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Integrative Case 5

### Lasting Impressions Company

Lasting Impressions (LI) Company is a medium-sized commercial printer of promotional advertising brochures, booklets, and other direct-mail pieces. The firm's major clients are ad agencies based in New York and Chicago. The typical job is characterized by high quality and production runs of more than 50,000 units. LI has not been able to compete effectively with larger printers because of its existing older, inefficient presses. The firm is currently having problems meeting run length requirements as well as meeting quality standards in a cost-effective manner.

The general manager has proposed the purchase of one of two large, six-color presses designed for long, high-quality runs. The purchase of a new press would enable LI to reduce its cost of labor and therefore the price to the client, putting the firm in a more competitive position. The key financial characteristics of the old press and of the two proposed presses are summarized in what follows.

**Old press** Originally purchased 3 years ago at an installed cost of \$400,000, it is being depreciated under MACRS using a 5-year recovery period. The old press has a remaining economic life of 5 years. It can be sold today to net \$420,000 before taxes; if it is retained, it can be sold to net \$150,000 before taxes at the end of 5 years.

**Press A** This highly automated press can be purchased for \$830,000 and will require \$40,000 in installation costs. It will be depreciated under MACRS using a 5-year recovery period. At the end of the 5 years, the machine could be sold to net \$400,000 before taxes. If this machine is acquired, it is anticipated that the current account changes shown in the following table would result.

Cash	+ \$ 25,400
Accounts receivable	+ 120,000
Inventories	- 20,000
Accounts payable	+ 35,000

**Press B** This press is not as sophisticated as press A. It costs \$640,000 and requires \$20,000 in installation costs. It will be depreciated under MACRS using a 5-year recovery period. At the end of 5 years, it can be sold to net \$330,000 before taxes. Acquisition of this press will have no effect on the firm's net working capital investment.

The firm estimates that its earnings before depreciation, interest, and taxes with the old press and with press A or press B for each of the 5 years would be as shown in the table at the top of the next page. The firm is subject to a 40% tax rate. The firm's cost of capital, *r*, applicable to the proposed replacement is 14%.

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Earnings before Depreciation, Interest, and Taxes  
for Lasting Impressions Company's Presses

Year	Old press	Press A	Press B
1	\$120,000	\$250,000	\$210,000
2	120,000	270,000	210,000
3	120,000	300,000	210,000
4	120,000	330,000	210,000
5	120,000	370,000	210,000

### TO DO

- a. For each of the two proposed replacement presses, determine:
  - (1) Initial investment.
  - (2) Operating cash inflows. (*Note:* Be sure to consider the depreciation in year 6.)
  - (3) Terminal cash flow. (*Note:* This is at the end of year 5.)
- b. Using the data developed in part a, find and depict on a time line the relevant cash flow stream associated with each of the two proposed replacement presses, assuming that each is terminated at the end of 5 years.
- c. Using the data developed in part b, apply each of the following decision techniques:
  - (1) Payback period. (*Note:* For year 5, use only the operating cash inflows—that is, exclude terminal cash flow—when making this calculation.)
  - (2) Net present value (NPV).
  - (3) Internal rate of return (IRR).
- d. Draw *net present value profiles* for the two replacement presses on the same set of axes, and discuss conflicting rankings of the two presses, if any, resulting from use of NPV and IRR decision techniques.
- e. Recommend which, if either, of the presses the firm should acquire if the firm has (1) unlimited funds or (2) capital rationing.
- f. The operating cash inflows associated with press A are characterized as very risky in contrast to the low-risk operating cash inflows of press B. What impact does that have on your recommendation?

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