

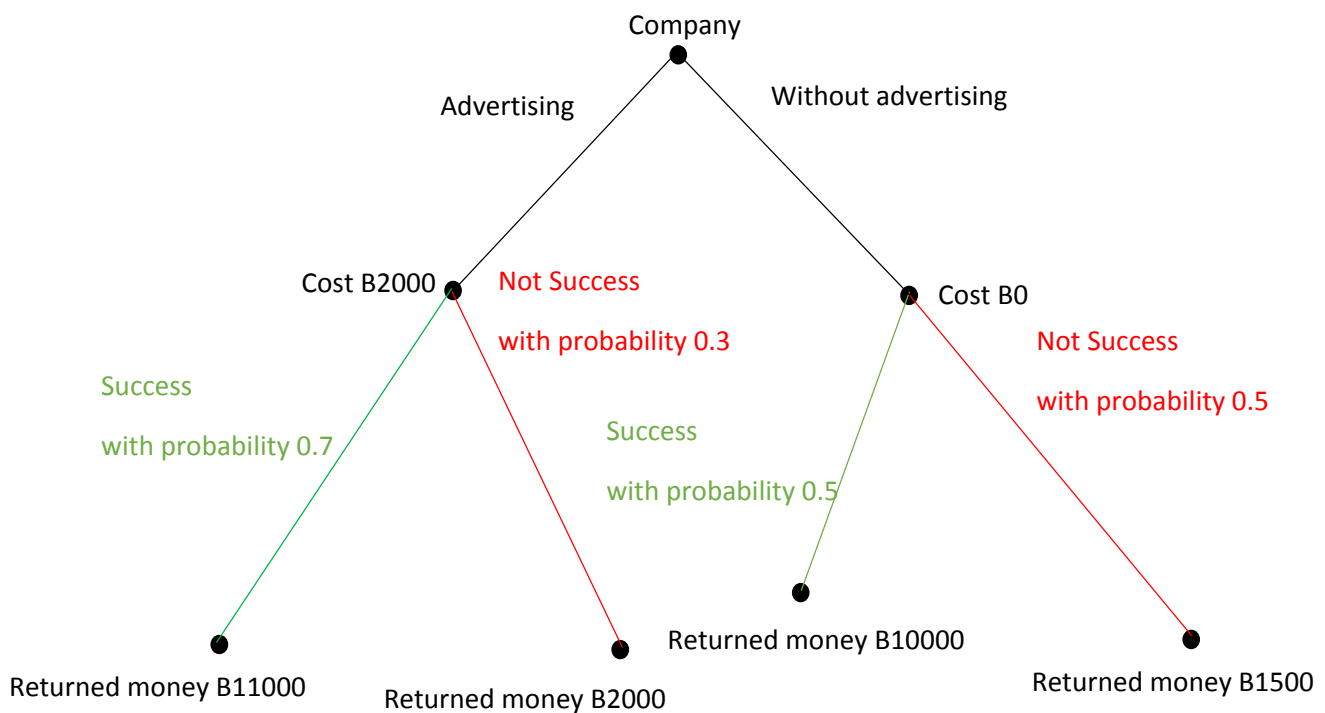
Answer on question 42683 – Math – Statistics and Probability

A small company has developed a new product for the electronics industry. The company believes that an advertising campaign costing R2000 would give the product a 70% chance of success. It estimates that a product with this advertising support would provide a return of R11000 if successful and return of R2000 if it not successful. Past experience suggests that without advertising support a new product of this kind would have a 50% chance of success giving a return of R10000 if successful and a return of R1500 if not successful.

Construct a decision tree and write a report advising the company on its best course of action.

Solution

Decision tree:



To make a decision what choice is better we need to find the average income.

With advertising:

$$Income_{average} = (0.7 * B11000 + 0.3 * B2000) - B2000 = B6300$$

Without advertising:

$$Income_{average} = 0.5 * B10000 + 0.5 * B1500 = B5750$$

As we can see it is better to make the advertising campaign.