**Guided Capstone Project Report Big Mountain Resort**

**Opportunity:** The Big Mountain Resort is a ski resort offering spectacular views of Glacier National Park and Flathead National Forest located in Montana. Every year about 350,000 guests visit a Big Mountain resort. Recently, the resort's management installed an additional chairlift to assist the distribution of visitors across the mountain, which cost the resort an extra $1,540,000 in OPEX. The usual costing strategy was to charge a premium over the industry's average price. However, due to the need to absorb the chairlift costs, management expressed the desire to capitalize on the resorts' facilities by selecting a more data-driven business strategy.

**Analysis:** The first test performed was a simple average price test to identify how well the current costing strategy reflects the industry pricing baseline. The output of this test showed an average price at $63.81, with $19.13 margin of error, suggesting that metrics built on average price are expected to be off by around $19 per ticket. Furthermore, the preliminary analysis of possible correlations between the ticket prices and various resort amenities illustrated that the strongest positive correlation was detected between pricing and features like night-time skiing, vertical drops, fast quads, runs, snowmaking, and total chairs.

***Table 1: Feature Correlation Heatmap***

Chart

Description automatically generated

Our Model also confirmed the above assumptions illustrating the strongest dependencies with the number of fast quads, runs, snowmaking, and vertical drops.

**Table 2:**

Chart, histogram

Description automatically generated

After a preliminary discussion with Big Mountain's management, four following scenarios were recommended to test the proposed Model.

*Scenario1*: Big Mountain's management recommended close-up to 10 of the least used runs.

**Table 3:**

Chart, line chart

Description automatically generated

Output: The graphs above illustrate that closing one run makes no difference. Consequentially, the closure of 2 and 3 successively reduces support for ticket price and so revenue. If Big Mountain shuts down three runs, it seems they may as well close down 4 or 5 as there's no further loss in the ticket price. They are increasing the closures down to 6 or more leads to a significant drop.

*Scenario 2:* In this scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift.

Output: This scenario increases support for ticket price by $11.06. Over the season, this could be expected to amount to $19,354,650

*Scenario 3*: Scenario number 3 assumed the requirements for scenario number 2 with the addition of 2 acres of snowmaking

Output: This scenario increases support for ticket price by $12.59. Over the season, this could be expected to amount to $22,032,150.

*Scenario 4*: This scenario calls for increasing the longest run by 0.2 miles and guaranteeing its snow coverage by adding 4 acres of snowmaking capability.

Output: Our Model has predicted an increase of 0.08100, which effectively does not affect our data.

**Results & Recommendations:** To summarize the present study, it is essential to mention that currently, the Big Mountain Resort is charging $81 per ticket, whereas our modeled price could reach as high as $91.80. One of the critical reasons for this analysis was to review potential scenarios for either cutting costs or increasing ticket prices. Presently, Big Mountain's costing strategy is not determent by a set of parameters reflecting the change in pricing but simply charging a premium over the industry's average price, which leads to significant undercapitalization and loss of opportunity income.

After testing our Model against the four scenarios above proposed, we concluded that scenario number 2 would result in the highest expected return, increasing support for ticket price by $11.06, accumulating an additional seasonal revenue of $19,354,650.

It is also important to mention that all suggested scenarios are missing the cost of the investment assumptions and therefore are partial by their nature. Specifically, each Model should be evaluated in terms of expected return on investment. Thus, additional costing information of the "new chair lift," plus investment costs for each extra feature, such as the cost of increasing the vertical drop by 150 ft or price of 4 additional acres of snow capability addition, would be necessary to complete the analysis. Furthermore, we should also consider that the Model's validity is based on the statement that our data on the competitor's pricing accurately reflects "the ticket-buying" support of the population.

The key drivers for delta in current ticket price vs. modeled price stem from the number of factors; however, one of the key reasons leading the change assumes that Big Mountain resorts were not capitalizing on most of its features, which most likely would not come as a surprise to the resort's management, since this was a critical problem that had to be analyzed.