

# [Project management exercise question](https://assignbuster.com/project-management-exercise-question/)

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Project management exercise questions Lecturer: Q17-3) Your company has asked you to determine the financial risks of manufacturing 6, 000 units of a product rather than purchasing them from a vendor at $66. 50 per unit. The production line will handle exactly 6, 000 units and requires a one-time setup cost of $50, 000. The production cost is $60/unit. Your manufacturing personnel inform you that some of the units may be defective, as shown below:
% defective     0       1       2       3       4
probability of occurrence (%)   40      30      20      6       4
Defective items must be removed and replaced at the cost of $145/defective unit. However, 100 percent of units purchased from vendors are defect-free. Construct a payoff table, and using the expected-value model, determine the financial risk and whether the make or buy option is best.
Units purchased= 6000
Cost per unit=$66. 50
Set up cost=$50000
6000\*66. 50+6000\*60+50000= 809000
Nature
Action
0
1
2
3
4
Probability
Production
410000
418700
427400
436100
444800
(0. 4)
164000
41000
1640
32800
174440
177920
0. 3
167480
167480
1674. 80
33496
87220
88960
0. 2
170960
170960
1709. 60
34192
26166
26688
0. 06
174400
174400
1744
34880
17444
17792
0. 04
177920
177920
1779. 20
35584
Total s
697800
697800
8547. 60
170952
= 6000\*60= 360000 = 6000\*60= 360000 = 6000\*60= 360000 = 6000\*60= 360000 = 6000\*60= 360000
Total Cost = 410000 418700 427400 436100 444800
Expected Cost of manufacturing = 410000\*0. 4+418700\*0. 3+427400\*0. 2 +436100\*0. 06 +444800\*0. 04
= 419048
Expected cost of manufacturing = 41\*0. 4+418700\*0. 3+427400\*0. 2= 419048
The total cost of manufacturing is $419048, but if the firm buys from a vendor, the total cost would be $809000. The firm should therefore manufacture instead of purchasing the product from vendors. In manufacturing, the firm will be able to save $389952.
Bibliography
Kerzner, H. (2009). Project management: A system Aproach to planning, Scheduling, and Controlling . John Wiley $ Sons .