

# Capstone 1: Big Mountain Ski Resort Data Driven Business Strategy Case

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## Abstract

You are part of a new data science team brought in to implement a more data-driven business strategy. The business wants some guidance on how to select a better value for their ticket price. They are also considering a number of changes that they hope will either cut costs without undermining the ticket price or will support an even higher ticket price.

**Context:** Your client is Big Mountain Resort, a ski resort located in Montana. Big Mountain Resort offers spectacular views of Glacier National Park and Flathead National Forest, with access to 105 trails. Every year about 350,000 people ski or snowboard at Big Mountain. This mountain can accommodate skiers and riders of all levels and abilities. These are serviced by 11 lifts, 2 T-bars, and 1 magic carpet for novice skiers. The longest run is named Hellfire and is 3.3 miles in length. The base elevation is 4,464 ft, and the summit is 6,817 ft with a vertical drop of 2,353 ft. Big Mountain Resort has recently installed an additional chair lift to help increase the distribution of visitors across the mountain. This additional chair increases their operating costs by \$ 1,540,000 this season.

The resort's pricing strategy has been to charge a premium above the average price of resorts in its market segment. They know there are limitations to this approach. There's a suspicion that Big Mountain is not capitalizing on its facilities as much as it could. Basing their pricing on just the market average does not provide the business with a good sense of how important some facilities are compared to others. This hampers investment strategy. [1]

**Hypothesis Formation:** Big Mountain Ski Resort can enhance their long term business strategy by investing in several facility enhancements to enable them to charge a price premium of at least 10 percent above the average for ski resorts in the same market segment.

## 1 Specific Facility Upgrade ideas:

Some of these suggestions are superfluous but fun to think about:

1. Snow tubing course
2. Mountain biking trails during the off season
3. Restaurant and bar
4. Community Space for Concerts, White Elephant Gift Exchanges, etc
5. Library with Hot Cocoa bar [2]
6. Indoor Play Gym and other Child Friendly spaces [3]

**Criteria for success:** There will be metrics based on reasonable industry benchmark standards for a reasonable timeline to recoup the fixed cost in capital investment enhancements. Within 5 years Big Mountain can expect to break even.

Furthermore, margins on adult ticket purchases should be at least 10 percent greater compared to the median industry profit margin of similar market sized resorts.

**Scope of Solution Space:** The scope will be confined to reasonable enhancements that can be done on already purchased and available land owned by Big Mountain.

**Constraints within Solution Space:** Careful change management communication plans need to be implemented to keep stakeholders informed of progress and rationale. They need to understand that some changes will be made and that will require some up front investment to allow Big Mountain to justify charging a higher ticket premium and therefore differentiate themselves for a sustainable competitive advantage in the long run within the luxury ski resort space.

There will be a budget and the timeline for enhancements for this specific initiative will be capped at 2 years. Product managers will be responsible for developing a road map and working with project managers to draft project plans and assign resources to applicable tasks.

**Stakeholders to Provide Key Insight:** In this project, we're working directly with the Director of Operations, *Jimmy Blackburn*, and he has connected you with *Alesha Eisen*, the Database Manager. These are the only two contacts for this project.

**Key Data Sources:** A Single CSV file is obtained from the database manager. The data is loaded below.

## References

- [1] Grace Hung. Springboard data science career track curriculum, Dec 2020.
- [2] Bridget Mallon. 5 ski resorts with seriously luxe amenities, Feb 2016.
- [3] Caroline Morse Teel. A snowcat taco truck and 8 other amazing ski resort amenities, Feb 2020.

Figure 1: Metadata Followed by a Sample Snippet

Column	Description
Name	The name of the ski resort.
Region	The region within the United States where the resort is located.
state	The state name where the resort is located.
summit_elev	Elevation in feet of the summit mountain at the resort.
vertical_drop	Vertical change in elevation from the summit to the base in feet.
base_elev	Elevation in feet at the base of the resort.
trams	The number of trams.
fastEight	The number of fast eight person chairs.
fastSixes	The number of fast six person chairs.
fastQuads	The number of fast four person chairs.
quad	Count of regular speed four person chairlifts.
triple	Count of regular speed three person chairlifts.
double	Count of regular speed two person chairlifts.
surface	Count of regular speed single person chairlifts.
total_chairs	Sum of all the chairlifts at the resort.
Runs	Count of the number of runs on the resort.
TerrainParks	Count of the number of terrain parks at the resort.
LongestRun_mi	Length of the longest run in the resort in miles.
SkiableTerrain_ac	Total skiable area in square acres.
Snow Making_ac	Total area covered by snow making machines in acres.
daysOpenLastYear	Total number of days open last year.
yearsOpen	Total number of years the resort has been open.
averageSnowfall	Average annual snowfall at the resort in inches.
AdultWeekday	Cost of an adult weekday chairlift ticket.
AdultWeekend	Cost of an adult weekend chairlift ticket.
projectedDaysOpen	Projected days open in the upcoming season.
NightSkiing_ac	Total skiable area covered in lights for night skiing.

For more context, a data snippet is provided below.

	Name	Region	state	summit_elev	vertical_drop	base_elev	trams	fastEight	fastSixes	fastQuads	quad	triple	double	surface	total_chairs	Runs
0	Alyeska Resort	Alaska	Alaska	3939	2500	250	1	0.0	0	2	2	0	0	2	7	76.0
1	Eaglecrest Ski Area	Alaska	Alaska	2600	1540	1200	0	0.0	0	0	0	0	4	0	4	36.0
2	Hilltop Ski Area	Alaska	Alaska	2090	294	1796	0	0.0	0	0	0	1	0	2	3	13.0
3	Arizona Snowbowl	Arizona	Arizona	11500	2300	9200	0	0.0	1	0	2	2	1	2	8	55.0
4	Sunrise Park Resort	Arizona	Arizona	11100	1800	9200	0	NaN	0	1	2	3	1	0	7	65.0