Chapter 8

Investment decisions
The Invest Company wants to expand and is thinking about launching a new product. The research and development so far has already cost $150,000. At the moment they have one product on the market with the following financial characteristics:

Sales price per unit	$15
Variable cost per unit	$8
Sold units per year	100,000

This product will remain on the market but it is expected that sales will drop by 10% due to cannibalization of the new product. On the bright side, when the new product is launched, the variable cost of the old product will go down to $7.50 due to economies of scale.

The new product has the following financial characteristics:

Sales price per unit	$20
Variable cost per unit	$12
Sold units per year	50,000

To start production, an immediate investment of $500,000 is needed. This investment is depreciated to a scrap value of zero in four years. Furthermore, the marketing expenses will increase by $200,000 per year because of extra advertising for the new product.

The cost of capital is 10%. The timeframe to analyze the investment is four years.

Required:
A. The expected annual change in cash flows associated with this investment.
B. The accounting rate of return of the investment.
C. On a net present value basis, should the new product be launched, yes or no?

Solutions investment decisions

Cash Flows ($)

	1	2	3	4
Margin New	400,000	400,000	400,000	400,000
Loss Old	(70,000)	(70,000)	(70,000)	(70,000)
Saving Old	45,000	45,000	45,000	45,000
Marketing	(200,000)	(200,000)	(200,000)	(200,000)
Cash Flow	**175,000**	**175,000**	**175,000**	**175,000**

B. The Average profit per year = (4*$175,000 – $500,000)/4 = $50,000. The average investment is $500,000/2 = $250,000. The AAR = $50,000/$250,000 = 20%.

C. NPV = ($500,000) + $175,000/(1.1) + $175,000/$(1.1)^2$ + $175,000/$(1.1)^3$ + $175,000/$(1.1)^4$ = $54,726. The NPV is positive so the answer is yes.