Chandigarh College of Engg. & Tech.

CCET
(Diploma Wing)

Software Requirement Specification

On

Data Analysis & Visualization Using Power BI for Blinkit

Submitted To:

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Power BI

Preface

In today's fast-paced digital economy, **data-driven decision-making** is essential for businesses seeking to optimize their operations and maximize revenue. This project, **"Blinkit Sales Analysis using Microsoft Power BI**," aims to develop an interactive business intelligence dashboard that provides valuable insights into **sales performance, customer purchasing behavior, and outlet efficiency.**

The core objective of this project is to transform raw sales data into actionable insights using Microsoft Power BI. The dashboard will integrate Blinkit grocery sales data, **apply ETL (Extract, Transform, Load)** processes, and **leverage DAX** (Data Analysis Expressions) to calculate **key performance indicators (KPIs)**. The result will be an intuitive and visually engaging platform that allows users to explore sales trends, product demand, and customer satisfaction metrics.
This Software Requirements Specification (SRS) document provides a detailed overview of the project.

The Power BI dashboard developed in this project will help businesses monitor **sales trends, compare product performances, and identify areas for improvement, ultimately driving better business strategies and operational efficiency**. This project serves as a practical demonstration of how business intelligence tools can be leveraged to gain a competitive edge in the retail industry.
This work is a culmination of extensive research, data analysis, and practical application of Power BI's capabilities to deliver a solution that aligns with modern data analytics standards. I sincerely hope that this project contributes to the growing field of business intelligence and data visualization, helping organizations harness the power of data for strategic decision-making.

Power BI

Project Overview

This project analyzes Blinkit grocery sales data using Power BI to identify trends, customer preferences, and outlet performance. The dataset includes sales metrics, product categories, and store details. Data preprocessing, modeling, and visualization were done using Power BI, Excel, and DAX. Key insights include top-selling items, sales distribution, and outlet performance analysis. The project helps in data-driven decision-making and optimizing business strategies. Future enhancements include predictive analysis and real-time data integration.

Duration

6-7 Weeks

Tools Used

PowerBI

Excel

Dataset Reference

Kaggle

INTRODUCTION

Blinkit is a **pioneering online grocery delivery platform** in India, recognized for its exceptionally **fast service and seamless user experience**. With a vision to simplify daily shopping, Blinkit ensures that customers receive their essentials swiftly and efficiently. Originally launched as **Grofers**, the company underwent rebranding to better reflect its commitment to rapid delivery, bringing products to customers in the blink of an eye.

Since its establishment in **2013, Blinkit has continuously evolved, integrating cutting-edge technology and real-time tracking to streamline grocery shopping**. By collaborating with local vendors and suppliers, the platform has created a strong supply network that meets the dynamic needs of urban consumers.

PURPOSE

The purpose of this project is to **analyze and visualize** Blinkit's grocery sales data using **Power BI** to derive meaningful **business insights**. With the growing demand for online grocery shopping, it is crucial for businesses to understand **customer behavior, sales trends, and product performance to enhance operational efficiency.**

This project leverages data analytics and visualization techniques to provide a comprehensive overview of **sales performance, revenue distribution, and consumer preferences.**

Through this analysis, businesses can make **data-driven decisions** regarding **inventory management, pricing strategies, and marketing campaigns.** Ultimately, this project **serves as a tool** to optimize business performance, improve customer satisfaction, and drive strategic growth in the competitive online grocery market.

Power BI

SCOPE OF THE PROJECT

This project focuses on **analyzing Blinkit's grocery sales data** using **Power BI** to provide interactive **dashboards** and **insightful reports**. The scope includes **data collection, preprocessing, visualization, and interpretation to support business decision-making.**

The key areas covered in the project are:

- **Sales Analysis:** Evaluating sales by product *category, region, and outlet type.*
- **Trend Analysis:** Examining trends in *sales, customer ratings, and item visibility.*
- **Outlet Performance:** Comparing outlets based on *size, location, and establishment year.*
- **Customer Insights:** Identifying customer preferences based on product types and sales.
- **Dashboard Creation:** Developing a Power BI dashboard with interactive features for real-time data analysis and decision-making.

BUSINESS REQUIREMENTS

To conduct a comprehensive analysis of **Blinkit's** sales performance, customer satisfaction, and inventory distribution, this project aims to leverage Power BI to generate actionable insights. By utilizing various **KPIs and visualizations,** the goal is to optimize business processes, improve decision-making, and enhance customer experiences. The analysis will cover multiple aspects, **including sales trends, product demand, outlet performance, and customer ratings.**

Key Business Objectives:

1. **Total Sales Performance Evaluation:** The overall revenue generated from all items sold
2. **Average Sales:** The average revenue per sale.
3. **Number of items:** The total count of different items sold.

4. **Average Rating:** The total average customer rating for items sold.

SYSTEM HARDWARE AND INVENTORY OVERVIEW

Hardware Requirements:

To efficiently run Power BI and handle large datasets for analysis, the following hardware specifications are recommended:

- **Processor:** Intel Core i5 (10th Gen or above) / AMD Ryzen 5 or higher
- **RAM:** Minimum 8GB (16GB recommended for large datasets)
- **Storage:** 256GB SSD (512GB SSD recommended for faster processing)
- **Graphics:** Dedicated GPU (optional but beneficial for complex visualizations)
- **Operating System:** Windows 10/11 (64-bit) or macOS (for Power BI Service)

Inventory Overview

*The project deals with **grocery sales data**, which includes:*

- **Product Categories:** Fresh produce, packaged goods, beverages, household essentials
- **Outlet Types:** Supermarkets, grocery stores, convenience stores
- **Sales Metrics:** Revenue, total sales, average ratings, outlet performance
- **Customer Insights:** Preferences, buying patterns, and regional demand

This **hardware and inventory setup** ensures smooth data processing, efficient dashboard creation, and real-time insights for business optimization and decision-making.

Power BI

GUIDELINES FOR BLINKIT ANALYSIS DASHBOARD

- **Data Accuracy & Integrity:** All sales and customer data must be accurate and regularly updated to reflect real-time business operations.
- **Standardized Data Entry:** Sales records, customer ratings, and inventory logs should follow a uniform format to maintain consistency.
- **Decision-Making Guidelines:** Insights derived from the dashboard should be aligned with business strategies, such as improving fast-selling product categories and optimizing inventory.
- **Regular Updates:** The dashboard must be refreshed at predefined intervals (e.g., every 30 minutes) to ensure data relevance.

FEASIBILITY ANALYSIS

The feasibility of the Blinkit Analysis Dashboard is assessed across different parameters to ensure a successful implementation and operational efficiency.

1. Technical Feasibility

- The dashboard is built using Power BI, a well-supported data visualization tool with seamless integration capabilities.
- Supports real-time data refresh to ensure up-to-date insights on sales, customer ratings, and inventory levels.
- Can be deployed on desktop, web, and mobile platforms, making it accessible to business users across devices.

2. Economic Feasibility

- Cost-effective solution compared to custom-built analytics software, as Power BI offers affordable licensing plans.
- Reduces operational costs by providing data-driven insights, optimizing inventory, and improving sales forecasting.
- Helps businesses identify profitable products and outlets, leading to increased revenue and better resource allocation.

3. Operational Feasibility

- The dashboard is designed with user-friendly interfaces, making it easy for non-technical users to operate.
- Provides interactive visualizations to help business analysts make quick and informed decisions.

4. Schedule Feasibility

- The estimated development time for the **dashboard is 7-8 weeks**, considering data preparation, dashboard design, and testing.
- Regular updates can be rolled out periodically to add new features and optimize performance.

DATA INTEGRITY REQUIREMENTS

To ensure accurate, reliable, and secure data handling, the following data integrity requirements must be met:

1. Accuracy and Consistency

- Data must be collected from verified sources such as Blinkit's sales records, inventory databases, and customer feedback systems.
- Standardized data entry formats should be followed to maintain uniformity across different reports and dashboards.

2. Data Validation and Backup

- Incoming data should go through validation checks to prevent incorrect or duplicate entries.
- Data should be backed up at regular intervals to prevent loss due to system failures.

By implementing these **feasibility measures** and **data integrity requirements**, the Blinkit Analysis Dashboard will provide accurate, secure, and actionable insights for business decision-making.

Power BI

FEATURE	TABLEAU	POWER BI
Data Visualization	Tableau provides strong data visualization and is one of the main data visualization tool in the market.	Power BI provides a strong backend data manipulation feature with access to simple visualizations
Dataset size	Tableau can connect much larger datasets as compared to Power BI	Power BI has a limit of 1GB data in free version.
Data Sources	Tableau covers a vast range of data sources to connect with for data visualization. In Tableau, you select the dataset first and visualizations are used on the fly.	Power BI covers most of the data sources available in Tableau. It is closely integrated with Office 365, hence provides connectivity to SharePoint. Power BI online version also supports direct visualization on Search Engine, though, only Bling is supported at this point.
Costing	Tableau is expensive as compared to Power BI but still under budget for small and medium enterprise.	Power BI provides a free version with 1GB limit on dataset. Power BI Pro is also a cheaper solution when compared with any other BI tool
Implementation	Tableau provides different implementation types as per organizational needs panning from few hours to few weeks	Power BI uses cloud storage and includes simple implementation process.