# Applied Analytics and data for Decision making - PROJECT3
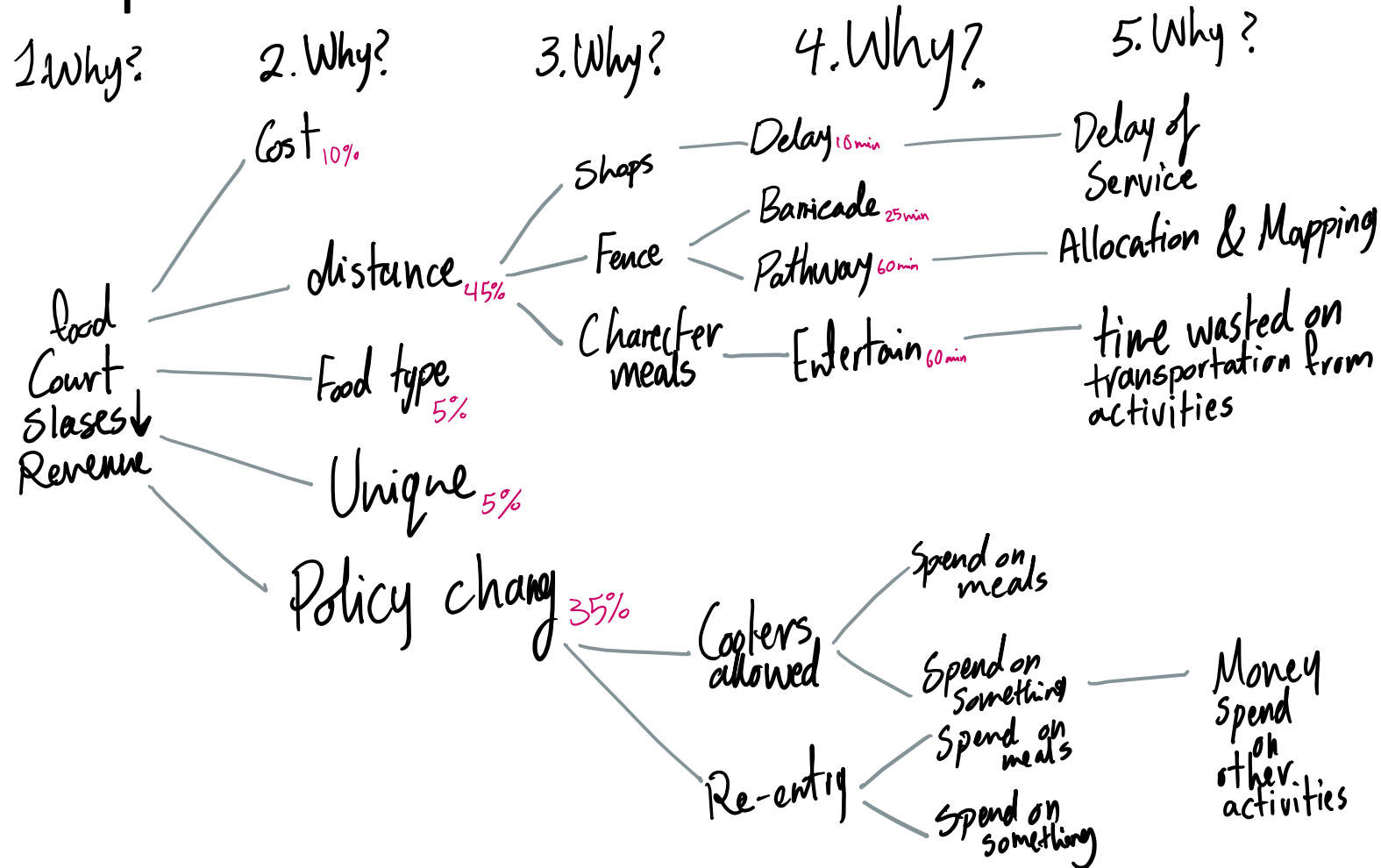
Amusement Park Scenario

# Identifying the best solution to improve performance:

1.Why?  2.Why?  3.Why?  4.Why?  5.Why?

Food Court Slasest Revenue

- Cost 10%
- distance 45%
  - Shops — Delay 10min — Delay of Service
  - Fence
    - Barricade 25min
    - Pathway 60min — Allocation & Mapping
  - Charecter meals — Entertain 60min — time wasted on transportation from activities
- Food type 5%
- Unique 5%
- Policy chang 35%
  - Coolers allowed
    - Spend on meals
    - Spend on Something — Money spend on other activities
  - Re-entry
    - Spend on meals
    - Spend on something

Five WHYs?

Identifying the best solution to improve performance:

| | 1 | 2 | 3 Money spend on other activities | 4 | 5 | 6 Dely of service | 7 | 8 Time Wasted on transprtation from activities | 9 Allocation and Mapping | 10 | Overall impact rating | Cost Rating | Risk Rating | Overall Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Potential Improvement** | | | | | | | | | | | | | | |
| Realocating of events | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 17 | 1 | 7 | 25 |
| Redesining and mapping of fences (Barricade and Pathways) | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 6 | 0 | 18 | 7 | 7 | 32 |
| Reduction of sales on coolers and re-entries | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 2 | 10 |
| Improvement on service time | 0 | 0 | 3 | 0 | 0 | 7 | 0 | 3 | 0 | 0 | 13 | 7 | 7 | 27 |

The highest overall rating of the impact of potential improvements is for Redesigning and mapping of fences with the value 32. Thus, we would prioritize the solution of redesigning and mapping of fences around the amusement park to raise the sales and the demand on food courts.
**Redesigning of fences all around the amusement park to ease the transportation process in the amusement park from the different activities to the food courts which would reduce both the distance traveled and the time wasted in transporting to food vendors.**

# The DoE Definition Phase:

- Problem statement:
  - A decrease of the revenue of food court sales in the amusement park based on an observation of a drop of guests spending on food vendors at the amusement park.
- Experiment objective:
  - Raising the revenue of the food courts at the amusement park and encouraging guests to spend on food vendors.
- Output responses:
  - An increase on food court sales, an increase in customer satisfaction reduction of delay, reduction of distance of transportation.
- Input factors:
  - Revenue from sales, costumer experience.
- Input factor levels:
  - Sales of the food court, costumer satisfaction.

# The DoE Execution Phase:

It possible to execute the suggested solution "redesigning of fences all around the amusement park to ease the transportation process in the amusement park from the different activities to the food courts which would reduce both the distance traveled and the time wasted in transporting to food vendors" by implementing a simulation to study the best way for implementation. The steps of executing are as follows;

- Defining the sample size of the population (revenue).
- Collecting data from running the experiment.
- Analyzing the data collected.
- Drawing a practical and a statistical conclusion from the analysis.
- Visualizing the conclusion and communicating them.

# Integration of the concepts of Lean and Six Sigma to sustain the improvement.



## Six Sigma Concepts:

**DMAIC**

D: Define

o A decrease of the revenue of food court sales in the amusement park based on an observation of a drop of guests spending on food vendors at the amusement park.

M: Measure

o Collect the data of sales to measure the situation and the processing

A: Analyze

o Execute a statistical and a practical analysis

I: Implement

o Implement solutions based on analysis of data from revenue

C: Control

o Keep on observation upon the sales and the implementation of solution to sustain them.

## Lean Concepts:

o The implementation is crucial to solve the problem of a decrease of the revenue of food court sales in the amusement park based on an observation of a drop of guests spending on food vendors at the amusement park.

o The reduction of food court revenue yield a reduction of the revenue of the amusement park which causes a loss.

o The flow:

   o Collect the data of sales to measure the situation and the processing

   o Execute a statistical and a practical analysis

   o Implement solutions based on analysis of data from revenue

o Keep continues improvement on the process to seek perfection

o Keep on observation upon the sales and the implementation of solution to sustain them.