DECISION Matrix

	Competency	Cost	Viability	Desirability	Alignment	Total
Criteria rating	3	4	5	4	2	
Idea A	1	3	3	1	1	
Weighted rating						0
Idea B	5	3	5	3	4	
Weighted rating						0
Idea C	0	2	3	1	1	
Weighted rating						0
Idea D	5	1	2	1	1	
Weighted rating						0

Creating the Decision Matrix:

	Competency	Cost	Viability	Desirability	Alignment	Total
Criteria rating	3	4	5	4	2	
Idea A	1	3	3	1	1	
Weighted rating	3	12	15	4	2	36
Idea B	5	3	5	3	4	
Weighted rating	15	12	25	12	8	72
Idea C	1	2	3	1	1	
Weighted rating	3	8	15	4	2	32
Idea D	5	1	2	1	1	
Weighted rating	15	4	10	4	2	35

GRID ANALYSIS

AN EXAMPLE USING A GRID ANALYSIS:

A **windsurfing enthusiast** is about to replace his car. He needs one that not only carries a board and sails, but also that will be good for business travel. He has always loved open-topped sports cars. No car he can find is good for all three things.

His options are:

- A four-wheel drive, hard topped vehicle.
- A comfortable 'family car'.
- An estate car.
- A sports car.

Criteria that he wants to consider are:

- Cost.
- Ability to carry a sail board at normal driving speed.
- Ability to store sails and equipment securely.
- Comfort over long distances.
- Fun!
- Nice look and build quality to car.

Firstly, he **draws up the table** shown in the following figure, and **scores each option** by how well it **satisfies each factor**:

Factors:	Cost	Board	Storage	Comfort	Fun	Look	Total
Weights:	4	5	1	2	3	4	_____
Sports Car	1	0	0	1	3	3	
4WD	0	3	2	2	1	1	_____
Family Car	2	2	1	3	0	0	
Estate Car	2	3	3	3	0	1	_____

Next, he decides the **relative weights for each of the factors**. He **multiplies** these by the **scores already entered** and **totals** them. This is shown in the following figure:

Factors:	Cost	Board	Storage	Comfort	Fun	Look	Total
Weights:	4	5	1	2	3	4	_____
Sports Car	4	0	0	2	9	12	27
4WD	0	15	2	4	3	4	28
Family Car	8	10	1	6	0	0	25
Estate Car	8	15	3	6	0	4	36

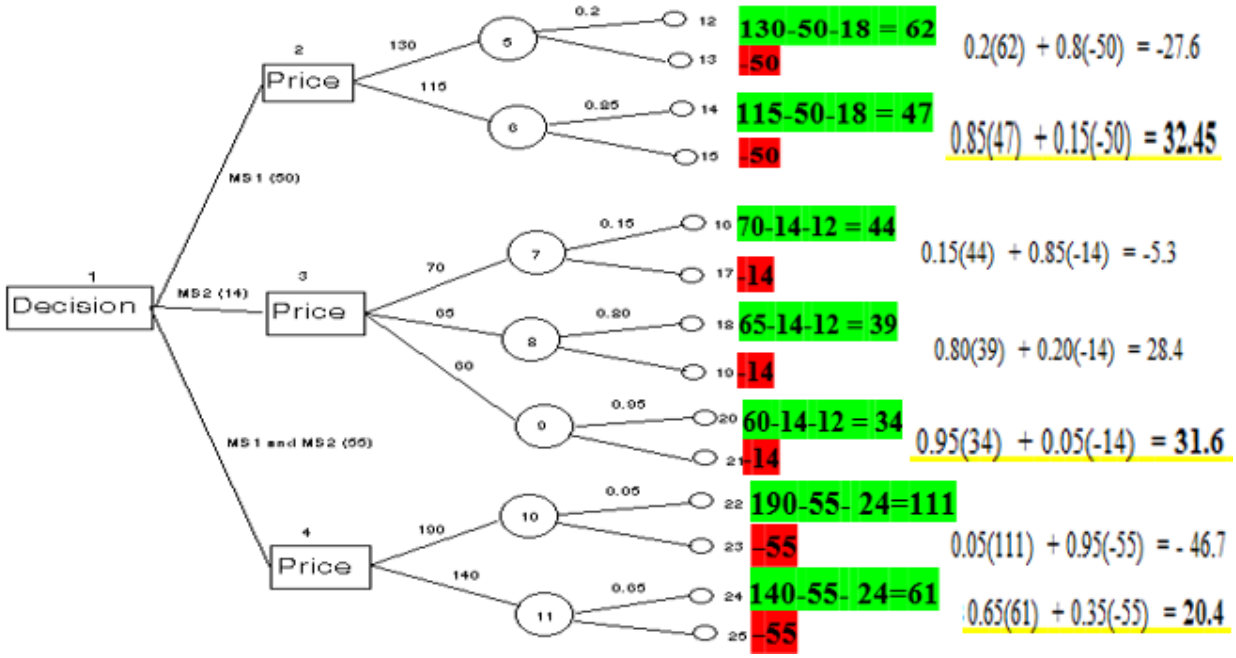
This gives an interesting result – despite its **lack of fun**, an **Estate Car** may be the **best choice**.

DECISION TREE

Draw the Decision Tree and find out the most appropriate option should be taken?

Option	Cost of tendering	Component supply cost	Possible tender prices (£)	Probability of getting contract
MS-1 only	50,000	18,000	130,000	0.20
			115,000	0.85
MS-2 only	14,000	12,000	70,000	0.15
			65,000	0.80
			60,000	0.95
MS-1 and MS-2	55,000	24,000	190,000	0.05
			140,000	0.65

The Decision Tree for the problem is shown below:



Hence at decision node 1 have three alternatives:

- tender for MS1 only EMV=32.45 (The Best Decision).
- tender for MS2 only EMV=31.6
- tender for both MS1 and MS2 EMV = 20.4 (The Worst Decision).

Hence the best decision is to tender for MS1 only (at a price of 115) as it has the highest Expected Monetary Value of 32.45 (£'000).

The downside is a loss of 50 and the upside is a profit of 47.