Sales Analytics for a Computer Parts Retailer

A Proposal report for the BDM capstone Project

Submitted By :

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DECLARATION STATEMENT :

I am working on a Project titled "**Sales Analytics for a Computer Parts Retailer**". I extend my appreciation to **WebTech System**, 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: (**Digital Signature**)
Name : Aditya Shanker Srivastava
Date : 25-09-2024

EXECUTIVE SUMMARY :

The project focuses on WebTech System, a retail shop located in Lucknow, specializing in batteries, inverters, and computer components. Operating on a B2C model, the shop caters to individual consumers in the tech and electronics segment, providing a wide range of products like computer parts, WiFi and CCTV solutions.

However, WebTech System faces several significant challenges. Low customer retention is a critical issue, primarily due to the high costs associated with batteries and inverters, which come with long warranty, limiting repeat purchases. Additionally, the shop struggles with inventory mismanagement due to a diverse range of small SKUs, making it difficult to track stock effectively. This mismanagement can affect sales and customer satisfaction. As a result, these challenges contribute to nominal profits and significant money blockage tied up as holding cost.

To address these problems, the project will utilize various analytical methods. Sales trend analysis will identify purchasing patterns, while ABC analysis will prioritize inventory management based on product value. Service record analysis will enhance after-sales support by pinpointing common customer issues. The expected outcome of these analyses will be a reduction in the money tied up in inventory, leading to increased profitability and improved customer satisfaction through better service and product availability.

ORGANIZATIONAL BACKGROUND :

WebTech System is a retail shop specializing in inverters and batteries, founded in 2001 by Mr. Ravi Srivastav. Conveniently located at LGF-25 Nirman Ambika Arcade, IT Chauraha, Lucknow, the store operates from 11 AM to 7 PM. As the sole proprietor, Mr. Srivastav oversees all business operations, ensuring a personalized shopping experience for customers. WebTech System offers a diverse selection of batteries and inverters, prominently featuring the Exide brand, as well as products from other brands like Microtek and V-Guard. In addition to batteries and inverters, the shop also stocks computer components such as monitors, keyboards, mice, printers, and Bluetooth speakers. Furthermore, Mr. Srivastav provides security solutions, including CCTV cameras and D-Link Wi-Fi products, offering essential components like DVRs, routers, and cables.

PROBLEM STATEMENT :

- **Pricing and Retention :** How can WebTech System implement pricing strategies for various SKUs to balance low prices with high sales and high prices with low sales?
- **Inventory Management :** What strategies can be employed to effectively manage a large number of SKUs, especially with diverse components, in a small retail space?
- **Operational Efficiency and Marketing :** How can Mr. Srivastav improve operational and service efficiency while simultaneously enhancing marketing efforts for the various services offered?

BACKGROUND OF THE PROBLEM :

WebTech System sells products such as batteries and inverters, which have a significantly higher unit cost compared to smaller components like cables, mice, and keyboards. The sales volume for these two categories differs significantly; batteries and inverters typically come with warranties of 3 to 5 years, leading to low customer retention since repeat purchases are very less. While these products can give one-time profits, their longevity means customers are less likely to return, presenting a challenge for WebTech in maintaining steady revenue from returning customers.

Additionally, the diverse range of products offered, including small computer and Wi-Fi components, complicates inventory management for a retail shop. Items like RAM and drives are not only small and easy to misplace but also carry a risk of theft. Effectively managing inventory and ensuring the availability of these components is crucial for WebTech to enhance customer trust and retention. A well-organized inventory can position the store as a reliable source for tech enthusiasts, increasing loyalty and repeat business.

Mr. Srivastav, as the sole proprietor, also faces operational inefficiencies in managing a wide variety of products and providing after-sales service for batteries, Wi-Fi products, and CCTV systems. This can lead to delays and inconsistencies in service quality, affecting overall customer satisfaction. Moreover, the diverse range of services requires effective marketing strategies to boost customer footfall. Improving operational efficiency and enhancing marketing efforts are essential for driving growth and increasing visibility in a competitive market.

PROBLEM SOLVING APPROACH :

METHODS USED :

For pricing and retention at WebTech System, **sales data analysis** and customer segmentation can help identify purchasing trends and refine pricing strategies, while profit margin analysis will optimize pricing across different SKUs. In terms of inventory management, **ABC analysis** will prioritize items based on their value, and stock level analysis will ensure optimal inventory levels for both high-demand and slow-moving products. Additionally, **service record analysis** can be conducted to assess the effectiveness of after-sales services and identify areas requiring specialization based on market demand. By reviewing service records, Mr. Ravi can pinpoint common customer issues, measure response times, and evaluate customer satisfaction, ensuring that WebTech System meets customer expectations and remains competitive in the market.

DATA COLLECTED :

Sales data is essential for conducting sales analysis to identify purchasing trends and evaluate overall performance. **Customer data** will facilitate customer segmentation, allowing the shop to categorize customers based on behavior and preferences. **Pricing data** is necessary for analyzing purchasing prices and optimizing pricing strategies across different SKUs, while **profit margin data** will enable the assessment of profitability for individual products and overall lines. Additionally, **service records** are required for service data analysis, providing insights into customer issues, response times, and resolutions to evaluate the effectiveness of after-sales services.

TOOLS USED :

Excel will be our main tool for organizing and doing basic calculations on sales and inventory data. For more advanced data cleaning and analysis, we will use **Python**, specifically the **Pandas** library for handling data and **NumPy** for calculations. To create easy-to-understand visuals, we will use **Datawrapper** to make charts and graphs that show trends and patterns. Lastly, we will use **Google Docs** for documentation.

EXPECTED OUTCOME :

- Improved pricing strategies leading to higher customer retention and increased sales revenue.
- Better inventory management resulting in less stockouts and better availability of products.
- Enhanced after-sales service efficiency, leading to increased customer satisfaction

EXPECTED TIMELINE :

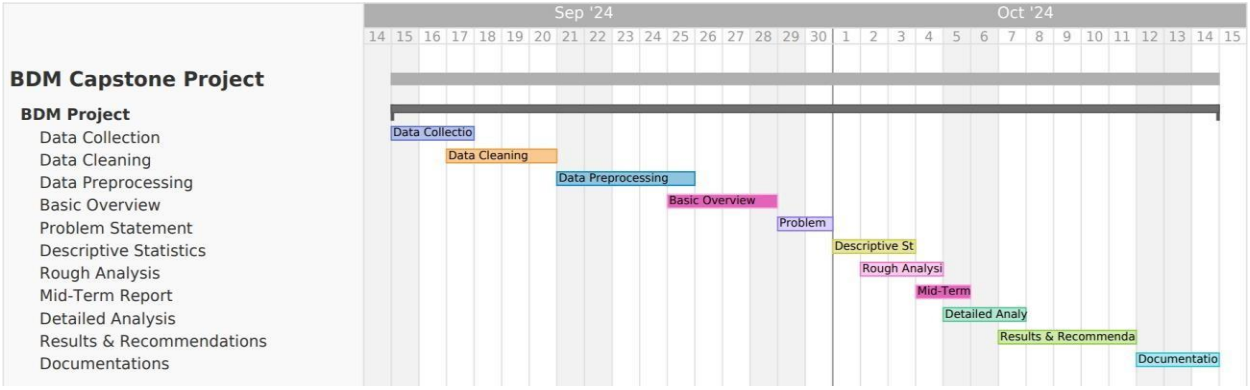

Figure 1 : A Gantt Chart

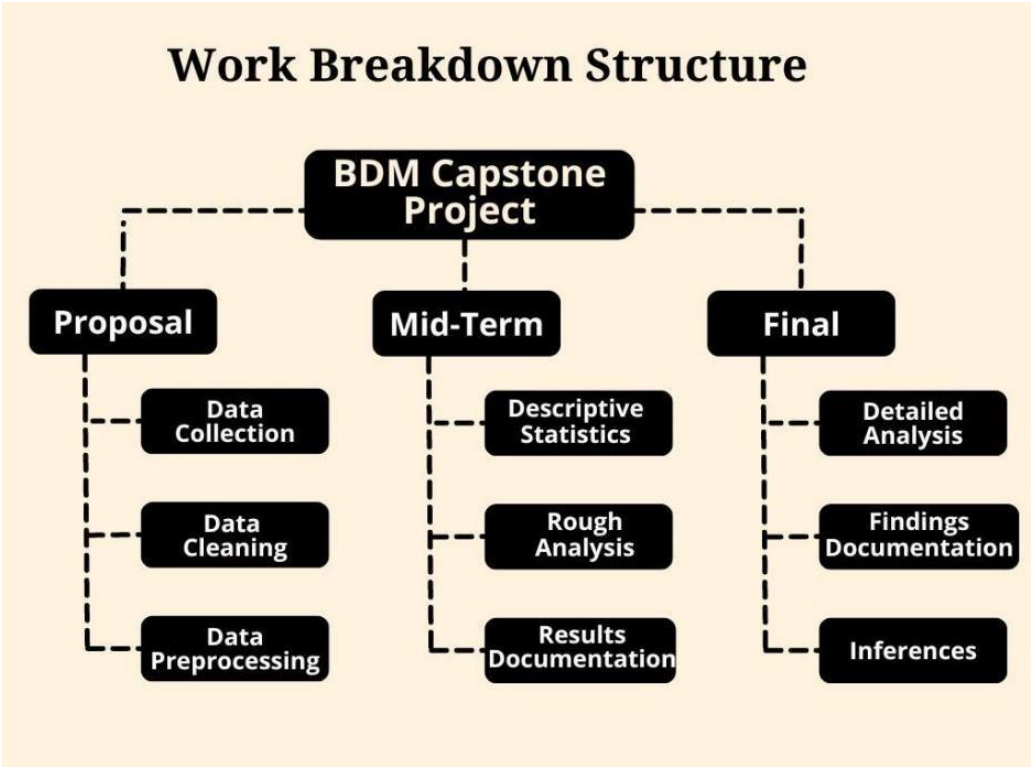

Figure 2 : A Work Breakdown Structure