Analytical Study of Ankita Cashew Processing

A Proposal report for the BDM Capestone Project

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Contents

Declaration Statement

I am working on a Project titled “Analytical Study of Ankita Cashew Processing”. I extend my appreciation to **Ankita Cashew Processing**, 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.

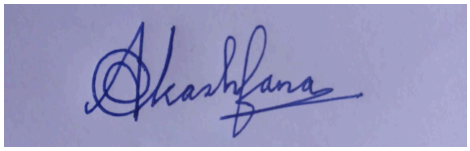
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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:



Name: Akash Jana
Date: February 11, 2026

1 Executive Summary and Title (200 Words)

The project focuses on Ankita Cashew Processing, a cashew processing company located in India. The business mainly works in the B2B segment and supplies processed cashew to both large and small vendors across different regions of the country. The company has a daily production capacity of around 5 metric tons.

The major business issues faced by the organization include changing market demand and fluctuating prices, which make planning and purchasing decisions difficult. There are also problems such as excess or unorganized inventory, wastage during processing, delayed payments from buyers, and no proper real-time tracking of profit and loss. These challenges reduce overall profitability and create financial pressure.

These issues will be addressed by analyzing business and operational data using different analytical approaches. Demand forecasting and price trend analysis will help in better planning and purchasing. An inventory and batch tracking system will reduce wastage and improve efficiency. A real-time profit and loss dashboard will provide clear visibility of costs and margins, and a buyer tracking or scoring system will help manage payment risks.

The expected outcome of this project is better inventory control, reduced wastage, improved cash flow, and more stable profits. By using data-driven decision-making, the organization can improve efficiency, reduce unnecessary losses, and increase overall profitability.

Ref: https://www.msmemart.com/member/255547/ankita-cashew-processing
Ref: https://www.thecompanycheck.com/org/ankita-cashew-processing/b0d7b6928a

2 Organization Background (150 Words)

Ankita Cashew Processing is a cashew processing business based in India, owned and managed by its proprietor, Usha Jana. The company purchases raw cashew nuts, processes them into graded kernels, and supplies them to large and small vendors across different parts of the country. It mainly operates in the B2B segment and focuses on maintaining quality, consistency, and timely delivery. With a production capacity of around 5 metric tons per day, the company has steadily grown in scale and market presence. The business is currently valued at approximately 6 crore INR. Like many traditional processing businesses, its operations are largely experience-based, and it is now moving towards adopting better systems and data-driven methods to improve efficiency and profitability.

Ref.

1. https://www.msmemart.com/member/255547/ankita-cashew-processing
2. https://www.thecompanycheck.com/org/ankita-cashew-processing/b0d7b6928a

3 Problem Statement (Listed as objectives) (50-75 Words)

3.1 Demand & Price Volatility Problem

Ankita Cashew Processing faces frequent changes in market demand and raw cashew prices. These fluctuations make it difficult to decide when to buy raw materials and at what price to sell finished products. Sometimes the company purchases stock at high prices and later sells at lower prices due to market drops. This uncertainty affects profit margins and makes financial planning challenging.

3.2 Inventory & Wastage Loss

The business may face issues with excess or poorly managed inventory. Without proper tracking, raw cashews and processed kernels may remain in storage for too long, leading to quality loss. During processing, there can also be wastage due to breakage, moisture loss, or handling errors. These small losses, when added over time, can significantly reduce overall profitability.

3.3 Real-Time Profit & Loss Tracking

Currently, there may not be a proper system to track profit and loss in real time. Costs such as raw material, labor, electricity, and transportation are not always calculated per batch or per kilogram. As a result, the company may not clearly know which grades or orders are more profitable. This lack of clear financial visibility can lead to weak decision-making.

3.4 Buyer Risk & Payment Delays

Since the company operates in a B2B model, it depends heavily on buyers for timely payments. Some buyers may delay payments or fail to pay on time, which affects cash flow. Without a proper system to track payment history and buyer reliability, the business may continue giving credit to risky customers, increasing financial pressure.

3.5 Fraud / Leakages / Hidden Losses

In manual or traditional systems, there can be hidden losses such as weight manipulation, inventory mismatches, or small leakages during procurement and storage. These issues are often not detected immediately and may go unnoticed for long periods. Over time, such hidden losses can reduce profits and create operational inefficiencies within the organization.

Ref.

1. https://project-management.com/what-is-a-problem-statement/
2. https://www.isixsigma.com/getting-started/how-to-write-an-effective-problem-statement/
3. https://www.managementstudyguide.com/defining-project-problem-statement.htm

4 Background of the Problem (200 Words)

Ankita Cashew Processing operates in a competitive B2B market where profit margins depend heavily on correct pricing, efficient processing, and smooth cash flow. The main problems arise due to market uncertainty, lack of structured data systems, and dependence on manual decision-making. Changing demand patterns and fluctuating raw cashew prices make it difficult to plan purchases and sales properly. When buying decisions are based on guesswork instead of data, the company may either overstock inventory or miss profitable opportunities.

The major causes of these problems are both internal and external. Internally, the business may lack real-time tracking of inventory, batch-wise production data, and detailed cost calculation. Without proper systems, wastage during processing, hidden losses, and unorganized stock management increase operational inefficiencies. Delayed financial reporting also prevents quick corrective action.

Externally, market price volatility, seasonal demand changes, competition, and delayed payments from buyers create additional pressure. Buyers may negotiate heavily or delay payments, affecting working capital. Global supply changes and export market trends can also impact pricing. Together, these internal inefficiencies and external market uncertainties create financial instability and reduce overall profitability for the organization.

5 Problem Solving Approach (400 Words)

5.a Demand & Price Volatility – Sales Forecasting

- Collect historical sales data (date, grade, quantity, price).
- Clean and organize monthly sales data using Excel or Python.
- Perform trend analysis and seasonal analysis using pivot tables and line charts.
- Apply linear regression or time-series models (ARIMA) in a Kaggle notebook.
- Evaluate model accuracy using RMSE or MAE.
- Generate 3–6 month demand and price forecasts.
- Provide data-driven purchasing and pricing recommendations.

5.b Inventory & Wastage – Yield Analysis

- Record batch-wise raw input and grade-wise output data.
- Calculate yield percentage and wastage rate per batch.
- Use Excel for yield comparison and ABC inventory analysis.
- Identify high-loss batches using variance analysis.
- Apply outlier detection methods in Python to detect abnormal losses.
- Analyze storage duration impact on quality.
- Recommend optimized inventory control and processing improvements.

5.c Real-Time Profit & Loss – Cost Modeling

- Collect detailed cost data (raw material, labor, electricity, transport, packaging).
- Build a cost sheet in Excel for per kg and per batch calculation.
- Perform break-even and contribution margin analysis.
- Conduct sensitivity analysis for price fluctuations.
- Develop a basic dashboard (Excel or Flask-based) for profit monitoring.
- Identify most profitable grades and loss-making segments.
- Provide financial optimization recommendations.

5.d Buyer Risk & Payment Delay – Credit Analysis

- Collect buyer transaction history and payment delay data.
- Perform ageing analysis (30/60/90 days) in Excel.
- Categorize buyers based on average delay and order volume.
- Develop a buyer risk scoring system.
- Apply logistic regression to predict late payments.
- Recommend credit limits based on risk score.
- Improve cash flow planning and reduce financial exposure.

5.e Fraud / Hidden Loss – Anomaly Detection

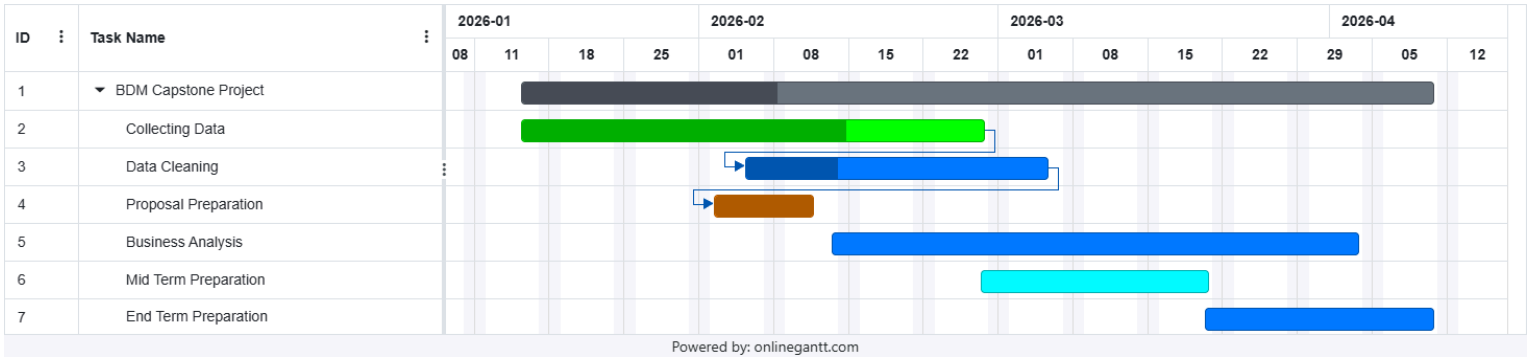
- Reconcile procurement, inventory, and sales data regularly.
- Perform variance analysis between expected and actual yield.
- Detect abnormal deviations using Z-score or statistical thresholds.
- Apply basic anomaly detection models (Isolation Forest) in Python.
- Monitor inventory mismatches and unusual procurement patterns.
- Generate alerts for irregular transactions.
- Recommend internal control improvements to reduce hidden losses.

6 Expected Timeline

6.1 Work Breakdown Structure:

- Data Collection: I collected data in the months of January and February, spanning a total of 31 days.
- Data Cleaning and Preprocessing: I will successfully clean the data until the end of February.
- Proposal Preparation: I prepared my project proposal at the beginning of February.
- DataAnalysis: I will start basic data analysis in the middle of February.
- The aim is to successfully analyse and provide conclusive recommendations by the end of March and April.

6.2 Gantt Chart



7 Expected Outcome (Briefly explain in 150-200 words)

7.1 Improved Demand Forecasting and Sales Planning

The organization will gain a clear understanding of which cashew grades are sold more frequently and during which months demand increases or decreases. This will help in better production planning, smarter raw material purchasing, and reduced risk of overstocking or understocking.

7.2 Better Inventory Management and Reduced Wastage

Through batch-wise yield analysis and stock tracking, the company will identify areas of excess inventory and processing losses. This will improve storage planning, reduce unnecessary wastage, and increase overall efficiency in operations.

7.3 Clear Profit and Loss Visibility

The implementation of a structured cost model and real-time P&L tracking will provide clarity on profit per batch and per grade. Management will better understand cost distribution and identify high-margin and low-margin segments.

7.4 Improved Cash Flow and Buyer Risk Control

Buyer payment analysis and risk scoring will help in identifying customers with delayed payment patterns. This will improve credit control policies and strengthen working capital management.

7.5 Long-Term Data-Driven Growth Strategy

The project will lay the foundation for future automation, predictive analytics, and business intelligence systems, enabling sustainable growth and scalable expansion.