

***ADVANCED CAPITAL
BUDGETING DECISIONS***

CLASS 11-HW-Q29

Topic Replacement Project

Question 29:

The General Manager of Merry Ltd. is considering the replacement of five -year-old equipment. The company has to incur excessive maintenance cost of the equipment. The equipment has zero written down value. It can be modernized at a cost of ₹ 1,40,000 enhancing its economic life to 5 years. The equipment could be sold for ₹ 30,000 after 5 years. The modernization would help in material handling and in reducing labour , maintenance & repairs costs.

The company has another alternative to buy a new machine at a cost of ₹ 3,50,000 with an economic life of 5 years and salvage value of ₹ 60,000. The new machine is expected to be more efficient in reducing costs of material handling, labour , maintenance & repairs, etc.

The annual cost are as follows:

	Existing Equipment (₹)	Modernization (₹)	New Machine (₹)
Wages & Salaries	45,000	35,500	15,000
Supervision	20,000	10,000	7,000
Maintenance	25,000	5,000	2,500
Power	30,000	20,000	15,000
	1,20,000	70,500	39,500

Assuming tax rate of 50% and required rate of return of 10%, should the company modernize the equipment or buy a new machine?

PV factor at 10% are as follows:

Year	1	2	3	4	5
PV factor	0.909	0.826	0.751	0.683	0.621

(Source: ICAI)

ANSWER:

Workings:

Calculation of Depreciation:

$$\text{On Modernized Equipment} = \frac{\text{₹ } 1,40,000 - \text{₹ } 30,000}{5 \text{ years}} = \text{₹ } 22,000 \text{ p.a.}$$

$$\text{On New machine} = \frac{\text{₹ } 3,50,000 - \text{₹ } 60,000}{5 \text{ years}} = \text{₹ } 58,000 \text{ p.a.}$$

i. Calculation of Incremental annual cash inflows/ savings:

Particulars	Existing Equipment (₹)	Modernization		New Machine	
		Amount (₹)	Savings (₹)	Amount (₹)	Savings (₹)
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(1)-(4)
Wages & Salaries	45,000	35,500	9,500	15,000	30,000
Supervision	20,000	10,000	10,000	7,000	13,000
Maintenance	25,000	5,000	20,000	2,500	22,500
Power	30,000	20,000	10,000	15,000	15,000
Total	1,20,000	70,500	49,500	39,500	80,500
Less: Depreciation (Refer Workings)			22,000		58,000
Total Savings			27,500		22,500
Less: Tax @ 50%			13,750		11,250
After Tax Savings			13,750		11,250
Add: Depreciation			22,000		58,000
Incremental Annual Cash Inflows			35,750		69,250

ii. Calculation of Net Present Value (NPV)

Particulars	Year	Modernization (₹)	New Machine (₹)
Initial Cash outflow (A)	0	1,40,000.00	3,50,000.00
Incremental Cash Inflows	1-5	1,35,492.50 (₹ 35,750 x 3.790)	2,62,457.50 (₹ 69,250 x 3.790)
Salvage value	5	18,630.00 (₹ 30,000 x 0.621)	37,260.00 (₹ 60,000 x 0.621)
PV of Cash inflows (B)		1,54,122.50	2,99,717.50
Net Present Value (B - A)		14,122.50	(50,282.50)

Advise: The company should modernize its existing equipment and not buy a new machine because NPV is positive in modernization of equipment.