Project management exercise question

Technology, Information Technology

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 .