**Chapter 21**

**Decision Analysis**

**Case Problem: Lawsuit Defense Strategy**

1. Decision Tree



To find the optimal decision strategy, we must fold the tree back computing expected values at the chance nodes and choosing the least cost alternative at the decision nodes. Shown below are the values computed at each node.

|  |  |
| --- | --- |
| Node | Value |
| 1 | 670 |
| 2 | 670 |
| 3 | 825 |
| 4 | 600 |
| 5 | 825 |

Shown below is the decision tree with all nonoptimal branches eliminated.



2. Allied should not accept John's offer to settle for $750,000. The strategy associated with a counteroffer of $400,000 has an expected value of $670,000.

3. If John accepts Allied's counteroffer of $400,000, no further action is required. If John rejects Allied's counteroffer and elects to have a jury decide the settlement amount, Allied must prepare for a trial. If John counteroffers with $600,000, Allied should accept John's counteroffer.

4. To develop the risk profile for the optimal strategy, we simply multiple the branch probabilities on all paths to the end points of the decision tree. The risk profile is given below in tabular form.

|  |  |
| --- | --- |
| Settlement Amount ($1000s) | Probability |
| 0 | 0.08 |
| 400 | 0.10 |
| 600 | 0.50 |
| 750 | 0.20 |
| 1500 | 0.12 |
|  | 1.00 |