**Guided Capstone Project Report – Big Mountain Resort**

**(Jonny Pearce, 15 December 2022)**

**Recommendation summary**

**Background**

Big Mountain Resort (BMR) has been reviewing potential scenarios for either cutting costs or increasing revenue (from ticket prices). Ticket price is not determined by any fixed set of parameters and the resort has freedom to set its prices, although it operates within a market where people pay more for certain features or facilities.

The expected number of visitors for the season is 350,000 and, on average, visitors ski for five days. BMR has recently installed a new chair lift at a cost of c$1.5m.

Executive management wishes to explore the following options:

1. Permanently closing down up to 10 of the least used runs.
2. Increasing the vertical drop by adding a run to a point 150 feet lower down but requiring the installation of an additional chair lift to bring skiers back up, without additional snow making coverage.
3. Same as number 2, but adding 2 acres of snow making cover.
4. Increase the longest run by 0.2 mile to boast 3.5 miles length, requiring an additional snow making coverage of 4 acres.

**Data review and modelling**

Following a process of data collection/wrangling, exploratory data analysis and modelling developing, testing and deployment, the following market features were identified as the most appealing:

* Vertical drop
* Snow making area
* Total chairs
* Fast quads
* Runs
* Longest runs
* Trams
* Skiable terrain

Further refinement using a Random Forest model identified the top four features as:

* Fast quads
* Runs
* Snow-making area
* Vertical Drop.

BMR currently charges a fixed rate of $81 per day, irrespective of it being a weekday or weekend. There is mixed practice within the sector related to varying rates across weekdays and weekends, but BMR's practice is not unusual in this respect.

Our modelled prices suggested a BMR price of just under $96 dollars. Even allowing for the expected mean absolute error of c$10 dollars, this suggests there is room for an increase. However, it may be that we are lacking data on some aspects of the market and how other resorts price their tickets, or the expenditure/operating costs they incur.

Looking at the sector as whole, BMR's pricing is towards the upper end of the sector's scale (and is in fact the highest in Montana) so an increase needs to be based on a sound evaluation of the key marketable features of BMR. When we looked at the features, BMR scores highly in all the categories that are considered key.

We modelled the scenarios requested by management, with the following outcomes:

* closing runs reduces the ticket pricing opportunities and hence revenue also drops. Ticket prices drop by c$0.75 when three runs are closed, but plateaus at this level for 4 and 5 runs being dropped. It would be possible to drop one run without affecting the price, and it may be acceptable to take a financial hit by closing 5 runs, but beyond that further run closures are detrimental.
* adding a run, increasing the drop and installing an additional chair lift provides the opportunity of an uplift in ticket price of $2, equating to an increased annual revenue of $3.5m.
* marginal or minimal increase in snow-making area or length of runs make little or difference.

**Recommendations**

* Further exploration should be carried out on scenario 2, with additional investigation of the cost savings from closing up to 5 runs. The c$1.5m cost of investing in a new chair lift would be more than covered by the additional revenue from an additional run, by a factor of 2:1.
* Additional information and data on the following should be gathered and applied within the further exploration above:
  + other price-related issues for ski visitors, such as any hire costs, additional pricing and average spend while at the individual resorts.
  + the operating costs per visitor, and any necessary investment that would be required to manage increased numbers.
  + Information on segmentation of visitors would be useful or consideration of whether this is an opportunity, eg, having differential pricing for those visitors who take advantage of the main features of BMR compared to those who don't, eg, novices versus experience, young versus older skiers, etc.
  + more information on visitor number and the spread or distribution of these re skiable days across the sector as a whole, along with more information on visitor demographics, and how visitor numbers fit with the catchment areas represented by each region (eg, how far on average to do people travel for skiing visits/holidaying?).
* Based on the above, explore some of BMR's nearest competitors to assess their pricing strategies, and understand any sensitivities on increasing prices and the impact on market share. BMR's pricing is already relatively high in the sector, and there may only be scope to increase prices if market leading features are retained and enhanced.