Business Requirement Document (BRD)

Project Name: Q1 2025 Sales Performance Analysis Report - Amazon Dataset

Prepared By: Team Alpha

Date: 24-02-25

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1. Introduction

1.1 Purpose

The purpose of this document is to outline the business requirements for the Q1 2025 Sales Performance Analysis Report. The report aims to analyze product sales performance on Amazon based on available data, providing insights into key factors influencing revenue, sales volume, and customer engagement. This includes understanding key sales trends, the impact of discounts and ratings on sales, and identifying top-performing products. The dataset used contains various product-related attributes such as product details, pricing, ratings, reviews, and category information.

1.2 Objectives

- Clean and preprocess the dataset to ensure data quality.

- Identify key sales trends and patterns.

- Estimate sales volume using rating count as a proxy.

- Analyze factors affecting sales, such as discounts, ratings, and product categories.

- Generate insights for business decision-making.

1.3 Scope

This project will focus on analyzing sales data, estimating revenue, and identifying trends using available datasets. The analysis will be used to support business decisions related to pricing, discount strategies, and product performance.

1.4 Stakeholders

- **Project Head:** Oversees overall execution and ensures alignment with business goals.

- **Team Lead**: Manages daily operations and coordination among team members.

- **Data Engineers:** Responsible for data preparation and transformation.

- **Data Analyst Team:** Performs in-depth sales analysis and trend identification.

- **BI Developer Team:** Develops interactive dashboards and visual reports.

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2. Business Objectives

- Provide a comprehensive sales performance analysis for Q1 2025.

- Identify top-performing and low-performing products.

- Understand the impact of discounts and pricing on sales.

- Analyze the effect of customer ratings on product sales.

- Deliver insights for strategic decision-making in pricing and marketing.

- Identify the Total Estimated Sales and Revenue For Estimating Sales

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3. Key Requirements

3.1 Team Structure & Responsibilities

The dataset initially contained multiple columns that required cleaning and transformation. The data team was structured as follows:

- **4 Data Engineers:** Responsible for data cleaning and preparation.

  o **Data Engineer 1:** Cleans product_id, product_name, category, and about_product.

  o **Data Engineer 2:** Cleans discounted_price, actual_price, and discount_percentage.

  o **Data Engineer 3:** Cleans rating, rating_count.

  o **Data Engineer 4:** Cleans user_id, user_name, review_id, review_title, review_content.

- **3 Data Analysts:** Performed exploratory data analysis (EDA) and identified key insights.

  o **Data Analyst 1:** Making the Pivot Table , Analyzing the Total Distinct Category

  o **Data Analyst 2:** Calculating of Average of Discount Percentage ,Sum of Revenue ,Sum of Estimated Value, Average Of Rating.

  o **Data Analyst 3:** Make a Report of all Analysis Part

- **6 BI Developers:** Built visualizations and dashboards to present insights.

3.2 Functional Requirements

1. **Data Cleaning & Preparation:**

   o Remove duplicates and null values.

   o Convert pricing and discount fields into numerical values.

   o Standardize rating and review data.

- Null & Duplicate Check:
  - Perform data consistency checks to remove duplicates and inconsistencies.
  - Handle missing values by selecting all empty cells and filling them with appropriate values.
  - Use =AVERAGE(B:B) to replace missing rating counts with the average rating count.

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2. **Sales Estimation & Revenue Calculation:**
   - Use **rating_count** as a proxy for estimating sales.
   - Apply a conversion factor (10) to estimate total sales.
   - Since actual sales quantity is not available, an estimated sales quantity is calculated using:

     Estimated Sales = rating_count * Conversion Factor (10)
   - Calculate total revenue using the formula:

     Total Revenue = Discounted Price * Estimated Sales Count

3. **Sales Analysis:**
   - Identify the impact of discounts on sales volume.
   - Determine how product pricing influences sales.
   - Categorize products based on sales performance.
   - Compare high-rated vs. low-rated product sales.
   - Generate a ranked list of top-performing and bottom-performing products.

Top 5 Revenue-Generating Categories

1. **Electronics** – ₹586.49 billion
2. **Home & Kitchen** – ₹62.64 billion
3. **Computers & Accessories** – ₹60.90 billion
4. **Musical Instruments** – ₹644.58 million
5. **Office Products** – ₹457.87 million

Highest Discounted Categories (Avg. Discount %)

1. **Home Improvement** – 57.5%
2. **Computers & Accessories** – 53.89%
3. **Health & Personal Care** – 53%
4. **Electronics** – 50.49%
5. **Musical Instruments** – 46%

4. **Dashboard & Reporting:**

   o Display key sales metrics in an interactive dashboard.

   o Provide **Top 5 & Bottom 5** products based on revenue.

   o Allow category-wise and rating-based filtering.

3.3 Non-Functional Requirements

- The analysis should be completed within a specified timeframe.

- The dashboard should be user-friendly and accessible to stakeholders.

- Data processing should ensure accuracy and reliability.

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4. Assumptions & Constraints

- Actual sales data is not available, and sales volume is estimated using rating count.

- Conversion factor (10) is assumed for estimating sales from ratings.

- Some missing values are handled using average-based imputation.

- Data accuracy depends on the quality of the Amazon dataset.

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5. Success Criteria

- Successful generation of Q1 2025 Sales Performance Report.

- Dashboard providing actionable insights for decision-making.

- Identification of key trends in sales, pricing, and ratings.

- Improved business strategy based on report findings.

6. Deliverables & Timeline

6.1 Deliverables

- Cleaned dataset with structured columns.

- Sales estimation report.

- Insights report on factors influencing sales.

- Dashboard for sales Performance Analysis.

- Final presentation to stakeholders.

6.2 Timeline

Task	Responsible	Deadline
Data Cleaning	Data Engineers	23-02-25
Data Analysis	Data Analysts	24-02-25
Dashboard Development	BI Developers	24-02-25
Final Report Submission	Team Lead	25-02-25

7. Conclusion

This BRD outlines the scope, objectives, and methodology for analyzing Q1 2025 Amazon sales performance. The project aims to derive meaningful insights to assist in business decision-making by leveraging data cleaning, sales estimation, and BI visualization techniques.

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