## **e-Commerce Sales Dashboard**

**Objective**

Design a sales dashboard that analyses sales based on various product categories. The company wants to add user control for product categories so that users can select a category and see the trend month-wise and product-wise accordingly.

**Steps**

**Create a table of sales and profit month-wise in a working sheet**

1. In the datasheet, calculated the total sales by using the formula – Sales \*Quantity and the total profit by Profit\*Quantity
2. Created *Named Range* for Total Sales, Total Profit, Product Category, Region, Country, Segment, Product, Months by selecting the respective column and using shortcut key *Ctrl+Alt+F3*
3. In the working sheet, created monthly sales and profit table by adding months in the columns and used the formula for sales – *=SUMIF(Months,Table1[@Months],Total\_Sales)* To get the total profit, used the formula - *=* *=SUMIF(Months,Table1[@Months],Total\_Profit)).* Alternatively, a pivot chart could also be created.
4. To make the above a table, used the shortcut *Ctrl+T*

**Create a table of sales region-wise in a working sheet**

1. In the working sheet, added Regions and sales as headers. Copied all the region values from the data sheet to the working sheet and pasted it under the Region header. Removed Duplicates.
2. To calculate the sales, used the formula *=* *=SUMIF(Region,Table2[@Regions],Total\_Sales)*
3. To change to table format,used a shortcut *Ctrl+T*

**Creating a Dashboard**

1. Added a worksheet and named it Dashboard
2. Removed the Gridlines – *View>Uncheck Gridlines*
3. Adding a shape to the dashboard to create a background– Insert>Shapes>Rectangle

**Creating combo box and the list**

1. Created combo box with Developer>Insert>Combo box and then creating a box in the dashboard
2. In the working sheet, copied the product category column from the data sheet and removed duplicates by *Data>Remove Duplicates*
3. Added “All” value in the list to see the overall trend*.*
4. In the Dashboard, right clicked on the combo box to select Format control. In the input range, add the values from the product category column in the working sheet and select the output (Cell link) to a cell in the working sheet.

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1. In the category selected cell, added a formula to get the name of the product category selected in the combo box. Formula used – *Index(H3:H6,D2)*

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1. Above the Combo box, the text “Select Category” was added after merging 3 cells
2. Used the above steps to create one more combo box named Region
3. After adding the values, the text “Select Region” was added above the combo box

**Create a column chart of the month-wise Sales & Profit table**

1. In the dashboard, added the column chart by *Insert>Columnchart>2-D Column*
2. By right-clicking the chart, choose *Select data* option to add the table from the working sheet to the chart data range
3. Added the Chart title – *Month-wise Sales & Profit*
4. Added the data labels

**Create a column chart of the Region-wise Sales table**

1. In the dashboard, added the column chart by *Insert>Columnchart>2-D Column*
2. By right-clicking the chart, choose *Select data* option to add the table from the working sheet to the chart data range
3. Added the Chart title – *Region-wise Sales*
4. Added the data labels
5. Added a max value column in the table. Used the formula - *=IF([@Sales]=MAX($B$23:$B$35),[@Sales],"")*
6. Added the max value to the chart to highlight the column with a max column. To do this, I right-clicked on the chart, chose select data, and used the Add functionality to add the max column values in the series Values and defined the series name as Max.
7. An orange column bar appeared. After selecting the orange column bar, I right-clicked to select Format Data Series and then selected Secondary Axis to merge the orange column with the blue colour.

**Linking the month-wise table and region-wise table with the combo box**

1. In the working sheet and month-wise table, I changed the formula in the Sales column to*=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Months,[@Months]),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Months,[@Months]),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Months,[@Months]),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Months,[@Months]))*
2. *I then changed the profit formula in the month-wise table to:*

*=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Profit,Months,[@Months]),$C$2="All",SUMIFS(Total\_Profit,Region,$C$3,Months,[@Months]),$C$3="All",SUMIFS(Total\_Profit,Product\_Category,$C$2,Months,[@Months]),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Profit,Product\_Category,$C$2,Region,$C$3,Months,[@Months]))*

1. With the change in value, the column chart was updated.
2. To validate if the formula is working correctly, I created a pivot table in a separate sheet and made the product category and region as Filter, used months as rows, and values as Sum of total sales and total profit. I then changed the selection in the combo box to see if the value coming in the table matched with the pivot table values.
3. To link the region-wise saes table with a combo box, I updated the formula as - *=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Region,[@Regions]),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Region,[@Regions]),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,[@Regions]),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Region,[@Regions]))*

**Create a bar chart for the Top 4 Performing Products (by sales)**

1. Copied the product values from the data sheet and pasted it in the Working sheet. Used Removed Duplicated to get the unique products.
2. Added a column named Total sales and used the formula to calculate Total sales based on the combo box. Formula used - *=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Product,A40),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Product,A40),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Product,A40),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Product,A40))*
3. In separate columns, I created 2 headers – Product & Sales
4. By using the formula mentioned below, I got the top 4 sales. Below are the formulas used:

*Top product - =LARGE($B$40:$B$81,1) or Max(B40:B81)*

*2nd Highest sales = =LARGE($B$40:$B$81,2) and so on.*

1. To get the product name, I used the index function - *=INDEX($A$40:$B$81,MATCH(E41,$B$40:$B$81,0),1)*
2. After inserting the bar chart in the Dashboard, I right-clicked on the chart to choose select data and selected the top 4 products with Max to get the max value highlighted
3. After selecting the orange bar, I right-clicked to choose Format Data series to make it the secondary axis and removed the axis value for this bar
4. Chart Title – Top 4 Performing Products and Data labels were added to the chart. Gridlines were removed
5. Data was sorted from smallest to largest in the Working sheet to bring the top-selling product bar to the top

**Create a bar chart for the top 5 performing countries (by sales)**

*Using similar steps as mentioned above, the top 5 performing countries list was generated. You can skip the below section if you like.*

1. Copied the Country values from the data sheet and pasted it in the Working sheet. Used Removed Duplicated to get the unique Country.
2. Added a column named Total sales and used the formula to calculate Total sales based on the combo box. Formula used - *=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Country,L3),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Country,L3),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Country,L3),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Country,L3))*
3. In separate columns, I created 2 headers – Country & Sales
4. By using the formula mentioned below, I got the top 4 sales. Below are the formulas used:

*Top product =LARGE($M$3:$M$149,1)or Max(M3:M149)*

*2nd Highest sales = =LARGE($M$3:$B$149,2) and so on.*

1. To get the product name, I used the index function - *=INDEX($L$3:$M$149,MATCH(Q3,$M$3:$M$149,0),1)*
2. After inserting the bar chart in the Dashboard, I right-clicked on the chart to choose select data and selected the top 5 Countries with Max to get the max value highlighted
3. After selecting the orange bar, I right-clicked to choose Format Data series to make it the secondary axis and removed the axis value for this bar
4. Chart Title – Top 5 Performing Country and Data labels were added to the chart. Gridlines were removed
5. Data was sorted from smallest to largest in the Working sheet to bring the top-selling product bar to the top

**Create a pie chart to show Customer Segment mix**

1. To create a sales table by customer segment, the segment values were copied from the Data Sheet and pasted into the working sheet. Duplicates were removed by using *Data>Remove Duplicates*
2. A column was added named Sales to get the sales per segment. To calculate the sales, the following was used:

*=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Segment,P12),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Segment,P12),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Segment,P12),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Segment,P12))*

1. A pie chart was added to the Dashboard. After right-clicking the chart, I choose the select data to add data to the chart
2. Chart title – Segment mix and labels were added to the chart

**Create a Doughnut chart to show the Category mix**

1. To create a sales table by category segment, the category values were copied from the combo list created in the working sheet.
2. A column was added named Sales to get the sales per segment. To calculate the sales, the following was used:

*=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Product\_Category,P18),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Product\_Category,P18),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Product\_Category,P18),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Product\_Category,P18))*

1. A doughnut chart was added to the Dashboard. After right-clicking the chart, I choose the select data to add data to the chart
2. Chart title – category Mix and labels were added to the chart

**Create a Histogram to show the Aging**

1. In the working sheet, a table was created with 2 headers – Bins & Max of Each bin, as shown below

A table with text on it

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1. Clicked on the Data Tab and selected the Data Analysis tool to create Histogram. In the input range, added the values of Aging from the Data Sheet and the Max of Each bin values in the Bin Range. Checked the cumulative Percentage and Chart Output to create a Histogram

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**Linking the Histogram Data with Combo Chart**

1. Unfortunately, the previous steps only provided the total value, so to customise it to combo boxes, a table with a formula was created.
2. Using the formula mentioned below, a frequency column was added to the table.

*=IFS(AND($C$2="All",$C$3="All"),COUNTIFS(Aging,"<=3"),$C$2="All",COUNTIFS(Region,$C$3,Aging,"<=3"),$C$3="All",COUNTIFS(Product\_Category,$C$2,Aging,"<=3"),OR($C$2<>"All",$C$3<>"All"),COUNTIFS(Product\_Category,$C$2,Region,$C$3,Aging,"<=3"))*

1. To calculate Cumulative %, Formulas were used, which can be shown in the resulting table

*A table with numbers and a few black text

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1. By clicking on the Insert tab, a histogram chart was added to the Dashboard. By right-clicking it and choosing Select Data, The Data table was added to the chart
2. Chart Title – Aging and label was added to the chart

**Create Visuals to display Key metrics in the Dashboard**

1. Next to the combo box, the following metrics were added in the box form, namely *Total Transactions, Quantity Sold, Sales, Profit, Profit%, Average Price, and Discount Offered*
2. In the working sheet, a summary table was created, and by using the formulas, the table values were linked to the combo boxes. Formulas used:

**Total Sales -** *=IFS(AND($C$2="All",$C$3="All"),SUM(Total\_Sales),$C$2="All",SUMIF(Region,$C$3,Total\_Sales),$C$3="All",SUMIF(Product\_Category,$C$2,Total\_Sales),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3))*

**Total Transactions -** *=IFS(AND($C$2="All",$C$3="All"),COUNT(Quantity),$C$2="All",COUNTIF(Region,$C$3),$C$3="All",COUNTIF(Product\_Category,$C$2),OR($C$2<>"All",$C$3<>"All"),COUNTIFS(Product\_Category,$C$2,Region,$C$3))*

1. For profit% and Average price, the following formulas were used:

*Profit% - Profit/Sales\*100*

*Average Price – Sales/Quantity*

1. A cell reference was used to link the metrics to the summary Table.
2. Icons were added next to the value to make it visually appealing



**Create a Top Customer Card**

1. On the right side of the Dashboard, 1 Header was created – Top Customer
2. To the left of this text, a trophy icon was inserted to bring attention to this data
3. Customer name values were copied from the datasheet to the working sheet, and the duplicates were removed
4. A sales header was added next to the customer’s name, and a formula was used to get the value that’s linked to the Combo boxes

*=IFS(AND($C$2="All",$C$3="All"),SUMIFS(Total\_Sales,Customer\_Name,T12),$C$2="All",SUMIFS(Total\_Sales,Region,$C$3,Customer\_Name,T12),$C$3="All",SUMIFS(Total\_Sales,Product\_Category,$C$2,Customer\_Name,T12),OR($C$2<>"All",$C$3<>"All"),SUMIFS(Total\_Sales,Product\_Category,$C$2,Region,$C$3,Customer\_Name,T12))*

1. In a separate cell, a max formula was used to get the max sales from the table created - *=MAX(U12:U806)*
2. To the left of this cell, an index function was used to get the customer name - =INDEX(T11:U806,MATCH(X12,U11:U806,0),1)A screenshot of a spreadsheet

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3. A cell reference was used to get the customer’s name to the dashboard under the Top customer Header.

**Check if the combo boxes are working correctly**

1. A pivot table was created in a separate workbook to get the values of Sales, Profit, quantity, order count, discount
2. On the Dashboard, after selecting a category or region filter, the values appearing on the key metrics and charts were checked with the values appearing on the pivot table
3. All the conditions were checked

|  |  |  |
| --- | --- | --- |
| Category | Region | Values Match |
| All | All | Yes |
| All | Individual | Yes |
| Individual | All | Yes |
| Individual | Individual | Yes |

**Insights will be shared in a separate file attached to the Source Code.**