

## **BDM CAPSTONE PROJECT**

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**COURSE CODE-BSCMS2001P**

**PROGRAM NAME-BS Degree in Data Science and Applications from IIT Madras (Diploma Level)**

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### **EXECUTIVE SUMMARY AND TITLE**

#### ***ASSESSMENT OF “Modern Pipe & Sanitation” DIFFICULTIES AND SOLUTIONS TO THEM USING DATA ANALYSIS.***

For my IITM-BS course's Business Data Management Project, which requires a student to gather, analyse, and use primary data from any business firm in the organized or unorganized sector. I went to the "**Modern Pipe and Sanitation**" to start my BDM project.

Mr. Kailash Agarwal is the Proprietor of the Modern Pipe & Sanitation. Modern Pipe & Sanitation operates from Korba, Chhattisgarh. I spoke with the shop's owner's son Mr. Abhay Agrawal and his wife Mrs. Anshu Agrawal, and they agreed to give the information that he typically manages in a software named “Busy Accounting Software”. Since it was impossible to comprehend all the data in a single meeting, I spoke to him quite often. I asked him to discuss the difficulties he is having in this business as part of this survey. Also, I was impressed by the way he keeps his data. I also gather some miscellaneous information like expenses in maintaining the shop, staff etc.

Some problems which were discussed by him as he stated was “If your revenue is insufficient to survive in the market, there is too much rivalry and a low profit margin in this business type”.

He informed me that their sales were rapidly declining following Covid-19 period, which might be due to less construction site work at that period. A wise man once remarked, “Data really powers everything that we do.” and a quick glance at the shop's data gave me an idea of the issues and the way it could be dealt with.

### **ORGANIZATION BACKGROUND**



- NAME- Modern Pipe and Sanitation
- LOCATION: <https://maps.app.goo.gl/RfEQCMJGD5A6yhRx5>
- FOUNDED IN 2010
- Employee Detail: They have few employees which include salesman, accounting staff etc. Their expenditure for maintaining the shop is around 2-3 lakhs a year.
- Annual turnover of the firm is around 1 cr.
- About the shop: It is well renowned for Modern Pipe & Sanitation in Powerhouse Road, Korba, to adequately meet the needs of its clientele. Since its founding, the company has been well-known in its industry. Leading Water Tank Dealers may be found at Modern Pipe & Sanitation on Powerhouse Road in Korba.

It is committed to putting the needs of its customers first, and it is because of this that the company has developed enduring connections. The provision of top-notch products and/or services and ensuring a favourable client experience are given high priority. It participates in the PVC Pipe and bathroom tile industries, among others. The supplier business is one of the top distributors of the mentioned goods.

The list of trusted merchants on Trade India that offer products of the highest calibre includes Modern Pipe & Sanitation. For the greatest products and services, orders in large quantities are taken. The product/catalogue list for this company comprises items like Two Layer Plastic Water Tank, Polyvinyl Chloride (PVC) Water Pipe, Tiles for Bathroom Wall, etc.

### **PROBLEM STATEMENT**

- HOW TO OPTIMIZE CAPITAL INVESTMENT WITH INCREMENT IN SALES AND REVENUE?
- HOW TO BALANCE SALES AND INVENTORY PROPORTIONALITY?
- HOW TO HOLD ON MORE CONSTRUCTION SITE?

### **BACKGROUND OF THE PROBLEM**

Many business sectors experienced difficulties following Covid-19. One of the major issues was the shift in people's preferences and lifestyles. When I saw the data, I realised that the amount of capital invested in current inventory could be reduced or, at the very least, invested more wisely. It could be due to a shift in the shop's customer base or a shift in the customers themselves.

Also, "Modern Pipe and Sanitation" has been one of the leading shops in the area since its inception, but new shops are entering the market, so they need to stand out. This, I reasoned, could be accomplished by analysing their sales and patterns.

Holding on to more construction sites is also extremely important because major sales is contributed by them. As they give bulk orders which are easy to deliver, and huge sales volume give better revenue.

After Covid -19, construction was halted in many places, resulting in massive losses during that period. So, to get hold on more small construction sites there are some measures which can be adopted like better reach can also be availed if local plumbers and technician recommends the shop name.

### **PROBLEM SOLVING APPROACH**

#### **1.CLEANING OF DATA**

To begin, detailed analysis of the provided data is required to achieve the goal. Cleaning and sorting of data of approximately a year is required, which, of course, contains many errors. Analysis is simple after the data has been cleaned. Cleaning data extracted from Busy accounting software may require several steps to ensure accuracy and readiness for analysis.

Mr. Abhay Agrawal shared with me an excel sheet which has data of about a year.

It has columns like Item Details, Unit Opening Qty, Avg. Price, Opening Amount, Purchase, Average Price, Amount In, Sale, Average Price, Amount Out, Closing Quantity, Price, Closing Amt.

The major problem in the sheet is that it contains more than thousand products and many of the products don't have purchase and sale which basically has no use in analysis.

#### **2.PIVOT TABLE FOR SALES ANALYSIS**

With different categories of product like pipes, fittings, faucets, we need to see which category has highest sales. Pivot tables can also help us to get cumulative sales record for the aforementioned category which otherwise might have been difficult.

#### **3.PARETO CHART**

A Pareto chart is a graphical tool for representing the relative frequency or size of various data categories. It is based on the Pareto principle, which states that approximately 80% of effects are caused by 20% of the causes. So, we can apply this rule by finding the 20 percent product which contributes to 80 percent sales.

#### **4.INVENTORY ANALYSIS IN MS EXCEL**

Inventory analysis is the process of reviewing and evaluating a company's inventory levels, movement, and costs. The analysis is performed to assist a company in optimising its inventory management practises and improving its bottom line. The primary goals of inventory analysis are as follows:

- Identifying obsolete or slow-moving inventory
- Optimizing stock levels
- Reducing inventory costs
- Improving forecasting accuracy
- Increasing inventory turnover

Overall, inventory analysis assists businesses in making informed inventory management decisions, improving customer satisfaction, and increasing profitability.

## 5.CAPITAL INVESTMENT ANALYSIS

With the help of pie chart, we will analyse the categories in which the capital is invested and by how much. The categories will include capital invested, staff maintenance, miscellaneous stuff etc.

## 6.MARGIN ANALYSIS IN MS EXCEL

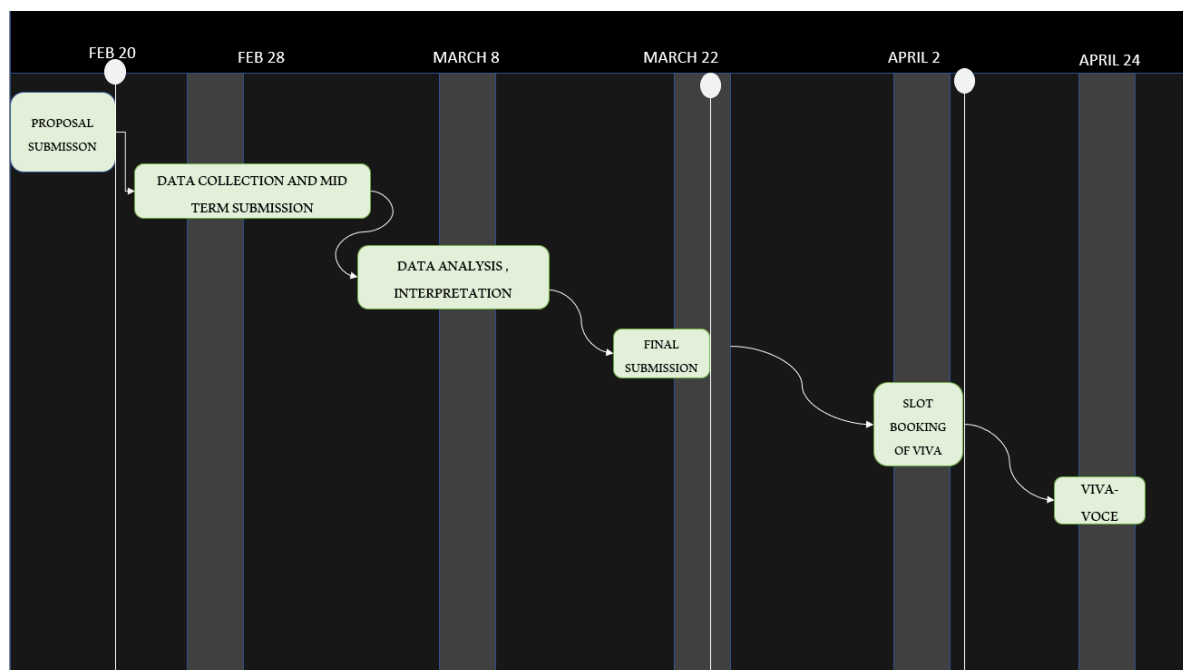
Microsoft Excel includes several tools and functions for performing margin analysis. The following are the steps for performing margin analysis in MS Excel:

- Determine your gross profit.
- Determine your gross profit margin.
- Analyse your results.

In addition to pivot tables and the creation of scenarios to analyse the impact of different variables on your profitability, Excel provides other useful functions for margin analysis. We can gain valuable insights into their margins and make informed decisions to improve profitability by utilising these tools and functions.

### **EXPECTED TIMELINE**

20th Feb 2023	Submission of Proposal
20th Feb To 28th Feb	Analysis of data and preparation of Mid-term submission
Up to 2nd March	Mid - term Submission
Up to 22nd March	Data analysis and Interpretation of data and Final Submission
3rd week of April	Viva-Voce



### **EXPECTED OUTCOME**

- Maximize revenue.
- Better hold on inventory and sales proportionality based on pareto chart principle.
- Increment in sales of products which are more in demand in the market.
- Hold on more construction sites from the local area.