

***ADVANCED CAPITAL
BUDGETING DECISIONS***

CLASS 11-HW-Q25

Topic Replacement Project

Question 25:

A Company named Roby's cube decided to replace the existing Computer system of their organisation. Original cost of old system was ₹ 25,000 and it was installed 5 years ago. Current market value of old system is ₹ 5,000. Depreciation of the old system was charged with life of 10 years with Estimated Salvage value as Nil. Depreciation of the new system will be charged with life over 5 years. Present cost of the new system is ₹ 50,000. Estimated Salvage value of the new system is ₹ 1,000. Estimated cost savings with new system is ₹ 5,000 per year. Increase in sales with new system is assumed at 10% per year based on original total sales of ₹ 10,00,00. Company follows straight line method of depreciation. Cost of capital of the company is 10% whereas tax rate is 30%.

(Source: ICAI)

ANSWER:

Step I. Net cash outflow (assumed at current time) [Present values of cost]:

- a. $(\text{Book value of old system} - \text{market value of old system}) \times \text{Tax Rate}$
 $= \text{Tax payable/savings from sale}$
 $= [(\text{₹ } 25,000 - 5 \times \text{₹ } 2,500) - \text{₹ } 5,000] \times 0.30$
 $= \text{₹ } 7,500 \times 0.30$
 $= \text{₹ } 2,250$
- b. $\text{Cost of new system} - [\text{Tax payable/savings from sale} + \text{Market value of old system}] = \text{Net cash outflow}$
 $\text{Or, } \text{₹ } 50,000 - [\text{₹ } 2,250 + \text{₹ } 5,000] = \text{₹ } 42,750$

Step II. Estimated change in cash flows per year if replacement decision is implemented.

$\text{Change in cash flow} = [(\text{Change in sales} \pm \text{Change in operating costs}) - \text{Change in depreciation}] (1 - \text{tax rate}) + \text{Change in depreciation}$
 $= [\text{₹ } 1,00,000 \times 0.1 + \text{₹ } 5,000 - (\text{₹ } 49,000/5 - \text{₹ } 25,000/10)] (1 - 0.30) + (\text{₹ } 49,000/5 - \text{₹ } 25,000/10)$
 $= \text{₹ } 12,690$

Step III. Present value of benefits = Present value of yearly cash flows + Present value of estimated salvage of new system

$= \text{₹ } 12,690 \times \text{PVIFA } (10\%, 5) + \text{₹ } 1,000 \times \text{PVIF } (10\%, 5)$
 $= \text{₹ } 48,723$

Step IV. Net present value = Present value of benefits - Present value of costs

$= \text{₹ } 48,723 - \text{₹ } 42,750$
 $= \text{₹ } 5,973$

Step V. Decision rule: Since NPV is positive we should accept the proposal to replace the machine.