sold
- On analysing reasons, it was found that 60% of under absorbed overhead was due to defective planning and the rest was attributed to normal cost increase
- How would you treat the under absorbed overhead in the cost accounts?

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Exam sum: Activity-based

- A company manufacturing only two products furnishes following annual data:

2008-09	Output (Units)	Total M/c hours	Total no of Pos raised	Total no of set-ups
Product A1	5,000	20,000	160	20
Product B2	60,000	120,000	384	44

- The annual overheads were as under:
 - Rs550,000 being volume related activity costs
 - Rs820,000 being set-up related costs
 - Rs618,000 being purchase related costs
- Calculate the cost per unit of products A1 and B2 based on:
 - Traditional method of charging overheads
 - Activity based costing method

Thank You

For further info:

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