Guided Capstone Project Report

**Background**:

Big Mountain is a ski resort located in Montana. It offers spectacular views of nearby national parks and has access to 105 trails and has 11 lifts. They accommodate skiers and riders of all levels and about 350,000 people ski there every year. They installed additional chair lift to increase  the  distribution of visitors leading to an increase in costs by 1.54M. The resort is seeking ways to cut the cost and maintain profits by winter 2021.The project’s aim was to gain some insights into what price Big Mountain's facilities might actually support as well as explore the sensitivity of changes to various resort facilities/features.

**Problem statement** : To reduce the operational costs without undermining the ticket price and maintain profits by the end of the season 2021.

**Scenarios based on analysis and modeling**:

The analysis and modeling predicted Big Mountain Resort’s  price to be $95.87,while  actual price is $81.00.From the data provided and from the market context the features that would affect the resort’s ticket price , based on where people pay more for certain facilities, and less for others were :

* Vertical drop
* Snow Making area (ac)
* Total chairs
* Fast Quads
* Runs
* LongestRun(mi)
* trams
* Skiable Terrain (ac)

Chart, histogram

Description automatically generated

Fig.1. Features that would affect the resort’s ticket price.

The business decided to consider the following scenarios:

The first scenario is , permanently closing down up to 10 of the least used runs.

Based on the model, closing one run makes no difference. Closing 2 and 3 successively reduces support for ticket price and so revenue. If Big Mountain closes down 3 runs, it seems they may as well close down 4 or 5 as there's no further loss in ticket price. Increasing the closures down to 6 or more leads to a large drop.

Chart, line chart

Description automatically generated

Fig.2.Number of runs closed and the associated ticket-price change and predicted revenue.

In another scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift. This scenario increases support for ticket price by $1.99.Over the season, this could be expected to amount to $3474638. There was the same increase when the snow making area was increased by 2 acres.  The last  scenario calls for increasing the longest run by .2 miles and guaranteeing its snow coverage by adding 4 acres of snow making capability, but this resulted in no increase in the ticket price.

**Conclusion:**

Overall, from the model predictions and analysis the best scenario for the company would be to add a run and increase the vertical drop by 150 feet as this would negate the costs related to installing additional chair lift.

In addition, other cost information such as maintenance costs related to snow making machines, runs and additional operational costs, would have been useful in the analysis to understand how it may benefit the ticket price.