

Business Requirements Document (BRD)

1. Business Problem:

The retail store is facing challenges due to a lack of understanding of its diverse customer profiles. This has resulted in untargeted marketing strategies that do not effectively address the needs and preferences of various customer segments. As a consequence, the store is missing opportunities to enhance customer satisfaction and optimize sales.

2. Business Objectives:

The primary objectives of this project are:

Improve Customer Satisfaction:

By understanding different customer segments, the retail store can tailor its marketing efforts and product offerings to meet specific customer needs, leading to higher satisfaction levels.

Increase Sales: Targeted marketing strategies based on customer segmentation can drive more effective promotions and product recommendations, ultimately boosting sales and revenue.

3. Functional Requirements:

The following functional requirements outline the key capabilities needed for the project:

Data Analysis:

- Collect and preprocess customer data from various sources (e.g., transaction data, customer demographics).
- Perform exploratory data analysis (EDA) to identify trends, patterns, and correlations within the data.

Clustering:

- Implement K-Means clustering to segment customers based on purchasing behavior and demographic information.
- Determine the optimal number of clusters using methods such as the Elbow Method or Silhouette Score.
- Validate and assess the quality of the clusters generated.

2. Visualization:

- Create visualizations using Matplotlib to represent customer segments and their characteristics.
- Develop dashboards in Power BI to present insights in an interactive format for stakeholders.
- Generate reports summarizing findings, insights, and recommendations for marketing strategies.

4. Non-Functional Requirements :

The following non-functional requirements are essential to ensure the success and effectiveness of the project:

Performance:

- The data analysis and clustering processes should be optimized to handle large datasets efficiently, ensuring timely results.
- Visualizations and dashboards should load quickly to facilitate real-time decision-making.

Scalability:

- The solution should be designed to accommodate future growth in customer data. It should be able to scale horizontally or vertically as needed, without significant rework.
- The clustering algorithm should be adaptable to incorporate new customer data as it becomes available.

Usability:

- The final dashboards and reports should be user-friendly, allowing stakeholders with varying levels of technical expertise to navigate and interpret the data easily.
- Documentation and training materials should be provided to ensure users can effectively utilize the insights generated from the project.

5. Stakeholders:

- **Project Sponsor:** LATHIGAA
- **Marketing Team:** Responsible for implementing targeted marketing strategies based on insights.
- **Data Analysts:** Involved in data collection, analysis, and reporting.
- **IT Team:** Ensures the infrastructure is in place to support data analysis and visualization tools.

6. Success Criteria:

- Successful segmentation of customers into distinct groups, validated by stakeholder feedback.
- Increased customer satisfaction scores following the implementation of targeted marketing strategies.
- Measurable increase in sales attributed to the new marketing approaches based on customer insights.

This Business Requirements Document serves as a foundational guide for the project, ensuring all stakeholders are aligned on the objectives, requirements, and expected outcomes.