Strategic Decision Making Using PowerBi

PRE-REPORT SUBMISSION

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Pre-Report for Sales Analysis Dashboard

1. Problem Statement

The company seeks to derive actionable insights from its sales dataset to optimize performance and decision-making. The objective is to understand trends in revenue, customer behavior, product profitability, and regional sales distribution. This analysis will support identifying growth opportunities, improving operational efficiency, and maximizing profit margins.

2. Data Requirement

The dataset requirements for the analysis include:

- **Revenue Metrics:** Sales, profit, and loss data by product and region.
- **Operational Metrics:** Quantity sold, delivery times, and returned orders.
- **Customer Information:** Customer names, categories, and contributions to profit.
- **Segment Details:** Sales by market segments (Consumer, Corporate, Home Office).
- **Geographic Data:** Sales performance across global regions such as North America, Europe, Asia Pacific, etc.
- **Product Information:** Details on top-performing and loss-incurring products.

3. Data Collection

The sales data was provided in the form of an .xlsx file titled "Superstore Dataset." The file includes comprehensive transactional records:

- Product details
- Customer profiles
- Transaction dates
- Delivery data
- Geographic segmentation

The dataset contains all necessary columns to perform the required analysis.

4. Data Validation

Validation steps were undertaken to ensure accuracy and reliability:

- **Completeness:** Verified no critical data fields (e.g., sales, profit, region) were missing.
- **Consistency:** Checked for uniform formatting, such as dates and numeric

fields.

- **Accuracy:** Removed any duplicate or erroneous records, such as negative delivery days or mismatched regional data.
- **Outlier Analysis:** Identified and managed outliers in profit/loss data to avoid skewed visualizations.

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5. Data Cleaning

After validation, the following cleaning processes were performed:

- **Duplicate Records:** Identified and removed duplicate entries to ensure data integrity.
- **Missing Values:** Filled missing entries in non-critical columns with averages or median values for consistency.
- **Formatting Errors:** Corrected inconsistent data formats, especially for dates, numeric entries, and categorical labels.
- **Standardization:** Harmonized geographic names and product categories for seamless analysis.

These steps ensured a clean dataset ready for Power BI visualizations.

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6. Tools

The following tools were utilized during the project:

- **Microsoft Excel:** For initial data validation, cleaning, and preprocessing.
- **Power BI Desktop:** To create an interactive and dynamic dashboard, providing real-time analytics and data storytelling.

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7. Dashboard
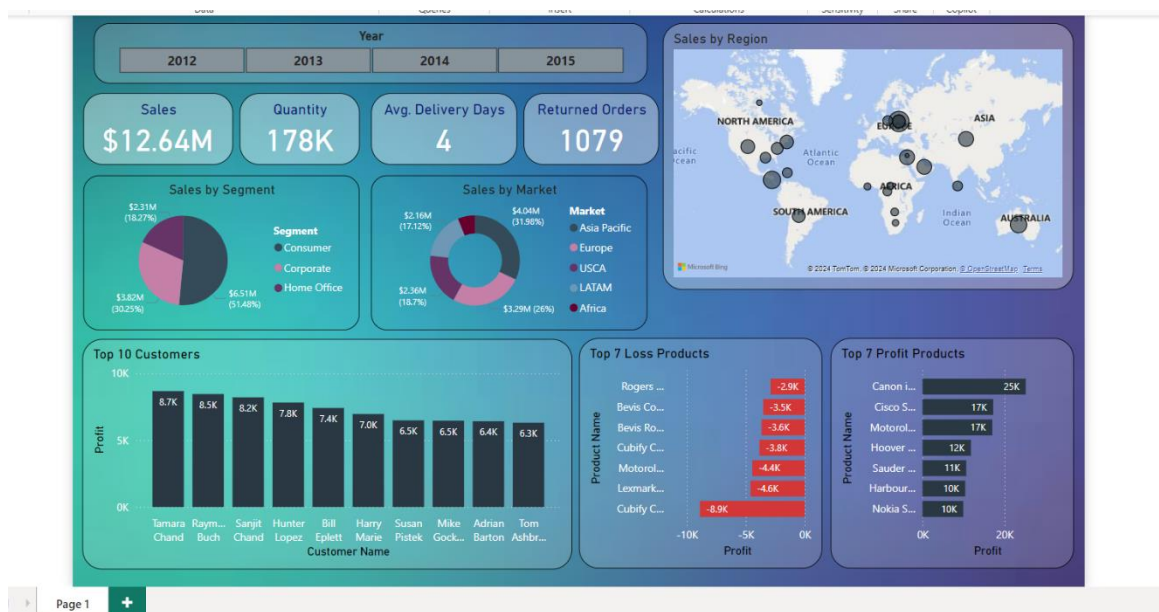
The Power BI dashboard highlights key business metrics and trends through an intuitive design:

- **KPIs (Key Performance Indicators):**
  - Total Sales: $12.64M
  - Quantity Sold: 178K
  - Average Delivery Days: 4
  - Returned Orders: 1079
- **Visualizations:**
  - **Sales by Segment:** Pie chart showing distribution across Consumer (31.27%), Corporate (51.48%), and Home Office (17.25%).
  - **Sales by Market:** Regional sales breakdown via pie chart and map (e.g., USCA contributes 31.91%).
  - **Top Customers:** Bar chart identifying the top 10 customers by profit, with Tamara Chand leading at $8.7K.
  - **Top Products:** Two bar charts showcasing the top 7 profitable products (e.g., Canon Inkjet with $25K profit) and top 7 loss-incurring products (e.g., Cubify Cube with a $-8.9K loss).
  - **Global Map:** Sales visualized across continents for an at-a-glance understanding of regional performance.

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8. Storytelling

The dashboard conveys an insightful narrative about the business:

- **Regional Insights:** North America and Europe dominate sales, suggesting potential to expand in underserved markets like Africa and LATAM.
- **Customer Insights:** A small set of high-value customers contributes significantly to overall profitability, emphasizing the need to retain and expand such relationships.
- **Product Trends:** Top profit products like Canon Inkjet and Nokia Smart phones indicate opportunities for scaling, while loss-making products like Cubify Cube signal areas for cost-cutting or strategic exits.
- **Operational Metrics:** An average delivery time of 4 days is competitive but could be optimized for better customer satisfaction. Similarly, analyzing the causes behind 1079 returned orders could reveal actionable improvements.

The dashboard enables a data-driven approach to decision-making, fostering growth and efficiency.