

Q1 We use the total project approach to calculate the net present value of the decision to replace forklifts with the AMMS based on the original estimates Rolland gave Forrest. The NPV analysis favors of investing in the AMMS.



Invest in AMMS	Relevant cash flows	Present value factors at 12.00%	Present Value
1 Initial AMMS investment	(4,400,000)	1.000	(4,400,000)
Initial working capital investment	(1,000,000)	1.000	(1,000,000)
2 After-tax cash flow from current disposal of old forklifts:			
Current disposal price of old forklifts	100,000	100,000	
Book value of old forklifts	480,000		
Loss on disposal of forklifts	380,000		
Tax savings $40.00\% \times 380,000 =$	152,000		
After-tax cash flow from disposal of old forklifts	252,000	1.000	252,000
3 Recurring cash-operating flows <u>a</u>	1,200,000		
Deduct income tax savings 40.00%	(480,000)		
Recurring after-tax cash flows (costs) for 10 years	720,000	5.650	4,068,161
4 Income tax cash savings from depreciation deductions			
Depreciation deductions each year:			
$4,400,000 \div 10 = 440,000$			
Income tax cash savings from depreciation deduction each year for 10 years $40.00\% \times 440,000$	176,000	5.650	994,439
5 After-tax cash flow from terminal disposal of AMMS:			
Terminal disposal price of AMMS in Year 10	850,000		
Deduct book value of AMMS at end of Year 10	0		
Gain on disposal of AMMS	850,000		
Deduct taxes on gain $40.00\% \times 850,000$	(340,000)		
After-tax cash flow from terminal disposal of AMMS	510,000	0.322	164,206
6 Recovery of working capital in Year 10	1,000,000	0.322	321,973
Net present value of AMMS investment			400,779

Keep forklift trucks	Relevant cash flows	Present value factors at 12.00%	Present Value
Lease payment on forklift truck in year 9 and 10	(80,000)		
Deduct income tax savings $40.00\% \times 80,000 =$	32,000		
After-tax cost of lease payment in year 9	(48,000)	0.361	(17,309)
After-tax cost of lease payment in year 10	(48,000)	0.322	(15,455)
Income tax cash savings from depreciation deductions			
Depreciation deductions each year:			
$480,000 \div 8 =$	60,000		
Income tax cash savings from depreciation deduction each year for 10 years $40.00\% \times 60,000$	24,000	4.968	119,223
Net present value of all cash flows			86,459
Net present value difference in favor of keeping forklift trucks			314,320
a Recurring cash operating flows equal:			
Increase in cash flow from higher sales revenue			700,000
Reduction in annual manufacturing costs over current costs			400,000
Reduction in annual maintenance costs over current costs			300,000
Increased annual operating costs over current costs			(200,000)
Recurring cash operating flows			1,200,000

Q2		Relevant cash flows	Present value factors at 12.00%	Present Value
Invest in AMMS				
1	Initial AMMS investment	(4,400,000)	1.000	(4,400,000)
	Initial working capital investment	(1,000,000)	1.000	(1,000,000)
2	After-tax cash flow from current disposal of old forklifts:			
	Current disposal price of old forklifts	100,000	100,000	
	Book value of old forklifts	480,000		
	Loss on disposal of forklifts	380,000		
	Tax savings $40.00\% \times 380,000$	= 152,000		
	After-tax cash flow from disposal of old forklifts	252,000	1.000	252,000
3	Recurring cash-operating flows <u>a</u>	1,200,000		
	Deduct income tax savings 40.00%	(480,000)		
	Recurring after-tax cash flows (costs) for 10 years	720,000	4.968	3,576,701
4	Income tax cash savings from depreciation deductions			
	Depreciation deductions each year:			
	$4,400,000 \div 8 = 550,000$			
	Income tax cash savings from depreciation deduction each year for 10 years $40.00\% \times 550,000$	220,000	4.968	1,092,881
5	After-tax cash flow from terminal disposal of AMMS:			
	Terminal disposal price of AMMS in Year 10	100,000		
	Deduct book value of AMMS at end of Year 10	0		
	Gain on disposal of AMMS	100,000		
	Deduct taxes on gain $40.00\% \times 100,000$	(40,000)		
	After-tax cash flow from terminal disposal of AMMS	60,000	0.404	24,233
6	Recovery of working capital in Year 10	1,000,000	0.404	403,883
	Net present value of AMMS investment			(50,302)

	Relevant cash flows	Present value factors at 0.00%	Present Value
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Keep forklift trucks

Income tax cash savings from depreciation deductions			
Depreciation deductions each year:			
$480,000 \div 8 = 60,000$			
Income tax cash savings from depreciation deduction each year for 10 years	$40.00\% \times 60,000$	24,000	4.968
			119,223
Net present value of all cash flows			119,223
Net present value difference in favor of keeping forklift trucks			(169,526)
<i>Keep</i>			

Q3 Referring to "Standards of Ethical Conduct for Management Accountants," and taking into consideration the specific standards of competence, confidentiality, integrity, and/or objectivity, Lealand Forrest should evaluate Bill Rolland's directives as follows.

Competence

Forrest has a responsibility to present complete and clear reports and recommendations after appropriate analyses of relevant and reliable information. Rolland does not wish the report to be complete or clear.

Confidentiality

Forrest should not disclose confidential information outside of the organization, but it also appears that Rolland wants to refrain from disclosing information to the Board that it should know about.

Integrity

Rolland is engaging in activities that could prejudice him from carrying out his duties ethically. In evaluating Rolland's directive as it affects Forrest, Forrest has an obligation to communicate unfavorable as well as favorable information and professional judgments or opinions.

Objectivity

The responsibility to communicate information fairly and objectively, as well as to disclose fully all relevant information that could reasonably be expected to influence an intended user's understanding of the reports and recommendations presented, is being hampered. The Board will not have the full scope of information that they should have when they are presented with the analysis.