Operational and Sales Analysis of a Packaged Drinking Water Company

A Proposal report for the BDM capstone Project

Submitted by

Name: Aditya Gumgaonkar

Roll number: 23f3001890

IITM Online BS Degree Program,

Indian Institute of Technology, Madras, Chennai

Tamil Nadu, India, 600036

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Declaration Statement

I am working on a Project Title "Operational and Sales Analysis of a Packaged Drinking Water Company". I extend my appreciation to **ABN SUN Foods and Beverages with its subsidiary IRA Gold**, for providing the necessary resources that enabled me to conduct my project.

I hereby 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 analyzed 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 information 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. I thus 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 the recommendations are business-specific and limited to this project exclusively, and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.

Signature of Candidate: (**Digital Signature**)

Name: Aditya Gumgaonkar

Date: September 11, 2025

1 Executive Summary and Title

The project is focused on studying and providing recommendations for the challenges faced by the business **'IRA Gold,' a packaged drinking water company operating under ABN SUN Foods and Beverages.** The business operates in both **B2B and B2C capacities**, serving distributors, retail outlets, institutions, and individual consumers seeking packaged drinking water.

The key challenges at 'IRA Gold' arise from three areas. **Firstly**, the utilization of machines is not at full capacity due to the absence of electricity transformers, which restricts production output despite the availability of infrastructure. **Secondly**, product sales suffer during the monsoon season, as consumer demand declines and transportation facilities in city areas are disrupted. **Thirdly**, the company remains dependent on pending government grants for essential infrastructure improvements, which delays expansion and affects long-term operational stability.

To tackle these challenges at 'IRA Gold,' I plan to explore two primary categories of data. **Firstly**, production-related data such as machine capacity, downtime, and actual utilization will be analyzed to identify efficiency gaps and provide recommendations for better capacity management. **Secondly**, sales-related data, particularly seasonal patterns and demand fluctuations, will be studied to develop forecasting methods and targeted sales strategies. Through this dual analysis, the project aims to provide structured, data-driven solutions that enhance operational efficiency, minimize seasonal disruptions, and support the sustainable growth of the company.

2 Organization Background

ABN SUN Foods and Beverages, established on **15 March 2025** by **Mr. Ashwini Akshay Nanote**, is a packaged drinking water company located in **Bidgaon, near Symbiosis Institute of Technology, Nagpur**. The company operates under the brand **IRA Gold** and leverages the founder's prior experience in **ABN SUN RO Technologies** and packaged water trading.

With a team of **12 employees**, the company serves both **B2B and B2C segments**, catering to distributors, retail outlets, institutions, and individual consumers. Its main offering is **high-quality packaged drinking water**, and the organizational structure is lean to enable efficient operations and quick decision-making. ABN SUN Foods and Beverages aims to provide **safe and reliable drinking water** while gradually expanding into additional urban and semi-urban markets, reflecting its mission to ensure accessible hydration and vision to become a trusted name in the packaged water industry.

3 Problem Statement

3.1 Problem Statement 1: Due to limited electricity infrastructure, the utilization of machines is not at full capacity, restricting production output and affecting the ability to meet demand.

3.2 Problem Statement 2: Product sales decline significantly during the monsoon season, as lower demand and disrupted transportation impact overall revenue.

3.3 Problem Statement 3: Dependency on pending government grants for essential infrastructure improvements delays expansion and creates uncertainty in long-term.

4 Background of the Problem

The issues faced by IRA Gold arise from the nature of its packaged drinking water business. Firstly, the utilization of machines is not at full capacity due to limited electricity infrastructure, which restricts production output despite the availability of equipment. This creates challenges in meeting customer demand efficiently and optimizing daily production schedules.

Secondly, product sales experience a significant decline during the monsoon season. Lower consumer demand combined with disrupted transportation facilities in city areas affects revenue generation and the ability to maintain consistent supply to both B2B and B2C customers.

Thirdly, the company remains dependent on pending government grants for essential infrastructure improvements, which delays expansion and creates uncertainty in long-term operational and financial planning. This affects strategic decision-making and limits the ability to scale production to meet growing demand.

In summary, the problems stem from **underutilization of production capacity, seasonal sales fluctuations, and dependency on government approvals for infrastructure expansion**. Addressing these challenges is crucial for improving operational efficiency, stabilizing sales performance, and supporting sustainable growth for IRA Gold.

5 Problem Solving Approach

5a. Details about the Methods Used with Justification

Given the nature of the problems faced by **IRA Gold**, a comprehensive approach involving both **quantitative and qualitative methods** is required.

Quantitative Methods:

- **Time-Series Analysis:** Considering the seasonal fluctuations in sales and production data, time-series analysis will help identify trends, patterns, and variations over time. This will provide insights into how production capacity and sales are affected during different months, especially during monsoon periods.
- **Statistical Computation:** Various statistical computations will be applied to production and sales data to extract meaningful insights. This includes efficiency calculations, utilization rates, and revenue forecasts to guide operational and financial decisions.

Qualitative Methods:

- **Interviews and Discussions:** Engaging with the owner, Mr. Ashwini Akshay Nanote, and operational staff will help gather qualitative insights regarding production challenges, infrastructure limitations, and sales issues during seasonal disruptions.

- **Benchmarking:** Comparison with similar packaged drinking water businesses will be conducted to identify best practices in machine utilization, seasonal sales management, and infrastructure planning.

5b. Details about the Intended Data Collection with Justification

- **Production Data:** Collect detailed data on machine capacity, actual utilization, downtime, and production output. This will help identify efficiency gaps and understand the limitations caused by electricity infrastructure issues.
- **Sales Data:** Gather sales data, including daily/weekly/monthly sales, B2B and B2C orders, and seasonal variations. This will allow the analysis of demand fluctuations, particularly during monsoon periods, and help design forecasting models.
- **Infrastructure and Grant Data:** Collect information on pending government approvals, transformer installation schedules, and other infrastructural dependencies. This will provide insight into how delays affect production planning and long-term operational strategies.

Justification:

- Focusing on **production and sales variables** ensures that the analysis is data-driven and addresses the core operational challenges, providing actionable insights.
- Gathering **infrastructure and grant-related data** enables the company to evaluate the impact of external dependencies and explore alternative solutions.
- Combining **quantitative production and sales data** with **qualitative insights from interviews and benchmarking** ensures a comprehensive understanding of challenges and supports the development of effective, practical recommendations.

5c. Analysis Tools and Justification

Analysis Tools:

- **Google Sheets and Excel:** For preliminary data processing, cleaning, analysis, chart creation, and computations to uncover meaningful insights.

- **Python with Pandas and Matplotlib/Seaborn libraries:** Used alongside Excel to explore the data more comprehensively, generate advanced visualizations, and extract additional insights.

Justification:

- **Google Sheets and Excel:** Efficient for fundamental computations, chart creation, and data management, offering a user-friendly interface for initial analysis.
- **Python:** Enables advanced data manipulation and sophisticated visualizations, complementing Excel's capabilities and providing a deeper, more thorough understanding of the dataset.

6 Expected Timeline

6.1 Work Breakdown Structure:

Ref:

1. https://acqnotes.com/acqnote/careerfields/work-breakdown-structure
2. https://www.wrike.com/project-management-guide/faq/what-is-work-breakdown-structurein-project-management/

6.2 Gantt chart

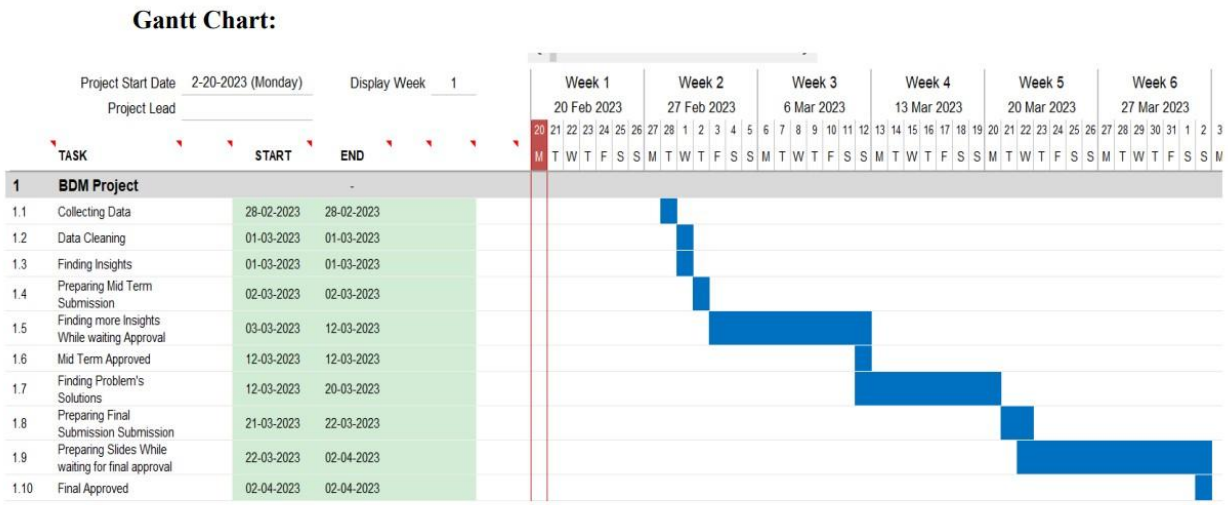

Figure 1 Expected timeline for completion of project.

7 Expected Outcome

- To optimize machine utilization and improve production efficiency by analyzing production-related data, ensuring that available capacity is fully leveraged.
- To develop strategies for managing seasonal sales fluctuations, particularly during the monsoon period, through data-driven forecasting and targeted marketing approaches.
- To provide a comprehensive operational and financial overview of the business using data analysis of production output, sales trends, and revenue performance.
- To assess the impact of pending government grants and infrastructural dependencies on operations, and propose actionable measures or temporary solutions to reduce delays and maintain production stability.
- To enable informed decision-making for long-term operational planning, improving overall efficiency, stabilizing seasonal performance, and supporting sustainable growth for IRA Gold.

For your reference, see the guidelines, rubrics, and live session videos. This is not part of the report. Remove this page before submission.

Ref:

Videos:

Lecture-1: https://youtu.be/RPGFybqNL1Q Lecture-

2: https://youtu.be/xKwBQLlP9sk

Lecture-3: https://youtu.be/N7PQRuXKCdY

Lecture-4: https://youtu.be/zV-PGq715lw

Playlist: https://www.youtube.com/playlist?list=PLNmlFfYWEPbQivebUOOlYudty1PlqlXHP

Documents:

https://drive.google.com/drive/folders/1iIEVBSuKfC1BGJ8-0OOz3HXrY9HE3MLa?usp=sharing

The document is prepared by Dr. Aaditya Chandel and Dr. Ashwin Baliga.