

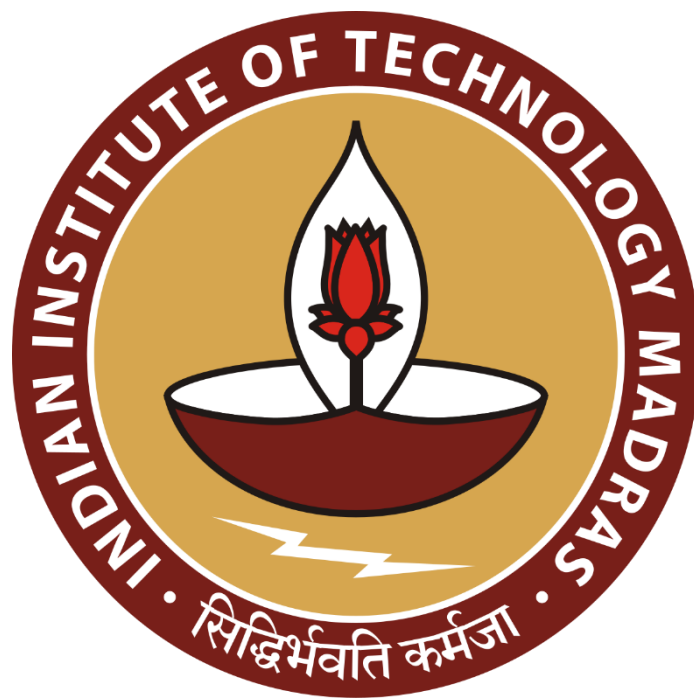
Navigating B2C Expansion and Optimizing Warehouse Efficiency Amid Labour Shortage

Proposal for the BDM capstone Project

Submitted by

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1. Executive Summary

The capstone project is a study of a manufacturing firm, SNP, based in Maharashtra. SNP is mostly a B2B manufacturing firm which manufactures industrial products like cable trays and electrical panels.

The firm faces the issue of acute labour shortage at multiple times in the year. Secondly the firm is also looking to step into the B2C but is facing several difficulties in doing so. Along with this, the owner also addressed the problem of stagnant growth.

The project aims to solve these problems with the help of extensive data analysis on the company's sale and purchase data which in turn will help in finding solutions for labour shortage, try and find ways to give a kickstart to the firm's objective of stepping into the B2C sector and also explore ideas to boost overall growth.

2. Organizational Background

The company I am working for is SNP. SNP, established in 1983 by Mr. Chandrakant Panchal, now operated by Mr. Jigar Panchal, is a B2B manufacturing firm engaged in the production of industrial products like different types of cable trays, channel supports, types of bends and electrical panels. The firm makes use of both, modern machinery and labour to manufacture products. It has a strength of 15 labours along with 25 different machines for jobs like cutting, bending, welding, drilling, etc. SNP takes on on-demand projects with orders from businesses like electrical firms, malls, hotel, factories, etc. from different states of Maharashtra (majorly from Mumbai and Pune), Gujarat, Goa and Karnataka and its only production unit is based in Maharashtra. The firm is also ISO 9001:2015 certified, a test of industrial quality standards, making it one of the renowned ones in this sector in the western part of India.



Figure 2. Factory Image - 1



Figure 1. Factory Image - 2

3. Problem Statement

- 3.1. Problem Statement 1: Severe labour shortage that has led to factory shutdown and dissatisfaction among customers due to unfulfilled demand.
- 3.2. Problem Statement 2: The desire to expand into the B2C sector to boost growth but lead to multiple failed attempts due to ineffective implementation.
- 3.3. Problem Statement 3: While currently profitable, the firm is seeking to boost their growth and maximise their profits.

4. Background of the Problem

SNP faces the critical challenge in securing and retaining workforce. The problem stems from a broader issue of lower labour supply in the manufacturing sector, especially fabrication. Even after hiring workers, making sure that workers are consistently working for the same firm has been a challenge due to lower labour supply and higher demand. Labour availability is even lower in the months of April-May and October-November. This is primarily caused due to festivals and school breaks as labours tend to take a leave and visit their native places.

Secondly, SNP also desires to expand its business into the B2C sector catering to the needs of common people. Attempts to sell their products on amazon and other online platforms have been made but did not succeed and also incurred losses due to return of products by the consumer mostly because of ordering wrong products or ordering incorrect sizes. Lastly, even though the company is currently profitable, the owner has observed a stagnant growing phase due to multiple reasons, labour shortage being the primary problem, due to which the firm is unable to cater to the constant demand all year round.

5. Problem Solving Approach

An all-round plan of action is essential for addressing the challenges faced by SNP'. The problems faced by SNP are inter connected and hence needs a strategy that approaches the problems while keeping this inter connection in mind. The labour shortage in the firm is caused mainly because of overall low labour supply in the manufacturing sector and secondly because of the seasonal personal commitments of the labourers. While the former is a problem on a larger scale and cannot be dealt with by an individual firm, the damage caused by the latter can be mitigated if dealt with efficiently. SNP relies only on hiring labourers for a long term and

hence the seasonal unavailability of these workers has a larger impact on the firm's productivity, looking for different options of labours like daily wage workers can help to reduce the factory shutdown times. Along with this advance planning of the leave requests of workers can help to make sure that not all of the staff are on a leave at the same time.

The attempts made by SNP to expand its business in the B2C was unsuccessful mainly due to common people not being able to order the right product catering their needs. Amazon not providing a way to establish a communication between the seller and the customer has only added to the problems. An efficient way to deal with this is can be to start a company website which can prove helpful in numerous ways. Online sale of their products on the website can help to deal with the problem of not direct communication with the consumer and advertising their website via google ads on relevant websites can help boost their online presence.

Lastly, SNP being an on-demand manufacturing firm, they do not manufacture products and store them in warehouses to cater the demand during peak seasons. Introducing warehousing of products which are in constant demand and other products which are unlikely to spoil over time can also prove to be useful in the time when labour shortage is a major problem.

To study the applications of the above suggestions, an analysis of the company's sales and purchase data along with the labour availability data will be done using tools like pandas and excel. Factors like hiring cost of daily wage workers against the cost incurred by the firm for their regular worker will be taken into consideration, along with that cost of renting a warehouse and running a website will also be accounted for.

6. Expected Timeline

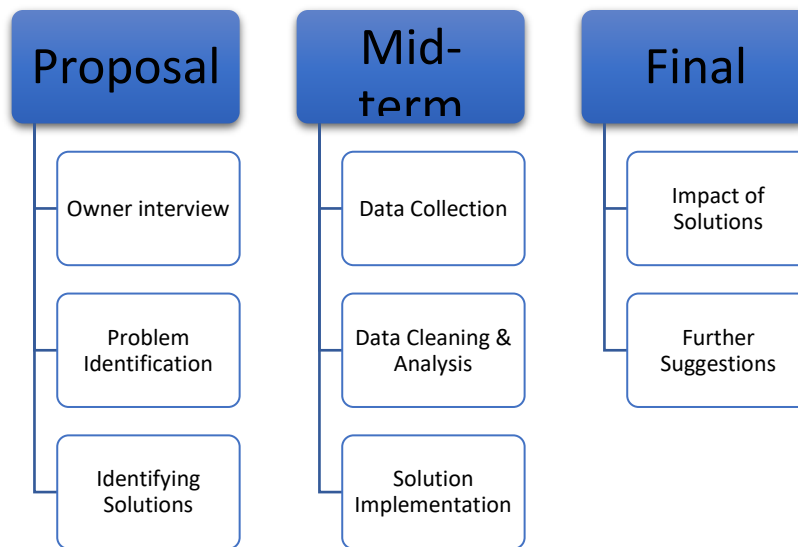


Figure 3. Work-Breakdown Structure (WBS)

| Process | Start Date | End Date | Week-1 | Week-2 | Week-3 | Week-4 | Week-5 | Week-6 | Week-7 | Week-8 | Week-9 | Week-10 | Week-11 |
|----------------------|------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Owner Interview | 11-06-2024 | 18-06-2024 | | | | | | | | | | | |
| Proposal Preparation | 18-06-2024 | 02-06-2024 | | | | | | | | | | | |
| Data Collection | 02-07-2024 | 09-07-2024 | | | | | | | | | | | |
| Data Cleaning | 09-07-2024 | 16-07-2024 | | | | | | | | | | | |
| Data Analysis | 16-07-2024 | 23-07-2024 | | | | | | | | | | | |
| Mid-term Report | 23-07-2024 | 06-08-2024 | | | | | | | | | | | |
| Final Report | 06-08-2024 | 27-07-2024 | | | | | | | | | | | |

Figure 4. Gantt Chart

7. Expected Outcome

- 6.1. Reduced factory shutdowns during seasonal labour unavailability by try to leverage daily-wage workers and pre-planning of leave requests.
- 6.2. Boosted the online presence of the firm in the B2C sector by introduction of the company website.
- 6.3. Introduction of warehousing of products which have constant demand helping to mitigate the impact of labour unavailability even further.