

If the Coat Fits, Wear It

The Innovative Sporting Goods Company (ISGC) was founded in 1975 in Cambridge, MA. Its founder, Andy Pratt, a mechanical engineer, had developed a sound technique of making baseball bats. Under his leadership, the company had gained national reputation. Recently, however, a new machine had been developed in the industry, which would allow manufacturers to coat the aluminum baseball bats with a special compound giving them a satin finish and making them more durable and powerful. The prototype had been presented to the respective regulatory authorities and had been approved. Upon Andy's request, Douglas Adams, the head of the design group, had tested the new product and researched the relevant cost and production process issues that a machine replacement would entail.

Doug reported that besides the initial price tag of \$350,000 for one of these machines, users would have to incur shipping, handling, and installation costs of \$4500 and annual fixed operating costs of about \$20,000 per machine. Currently, the company incurs fixed operating

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costs of \$28,000 for its coating and finishing process. Initial marketing survey results indicated that the company would be able to increase sales of its newly designed baseball bats by about 15% in the first year of introduction and thereafter at a rate of 5% per year compared with forecasted sales growth of 2% per year for the current type of baseball bats. During the most recent year, ISGC sold 220,000 baseball bats at an average price of \$12.50 per unit. The newly designed bat was expected to sell for \$13 per unit.

Material, labor, general, and administrative costs were expected to remain constant at \$10 per unit. The increased sales and production requirements would entail an increase in accounts receivable of \$54,000, an increase in accounts payable of \$30,000, and an increase in inventory of \$20,000. It was assumed that any increase in net working capital would be recovered at the end of the useful life of the machine, which was estimated to be 10 years. The existing machine was purchased 5 years ago for \$225,000. Currently, it could be sold for \$100,000, with the price expected to decline to about \$10,000 after 10 more years of use. Depreciation on the existing machine was being calculated using a 15-year straight-line schedule with the assumption of no residual salvage value. The new machine was expected to last for ten years -- the same as the remaining life of the old machine. The new machine would qualify as a 5-year class life asset under MACRS depreciation rates (see Table 1) and was expected to have a market value of approximately \$20,000 at the end of its economic life. ISGC'S marginal tax rate was 34% and its weighted average cost of capital was estimated at 15%. Part of the cost of replacing the existing machine would be financed by a bank loan that would require an annual interest expense of 10% on the outstanding balance.

Andy knows that the new technology is the way to go. However, being cautious and conservative by nature, he does not want to implement changes that would be financially detrimental to his company. After all, he has worked too hard to let it all slip away by making lousy financial decisions. Andy has long believed in the age-old saying, "If the coat fits wear it."

Depreciation Schedule

Modified Accelerated Cost Recovery System					
Recovery Period Class					
Year	3-Year	5-Year	7-Year	10-Year	
1	33.0%	20.0%	14.3%	10.0%	
2	45.0%	32.0%	24.5%	18.0%	
3	15.0%	19.2%	17.5%	14.4%	
4	7.0%	11.5%	12.5%	11.5%	
5	0.0%	11.5%	8.9%	9.2%	
6	0.0%	5.8%	8.9%	7.4%	
7	0.0%	0.0%	8.9%	6.6%	
8	0.0%	0.0%	4.5%	6.6%	
9	0.0%	0.0%	0.0%	6.5%	
10	0.0%	0.0%	0.0%	6.5%	
11	0.0%	0.0%	0.0%	3.3%	
Total	100.0%	100.0%	100.0%	100.0%	

Questions:

1. Your supervisor, Vic Gonzales, has asked you to prepare a capital budgeting report indicating whether ISGC should replace the existing machine or not. Indicate how you would proceed (without making any calculations).
2. Explain the relevance of incremental cash flows, sunk costs, and incidental costs in the context of this case.
3. As is often the case, the marketing department has overestimated the annual sales growth. How can more conservative and realistic estimates be generated? How can these estimates be incorporated into the analysis so as to arrive at a good and well-justified decision?

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4. What are the relevant factors and items to be considered when estimating the initial outlay? Calculate the initial outlay for this replacement project.
5. How are the interim cash flows to be computed for the productive life of the new machinery? How is depreciation to be accounted for?
6. As a shrewd financial analyst you observe that the net working capital of the firm has typically been about 20% of the annual revenues. How would you incorporate this observation into the analysis?
7. How should the annual interest expenses on the bank loan be handled? Explain.
8. What is the relevance of the terminal year cash flow? Which factors must be considered when estimating the terminal year cash flow?
9. After looking at the data provided by Vic, you realize that the revenue and cost figures have not been adjusted for inflation. If inflation were expected to be at least 3% per year, what effect would this have on your analysis? Adjust the data and recalculate the relevant cash flows.
10. What recommendation would you make to Vic regarding the replacement of the old coating machine? Explain.
11. If the new machine has an economic life of 15 years while the current machine has a life of only 10 years, how would the capital budgeting analysis have to be adjusted? Please explain by performing the necessary calculations.