



Case-study

Gunn & Twynmore

This case-study demonstrates the importance of valuating different investment opportunities.

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Sunlight Manufacturing Company has been successfully producing and selling various types of electrical equipment for the last twenty years and is considering adding a new product to their portfolio. The firm would have to spend 2.360.000 now to launch the new product, which is expected to be obsolete after 5 years. The investment ('Investment A') is expected to generate the following annual net cash flows:

Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
- € 2.360.000	€832.000	€822.000	€692.000	€554.000	€466.000

The terminal cash flow includes the estimated resale value of any equipment used to manufacture the product, net of any liquidation cost. The project's estimated cost of capital is 7.6%.

Should SMC launch the new product? In order to answer this question, SMC has created the following table and calculated the NPV.

Timeline	Now	End-of-year 1	End-of-year 2	End-of-year 3	End-of-year 4	End-of-year 5
		1	2	3	4	5
Cash flows	-€2,360,000	€832,000	€822,000	€692,000	€554,000	€466,000
Cost of capital	7.60%					
Present value		€773,234	€709,982	€555,481	€413,296	€323,091

Total Present value **€2,775,083**

Net present value **€415,083**

Now SMC has two other projects it can consider in addition to the above opportunity – both involve collaborating with Third Parties. These opportunities have the same investment cost and the same cost of capital. The products of both opportunities are expected to be obsolete in 5 years. The terminal cash flow for both opportunities includes the estimated resale value of any equipment used to manufacture the product, net of any liquidation costs. The cash flow expectations are as follows:

End-of year	Investment B	Investment C
0	- € 1.000.000	- € 1.000.000
1	€ 800.000	€ 100.000
2	€ 600.000	€ 200.000
3	€ 400.000	€ 400.000
4	€ 200.000	€ 600.000
5	€ 100.000	€ 800.000
Total cash flows	€ 2.100.000	€ 2.100.000

Which project has the best NPV?

Investment B

Timeline	Now	End-of-year 1	End-of-year 2	End-of-year 3	End-of-year 4	End-of-year 5
		1	2	3	4	5
Cash flows	€1,000,000	€800,000	€600,000	€400,000	€200,000	€100,000
Cost of capital	10.00%					
Present value		€727,273	€495,868	€300,526	€136,603	€62,092

Total present value €1,722,361

Net present value €722,361

Investment C

Timeline	Now	End-of-year 1	End-of-year 2	End-of-year 3	End-of-year 4	End-of-year 5
		1	2	3	4	5
Cash flows	€1,000,000	€100,000	€200,000	€400,000	€600,000	€800,000
Cost of capital	10.00%					
Present value		€90,909	€165,289	€300,526	€409,808	€496,737

Total present value €1,463,269

Net present value €463,269

SMC also has been presented with yet another choice. Two projects that generate the same cash flow but have a different cost of capital. The first project has a cost of capital of 8% whereas the second project has a cost of capital of 12%. The initial inlay is the same for both projects.

End-of year	Investment D	Investment E
0	- € 1.000.000	- € 1.000.000
1	€ 300.000	€ 300.000
2	€ 300.000	€ 300.000
3	€ 300.000	€ 300.000
4	€ 300.000	€ 300.000
5	€ 300.000	€ 300.000
Total cash flows	€ 1.500.000	€ 1.500.000

Investment C

Timeline	Now	End-of-year 1	End-of-year 2	End-of-year 3	End-of-year 4	End-of-year 5
		1	2	3	4	5
Cash flows	€1,000,000	€300,000	€300,000	€300,000	€300,000	€300,000
Cost of capital	8.00%					
Present value		€277,778	€257,202	€238,150	€220,509	€204,175

Total present value €1,197,813

Net present value €197,813

Investment D

Timeline	Now	End-of-year 1	End-of-year 2	End-of-year 3	End-of-year 4	End-of-year 5
		1	2	3	4	5
Cash flows	€1,000,000	€300,000	€300,000	€300,000	€300,000	€300,000
Cost of capital	12.00%					
Present value		€267,857	€239,158	€213,534	€190,655	€170,228

Total present value €1,081,433

Net present value €81,433

In summary, the following table shows how the different investments lead to different NPV's. From this table, it is clear that SMC should invest in option B and collaborate. Not only is the investment amount smaller, but the pay-off in the end is larger.

Investment option	NPV	Investment required	Cost of Capital
A	€415,083	€ 2.360.000	7.6%
B	€722,361	€1.000.000	10%
C	€463,269	€1.000.000	10%
D	€197,813	€1.000.000	8%
E	€81,433	€1.000.000	12%

For more information, please contact us at:

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