Case 1.2: Bharat Heavy Electricals Limited (BHEL)

BHEL is the largest engineering company in India. It provides total systems to the core sectors of the Indian economy — power, industry and transportation. About two-thirds of the company's business is in power sector. It is a technology-intensive company having collaborations with reputed international companies. It ranks among "Fortune 500" biggest industrial giants. Its operations are spread over 13 manufacturing plants and eight service centres in India. BHEL employs about 46,050 persons, including nearly 10,000 executives. The company was initially a totally public sector company. It has been partially privatised now.

The company is committed to quality. It receives orders from several countries for industrial equipments, including complete power stations, consultancy services and providing technical manpower. These countries include USA, UK, West Germany, Russia, New Zealand, Indonesia, Thailand, Malaysia, Saudi Arabia, Libya, and Turkey etc. BHEL is recognized in the world market as a renovation, services and maintenance expert. A number of old boilers and TG sets from renowned international suppliers are being entrusted to BHEL for renovation.

BHEL produces a wide variety of products in core sectors of the economy. The characteristics of those products vary significantly. A number of its products such as hydro and thermal

sets, boilers, boiler auxiliaries, compressors, industrial turbo sets and oilrigs are long production cycles items. BHEL has defined its objectives as follows:

Growth To ensure a steady growth by enhancing the competitive edge of BHEL in existing business, new areas and international operations so as to fulfil national expectations for BHEL.

Profitability To provide a reasonable and adequate return on capital employed, primarily through improvements in operational efficiency, capacity utilisation and productivity, and generate adequate internal resources to finance the company's growth.

Customer focus To build a high degree of customer confidence by providing increased value for his money through international standards of product quality, performance and superior customer service.

People orientation To enable each employee to achieve his potential, improve his capabilities, perceive his role and responsibilities and participate and contribute positively to the growth and success of the company. To invest in human resources continuously and be alive to their needs

Technology To achieve technological excellence in operations by development of indigenous technologies and efficient absorption and adaptation of imported technologies to sustain needs and priorities, and provide a competitive advantage to the company.

Image To fulfil the expectations which shareholders like government as owner, employees, customers and the country at large have from BHEL.

Discussion Question

1. Critically evaluate BHEL's objectives from the perspectives of financial management, in general and shareholders in particular.

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marginally as after-tax salvage value is higher by Rs 2.53 lakh.

Problem 10.5: A cosmetic company is considering to introduce a new lotion which is useful both in winters and summers. The manufacturing equipment will cost Rs 560,000. The expected life of the equipment is 8 years. The company is thinking of selling the lotion in a single standard pack of 50 grams at Rs 12 each pack. It is estimated that variable cost per pack would be Rs 6 and annual fixed cost, Rs 450,000. Fixed cost includes (straight-line) depreciation of Rs 70,000 and allocated overheads of Rs 30 000 The company expects to sell 100,000 packs of the lotion each year. Assume that the tax rate is 45 per cent and straight-line depreciation is allowed for tax purposes. If the opportunity cost of capital is 12 per cent, should the company manufacture the lotion? Also calculate the time-adjusted break-even point.

Solution: Allocated overheads (Rs 30,000 included in the fixed costs) are irrelevant for the project under consideration since they are not specific to it, and they would be incurred whether or not the project is undertaken.

The annual after-tax cash flows would be:

$$NCF = [Units (Selling price - Variable cost)$$
$$- Fixed cost] (1 - Tax rate) + Depreciation$$
$$= [100,000(12-6) - 420,000](1-0.45) + 70,000$$
$$= 180,000 \times 0.55 + 70,000 = Rs\ 169,000$$

$$NPV = -560,000 + 169,000 \times PVFA_{0,12,8}$$
$$= -560,000 \times 169,000 \times 4,968 = +Rs\ 279,592$$

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Problem 25.1: X Co. has made plans for the next year. It is estimated that the company will employ total assets of Rs 800,000; 50 per cent of the assets being financed by borrowed capital at an interest cost of 8 per cent per year. The direct costs for the year are estimated at Rs 480,000 and all other operating expenses are estimated at Rs 80,000. The goods will be sold to customers at 150 per cent of the direct costs. Tax rate is assumed to be 50 per cent.

You are required to calculate: (i) net profit margin; (ii) return on assets; (iii) assets turnover and (iv) return on owners' equity.

Solution:

The net profit is calculated as follows:

	Rs	Rs
Sales (150% of Rs 480,000)		720,000
Direct costs		480,000
Gross profit		240,000
Operating expenses	80,000	
Interest charges (8% of Rs 400,000)	32,000	112,000
Profit before taxes		128,000
Taxes (@ 50%)		64,000
Net profit after taxes		64,000

(i)

$$\text{Net profit margin} = \frac{\text{Rs } 64,000}{\text{Rs } 720,000} = 0.089 \text{ or } 8.9\%$$

$$\text{Net profit margin} = \frac{\text{EBIT}(1-T)}{\text{Sales}} = \frac{160,000\,(1-0.5)}{720,000}$$

$$= 0.111 \text{ or } 11.1\%$$

(ii)

$$\text{Return on assets} = \frac{\text{EBIT}(1-T)}{\text{Assets}} = \frac{160,000\,(1-0.5)}{800,000}$$

$$= 0.10 \text{ or } 10\%$$

(iii)

$$\text{Assets turnover} = \frac{\text{Sales}}{\text{Assets}} = \frac{\text{Rs }720,00}{\text{Rs }800,000} = 0.9 \text{ times}$$

(iv)

$$\text{Return on equity} = \frac{\text{Net profit after taxes}}{\text{Owner's equity}}$$

$$= \frac{\text{Rs }64,000}{50\% \text{ of Rs }800,000} = \frac{\text{Rs }64,000}{\text{Rs }400,000}$$

$$= 0.16 \text{ or } 16\%$$

✓Problem 25.2: The total sales (all credit) of a firm is Rs 640,000. It has a gross profit margin of 15 per cent and a current ratio of 2.5. The firm's current liabilities are Rs 96,000; inventories Rs 48,000 and cash Rs 16,000. (a) Determine the average inventory to be carried by the firm, if an inventory turnover of 5 times is expected? (Assume a 360-day year), (b) Determine the average collection period if the opening balance of debtors is intended to be of Rs 80,000? (Assume a 360-day year).

Solution:

(a) Inventory turnover : $\dfrac{\text{Cost of goods sold}}{\text{Average inventory}}$

Since gross profit margin is 15 per cent, the cost of goods sold should be 85 per cent of the sales.

Cost of goods sold $= 0.85 \times$ Rs $640,000 =$ Rs $544,000$

$$= \frac{\text{Rs } 544,000}{\text{Average inventory}} = 5$$

Thus Average inventory $= \dfrac{\text{Rs } 544,000}{5} =$ Rs $108,800$

(b) Average collection period:

$$\frac{\text{Average debtors}}{\text{Credit sales}} \times 360$$

Average debtors $= $ (op. debtors $+$ cl. debtors)$/2$

Closing balance of debtors is found as follows:

Current assets (2.5 of current liabilities)		Rs 240,000
Less: Inventories	Rs 48,000	
Cash	16,000	64,000
∴ Debtors		Rs 176,000

Average debtors $= $ (Rs $176,000 +$ Rs $80,000)/2$
$$= \text{Rs } 128,000$$

Average collection period $= \dfrac{\text{Rs } 128,000}{\text{Rs } 640,000} \times 360 = 72 \text{ days}$

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Problem 29.3: A company's requirements for ten days are 6,300 units. The ordering cost per order is Rs 10 and the carrying cost per unit is Re 0.26. The following is the discount schedule applicable to the company:

Lot size	Discount per unit (Rs)
1 – 999	0
1,000 – 1,499	0.010
1,500 – 2,499	0.015
2,500 – 4,999	0.030
5,000 – and above	0.050

Determine the economic order quantity.

Solution:

The economic order quantity without considering the discount is:

$$EOQ = \sqrt{\frac{2 \times 6,300 \times 10}{0.26}}$$

$$= \sqrt{\frac{126,000}{0.26}} = 700 \text{ units (approx).}$$

The following table is constructed to take account of the discount.

When the quantity discounts are available, the company should place four orders of 1,575 units each, as the total cost is minimum Rs 150.

No. of orders	1	2	3	4	5	6	7	8	9	10
Order size	6,300	3,150	2,100	1,575	1,260	1,050	900	787.5	700	630
Av. inventory	3,150	1,575	1,050	787.5	630	525	450	393.7	350	315
Carrying cost (Rs)	819	410	273	205	164	137	117	102	91	82
Order cost (Rs)	10	20	30	40	50	60	70	80	90	100
Total cost (Rs)	829	430	303	245	214	297	187	182	181	182
Less discount	315	189	95	95	63	63	–	–	–	–
Total cost after discount (Rs)	514	241	208	150	151	234	187	182	181	182

Note: Discount will be available on the total quantity, 6,300 units. However, discount per unit increases as order size increases.

Problem 29.4: A company is considering a selective inventory control using the following data:

Item	Units	Unit Cost (Rs)
1	6,000	4.00
2	61,200	0.05
3	16,800	2.10
4	3,000	6.00
5	55,800	0.20
6	22,680	0.50
7	26,640	0.65
8	14,760	0.40
9	20,520	0.40
10	90,000	0.10
11	29,940	0.30
12	24,660	0.50

Assuming the ABC analysis of selective control is indicated, arrange the data for presentation to the management.

Solution:

	Item	Units	% of Total Units	Unit Cost Rs	Total Cost Rs	% of Total Cost
A	3	16,800	4.52	2.10	35,280	21.43
	1	6,000	1.61	4.00	24,000	14.58
	4	3,000	0.81	6.00	18,000	10.94
	7	26,640	7.16	0.65	17,316	10.52
			14.10%			57.47%
B	12	24,660	6.63	0.50	12,330	7.49
	6	22,680	6.10	0.50	11,340	6.89
	5	55,800	15.00	0.20	11,160	6.78
	10	90,000	24.19	0.10	9,000	5.47
	11	29,940	8.05	0.30	8,982	5.46
	9	20,520	5.51	0.40	8,208	4.99
			65.48%			37.08%
C	8	14,760	3.97	0.40	5,904	3.59
	2	61,200	16.45	0.05	3,060	1.86
			20.42%			5.45%