Power BI Exec Dashboard – Ishita Joshi

This project utilizes the Adventure Works dataset, a fictitious dataset developed by Microsoft. Comprising multiple tables, this dataset enables analysis of various insights such as revenue analysis, product performance, customer base analysis, and identification of areas for improvement.

1. Data

In this section, an overview of the Adventure Works dataset is provided. The dataset consists of 6 lookup tables: Calendar lookup, Customer lookup, Territory lookup, Product lookup, Product category lookup, and Product subcategory lookup. Additionally, there are 2 data tables: Sales Data and Return Data. The lookup tables are static, while the data tables are dynamic, meaning they can be updated with new information.

To establish relationships between the data tables and lookup tables, a snowflake data model is used, where primary and secondary keys are employed. Furthermore, calculated tables are included, which contain DAX (Data Analysis Expressions) formulas. These calculated tables facilitate the analysis of the dataset and offer insights into fields such as revenue, profit, return rate, and more.

2. Visualization

The dashboard can be accessed in the report view tab on Power BI, where you can explore and interact with the visualizations. In addition, the dataset includes logos representing the company's branding. The colors used for the visuals were carefully selected to align with the company's logo, ensuring a cohesive and consistent design. The design of the dashboard was created in accordance with the guidelines provided in the course, allowing for a structured and organized presentation of the data.

A. Executive Dashboard.

This tab offers a comprehensive financial overview of the company's performance, designed to cater to the needs of a team of executives. The dashboard is interactive, allowing easy and effective data analysis.

Key performance indicators (KPIs) such as Revenue, Profit, Number of Orders, and Return Rate are prominently displayed using cards, providing a quick snapshot of the company's performance.

To gain deeper insights into revenue trends, a line chart is included. The chart can be zoomed in using a slider, enabling a closer examination of revenue fluctuations over time.

For a more detailed analysis of the Number of Orders, an interactive stacked bar chart is provided. The chart breaks down the orders by category, and hovering over the bars reveals specific KPIs for each category. Clicking on the bars applies a data filter, updating all the KPIs in the tab to display information solely for the selected category.

Further down the tab, a table showcases the top 10 best performing products. This table is interactive as well, allowing to click on a specific row to filter the data and view the performance numbers for that particular product.

Lastly, two static KPI cards showcase the most popular and most returned product types, providing valuable insights into customer preferences and product performance.

B. Map

The second tab of the dashboard features an interactive map that provides a comprehensive overview of the company's performance in different geographic regions. The company's presence in North America, Europe, and the Pacific is represented by data slicers located above the map, allowing for easy selection of specific regions.

Hovering over the data points on the map reveals the number of orders from each country, providing valuable insights into the company's performance in various locations. This interactive map allows for a visually engaging presentation of the company's geographic reach and helps highlight key trends or patterns within specific regions.

C. Product Detail

The third tab of the dashboard is dedicated to the "Product Detail" analysis. It allows for a focused examination of product-specific key performance indicators (KPIs). The right-hand side of the tab features a filter pane that facilitates the selection of specific products for analysis, enabling a detailed evaluation of individual products.

In the bottom left corner, there is a section for product metric selection. This feature allows for the choice of various KPIs, such as revenue, profit, return rate, and more. By selecting a specific metric, the tab presents the corresponding trends and insights related to that particular KPI for the chosen products.

The "Product Detail" tab provides an effective means of evaluating and understanding the performance of individual products, aiding in decision-making and identifying areas for improvement or investment based on the analyzed product-specific KPIs.

D. Customer Detail

The fourth tab of the dashboard is dedicated to the "Customer Detail" analysis. It provides analytical insights derived from the customer base, allowing for a comprehensive understanding of customer behavior.

In this tab, there is a line chart that presents trends for total customers and revenue per customer over time. This chart helps identify patterns and changes in customer behavior, enabling a deeper understanding of customer growth and revenue generation per customer.

On the left side of the tab, there are interactive donut charts that categorize customers based on income and occupation. These charts offer a visual segmentation of customers. Users can select specific areas within the donut charts to filter the dashboard accordingly, focusing on specific customer segments of interest.

The "Customer Detail" tab provides valuable insights into customer behavior, enabling a data-driven approach to decision-making and facilitating the exploration of customer segments based on income and occupation.

E. Q&A

The fifth tab of the dashboard is the Q&A tab, utilizing the intuitive features of Power BI. It serves as a dynamic tool for answering a wide range of data-related questions.

Using natural language queries, this tab allows for the retrieval of information on various aspects of the dataset. Examples of possible queries include retrieving returns per month, orders per month, or revenue in a specific country.

By leveraging the Q&A functionality of Power BI, relevant visualizations and insights are generated automatically based on the provided questions. This feature eliminates the need for complex queries and facilitates a more user-friendly and interactive experience.

The Q&A tab provides a convenient and efficient way to obtain insights and answers to specific data-related inquiries, enhancing the accessibility and usability of the dashboard.

F. Decomposition Tree

The sixth tab of the dashboard features a decomposition tree visualization that offers a detailed breakdown of the total number of orders. This decomposition tree categorizes the orders from higher-level categories down to the product level, providing a hierarchical view of the data.

Starting with the total number of orders, the decomposition tree visually represents the distribution by progressively splitting and categorizing the orders into different levels. This allows for an organized analysis of how the orders are distributed across various categories, subcategories, and individual products.

The decomposition tree provides valuable insights into the contribution of each category and product to the total number of orders. By exploring the tree, one can gain a comprehensive understanding of the sales distribution and identify top-performing categories and products within the dataset.

G. Key Influencers

The seventh tab of the dashboard is dedicated to the Key Influencers analysis. It serves as a valuable tool to understand the factors that drive the key performance indicators (KPIs) within the given customer base.

By utilizing the Key Influencers functionality, this tab provides insights into customer behavior and identifies the influential factors that contribute to the KPIs. It helps uncover patterns, correlations, and relationships within the data, enabling a deeper understanding of customer preferences and behaviors.

3. My Insights

- The "Tires and Tubes" product category is the top-selling category, based on the highest number of orders. This information provides valuable insights for inventory management and marketing strategies within the dataset.

- United States (USA) has the largest customer base for the company and generates most revenue. This insight highlights the significant presence and market share of the company in the USA, serving as a valuable indicator for business strategies and resource allocation in that region.
- Mountain, road, and touring bikes stood out as the most profitable product sub-categories, driving significant revenue for the company.
- Customers with an average income level ranging from 50,000 to 150,000 per year were the key drivers of revenue for the company.
- Customers with a partial high school degree drove the least revenue.

4. Summary

This report provides a concise overview of the Power BI dashboard I developed as a capstone project during an online course. As I reflect on my experience and interview at Caldic, I recognize the potential similarities between my reporting responsibilities and the needs of Caldic as a global company with diverse product categories and subcategories. This snapshot of my Power BI capabilities demonstrates my ability to excel in such a role, and I am confident that I would make a valuable contribution if given the opportunity. Thank you for taking the time to read this report.