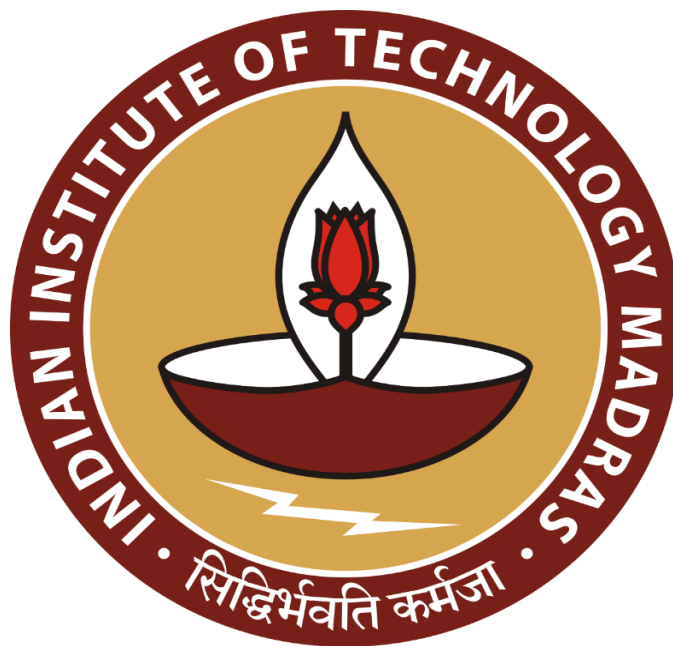# Optimizing Profitability and Operational Efficiency for M/S Shiv Shakti Traders

A Proposal report for the BDM capstone Project

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Contents

Declaration Statement

I am working on a Project Title "Optimizing Profitability and Operational Efficiency". I extend my appreciation to "M/S Shiv Shakti Traders", for providing the necessary resources that enabled me to conduct my project.
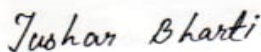
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analyzed to assure its reliability.

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.

Tushar Bharti

Signature of Candidate

Name: Tushar Bharti

Date: 5th of April, 2024

1 Executive Summary and Title

The project centers around a trading business situated in Daha, Madhepura, Bihar. Operating in the B2B sector, this business specializes in dealing with food grains. The function as wholesale distributors, providing grains to mills and other trading enterprises.

The organization is dealing with important business problems, including very low profits due to tough competition, transportation cost and issues, labour cost management, and challenges with quality of grains.

To tackle these issues, methods include market analysis, direct farmer negotiations for cost reduction, efficient labour practices, and moisture management measures. Quality checks and comparative profit analysis between local and interstate sales will guide decision-making.

Strategies such as optimizing transportation routes, negotiating better transport rates, and addressing challenges like vehicle shortages or unavailability will be implemented.

Data will be collected from ledger book and data involves vital metrics like paddy weight, costs, profits, transportation cost, and expenses, aiding problem-solving.

Analysis tools like Excel will streamline data management, facilitate profit calculations, and visualize insights for informed decision-making.

These strategies aim to optimize costs, enhance efficiency, quality of grains and maintain competitiveness in the market.

2 Organization Background

The owner of M/s. Shiv Shakti Traders, located in the village of Daha, Madhepura, Bihar, is Mr. Dilip Kumar.

He previously worked in a saree business in Surat and now runs his own trading business with the assistance of his nephew, Dhirender Kumar. Started in November 2007 and now running it for 16 years.

The trading business primarily deals with food grains such as paddy, wheat, and maize, as well as telhan (grains used for oil) and dalhan (grains used for pulses). They source these products from local farmers and small vendors in both urban and rural areas, storing them carefully for wholesale distribution to major mills.

These mills use the grains to produce essential products such as rice, aata, maida, suji, legumes, and oil. They work with different types of grains, but they focus mostly on food grains because they are more common in the area and easier to cultivate.

3   Problem Statement

They work with different types of food grains, but I am working only on paddy, so the problem statement and approaches are related to that only.

3.1   Problem statement 1:

The increase in competition and the shift towards direct purchasing from farmers by local buyers have led to higher purchasing prices for M/S Shiv Shakti traders. This has negatively impacted profit margins and competitiveness in the market.

3.2   Problem statement 2:

The paddy business faces significant capital expenditure due to high labour and transportation costs incurred from purchasing to supplying to large mills. Challenges like moisture-related weight shortages, quality of grains and transportation issues contribute to heavy losses and potential order cancellations.

4 Background of the Problem

The owner had mentioned that there wasn't much competition previously, but now the scenario has changed. As entry into this business is very easy, people started purchasing grains from farmers directly. Consequently, the grains that were previously supplied to Ms. Shiv Shakti traders are now going to these local buyers. These buyers buy at the same price as Dilip Kumar would have. After purchasing, they also need to make a profit, so they sell the grains to Ms. Shiv Shakti traders at a higher cost compared to if the traders had bought directly. This has resulted in an increase in purchasing prices and competition in the market.

The second problem they face is the high costs associated with labour and transportation, which are consuming a significant amount of capital. Labor costs are incurred from the point of purchasing the paddy until its sale. This includes tasks such as transportation, weighing, and storage of the purchased paddy. Additionally, when supplying these paddy bags to large mills in other states or to local mills, the process will need to be repeated due to potential weight shortages resulting in additional capital expenditure.

The weight shortage issue is caused by poor grain quality, primarily due to higher moisture levels in the paddy during purchase. Since there's no moisture checking tool available, they rely on manual checks, leading to the storage of low-quality paddy in stock.

Additionally, this situation can lead to the rejection of an entire truckload of paddy at the mill. The consequences are significant, as it may result in high penalties or even the rejection of the entire order.

Regarding transportation issues, the costs are particularly high due to the distance involved. Sometimes, there are challenges such as unavailability of transport facilities or shortages of

vehicles in specific areas. This can lead to heavy losses because during this time, market prices may fluctuate, and the party ordering the goods may find lower-priced alternatives, leading to order cancellations.

5 Problem Solving Approach

5.1 Details about the methods used with Justification

- Conducting a thorough analysis of local market competitors, their pricing strategies and market trends to understand the current competitive landscape better.
- Engaging directly with local farmers to negotiate better prices for purchasing grains which will reduce the cost price while purchasing.
- Implementing efficient labor management practices, optimize workforce allocation to streamline tasks and reduce labour costs.
- Implementing measures to control moisture levels in paddy bags during storage and transportation, such as moisture-proof packaging, proper ventilation, and moisture monitoring machines.
- Conducting regular quality inspections, moisture content tests, and compliance checks to ensure product quality, prevent weight shortages, and mitigate risks of order cancellations due to quality issues.
- Comparing the profit margin for goods sold to local mills versus other states' mills, considering transportation costs. This analysis will help us decide if sending goods to other states is profitable, as high transportation costs may offset profits.
- Negotiating favourable transport contracts, exploring bulk shipping options, and route optimization to minimize transportation expenses and improve cost-effectiveness.

5.2 Details about the intended data collection with Justification

- I've gathered data for a paddy season, which usually lasts about 4-5 months.
- I'll be transferring the handwritten data from the ledger into spreadsheets for easier organization and analysis.
- The key columns in my data consist of the following variables:
    - i   Weight of paddy (in kg)

        ii   Cost price (in quintals)

        iii Selling price (in quintals)

        iv Profit

        v   Labour cost

        vi Transportation cost

- These variables are essential for analyzing and finding insights and solution to the problem.

5.3   **Details about the analysis tools with justification**

- Analysis will be conducted using Excel for simplicity and effectiveness.

- Appropriate Excel formulas, Pivot Table and functions to be used for profit calculation, price calculation and tracking expenses like labour and transportation costs.

- Use of Python and ML for creating charts and graphs to visualize data, identify patterns, and enhance data illustration.

6 Expected Timeline

6.1   Work Breakdown Structure:

Task	Timeline
Data Collection	April 1 – April 3
Data Cleaning and Inserting into Excel	April 4 - April 6
Data Analysis and finding Insights	April 6 – April 8
Mid Term Submission	April 9 – April 10
Finding Solution to the problem	April 8 – April 12
Final Submission	April 14 – April 15

6.2   Gaant Chart:

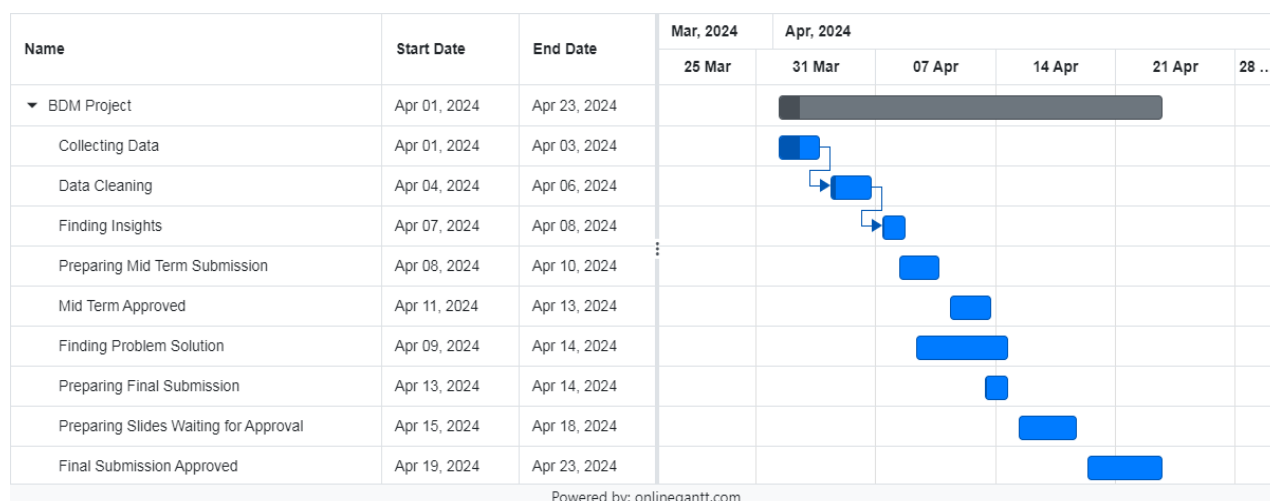| Name	Start Date	End Date	Mar, 2024	Apr, 2024				
			25 Mar	31 Mar	07 Apr	14 Apr	21 Apr	28 …
▼ BDM Project	Apr 01, 2024	Apr 23, 2024						
Collecting Data	Apr 01, 2024	Apr 03, 2024						
Data Cleaning	Apr 04, 2024	Apr 06, 2024						
Finding Insights	Apr 07, 2024	Apr 08, 2024						
Preparing Mid Term Submission	Apr 08, 2024	Apr 10, 2024						
Mid Term Approved	Apr 11, 2024	Apr 13, 2024						
Finding Problem Solution	Apr 09, 2024	Apr 14, 2024						
Preparing Final Submission	Apr 13, 2024	Apr 14, 2024						
Preparing Slides Waiting for Approval	Apr 15, 2024	Apr 18, 2024						
Final Submission Approved	Apr 19, 2024	Apr 23, 2024						

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Figure 1 Expected timeline for completion of project.

7   Expected Outcome

7.1   The analysis conducted on the data as part of this project is expected to have a positive impact on the profitability of M/s Shiv Shakti Traders in their business operations.

7.2   Implementing moisture management measures and quality checks can lead to improved paddy quality.

7.3   Implementing cost-saving measures and negotiating better prices with suppliers can lead to reduced expenses, increasing overall profitability.

7.4   Optimizing transportation routes, streamlining labour costs, and implementing efficient process can lead to improved operational efficiency and resource utilization.