

system that feeds directly into the refrigeration units. This automation would eliminate the need for a number of material handlers and increase the output capacity of the plant. Rolland has given this proposal to Forrest and instructed him to use the following information to prepare his analysis.

Automated-Material-Handling System Projections

Projected useful life	10 years
Purchase and installation of equipment	\$4,500,000
Increased working capital needed*	1,000,000
Increased annual operating costs (exclusive of depreciation)	200,000
Equipment repairs to maintain production efficiency (end of year 5).....	800,000
Increase in annual sales revenue	700,000
Reduction in annual manufacturing costs	500,000
Reduction in annual maintenance costs.....	300,000
Estimated salvage value of conveyor belt system	850,000

* The working capital will be released at the end of the 10-year useful life of the conveyor belt system.

The forklift trucks have a net book value of \$500,000 with a remaining useful life of five years and no salvage value for depreciation purposes. If the conveyor belt system is purchased now, these trucks will be sold for \$100,000. IDI has a 40 percent tax rate, has chosen the straight-line depreciation method for both book and tax purposes, and uses a 12 percent discount rate. For the purpose of analysis, all tax effects and cash flows from the equipment acquisition and disposal are considered to occur at the time of the transaction while those from operations are considered to occur at the end of each year.

When Forrest completed his initial analysis, the proposed project appeared quite healthy. However, after investigating equipment similar to that proposed, Forrest discovered that the estimated salvage value of \$850,000 was very optimistic. Information previously provided by several vendors estimates this value to be only \$100,000. Forrest also discovered that industry trade publications considered eight years to be the maximum life of similar conveyor belt systems. As a result, Forrest prepared a second analysis based on this new information. When Rolland saw the second analysis, he told Forrest to discard this revised material, warned him not to discuss the new estimates with anyone at IDI, and ordered him not to present any of this information to the board of directors.

Required:

1. Prepare a net-present-value analysis of the purchase and installation of the material-handling system using the revised estimates obtained by Leland Forrest. (For this problem, ignore the half-year convention. Assume annual straight-line depreciation of \$562,500, which is $\$4,500,000 \div 8$.)
2. Explain how Leland Forrest, a management accountant, should evaluate Bill Rolland's directives to repress the revised analysis. Take into consideration the specific ethical standards of competence, confidentiality, integrity, and objectivity discussed in Chapter 1.
3. Identify some steps Leland Forrest could take to resolve this situation.

(CMA, adapted)