Guided Capstone Project Report

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Big Mountain Resort has recently added a new chair lift expected to cost an additional $1,540,000 this coming season. Big Mountain Resort’s pricing strategy has traditionally been to make their ticket price a bit higher than their competitors but they’re looking for a more justified ticket price that can reflect the true value of what they have to offer. Big Mountain Resort would also like to look into what improvements or changes could be made to increase income.

We used data on competing resorts to train a machine learning model that can predict a likely ticket price given various statistics about a resort. This allows us to evaluate our actual ticket price or hypothetical changes we could make to our facilities. This model predicted a ticket price of $95.87 but had a MAE of $10.39. In spite of this limited accuracy, our current ticket price is only $81.00 so it’s probably safe to increase our ticket price by some amount. Anywhere from a $5 to $25 increase seems like it could be reasonable.

We examined several hypothetical facility changes and evaluated the ticket price change. The model predicted that adding a run, increasing vertical drop by 150 feet, and adding a new chair lift could justify a $1.99 ticket price increase that’s projected to bring in $3,474,638 over the first season. Assuming this chair lift has a cost similar to the one just installed, this would result in approximately $1.9 million net income over the first season.

We also examined run closures and found that they had a very limited effect on ticket price. As many as five runs could be closed with only a $0.70 reduction in predicted ticket price. In practice, this means changing our ticket price in response to run closures is probably not necessary unless there are other significant issues.

In conclusion, a ticket price hike of $5 to $25 should be implemented for the next season and the possibility of adding a new run and lift should be examined more to see if moving forward with it is appropriate.