The Problem

We set out on an expedition to answer the question that lies at the heart of every business' success: how do we increase profits? Simply put, Big Mountain Resort needs to increase revenue and decrease costs, especially considering the recently installed chair lift and its associated $1.54 million in operating costs. Given that tickets are our primary source of income, establishing a new pricing model is the primary goal of this expedition. At its conclusion, we have a proposed price that could support an estimated revenue increase of $1.94 million. Along the way, we uncover a potential cost-reduction scheme that could be enriched with additional data.

Suggestions

Our current predicted revenue is $141.75 million. After cleaning up our national data for ski resorts, we trained a model that could predict adult weekend ticket prices with an accuracy of +/- $10.39 (pretty accurate!). Since Montana's resorts' weekend and weekday prices do not differ, this model proves useful for our resort. The model predicted that Big Moutain Resort's ticket price to be $95.87 (the current price is $81.00).

Some facilities uncovered throughout the modeling process are vertical drop, acreage covered by snow-making machines, total chairs, and number of runs. Our model also serves to provide a sense of how facilities such as these can support a given increase in ticket price.

We recommend two of the proposed scenarios to increase revenue or decrease costs. We should close down at least one run to reduce costs (potentially more) seeing as it has no effect on ticket price and revenue (see fig. 1, 2). We should also increase our vertical drop by adding a new run with a point 150 feet lower, however, this will require the installation of a new chairlift. This new run supports a ticket price increase of $1.99. The cost/ticket to cover the required additional chair lift is $0.88. Thus, this scenario results in a net gain of $1.11/ticket or $1.94 million in increased revenue. This increase also covers the minimum revenue increase to accommodate the cost of the recently installed lift ($1.54 million).
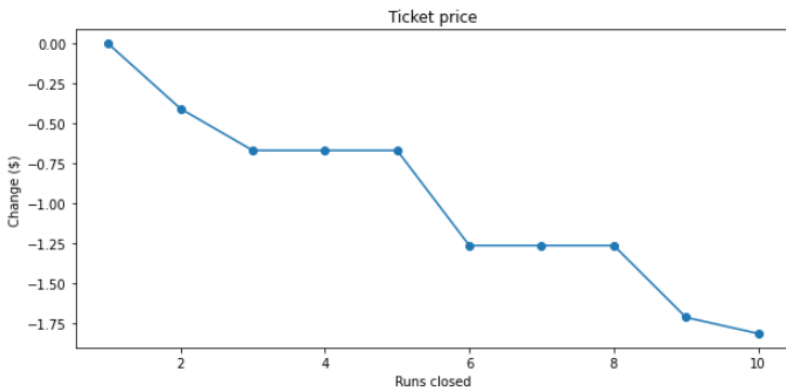

# of Runs Closed	Ticket Price ($)	Revenue ($ million)
1	0.00	0.00
2	-0.41	-0.71
3-5	-0.67	-1.17
6-8	-1.26	-2.21
9-10	-1.76	-3.08

Figure 1   *Figure 2*

Future Considerations

We propose that we implement these changes (price increase, vertical drop increase, and at least one closed run) by the beginning of next season. We would be able to better predict the proposed revenue changes' effects on profit if we had data regarding operating costs, especially for run maintenance.

Big Mountain's current ticket price is $81.00. Our model predicted a price of $95.87 with a reasonable range for ticket price being $85.48-$102.26. Our predicted supported price of $82.99 is relatively close to the low end of this range, but there's still a considerable difference. Our potential price cap is likely limited by our region; it could be worth it to further explore the validity of this proposed limitation. This brings up the question of what kind of resort we want to be. As it stands, we are already the most expensive resort in Montana (see fig. 3).

Figure 3

If we were to work towards relevance on a national level, our model's predicted price would make more sense contextually. In fact, the max predicted price (assuming the model has underpredicted by ~$10) would result in $178.96 million in revenue from ticket sales. Taking the operating costs of the new chairlifts into consideration, net income would still be up 21.5%. When you take into account Big Mountain's ticket price position on the national level (fig. 4) in addition to our high ranking among the vertical drop league (fig. 5), this revenue increase is not only attainable but quite reasonable.
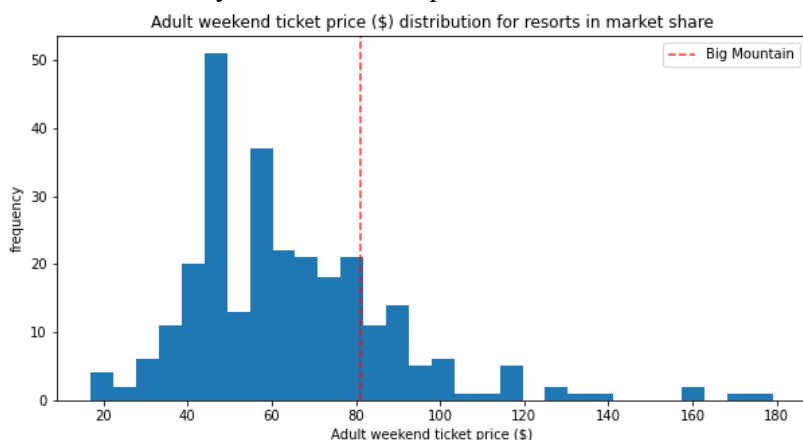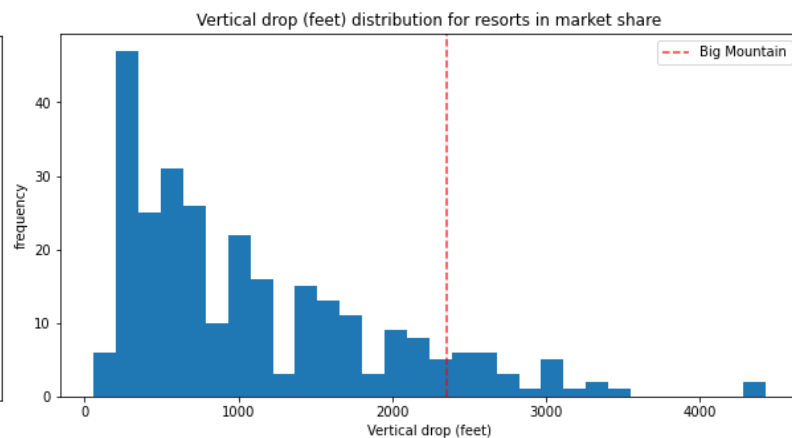

Figure 4

Figure 5

Lastly, if these insights have proven to be useful, refinements to the process can be made to make this accessible to our business analysts. This would allow them to re-evaluate our ticket prices and facility relevance seasonally to stay atop market trends.