**Chapter One – Baye**

Amcott Loses $3.5 Million; Manager Fired

On Tuesday software giant Amcott posted a year-end operating loss of $3.5 million. Reportedly, $1.7 million of the loss stemmed from its foreign language division.

With short-term interest rates at 7 percent, Amcott decided to use $20 million of its retained earnings to purchase three-year rights to Magicword, a software package that converts generic word processor files saved as French text into English. First year sales revenue from the software was $7 million, but thereafter sales were halted pending a copyright infringement suit filed by Foreign, Inc. Amcot lost the suit and paid damages of $1.7 million. Industry insiders say that copyright violation pertained to “a very small component of Magicword”.

Ralph, the Amcott manager who was fired over the incident, was quoted as saying, “I’m a scapegoat for the attorneys (at Amcott) who didn’t do their homework before buying the rights to Magicword. I projected annual sales of $7 million per year for three years. My sales forecast were right on target.”

Do you know why Ralph was fired?

**Problem 1 – 1**

The manager of Automated Product is contemplating the purchase of a new machine that will cost $300,000 and has a useful life of five years. The machine will yield (year-end) cost reduction to Automated Product of $50,000 in year 1, $60,000 in year 2, $75,000 in year 3, and $90,000 in year 4 and 5. What is the present value of the cost savings of the machine if the interest rate is 8 percent? Should the manager purchase the machine?

**Problem 1 – 2**

Suppose the interest rate is 10 percent and the firm is expected to grow at rate of 5 percent for the foreseeable future. The firm’s current profits are $100 million.

1. What is the value of the firm (the present value of its current and future earnings)?
2. What is the value of the firm immediately after it pays a dividend equal to its current growth?

**Problem 1 – 3**

An engineering firm recently conducted a study to determine its benefit and cost structure.

The result of the study are as follows:

*B(Y) = 300Y – 6Y²*

*C(Y) = 4Y²*

So that MB *= 300 – 12Y and MC = 8Y*. The manager has been asked to determine the maximum level of net benefits and the level of *Y* that will yield that result.

Bruce T. Allen, Managerial Economics

Problem 1-5

Suppose that an oil producer is considering drilling an exploratory well and believes after it has spent $ 10 million it will either have struck oil worth $ 100 million after payment of all nondrilling costs or have established for certain that the hole is dry and that the underlying rock formation are not worth exploring further. There is one chance in five that the producer will strike oil.