DSS/MVC Simulation Assignment

Case: Reebok International: Strategic Asset Allocation (A)

In deciding between The Question and Persistence, we need to consider the potential risks along with estimates of the cash flows and expected NPV. Use the spreadsheet you developed for the MVC class on Reebok as the basis for building a simulation model and use @RISK to evaluate both products.

Your assignment is to:

1. Enter the @RISK functions shown below for the specified variables.

2. Run the simulations (one for The Question and one for Persistence) and determine how you would present the expected outcomes and risks for these two products. For example, you could look at the standard deviations, or at the 5th percentiles, etc. We have listed some questions below that might be helpful in determining what to report.

3. Please be ready to present your analysis to the class as we will cold call on someone.

Please feel free to work on this assignment in groups of your own choosing.

Warning The student version of @RISK may not allow you to run a simulation if you have more than one workbook open or if you have uncertain variables on more than one worksheet within one workbook. It is better if you put both models on the same worksheet.

The Question

Athletic footwear market:
Distribution: normal
Mean: 18000
Standard Deviation: 1500

Growth of athletic footwear market:
Distribution: BetaGeneral
a1: 6
a2: 4
min: -0.08
max: 0.11

Market Share:
Distribution: Normal
Year 1 Mean: 1.75%
Year 1 St. Dev: 0.5%

Year 2 Mean: 1.75%
Year 2 St. Dev: 0.5%
Year 3 Mean: 1.61%
Year 3 St. Dev: 0.6%
Year 4 Mean: 1.45%
Year 4 St. Dev: 0.7%
Year 5 Mean: 1.35%
Year 5 St. Dev: 0.8%
Year 6 Mean: 1.25%
Year 6 St. Dev: 0.9%

We recommend that you truncate the above distributions at zero for years 3, 4, 5, and 6.

Cannibalization:
Distribution: Normal
Mean: $170 million
Standard Deviation: $20 million

Variable Costs as % of Sales:
Distribution: Normal
Mean: 31%
Standard Deviation: 1%

Sale of Factory:
Distribution: Normal
Mean: $102.35 million
Standard Deviation: $5 million

**Persistence**
Hiking footwear market:
Distribution: normal
Mean: 350
Standard Deviation: 10

Growth of Market:
Distribution: Normal
Mean: 15%
Standard Deviation: 3%

Market Share:
Distribution: Normal
Year 1 Mean: 10%
Year 1 St. Dev: 3%
Year 2 Mean: 16%
Year 2 St. Dev: 4%

Year 3 Mean: 19%
Year 3 St. Dev: 5%

We recommend that you truncate the year 3 distribution at zero.

Variable Costs as % of Sales:
Distribution: Normal
Mean: 17%
Standard Deviation: 1%

Outputs:
For both The Question and Persistence, calculate the potential distributions of NPVs.

Questions:

1. Use simulation analysis to determine the risks of The Question and Persistence.
2. What is the probability that the NPV for each product will be less than zero?
3. For each product, which variable contributes the most risk (the greatest volatility) to NPV?