



# DATA SPARK

## **CAPSTONE PROJECT – 2**

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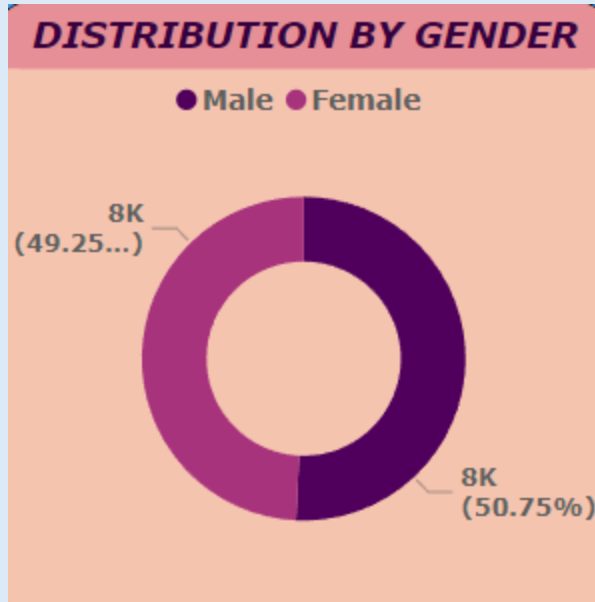
## ***DataSpark - Illuminating Insights for Global Electronics***

This project has been an incredible learning experience, allowing me to deepen my skills in data cleaning, preprocessing, EDA, SQL, and Power BI, all within the fascinating domain of retail analytics in the electronics industry.

# Project Overview

- ❖ Global Electronics, a leading retailer of consumer electronics, provided me with datasets containing information about their customers, products, sales, stores, and currency exchange rates.
- ❖ My goal was to conduct a comprehensive Exploratory Data Analysis (EDA) to uncover valuable insights that could enhance customer satisfaction, optimize operations, and drive overall business growth.
- ❖ Key Insights & Analyses:
  - **Customer analysis**
  - **Sales analysis**
  - **Product analysis**
  - **Store analysis**

# CUSTOMER ANALYSIS



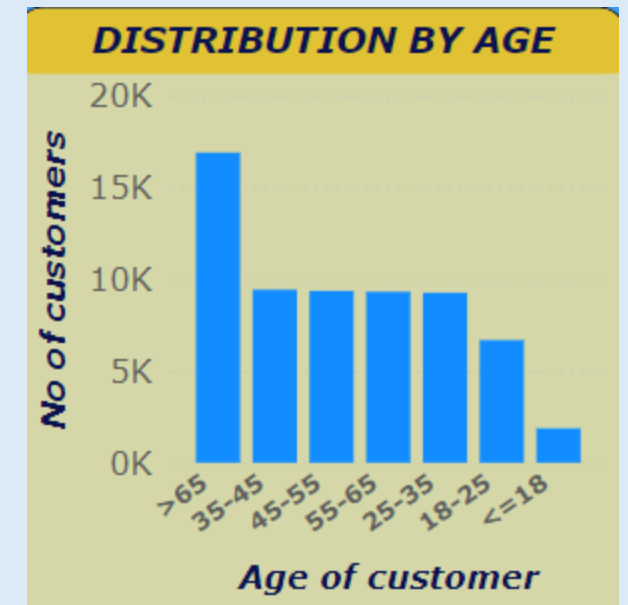
## GENDER DISTRIBUTION

Indicates that the population distribution between males and females is relatively balanced, with a slight male majority.

Female targeted advertisements shall increase female customers

## DISTRIBUTION BY AGE

- The largest group of customers falls in the >65 years age category and the smallest group is the ≤18 years category, While 35-45 and 45-55 age groups are nearly identical in size.
- Youth population must be targeted , increasing youth related products.





# CUSTOMER ANALYSIS

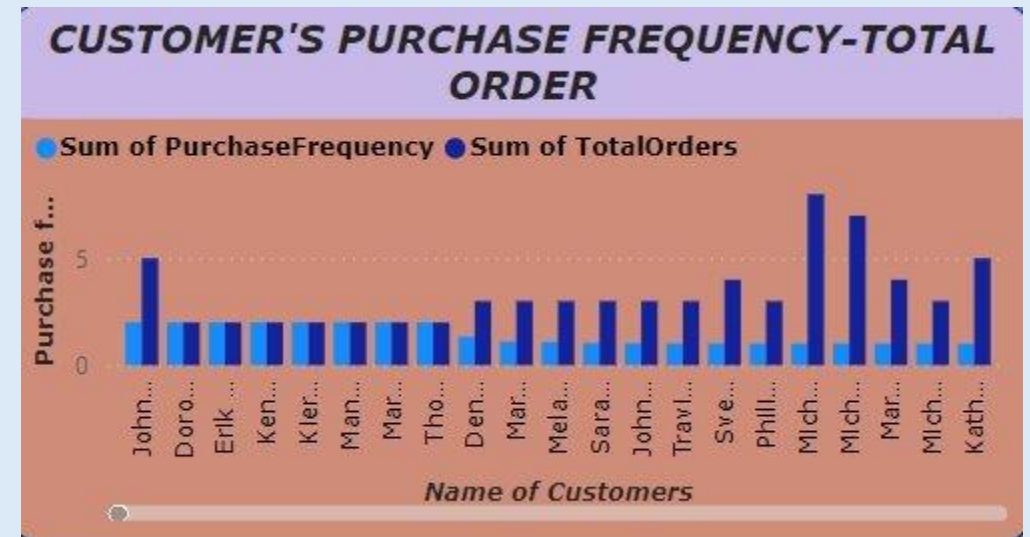


## COUNTRY WISE CUSTOMER'S AVERAGE ORDER VALUE :

- It is represented using a line graph.
- USA is on top followed by UK and Canada
- It help for inventory planning ,by stocking more in area where customer's average order value is more.

## CUSTOMER'S PURCHASE FREQUENCY – TOTAL ORDER :

- It is represented using a bar graph.
- It shows how certain customers make bulk order without frequent visit, while some make frequent orders.
- It helps plan inventory according to customer's purchase pattern

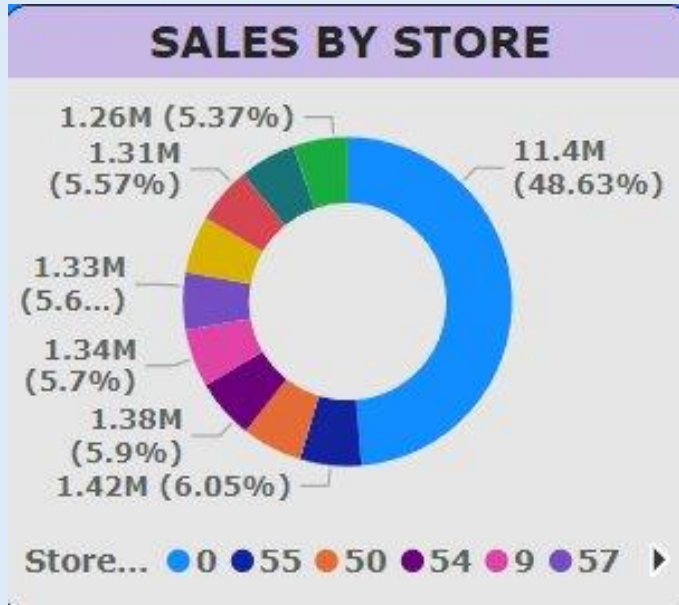


# CUSTOMER ANALYSIS



- The location wise analysis is made using map.
- The intensity of the bubble shows where customers are concentrated.
- It is clear that North America has maximum number of customers.
- This analysis helps to concentrate more in areas with less customers.

# SALES ANALYSIS

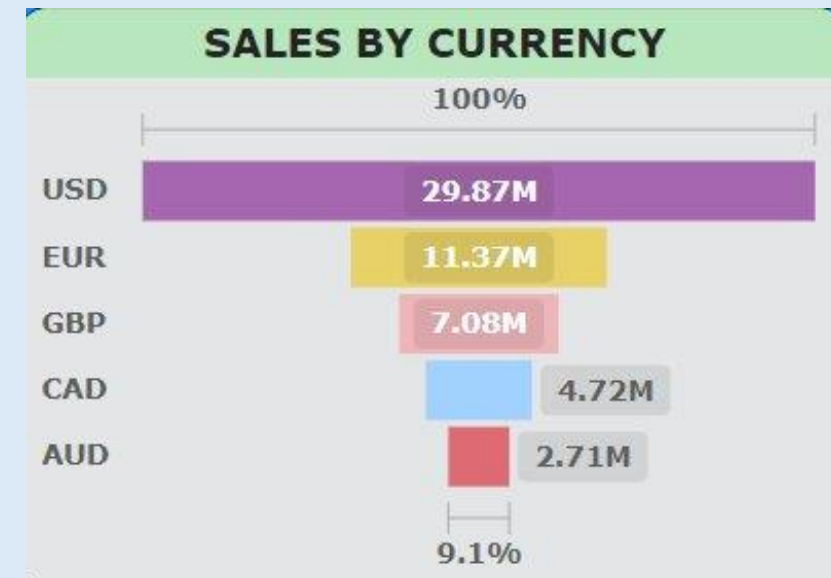


## SALES BY STORE

- Each stores total revenue is depicted using donut chart.
- It gives a clear idea of which store has high revenue.
- It helps to improve stores with low revenue

## SALES BY CURRENCY

- The visual clearly shows the order in which the revenues are.
- Most people trade in USD
- Its natural as most cutomers are from USA



# SALES ANALYSIS

SALES BY PRODUCT REVENUE

product_name	Sum of total_revenue_USD
WWI Desktop PC2.33 X2330 Black	5,05,450.00
Adventure Works Desktop PC2.33 XD233 Silver	4,66,089.00
Adventure Works Desktop PC2.33 XD233 Brown	4,64,151.00
Adventure Works Desktop PC2.33 XD233 Black	4,47,678.00
Adventure Works Desktop PC2.33 XD233 White	4,37,019.00
WWI Desktop PC2.33 X2330 White	4,24,578.00
WWI Desktop PC2.33 X2330 Brown	4,22,740.00
Adventure Works 52" LCD HDTV X590 White	3,94,398.64
Adventure Works 52" LCD HDTV X590 Black	3,74,098.71
WWI Desktop PC2.33 X2330 Silver	3,60,248.00

- Each products are of different cost.
- Top 10 products are displayed using table.
- It shows that computer products gives high revenue, all colour options are popular, but black holds the top position.

- Most preferred product is the one whose max quantity is sold
- Top 10 most preferred product is represented in table.
- Maximum black colour computer products are sold in high quantity.

SALES BY PRODUCT QUANTITY

product_name	Sum of total_quantity
WWI Desktop PC2.33 X2330 Black	550.0
WWI Desktop PC1.80 E1800 White	538.0
Adventure Works Desktop PC1.60 ED160 Black	521.0
Adventure Works Desktop PC2.30 MD230 White	521.0
Adventure Works Desktop PC1.80 ED180 Black	520.0
Adventure Works Desktop PC2.30 MD230 Black	514.0
WWI Desktop PC1.60 E1600 Black	509.0
WWI Desktop PC1.60 E1600 Silver	507.0
WWI Desktop PC1.60 E1600 Red	505.0
WWI Desktop PC1.80 E1801 Black	505.0



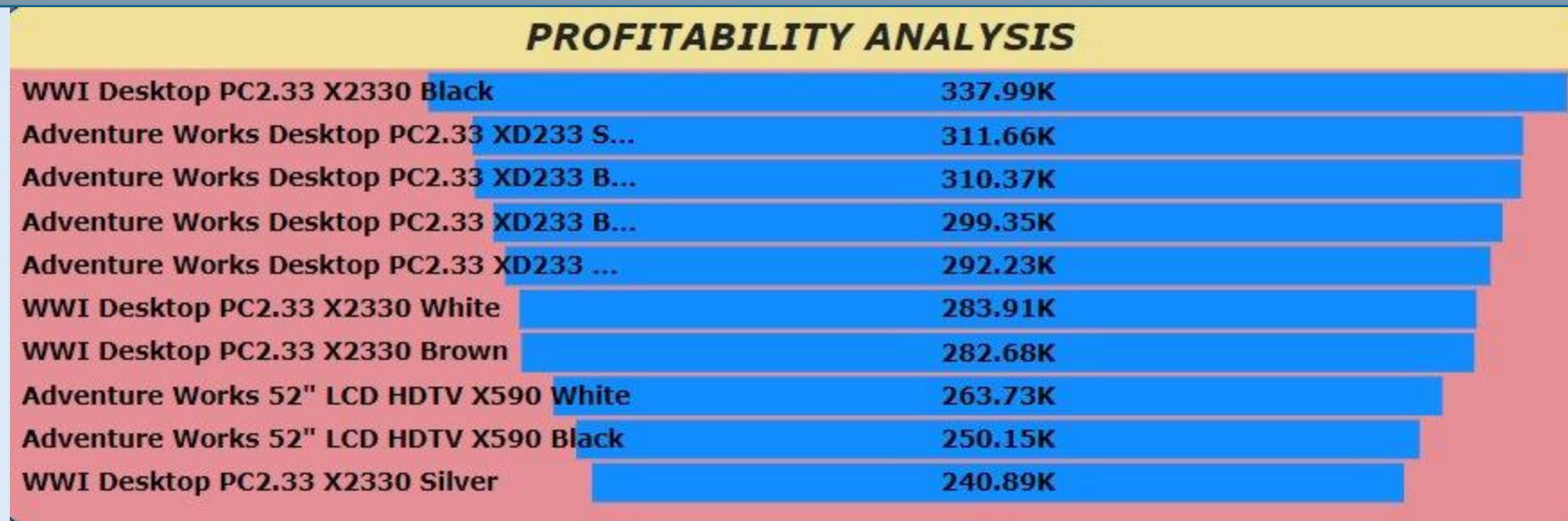
# SALES ANALYSIS

- Total revenue vs time graph clearly shows the trend of sales.
- For 2016 to 2019 almost the sales trend is exactly same.
- 2020 shows variation must be due to corona.
- Sales is high Dec,Jan,Feb must be due to christmas.
- All other months have moderate sales.
- April has minimum sales

**April month can used as end of season sale- it improves sales on April**



# PRODUCT ANALYSIS



## **MOST POPULAR PRODUCT**

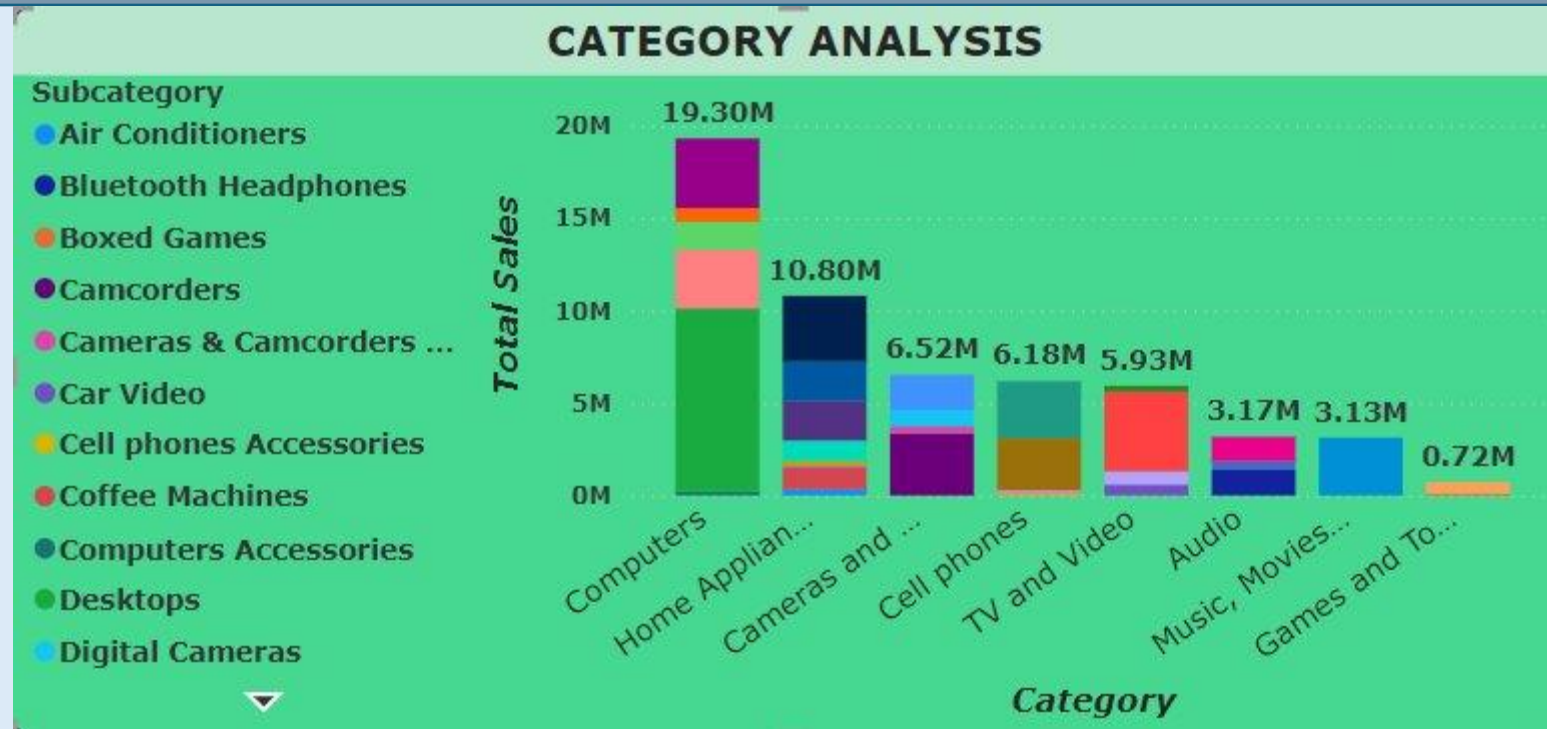
**WWI Desktop  
PC2.33 X2330  
Black**

- This visual provides the insight of most and least popular products
- The top 10 most profitable products.
- The Profitability chart –shows that the product's profit almost close, this is a good sign.
- The company can provide wide range of preferred products

## **LEAST POPULAR PRODUCT**

**Adventure Works  
Desk Lamp  
E1300 Black**

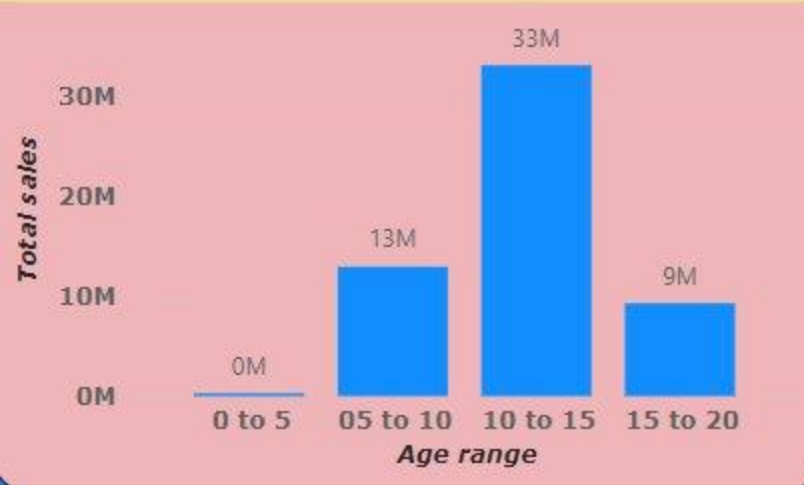
# PRODUCT ANALYSIS



- This visual provides the insight of various categories of products
- The top is Computers products , followed by Home appliance.
- Category analysis –provides insight of categories of products that customers need.
- The company can invest on the most wanted category products than the least.

# STORE ANALYSIS

## PERFORMANCE BY AGE



## PERFORMANCE BY AGE

Indicates that the performance of the store increases gradually by age upto 15 years, then there is a downfall.

Reason may be customers don't prefer very old stores.

Renovating the store and storing trendy products may increase sales .

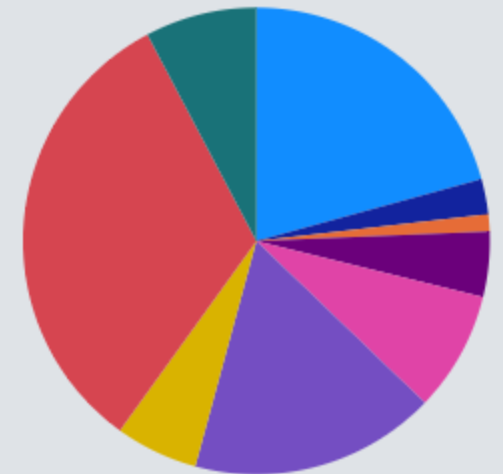
## PERFORMANCE BY SIZE

- ☐ The stores performance by size is visualized using pie chart.
- ☐ 1750-2000 size store performs best , followed by 0-250 size store.
- ☐ Looks like size doesn't play much role.
- ☐ Customers buy their product of need from the stores , not much bothering about size.

## PERFORMANCE BY SIZE

size\_bucket

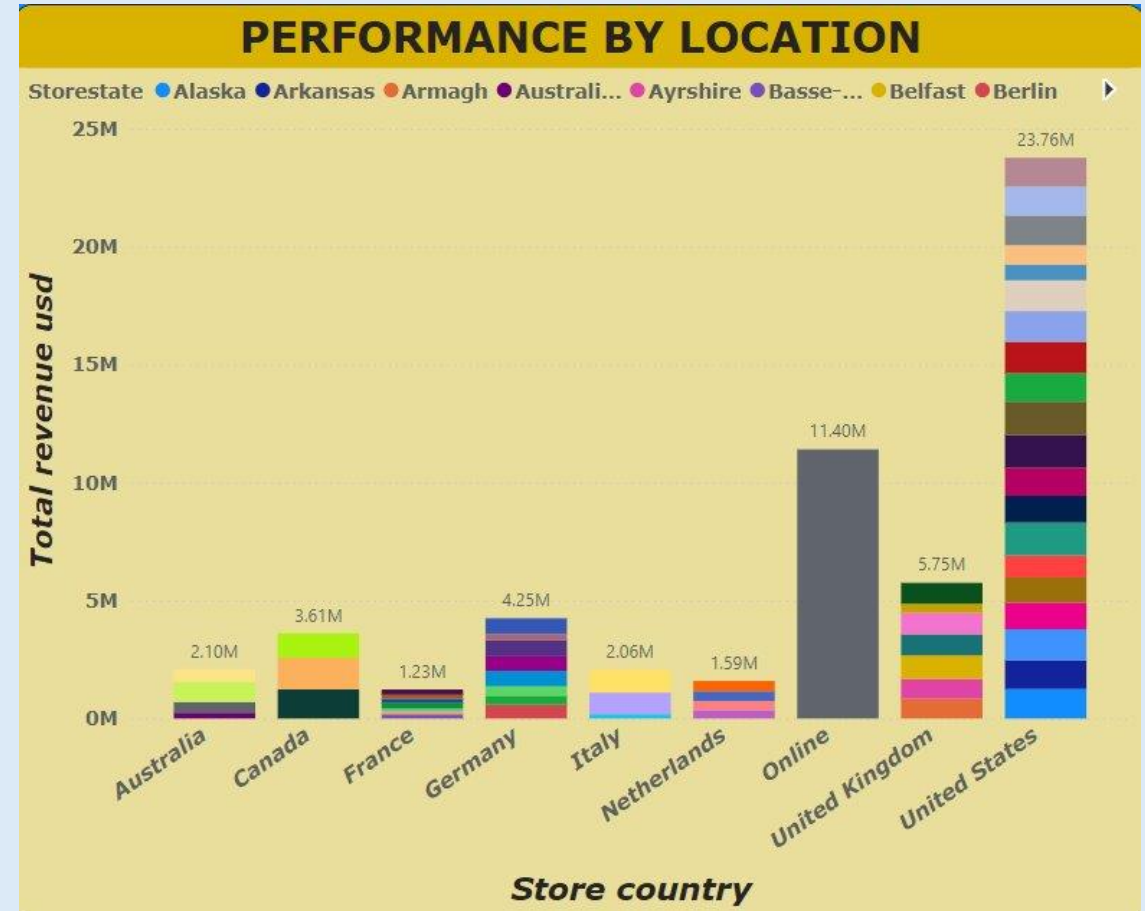
- 0 to 250
- 0250 to 500
- 0500 to 750
- 0750 to 1000
- 1000 to 1250
- 1250 to 1500
- 1500 to 1750
- 1750 to 2000
- 2000 above



# STORE ANALYSIS

## PERFORMANCE BY LOCATION

- ☐ The stores performance by location is visualized using stacked bar chart.
- ☐ USA stores performs best , followed by online stores.
- ☐ Due to online stores the dependency of store to be present in good location has lessen
- ☐ In addition to sales at store we can increase sales through online sales





# REPORT

The report will includes actionable recommendations tailored to enhance

- **Marketing strategies** – ads targeting female and youth customers can increase their proportion as customers
- **Optimize inventory management** – The visuals clearly shows the high demand areas and products, this will help to manage inventory efficiently.
- **Improve sales forecasting** - The visuals shows the demand in area and product, the sales trend clearly shows the sales probability of each month. This will definitely help to improve sales forecast.

## Actionable recommendations

- **Guide product development** – Providing offers for least popular product ,or coupling it as combo offer with most popular products will increase sales of those products.
- **Inform store expansion** – The stores above 15 years definitely needs renovation to attract customers
- **Operational decisions** – More youth related products of various colours ,with special attention to black colour is required.
- **This analysis will empower Global Electronics to increase customer satisfaction, maximize revenue, and drive overall business growth.**

*Thankyou*