

Capital Budgeting in Action: Selecting the Best Value-Adding Project!

Bharat Electronics Limited (BEL), a leading manufacturer of defense electronics and smart communication systems, is considering several new operational improvement projects aimed at enhancing its manufacturing capabilities, streamlining supply chains, and introducing innovative technologies. However, due to budget constraints, the company can only proceed with a limited number of projects. The operations team must carefully select the projects that will generate the highest return on investment (ROI) while also aligning with BEL's strategic objectives.

The Operations and Strategy divisions have developed eight distinct projects, each targeting different operational improvements, such as upgrades to manufacturing processes, infrastructure development, or product innovations. These projects are designed to boost operational efficiency, reduce costs, and improve production capacity. BEL's Chief Operating Officer (COO) has tasked the management team with quantitatively evaluating these projects to recommend which four should be prioritized for implementation.

Important Considerations:

- **Projects 7 and 8** focus on similar operational upgrades and target the same customer base, so only one can be selected.
- **Projects 2 and 3** have overlapping objectives and are thus mutually exclusive. Therefore, the company can select only one of these two.

Each project requires an initial investment of \$10 million, and expected cash inflows over the next several years have been estimated. BEL typically uses a 10% discount rate for evaluating projects, although some senior leaders believe that certain higher-risk projects (e.g., Project 8) may warrant a higher discount rate.

Your Task:

As part of the operations management team, you are responsible for conducting an investment appraisal to determine which projects should be prioritized. Your task is to rank the projects based on quantitative metrics such as NPV, IRR, and payback period, and recommend the top four projects that will provide the best return for BEL while aligning with the company's operational goals.

Exhibit 1: Operational Project Cash Flow Projections

All figures are in \$ (000's)

Project	#1	#2	#3	#4	#5	#6	#7	#8
Initial Investment	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000
Year								
1	1,500	7,000	0	800	1,400	11,000	6,000	-1,750
2	1,500	5,000	0	1,000	1,400		4,500	-300
3	1,500	100	0	1,000	1,400		1,500	300
4	1,500		0	1,000	1,400		450	1,750
5	1,500		0	2,000	1,400		350	3,500
6	1,500		0	2,000	1,400			6,000
7	1,500		0	2,000	1,400			11,250
8	8,000		0	3,000	1,400			
9			0	3,000	1,400			
10			29000	3,000	1,400			
11				2,000	1,400			
12				2,000	1,400			
13				-1,000	1,400			
14					1,400			
15					1,400			

Sum of Cash Flows	18,500	12,100	29,000	21,800	21,000	11,000	12,800	20,750
Excess Cash Flow	8,500	2,100	19,000	11,800	11,000	1,000	2,800	10,750