# Power BI Project: Financial Performance Dashboard

Project Overview

The goal of this project is to analyze the financial performance of a company across multiple countries, products, and time periods using key financial metrics such as sales, profit, and discounts. The analysis is performed using a dataset provided by Microsoft, and the dashboard is designed to provide an interactive and insightful overview of the company's financial health, enabling stakeholders to make informed decisions.

Key Objectives

- **Analyse Sales Performance**: Understand sales trends over time and across different   products and regions.
- **Profitability Insights**: Evaluate profit margins and total profits by product and country.
- **Discount Effectiveness**: Analyze the relationship between discounts offered and sales volume.
- **Geographical Breakdown**: Provide a view of financial performance by country.
- **Time-Based Trends:** Track financial performance over specific periods.

Dashboard Structure:
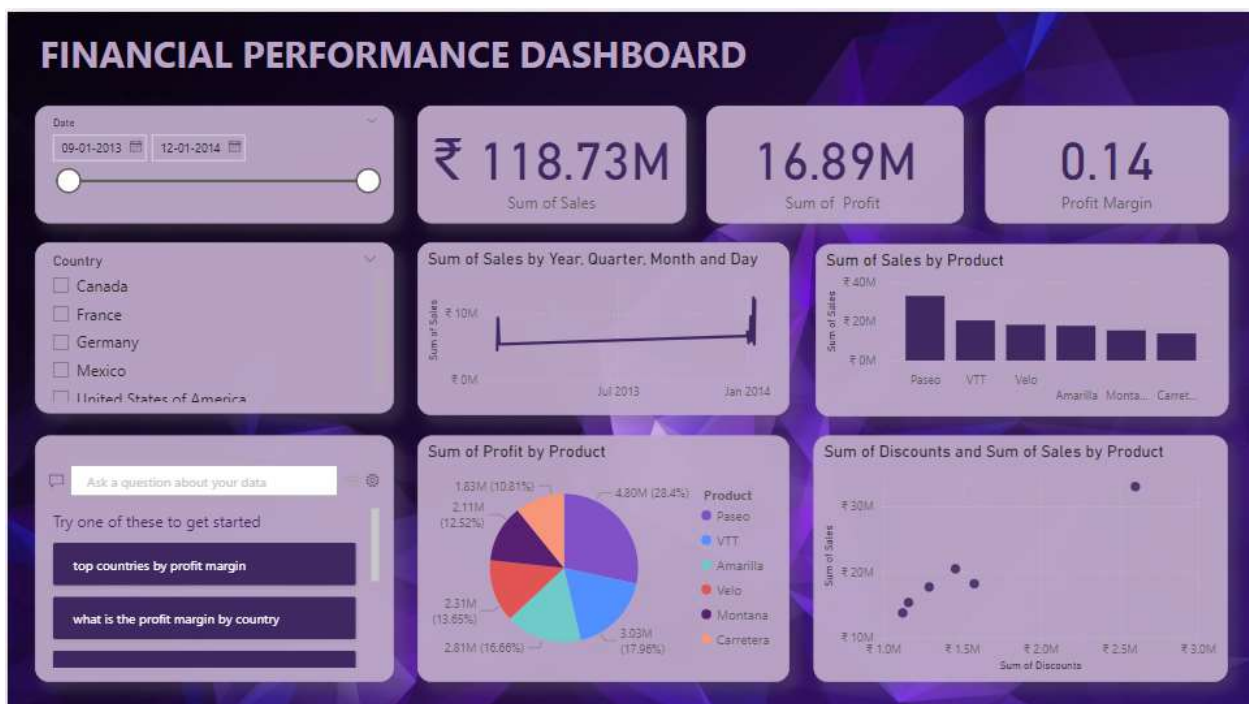
The dashboard is segmented into multiple sections, each serving a specific analytical purpose. Users can interact with the dashboard by filtering and drilling down into the data for more granular insights.

1. Filtering and AI Insights:

The first part of the dashboard provides users with the ability to filter data based on date ranges and country selection. Additionally, an AI-powered Q&A visual has been included to allow users to ask questions in natural language and get immediate answers.

Date Filter: A slicer visual is used to allow users to filter the data by specific time periods. This filter is critical for performing trend analysis over different months, quarters, or years.

Country Filter: A country visual is used to filter the financial data by geographic location, helping to pinpoint regional performance differences.

AI Q&A Visual: This feature enables users to type questions and receive instant results in a natural language query interface. It enhances usability by allowing non-technical users to explore the dataset with ease.

2. Key Financial Metrics:

In this section, key financial performance metrics are displayed using **Card Visuals**. These high-level indicators provide quick insights into important financial values.

Total Sales (Sum of Sales): Displays the total sales amount.

Total Profit (Sum of Profit) : Displays the overall profit generated.

Profit Margin: Calculated as the ratio of profit to sales, this visual displays the profitability of the company over a specific period.

These metrics give a high-level view of financial performance and allow decision-makers to evaluate the company's success in achieving its sales and profitability goals.

3. Sales Trend Analysis:

A **Line Graph Visual** is used to depict the trend of sales over time, based on the date selection.

X-Axis (Date): This axis shows the time periods (daily, monthly, or yearly).

Y-Axis (Sum of Sales): This axis represents the sales amount for each time period.

This visual helps to understand seasonality or growth trends in the company's sales performance over time.

4. Product Sales Distribution:

A **Bar Graph Visual** displays the sales distribution across different products.

X-Axis (Products): The various products sold by the company.

Y-Axis (Sum of Sales): The total sales generated by each product.

This visual helps stakeholders understand which products are performing well and which may need more attention.

5. Discount vs. Sales Correlation:

A **Scatter Chart** Visual is used to explore the relationship between discounts and sales across different products.

X-Axis (Sum of Discounts): Represents the total discount offered on each product.

Y-Axis (Sum of Sales): Shows the total sales for each product.

This visual helps in analyzing whether higher discounts lead to higher sales or if discounts are impacting profitability negatively.

6. Profit by Product Breakdown:

A **Pie Chart Visual** displays the profit distribution across different products.

Each Segment (Products): Represents a product category.

Segment Size (Sum of Profit): Indicates the total profit generated by each product.

This visual helps decision-makers quickly identify the most profitable products.

Data Sources and Preparation

The dataset provided by Microsoft includes various fields such as:

- Date of transaction

- Product name

- Country

- Sales amount

- Profit amount

- Discount offered

Data preparation involved the following steps:

1. Data Cleaning: Ensured there were no missing or incorrect values, and standardized the data format.

2. Data Transformation: Created calculated columns and measures for financial metrics such as total sales, total profit, and profit margin.

3. Time Intelligence: Set up time-based calculations for year-over-year comparisons and trend analysis.

Power BI Features Utilized:

Slicer Visuals: For date and country filters.

Card Visuals: For displaying key financial metrics.

Line Chart Visual: For trend analysis of sales over time.

Bar Graph Visual: For displaying sales distribution across products.

Scatter Chart Visual: For correlating discounts with sales.

Pie Chart Visual: For showing the profit distribution across products.

AI Q&A Visual: For natural language querying of the dataset.

Insights and Recommendations:

Product Performance: Based on the bar chart, certain products drive more sales than others. Focusing on improving the performance of underperforming products can increase overall sales.

Discount Strategy: The scatter plot may reveal that excessive discounts do not always correlate with increased sales, indicating a need to optimize discount strategies for maximizing profitability.

Profit Margins: The pie chart shows that some products contribute more significantly to profit. Emphasizing these products or identifying ways to increase margins on other products could enhance profitability.

Regional Trends: Using the country filter, the company can assess financial performance across different geographies, helping tailor marketing and sales strategies to the most profitable regions.

Conclusion

This Power BI dashboard provides a comprehensive view of the company's financial performance across multiple dimensions such as time, geography, and product categories. It allows users to explore the data interactively, identify key insights, and make informed decisions to enhance business performance.