

Decision Making – Relevant Costing

1. Management company follows the flexible budgeting system and the position at 70% level of production is as follows :

Production	40,000 units
Direct wages	60,000
Direct material	80,000
Overhead	
Fixed	84,000
Variable	<u>42,000</u>
	<u>2,66,000</u>

The selling price per unit is ₹ 8.65.

In the present market conditions there is hardly any chance for selling more locally. A special export order, for 8,000 units @ ₹ 6.50 per unit is received.

- Would it be prudent for the company to accept the order at this price?
- What is the price beyond which it would be profitable to accept this order?
- If export order is for 20,000 units, & capacity can not be increased above 100 % & the export order has to be accepted in full, what will you decide?
- What maximum order quantity can be accepted at this export price?

2. A.K. manufacturing Company is producing a Product X for the home market. The normal capacity is to produce 1,25,000 units. The estimates for the year 2008 for the home market are as under :

	Estimated Production and Costs	Full Capacity Production and Costs
Sales (units)	1,00,000	1,25,000
Sale Price per units (₹)	4.00	3.75
Fixed Cost:		
Production (₹)	1,00,000	1,05,500
Selling and Distribution (₹)	10,000	11,000

Variable Cost : Production ₹ 2.00 per unit. Selling and Distribution ₹ 0.20 per unit.

The Sales Manager finds that there is a market in the foreign country for 25,000 units @ ₹ 3.75 per unit. The cost of exporting the goods to the foreign country is ₹ 0.50 per unit. Should the Company enter into the foreign market? What should be the minimum sale price at which the company can sell in the foreign country? Give reasons

3. Star Bicycle Company, produced and sold 1,10,000 bicycle annually, under the brand name 'Smart' with a price tag ₹ 899. Like all other players in the industry, Star too was running under capacity. The manufacturing cost of these cycles was-material ₹ 300, labour ₹ 200 and Manufacturing ₹ 300, 40% of the manufacturing cost was variable. General and administration expenses were 50% of labour cost.

Star has now received a proposal to sell 25,000 bicycles per year under the brand name 'Jeet' to a chain store at a price of ₹ 800. The brand will be exclusive for the chain stores as they will market it as their own product. Expenditure for producing 'Jeet' will be the same as that of Star as design of 'Jeet' will exactly be same as that of 'Star' with only some cosmetic changes. To produce 'Jeet' however, ₹ 6,00,000 additional fund will be required on an average. Further it is estimated that sale of 'Jeet' through the store will reduce the sale of 'Star' by 10,000 units.

You are required to calculate the relevant cost of 'Jeet', given that the weighted average cost of capital Star Co. is 15%.

4. A job would require the following materials-

Material Cost	Required Total units	Already in stock units	Book Value of units in stock `/Unit	Realisable value `/ Unit	Replacement `/Unit
A	1,200	700	35	40	60
B	1,350	1,600	25	12	45
C	800	700	30	25	40
D	200	160	14	6	19
E	400	500	17	--	28
F	360	300	39	--	67

(i) Material A & B is used regularly by X Ltd. and if stocks are required for this job, they would need to be replaced to meet other production

(ii) Materials C and D are in stock as a result of over purchase. C has no other use but D could be used in another job as substitute demand for 350 units of material P, which currently cost ` 4.5 per unit (of which the company has no units in stock at the moment).

(iii) Material E & F are toxic material and was purchased for a separate contract (not accepted). It should be disposed off at a cost of ` 3,500 & ` 8,000 respectively, if not used in this contract. Find the relevant cost of material

5. Two machines namely Machine Type 'X' and Machine Type 'Y' are required to produce a new product AXE (life one year), Machine Type 'X' is in regular use on different products (capacity 100 % utilised) and Machine Type 'Y' is now idle. If AXE is not produced Machine Type 'Y' can be sold immediately. The management is planning for an expansion programme with machine X in near future.

The relevant data relating to each type of machine are as under :

		At the start of the year	At the close of the year
Type 'X'	Replacement Cost	1,60,000	1,20,000
	Resale value	1,20,000	94,000
Type 'Y'	Replacement Cost	26,000	48,000
	Resale value	22,000	21,000

The Company charges depreciation on straight line basis.

6. A company has been making a machine to order for a customer, but the customer has since gone into liquidation, and there is no prospect that any money will be obtained from the winding up of the company.

Costs incurred to-date in manufacturing the machine are ` 2,50,000 and progress payments of ` 1,34,300 have been received from the customer prior to the liquidation. The sales department has found another company willing to buy the machine for ` 1,24,000 once it has been completed.

To complete the work, the following costs would be incurred :-

(a) Material A - these was bought at a cost of ` 4,500. They have no other use, and if the machine is not finished, they would be sold for scrap for ` 3,500 .

Material-B : Book value ` 60,000. This material, which has just been received, is extremely toxic and if not used on the project would have to be disposed of by special means ( for resale purpose ) , at a cost of ` 15,000.

(b) Further labour costs would be ` 9,000. Labour is in short supply, and if the machine is not finished, the work-force would be switched to another job, which would earn ` 40,000 in revenue, and incur direct costs (not including direct labour) of ` 18,000 and will incur a fixed overhead of ` 8,000.

(c) Consultancy fees ` 4,000. If the work is not completed, the consultant's contract would be canceled at a cost of ` 2,500. `1,000 is paid so far .

(d) General overheads of ` 23,000 would be added to the cost of the additional work.

(e) Research Staff-` 64,000 : A decision has already been taken that this will be the last major piece of research undertaken, and consequently when work on the project ceases the. Staff involved will be made redundant. Redundancy and severance pay have been estimated at ` 1,25,000. Rate of interest is 5% p.a.. The project will take 4 months to complete.

(f) Machinery : The following machines are required to complete the offer :

Z-200 costs `6,000
CBX costs `45,000

It transpires that the CBX will also do the job of the CB-500 as well as complete this machine. Co. uses a CB-500 in existing business and it is due to be replaced at a cost of `30,000. The resale value of Z-200 is `2400 at the end of its use for this project.

Should the new customer's offer be accepted? Prepare a statement showing the economics of the proposition.

7. Shortflower Ltd. currently publish, printing and distribute a range of catalogues and instruction manuals. The management have now decided to discontinue printing and distribution and concentrate solely on publishing. Longplant Ltd. will print and distributed the range of catalogues and instruction manuals on behalf of Shortflower Ltd. commencing either at 30th June or 30th November . Longplant Ltd. will received `65,000 per month for a contract which will commence either at 30th June or 30th November .
The result of Shortflower Ltd. for a typical month are as follows :

	Publishing `000	Printing `000	Distribution `000
Salaries and wages	28	18	4
Materials and supplies	5.5	31	1.1
Occupancy costs	7	8.5	1.2
Depreciation	0.8	4.2	0.7

Other information has been gathered relating to the possible closure proposals :

(i) Two specialist staff from printing will be retained at their present salary of ₹1,500 each per month in order to fulfill a link function with Longplant Ltd. One further staff member will be transferred to publishing to fill a staff vacancy through staff turnover, anticipated in July. This staff member will be paid at his present salary of ₹1,400 per month which is ₹100 more than that of the staff member who is expected to leave. On closure all other printing and distribution staff will be made redundant and paid an average of two months redundancy pay.

(ii) The printing department has a supply of materials (already paid for) which cost ₹18,000 and which will be sold to Longplant Ltd. for ₹10,000 if closure takes place on 30th June. Otherwise the material will be used as part of the July printing requirements. The distribution department has a contract to purchase pallets at a cost of ₹500 per month for July and August. A cancellation clause allows for non-delivery of the pallets for July and August for a one-off payment of ₹300. Non-delivery for August only will require a payment of ₹100. If the pallets are taken from the supplier, Longplant Ltd. has agreed to purchase them at a price of ₹380 for each month's supply which is available. Pallet costs are included in the distribution material and suppliers cost stated for a typical month.

(iii) Company expenditure on apportioned occupancy costs of printing and distribution will be reduced by 15% per month if printing and distribution departments are closed. At present, 30% of printing and 25% of distribution occupancy costs are directly attributable costs which are avoidable on closure, whilst the remainder are apportioned costs.

(iv) Closure of the printing and distribution department will make it possible to sub-let part of the building for a monthly fee of ₹2,500 when space is available.

(v) Printing plant and machinery has an estimated net book value of ₹48,000 at 30th June. It is anticipated that it will be sold at a loss of ₹21,000 on 30th June. If sold on 30th November the prospective buyer will pay ₹25,000.

(vi) The net book value of distribution vehicles at 30th June is estimated as ₹80,000. They could be sold to the original supplier at ₹48,000 on 30th June. The original supplier would purchase the vehicles on 30th November for a price of ₹44,000.

Required

Using the above information, prepare a summary to show whether Shortflower Ltd. should close the printing and distribution departments on financial grounds on 30th June or on 30th November.

8. Companies GP, GR, GS and GT are members of a group. GP wishes to buy an electronic control system for its factory and in accordance with group policy, must obtain quotations from companies inside and outside the group.

From outside of the group the following quotations are received :

- Company A quoted ₹32,200.
- Company B quoted ₹33,000 but would buy a special unit from GS for ₹13,000.
To make this unit, however, GS would need to buy parts from GR at a price of ₹7,500.
- The inside quotation was from GS whose price was ₹48,000. This would require GS buying parts from GR at a price of ₹8,000 and units from GT at a price of ₹30,000. However, GT would need to buy parts from GR at price of ₹11,000.

Additional data are as follows :

- GR is extremely busy with work outside the group and has quoted current market prices for all its products.

- GS cost for the GP contracts including purchases from GR and GT total ` 42,000. For the company B contract it expects a profit of 25% on the cost of its own work.
- GT prices provide for a 20% profit margin on total costs.
- The variable costs of the companies in respect of the work under consideration are :
 - GR - 20% of selling price.
 - GS - 70% of own cost (excluding purchases from other group companies).
 - GT - 65% of own cost (excluding purchases from other group companies).

You are required, from group point of view, to recommend, with appropriate calculations, whether the contract should be placed with GS or Company A or Company B.

9. Reel and Roll Ltd., manufactures a range of films extensively used in the cinema industry. The films, once manufactured are packed in circular containers and stored in specially constructed crates lined with "protecto". These crates are manufactured and maintained by a special Department within the company and the Departmental costs last year are as under :-

Direct Materials (including "protecto")		1,40,000
Direct Labour		<u>1,00,000</u>
Overheads :		2,40,000
Department Manager	16,000	
Depreciation of machine	30,000	
Maintenance of machine	7,200	
Rent (portion of warehouse)	9,000	
Other Miscellaneous costs	<u>31,500</u>	<u>93,700</u>
		3,33,700
Administration Overhead (20% of direct costs)		<u>48,000</u>
		<u>3,81,700</u>

1. Pack Knack Associates have approached the Reel and Roll Ltd. offering to make all the crates required on a four year contract for ` 2,50,000 per annum and /or to maintain them for a further ` 50,000 per annum.

The following data are relevant: for the offer -

(i) The machine used in the department cost ` 2,40,000 four years ago and will last for four more years. It could be currently sold for ` 70,000.

(ii) A stock of "protecto" was acquired last year for ` 2,00,000 and one-fifth was used last year and included in the material cost. It originally cost ` 1,000 per ton, but the replacement cost is ` 1,200 per ton, and it could be currently sold for ` 900 per ton.

(iii) The Department has acquired warehouse space for ` 18,000 per annum. It uses only one - half of the space; the rest is idle.

(iv) If the department were closed, the Manager will be transferred to another department; but all the labour force will be made redundant, and the terminal benefits to be met will amount to ` 15,000 per annum. In that event, pack knack Associates will undertake to manufacture and maintain the crates.

2. If Reel and Roll Ltd. continued to maintain the crates, but left their manufacture to pack-knack Associates:-

- (i) The machine will not be required
- (ii) The manager will remain in the department

- (iii) The warehouse space requirements will not be reduced
- (iv) Only 10 per cent of all materials will be used
- (v) Only one worker will be dispensed with and taking the terminal benefit to be met into account, the saving will be ` 5,000 per annum.
- (vi) The miscellaneous costs will be reduced by 80 per cent.

3. If Reel and Roll Ltd., continued to manufacture the crates but left their maintenance to Pack Knack Associates:-

- (i) The machine will be required
- (ii) The manager will remain in the department
- (iii) The warehouse space will be required
- (iv) 90% of all the materials will be required
- (v) The labour force will continue
- (vi) The miscellaneous costs will be reduced by 20%. Advice

10. TQM Limited makes engines for motor cars for its parent company and for two other motor car manufacturers.

On 31st December, the company has sufficient work order for January and one further order for 21,000 engines. Due to recession in the economy, no further order are expected until May when it is hoped economic prospect for the motor car industry will have improved. Recently factory has been working at only 75% of full capacity and the order for 21,000 engines represents about one month production at this level of activity.

The board of directors are currently considering following two options:

(i) Complete the order in February and close the factory in March and April.

OR

(ii) Operate at 25 per cent of full capacity for each of three months of February, March and April.

The costs per month at different levels of activities are as follows:

	At 75% (%)	At 25% (%)	Idle (%)
Direct Material	5,25,000	1,75,000	--
Direct Labour	5,23,600	1,73,250	--
Factory overhead:			
Indirect material	8,400	4,900	4,900
Indirect labour	1,01,500	59,500	--
Indirect expenses:			
Repairs and maintenance	28,000	28,000	--
Others expenses	52,500	34,300	26,600
Office overheads:			
Staff salaries	1,48,400	98,000	67,550
Other overheads	28,000	19,950	11,200

Other information is as follows:

- Material cost and labour cost will not be incurred where there is no production.
- On the reopening of the factory, one time cost of training and engagement of new personnel would be `65,800 and overhauling cost of plant would be `14,000.
- Parent company can purchase engines from open market at reasonable price.

Required:

- (i) To express your opinion, along with calculations, as to whether the plant should be shut down during the month of March and April or operate 25% of full capacity for three months.

(ii) To list and comment on cost and non-costs factors which might be relevant to the discussion.