

A  
Business Data Management Capstone Project Proposal

Entitled

# **Maximizing Profits for a Packaged Drinking Water Manufacturing Industry Through Proactive Customer Acquisition Strategies**

Submitted by

**Barenya Kumar Dev**

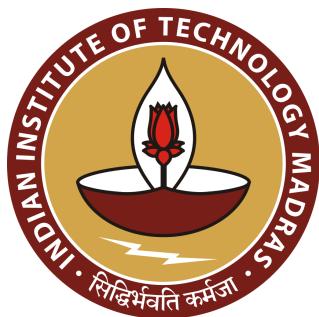
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For the partial fulfilment of the  
Degree of  
Bachelor of Science (BS) Degree in Data Science and Applications

At

Indian Institute of Technology Madras  
Chennai, Tamil Nadu, India, 600036



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## Declaration:

I, **Barenya Kumar Dev, Roll No. 21f2000494**, Diploma Level, Bachelor of Science (BS) in Data Science and Application, Indian Institute of Technology Madras, Tamil nadu, India, 600036 , am working on the Business Data Management Capstone Project entitled “Maximizing Profits for a Packaged Drinking Water Manufacturing Industry Through Proactive Customer Acquisition Strategies”. I extend my appreciation to M/S MAA BIRAJA TRADERS, Khata No-171, Mirijapur, Badabanta, Jajpur, Odisha, 755009 , for providing the necessary resources that enabled me to conduct my project.

I assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analysed to assure its reliability. Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures. I am dedicated to adhering to the principles of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. Therefore, I affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I agree that all recommendations provided are business-specific and limited to this project exclusively, and cannot be utilised for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this project.

Signature of Candidate:

*Barenya Kumar Dev.*

Name: Barenya Kumar Dev

Date: 05-03-2024

## **1. Executive Summary:**

I have obtained essential data from Sohit Fresh Packaged Drinking Water Industry, which is an extension of the business house M/S Maa Biraja Traders, that deals with both B2B and B2C is located in Madhapur, a small town within the district of Jajpur in the state of Odisha. Sohit Fresh specialises in the production and distribution of premium packaged mineral drinking water under the label of “Sohit Fresh”.

The primary reasons to select this establishment:

- The manager of the packaged drinking water establishment Mr. Ashok Kumar Pati, whom I am personally acquainted with, has been cooperative and willing to share the required data crucial for the project's success.
- Size and scale of the business is appropriate for the project.
- The owner is educated and maintains the sales/stock data regularly.
- It is evident that the establishment harbours genuine aspirations for growth and success, recognizing the need for professional guidance to realise its ambitions effectively.

The primary reasons to undertake the project:

- The proprietor aims to achieve spontaneous profitability because of the large amount of capital invested for the machinery for the sake of treatment of water.
- The business house seeks maximum profit margins over the next five-ten years at least, necessitating a larger and sustained consumer base.
- The project's primary focus is on devising strategies, including market analysis and sales optimization, aimed at attracting and retaining both individual consumers and market penetration of the product primarily within the district.

Data Acquisition:

Till date I have collected the sales/stock data of 59 days(Jan-Feb) and will continue to do so until a meaningful analysis could be done and a conclusion could be drawn. I have collected the data from the record books of the establishment, with the manager's prior permission.

The data consists of the product as mentioned below:

- “Sohit Fresh” packaged drinking water
  - 250 millilitre
  - 500 millilitre
  - 1 Litre

## 2. Organisational Background

**Name of the firm - M/S MAA BIRAJA TRADERS. (CM/L: 5200124656)**

**Managing Partner - Mr. Sudhansu Sekhar Swain. (Partner of the Firm)**

**Manager: Mr. Ashok Kumar Pati**

- M/S Braja Traders is a service provider company dealing with all types of housekeeping material and services, diet and food services, and bio waste services. “Sohit Fresh” is a brand for the newly launched packaged drinking water service.
- “Sohit Fresh” Packaged Drinking Water Industry specialises in the production and distribution of premium quality packaged filtered, mineral induced and ozonated drinking water.
- Founded in late 2023, the industry specialises in water purification, ozonation, and bottling, offering various sized bottles (250ml, 500ml, and 1L) and leveraging its expertise and equipment for water treatment and packaging.
- The manufacturing industry has a dedicated channel of distributors through which it makes the products available in the retail stores.
- The manufacturing industry also has a dedicated website: <https://sohitfresh.com>

FEBRUARY												
DATE	Opening Stocks		Production		Total		Sales in Glare 1		Sales in Glare 2		GATE	Closing Stocks
	1 Ltr	500 ml	1 Ltr	500 ml	1 Ltr	500 ml	1 Ltr	500 ml	1 Ltr	500 ml		
01-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
02-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
03-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
04-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
05-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
06-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
07-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
08-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
09-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
10-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
11-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
12-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
13-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
14-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
15-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
16-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
17-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
18-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
19-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
20-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
21-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
22-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
23-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
24-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
25-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
26-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
27-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
28-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
29-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
30-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0
31-02-2024	0	0	0	0	0	0	0	0	0	0	13.0	13.0 13.0 13.0 13.0

(Sale/Stock record for the month February, 2024)



(Pictures of the packaged drinking water manufacturing plant)

### **3. Problem Statement**

My conversation with the owner revealed several challenges impacting their profit margins. While the 500ml and 250ml bottles are their best sellers, the higher-profit 1L bottle struggles with low market penetration. The owner attributed this partly to their premium product's higher production cost compared to local competitors. Furthermore, a significant gap exists between distributors and retailers, with distributors hesitant to sell the 1L bottle batches to the retailer due to concerns about lower margins. The retailer sells the products with significantly high markups, leaving both the distributor and manufacturer with insufficient profits.

- Product struggles to reach consumers due to inefficiencies in the supply chain.
- Sales suffer from a disconnect between manufacturer, distributor, and retailer.
- Unsold inventory piles up due to flawed inventory management practices.

### **4. Problem Background:**

Industry owner's marked issues:

- Full inventory due to a weak distributor chain.
- Low market penetration within the district.
- Unprofitable business due to underperformance of the product.

The problems that I assume (as a consumer and an analyst) from first impressions and after using the product are listed as follows:

- Low Demand: Despite comparable water quality to premium competitors, the average local prioritizes product's reusability over taste, quality, or mineral content. Structural and design flaws in packaging could be contributing to lower sales.
- Product Differentiation: Packaging is unique in design and robust in quality, but problems with labeling and color scheme hinder product differentiation.
- Low Brand Awareness: Public recognition of the brand is likely low.
- Limited Distribution Network: The company suffers from limited distribution and an almost full inventory.
- Weak Sales Strategy: The industry probably has a weak sales strategy that hampers the growth.
- High Production Costs: The production cost of making one bottle of 1L packaged drinking water is relatively higher due to the premium quality of the product.
- Competition: Market is saturated with established brands.

- Consumer Preferences: The average consumer prefers 500mL(MRP:10Rs) bottles, but the profit margin is maximum for the 1L(MRP:20Rs)

I will use the theories and skills taught in the BDM theory course to arrive at an appropriate solution to these problems.

## **5. Problem solving strategies:**

I have acquired the time series data of the inventory as I plan to analyse the same for solving the problem at hand. Here are the few problem solving approaches that I might have to take in the following months:

- Optimizing pricing strategies: Implement a cost-plus pricing strategy for the 1L bottle.
- Negotiating with Suppliers: Negotiate with suppliers to reduce costs.
- Exploring Alternatives: Explore cost-effective materials or packaging options.
- Competitive Analysis: Analyze competitors' pricing strategies for informed decision-making.
- Profit-Sharing Model: Implement a profit-sharing model with distributors, offering higher profit percentages on each 1L bottle sold.
- Guaranteed Sales Volume: Provide guaranteed minimum sales volume agreements to incentivize distributors and increase production and sales of 500ml and 250ml bottles.
- Marketing and Sales Support: Develop strategies to support distributors with co-branded campaigns and training on the benefits of the 1L bottle.
- Advertisement: Run media advertisements to increase brand visibility.
- Direct Sales: Sell products directly to select retailers to streamline distribution.

The data I am collecting for now, for each segment of packaged drinking water includes the following:

- Production cost, Sale price, Quantity sold etc

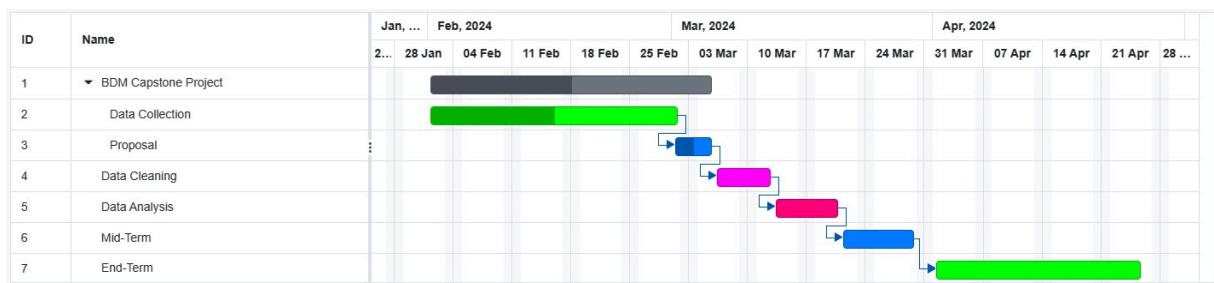
Reason: Firstly, production costs provide insight into the expenses incurred in manufacturing the products, helping to assess profitability and cost-efficiency. Sale price data reveal the pricing strategy employed by the business, impacting revenue generation and market competitiveness. Quantity sold is a crucial metric indicating product demand and market performance, directly influencing sales revenue and profitability.

I intend to do a complete analysis of the sale and stock using the acquired data, thus ensuring an optimised profit margin. Inventory optimization leading to a free flow of product into the

market. Using the data I can compute revenue, EBITDA, expenditure, growth, net profit and profit margin, average inventory, GPR, NPR etc. Also I plan to do a thorough demand-supply curve analysis. I plan to use Excel(primarily) and Tableau(secondary) for the analysis and visualisation of data. Excel offers powerful tools like SUM, AVERAGE, COUNT, MIN, and MAX for summarizing sales volume, profit margins, and production costs. Conditional formatting highlights trends and outliers using color coding or data bars. Filters and sorting help focus on specific regions, products, or time frames for improvement. PivotTables and Charts create interactive visualizations, analyzing sales by region, product category, or price point. What-if analysis with Goal Seek aids in setting sales targets or optimizing production costs. Data visualization primarily relies on scatter plots, pie charts, histograms, and heatmaps.

## 6. Timeline:

I've gathered 59 days of data and will continue until reaching a conclusive analysis from the owner. A Gantt chart outlines the projected flow of the project:



## 7. Expected Outcomes:

- Maximise the profits of the company by employing the aforementioned strategies.
- Suggest best inventory management techniques and solutions.
- Assist the owner in reorganising the business and possibly remodelling the business model itself.