**Power BI End-to-end Sales Dashboard project**

**The Objective of the Sales Dashboard / Business Problem**

The objective of the report is to analyze and present comprehensive insights into sales, profit, orders, profit margin, and various comparisons. It aims to provide a clear understanding of key performance indicators and trends using Power BI. The report objectives can be summarized as follows:

**Calculate Total Sales:** Calculate and display the total sales value for the selected period, allowing users to understand the overall revenue generated.

**Calculate Profit:** Calculate and visualize the total profit achieved based on the sales data, providing insights into the financial performance.

**Analyze Orders:** Analyze the number of orders placed during the selected period, helping to identify sales patterns and order trends.

**Calculate Profit Margin:** Calculate and visualize the profit margin percentage, enabling users to assess the profitability of products or services.

**Compare Sales by Product with Previous Year:** Compare sales performance for each product between the selected period and the previous year, highlighting growth or decline in sales.

**Compare Sales by Months with Previous Year:** Compare sales performance across different months between the selected period and the previous year, identifying regions with significant changes.

**Display Top 5 Cities:** Present a visualization showcasing the top 5 cities based on sales, allowing users to quickly identify the most lucrative locations.

**Compare Profit by Channel with Previous Year:** Compare profit generated by each channel between the selected period and the previous year, indicating improvements or challenges in profitability.

**Analyze Sales by Customer and Compare with Previous Year:** Analyze sales data by customer, highlighting the performance of individual customers and comparing it to the previous year.

**Create Slicers for Date, City, Product, and Channel:** Enable users to interact with the data by providing slicers for selecting specific dates, cities, products, and channels, allowing for dynamic filtering and personalized analysis.

**Steps followed in this project:**

1. **Gather Data:**

We have collected the data in a spreadsheet which includes the information about the sales orders, customers, regions and products.

1. **Data transformation:**

We have checked for any null values in any columns of tables. We have also created two custom columns of Sales and Toyal\_Cost.

1. **Date Table & Measure Table:**

We have created a Date table using CalendarAuto() function.

Also we have created a separate Measure table for storing all our measures created.

1. **Data Modelling:**

We have joined the fact table ‘Sales\_Data’ with all dimension tables in the Star Schema.

1. **DAX Measures:**

We have used below DAX measures in the project:

* 1. **For Date Table:**

DateTable =

ADDCOLUMNS (

    //CALENDAR(DATE(2020,1,1), DATE(2024,12,31)),

    CALENDARAUTO(),

    "Year", YEAR([Date]),

    "Quarter", "Q" & FORMAT(CEILING(MONTH([Date])/3, 1), "#"),

    "Quarter No", CEILING(MONTH([Date])/3, 1),

    "Month No", MONTH([Date]),

    "Month Name", FORMAT([Date], "MMMM"),

    "Month Short Name", FORMAT([Date], "MMM"),

    "Month Short Name Plus Year", FORMAT([Date], "MMM,yy"),

    "DateSort", FORMAT([Date], "yyyyMMdd"),

    "Day Name", FORMAT([Date], "dddd"),

    "Details", FORMAT([Date], "dd-MMM-yyyy"),

    "Day Number", DAY ( [Date] )

)

* 1. **Month Sort**=Format(DateTable[Date],”YYYYmm”)
  2. **Total Sales:** Sales = SUM(Sales\_Data[Sales])
  3. **Previous Year Toal Sales Sales PY** = CALCULATE([Sales], SAMEPERIODLASTYEAR(DateTable[Date]))
  4. **Diffrence Between Current Year Sales & Previous Year Sales Sales vs PY** = [Sales] - [Sales PY]
  5. **Percentage Increase or Decrease in sales year on year (YOY%) Sales vs py %** = DIVIDE([Sales vs PY],[Sales],0)
  6. **Products Sold** = SUM(Sales\_Data[Order Quantity])
  7. **Profit(Column)** = Sales\_Data[Sales]-Sales\_Data[Total\_Cost]
  8. **Profit** = SUM(Sales\_Data[Profit])
  9. **Profit LY** = CALCULATE([Profit], SAMEPERIODLASTYEAR(DateTable[Date]))
  10. **Profit Vs LY** = [Profit]- [Profit LY]
  11. **Profit vs LY %** = [Profit Vs LY]/[Profit]
  12. **Profit Margin** = DIVIDE([Profit],[Sales],0)
  13. **Total Cost** = SUM(Sales\_Data[Total Cost])

1. **Data Visualization:**
   1. We have created **slicers** for Date, City, Product and Channel.
   2. For: **Sales By Product and Comparing it with last year’s Sales**, we have created a Line and Stacked Column chart and used Bar colour conditional formatting to compare the Current Year Sales and Previous Year Sales.
   3. For **Sales By Month and Comparing it with last year’s Sales**, we have again created a Line and Stacked Column chart.
   4. For  **Sales of top 5 Cities**, we have used Donut Chart and used Visual Filter on City by Sales.
   5. **For  Compare Profit by channel with Previous year’s Profit**,w ehave used Area chart and have also used Profit Margin for better comparison.
   6. For  **Sales By Customer and Comparing it with last year’s Sales**, we have used Clustered Bar chart
   7. We have also created cards for Sales, Profit, Profit Margin & Product Sold. Also we have created two cards for Sales PY % and profit PY% to compare them with the Sales and profit using the slicers created above.
   8. Finally, after rearranging and applying proper formatting to the visuals, we have drawn below insights.

Selected **year 2019** from the Year slicer to check the current year scenario: We found-

* Sales decreased by more than 10%
* There is a drop in sales of all the top 7 Products
* 4 Customers are leading to a drop in sales
* The profit margin in the Export channel is higher