



EX

■ **Case 16-58**
 Capital-Budgeting Analysis of
 Automated-Material-Handling
 System: Taxes, Ethical Issues
 (Section 2)
 (LO 16-3, 16-4, 16-6)
 1. Net present value:
 \$(235,280)

controller has estimated that it will cost the district \$15,250, initially, to redesign its bus routes, inform the public, install caution signs in certain hazardous locations, and retrain its drivers.

A minibus costs \$27,000, whereas a full-size bus costs \$90,000. The school district uses straight-line depreciation for all of its long-lived assets. The board has two options regarding the five full-size buses. First, the buses could be sold now for \$15,000 each. Second, the buses could be kept in reserve to use for field trips and out-of-town athletic events and to use as backup vehicles when buses break down. Currently, the board charters buses from a private company for these purposes. The annual cost of chartering buses amounts to \$30,000. The school district controller has estimated that this cost could be cut to \$5,000 per year if the five buses were kept in reserve. The five full-size buses have five years of useful life remaining, either as regularly scheduled buses or as reserve buses. The useful life of a new minibus is projected to be five years also.

Blue Ridge School District uses a hurdle rate of 12 percent on all capital projects.

Required:

1. Think about the decision problem faced by the board of education. What are the board's two main alternatives?
2. One of these main alternatives has two options embedded within it. What are those two options?
3. Before proceeding, check the hint given at the end of the chapter, which explains and diagrams the school board's alternatives. Suppose the board of education chooses to buy the minibuses. Prepare a net-present-value analysis of the two options for the five full-size buses. Should these buses be sold now or kept in reserve?
4. From your answer to requirement (3), you know the best option for the board to choose regarding the full-size buses *if* the minibuses are purchased. Now you can ignore the other option. Prepare a net-present-value analysis of the school board's two *main alternatives*: (a) continue to use the full-size buses on regular routes, or (b) purchase the minibuses. Should the minibuses be purchased?
5. Compute the internal rate of return on the proposed minibus acquisition.
6. What information given in this case was irrelevant to the school board's decision problem? Explain why the information was irrelevant.
7. Independent of requirements (1) through (6), suppose the NPV analysis favors keeping the full-size buses. Michael Jeffries, the business manager for the Blue Ridge School District, was prepared to recommend that the board not purchase the minibuses. Before doing so, however, Jeffries ran into a long-time friend at the racquet club. Peter Reynolds was the vice president for sales at a local automobile dealership from which the minibuses would have been purchased. Jeffries broke the bad news about his impending recommendation about the minibuses to his friend. The said, "Michael, you and I go back a long time. I know you're not paid all that well at the school district. Our top financial person is retiring next year. How would you like to come to work for the dealership?"

"That's pretty tempting, Peter. Let me think it over," was Jeffries' response.

"Sure, Michael, take all the time you want. In the meantime, how about rethinking that minibus decision? It's no big deal to you, and I could sure use the business."

"But Peter, I told you what the figures say about that," responded Jeffries.

"Come on, Michael. What are friends for?"

Discuss the ethical issues in this situation. What should Michael Jeffries do?

Instant Dinners, Inc. (IDI), is an established manufacturer of microwavable frozen foods. Leland Forrest is a member of the planning and analysis staff. Forrest has been asked by Bill Rolland, chief financial officer of IDI, to prepare a net-present-value analysis for a proposed capital equipment expenditure that should improve the profitability of the western plant. This analysis will be given to the board of directors for approval. Several years ago, as director of planning and analysis at IDI, Rolland was instrumental in convincing the board to open the western plant. However, recent competitive pressures have forced all of IDI's manufacturing divisions to consider alternatives to improve their market position. To Rolland's dismay, the western plant may be sold in the near future unless significant improvement in cost control and production efficiency are achieved.

Western's production manager, an old friend of Rolland, has submitted a proposal for the acquisition of an automated-material-handling system. Rolland is anxious to have this proposal approved as it will ensure the continuation of the western plant and preserve his friend's position. The plan calls for the replacement of a number of forklift trucks and operators with a computer-controlled conveyor belt

tion of the theater's seating capacity.

ing the project's initial investment.

ing the project's average investment.

that discounted-cash-flow methods of evaluation and accounting-rate-of-return methods.

was formerly a managerial accountant, has rate of return to be lower than the project's rate of acquiring expansion capital is above the its accounting rate of return. As a champion of the board chairperson has decided to present and for its approval of the project. Is this ethical?

service to two counties in Southern California. The dish antenna provided to customers. The dish antenna use and install. The company's old equipment, 000. The company president expects the firm's \$80,000 per year during the dish's useful life of \$100,000 with the new equipment are projected to be MACRS depreciation schedule for the 5-year

of interest in the economy to remain stable at ing at 20 percent, to remain unchanged.

next eight years (20x0 through 20x7), measure the initial costs of purchase and installation, the depreciation tax shield. Remember to nominal dollars.

new satellite dish. Use cash flows measured to the nominal interest rate.

go Cablevision Company.

rough 20x7, using 1,000 as the index for in real dollars.

satellite dish using cash flows measured in real interest rate.

istrict is considering the acquisition of several e of the school district's bus routes are under-use routes are not fully utilized. After a careful idate these routes into fewer routes served by o large for that approach, since some students' 5 minutes.

place five full-size buses with eight minibuses, full-size bus. The bus drivers in this rural school sis the school district \$18,000 per year for each al costs of operating and maintaining a full-size at a minibus will cost only \$20,000 annually to ages as a full-size bus driver. The school district