QUESTION #3:   
(addressing SLO #3 - formulate and assemble component ideas in order to successfully execute a project plan & SLO #4 - analyze information in order to formulate effective solutions)

TechCon is a construction firm, founded in 1995, with headquarters located in Dallas. They have been one of the top contractors in the sector until 2014. However, they have lost many bids last 2 years to other contractors. The sector is getting more and more competitive. Also, the financial indicators show critical threats to their short term and long term stability. Considering these threats, the management has performed a SWOT analysis. According to the results of this analysis, a critical weakness of the firm was detected to be the lack of the use of the latest construction technology. Failing to follow the latest technology caused them to offer higher bids to the project owners, which was the main cause of bid losses in the last two years.

To address this technology advancing failure, the management decided to form an in-house team to research and evaluate emerging construction technologies. Human resources department was asked to review the backgrounds of first year employees to filter the ones who have a technology focus in their education and/or previous work experience. Having a Master’s degree on Technology Management, you were nominated by the human resources. The management decided to select you as the leader of this so-called technology evolution team.

After extensive research on emerging construction technologies, you have decided to propose the use of drones.

**Questions to be answered:**

1. Justify the use of drones for this firm. How would you convince the management to start utilizing drones? Describe/explain specifically which tools/methods would you use to justify such a critical investment.
2. Assume that the management has accepted the utilization of drone technology after reviewing the proposal your team has submitted. An immediate decision to be made is determining the model of the drone to be purchased. After an extensive search, 4 models were selected. These four models are equally priced. Each model has differing productivity and efficiency under different climate conditions as a result of the material they are made of (carbon fiber or other), their aerodynamic design, and several other factors. The following table shows the estimated annual return each drone will provide under different climatic conditions.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Average Climate Conditions | | |
| **Model** | Bad | Decent | Good |
| Drone X | 100,000 | 180,000 | 250,000 |
| Drone Y | 120,000 | 130,000 | 130,000 |
| Drone Z | 130,000 | 140,000 | 150,000 |
| Drone T | 200,000 | 200,500 | 210,000 |
|  | *Amounts in US Dollars* | | |

Which drone would you propose to the management? Make your decision considering solely the information given. Clearly show the tools you have used. Summarize on a table if different tools suggest selection of different drone models. In this case, how did you make your final decision?

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