

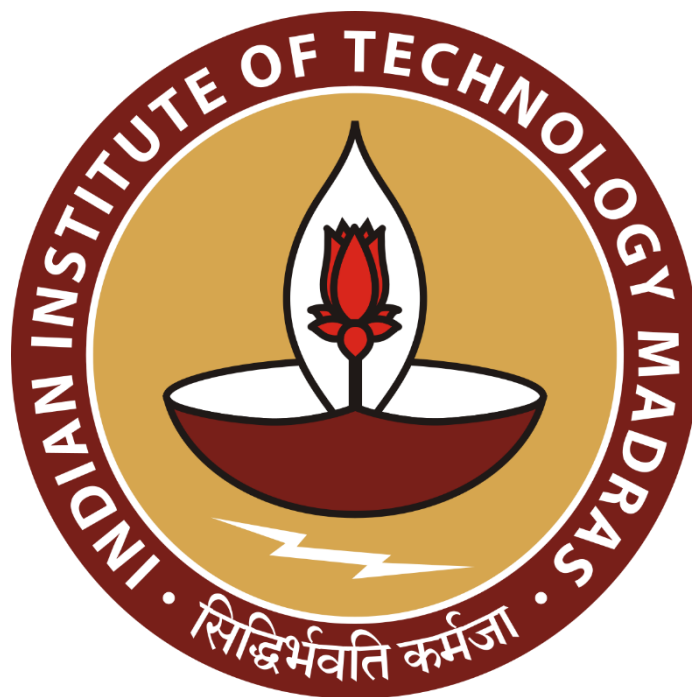
Fluctuations, Foes & Flows: Solving Business Challenges for an Electronics & IT Solutions Provider

A Proposal report for the BDM capstone Project

Submitted by

Name: Antareep Ghosh

Roll number: 23F2001127



IITM Online BS Degree Program,

Indian Institute of Technology, Madras, Chennai

Tamil Nadu, India, 600036

Contents

1	Executive Summary	3
2	Organisation Background	3-4
3	Problem Statement	4
	3.1 Fluctuations and Volatility	4
	3.2 Market Competition	4
	3.3 Slow-Moving Goods	4
4	Background of the Problem	4-5
5	Problem Solving Approach	5-6
	5.1 Methods to be used	5
	5.2 Intended data to be collected	5-6
	5.3 Tools to be used for analysis	6
6	Expected Timeline	6-7
	6.1 Work Breakdown Structure	6
	6.2 Gantt Chart	7
7	Expected Outcome	8

Declaration Statement

I am working on a Project titled “**Fluctuations, Foes & Flows: Solving Business Challenges for an Electronics & IT Solutions Provider**”. I extend my appreciation to **Silicon Systems** for providing the necessary resources that enabled me to conduct my project.

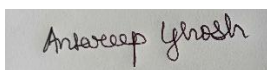
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

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 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. 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 understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.



Signature of Candidate

Name: Antareep Ghosh

Date: 03/02/2025

1 Executive Summary

The project is oriented towards an electronics and IT solutions provider business – Silicon Systems, that is located at 15A, Clive Row in Kolkata. Silicon Systems operates in Business-to-Business (B2B) mode and provides their electronic and technology related products and services to various colleges and educational institutions across West Bengal.

Unfortunately, the business has been facing certain challenges recently that involve difficulty tackling extreme market fluctuations and volatility, hurdles operating in a highly competitive landscape of a saturated market and inability to capture enough sales for their newly introduced products.

The project will aim at using a data-driven approach via use of various data analysis tools and visualizations to find out the possible solutions for the business bottlenecks and try to maximize business growth for the company. Analysis of sales, revenues, stocks, market scenarios and trends in data will be useful for the purpose of the project.

The anticipated results are expected to help the business make better decisions to fight market volatility by maintaining optimum stocks, get a competitive edge over the rivals in the market by maintaining their existing customers and expanding to newer customers using business strategies and enhancing the sales of their slow-moving goods with proper planning.

2 Organisation Background

Silicon Systems is the business in focus for the purpose of this project. It is an ISO 9001:2015 Certified Company, based in Kolkata. Their office is situated in Clive Row, Kolkata and has various warehouses across West Bengal. It is the sole proprietorship of Mr. Atanu Chowdhury, the founder, who established it in 1985.

Silicon Systems is a B2B electronics and IT solutions provider with their products ranging from computers, peripherals, printers, CCTV systems, projectors to electronic components like heavy-duty batteries, solar cells, etc. They also provide installation and repair services. Their products and services are available for colleges and institutions across West Bengal. A minor

portion of their business also includes sales and services for noticeboards, nameplates and acrylics.

Mission and Vision: “Our aim is to become a One Stop Solution for IT product sales and services of every college and university in West Bengal.” - Mr. Atanu Chowdhury.

3 Problem Statement

- 3.1 Fluctuation and Volatility: The sector in which the business operates has a very fluctuating market, in terms of both price and demand. This hinders the businesses from maintaining stocks consistently and reduces business efficiency.
- 3.2 Market Competition: There has been emergence of numerous new players in the market, who try to acquire orders by hook or crook. The business is finding it tough to fight the newcomers.
- 3.3 Slow-Moving Goods: The business has certain items for which they are finding it tough to get orders.

4 Background of the Problem

The conversations with the business owner helped identify three major business problems in Silicon Systems, as has been already mentioned above.

- In the IT and electronic goods market, there is a constant rise and fall in the prices of the goods. In addition to that, due to a huge variety of products, demand for a particular product also varies drastically. In such a scenario, if a product is overstocked, there is a risk of suffering losses due to price change or reduction in demand. Similarly, if a product is understocked, the business might lose potential customers due to their inability to provide the products on time. This is a major issue of this business which needs to be solved by finding an optimization strategy.
- Due to the ever-growing nature of the IT sector, emergence of several new players in the market has occurred. These new players adopt “low quality, low price” strategy to acquire customers quickly. However, Silicon Systems has a reputation among its

customers and is unwilling to compromise the quality of their products to reduce price. This is making them lose certain customers as they are attracted by low price points. A comprehensive data-driven strategy needs to be developed to solve this problem.

- Silicon Systems is finding it hard to get orders for some of their new products, which is causing them scalability issues. Such products need to be identified, and a tactical approach is needed to increase the sales of such products.

5 Problem Solving Approach

5.1 Methods to be used

- To deal with the market fluctuation issue, it is intended to analyze the sales data of the business in great details to figure out products that have seen constant purchases from various sources without much volatility and other products that are highly varying in terms of demand. This will enable the decision-making process of which products should and should not be made readily available in warehouses.
- In order to fight the intense market competition, it is essential to figure out the regular customers of the business. It is also important to figure out the type of products and services that each customer is buying. This will help us identify customers that the business might potentially lose and the ones that are expected to continue doing business with Silicon Systems.
- The problem of slow-moving items can also be solved by identifying the loyal and regular customers of the business and adopting an appropriate approach to introduce and market their products to such customers. Gaining popularity of slow-moving items among old customers can help significantly to bring in new customers as well.

5.2 Intended data to be collected

In order to solve the above-mentioned problems, detailed data analysis is necessary. For the purpose of the project the data that would be required to be collected are as follows:

1. Stock In and Stock Out Data: This dataset will help us identify the products that need to be made readily available in the warehouses and those that can be brought in only when received an order for. This will also help us identify the slow-moving goods of the business and help us develop strategies to solve the same.

2. Sales Data: This dataset is required to detect which items are being sold and of how much amount. This will also help us recognize the services provided by the business. Besides, which customers are buying what items and of how much amount can also be identified by this data.
3. Qualitative Data: Some qualitative data is also essential in order to know the business in great details, the market scenarios, competitors, customers and the industry as a whole.

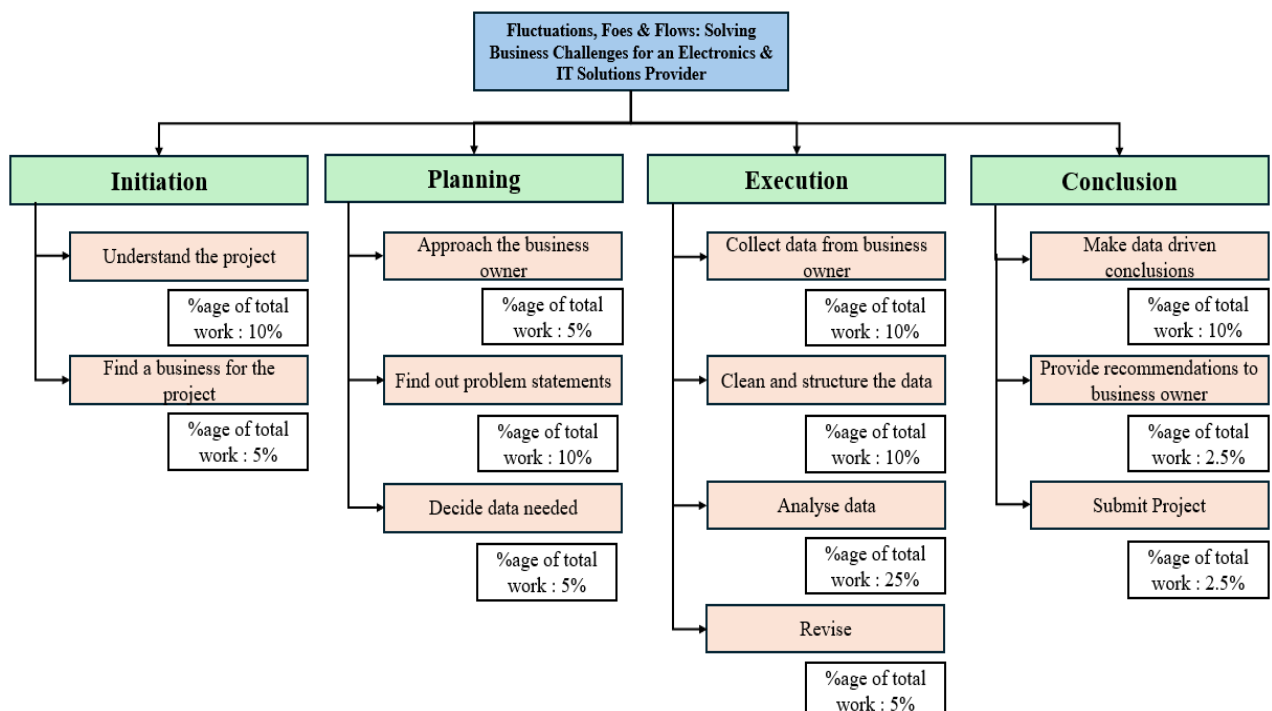
5.3 Tools to be used for analysis

The main tool for analysis would be Microsoft Excel simply because of its convenient and efficient usage of functions and formulas. Visualization of data will also be performed in MS Excel due to ease of usage. Pivot Table would be a vital tool for data analysis within MS Excel. Python would be used for certain tasks including descriptive statistics and some visualizations.

6 Expected Timeline

6.1 Work Breakdown Structure

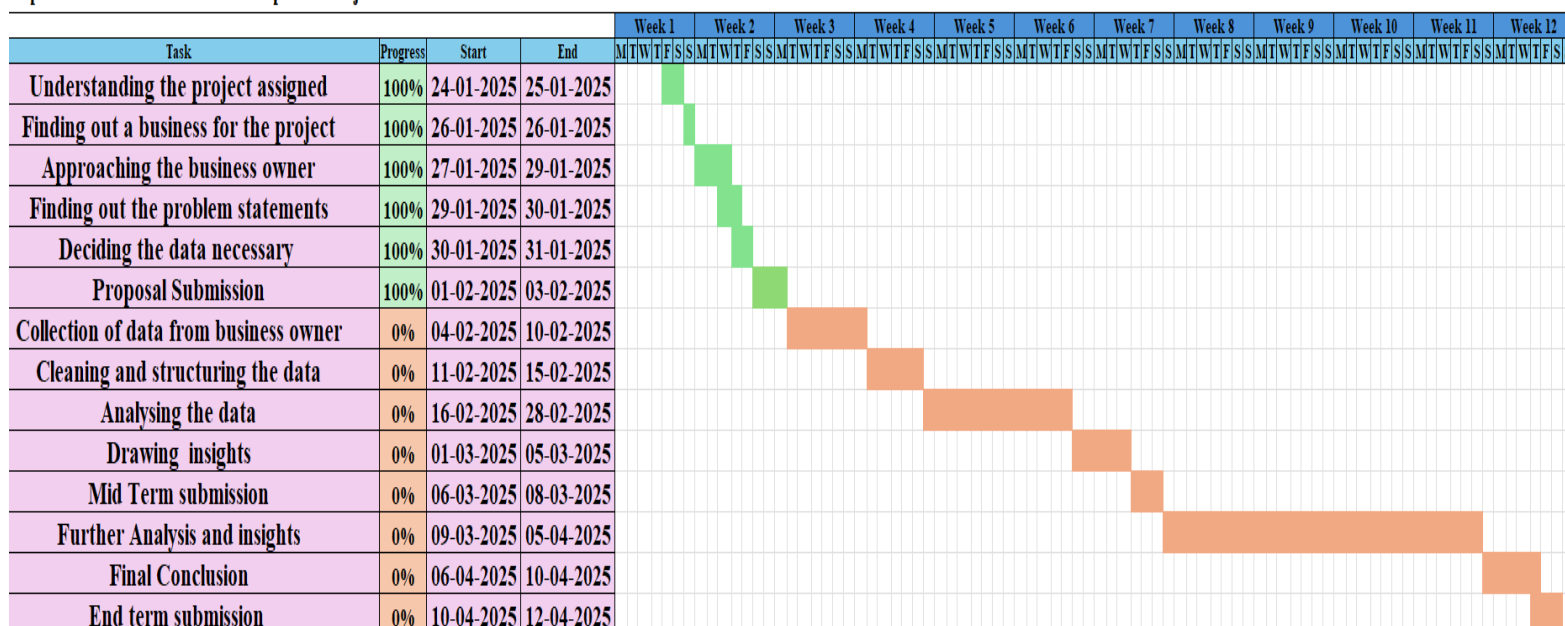
The stepwise breakdown of work and the percentage of the total work that each task accomplishes is given in the Work Breakdown Structure as follows.



6.2 Gantt Chart

The Gantt chart below shows the timeline of work

Expected Timeline for the BDM Capstone Project



- For over a week, the project has been read and understood, a business has been found for the project, the business owner has been approached, problem statements have been researched for, and necessary data has been decided.
- The proposal report has been prepared with all the necessary information.
- Once the proposal is accepted, attempts will be made to collect data from the business owner.
- Collected data will be then cleaned and analyzed for which, a major portion of time will be allocated.
- After the preliminary analysis of data, insights will be drawn, and a mid-term submission will be made
- Succeeding mid-term submission, further extensive analysis of data will be executed.
- Completion of data analysis will result in reaching conclusions that will possibly help the business solve their bottlenecks.
- Finally, end term submission will be made.

7 Expected Outcome

- 7.1 Better management of stock and inventory by segmenting products into ones that must be readily available and the ones that can wait. This will help in reaching an optimum solution to deal with market fluctuations and volatility and, in turn, result in improved business efficiency, better customer service and enhanced acquisition. This will also prevent the loss of customers due to longer waiting times or unavailability of products in time of need while also preventing overloading of warehouses.
- 7.2 Compete strongly against rivals who are acquiring customers by compromising on quality. This will help in maintaining the reputation of the business among customers while not bringing down profit margins or revenues.
- 7.3 Increase the sale of underperforming products and sluggish stock. The approach will make an attempt to find market fit for such products and will also help in gaining popularity in the market in the long run which will ultimately result in holding onto old customers and at the same time bringing in new customers to scale the business.