Sales Analysis

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Data Understanding

Get To Know About Data

Sales Analysis Dataset Overview:

This Sales Analysis Dataset consists of several interconnected tables. Dimension tables such as Date, Product, Channel, Stores, Geography, and Promotion contain descriptive information about sales. At the center is the Sales fact table, which links all these dimensions and holds key measurable figures like SalesAmount and TotalCost. This structure allows for comprehensive business analysis by aggregating and analyzing these metrics across any of the available dimensions.

Columns Characteristic

Defining The Columns and Data Types

Overall Column Overview:

Simply put, this data gives us a complete picture of everything related to sales. It helps us understand what's affecting our sales performance and revenue because it brings together information on all the product details and their categories, plus specifics on the stores and geographic areas where sales happened, and what channels we used. It also has all the data on marketing campaigns and promotions so we can see their impact on customers. In short, when we connect all of this, we can figure out what makes customers buy, how to increase our profits, and how to improve our sales strategies.

Columns Characteristic

Defining The Columns and Data Types

1. Products Table

- **BrandName:** The name of the brand under which the product is sold and There are 10 brands (e.g., Contoso).
- **ClassName:** Describes which class the product belongs to and There are 3 classes (e.g., Economy).
- **Manufacture:** It lists the names of the companies that manufactured the product, which number 10 companies (e.g., Contoso Ltd).
- **ProductDescription:** Detailed description of each product (e.g., Wireless Mouse).
- **ProductName:** Shows the products names.
- **UnitCost:** Shows the cost of the product to the company.
- **UnitPrice:** It shows the selling price of the product to the customer.

2.Product Categories Table

- **ProductCategory:** Shows the main category name for each product (e.g., Audio, Computers).
- **ProductSubcategory:** Contains the name of the product subcategory (e.g., Refrigerators, Microwaves).

3.Product Categories Table

- **Product**Subcategory: Name of the subcategory (e.g., Refrigerators, Microwaves).

4. Marketing Table

- **Clicks:** Represents the number of clicks that occurred in this date.
- **Date:** Contains the specific date on which the data was recorded.

Columns Characteristic

Defining The Columns and Data Types

5.Sales Table (Fact)

- **Delivery_Date:** Shows the date the products were delivered to the customer.
- **DiscountAmount:** Represents the value of the financial discount applied to the transaction.
- **DiscountQuantity:** Shows the number of units discounted.
- **Order_Date:** Shows the date of the sale transaction.
- **ReturnAmount:** Represents the financial value of the returned products.
- **ReturnQuantity:** Shows the quantity of units returned.
- **SalesAmount:** Represents the total sales value for the transaction (UnitPrice × SalesQuantity).
- **SalesQuantity:** Shows the quantity of units sold in this transaction.
- **TotalCost:** Shows the total cost of the products sold in this transaction (UnitCost × SalesQuantity).
- **UnitCost:** Specific to the cost of each unit sold.
- **UnitPrice:** Shows the unit selling price to the customer.

6. Stores Table

- **CloseReason:** It shows the reason for the store's closure (e.g., Relocation/Store)
- **EmployeeCount:** It shows the number of employees in the store.
- **SellingAreaSize:** It shows the store's area allocated for selling products.
- **Status:** It shows the store status, of which there are two (ON /OFF).
- **StoreName:** It shows the store name.
- **StoryType:** It identifies the store type, of which there are four types (Store, Online, Catalog, Reseller).

7. Geography Table

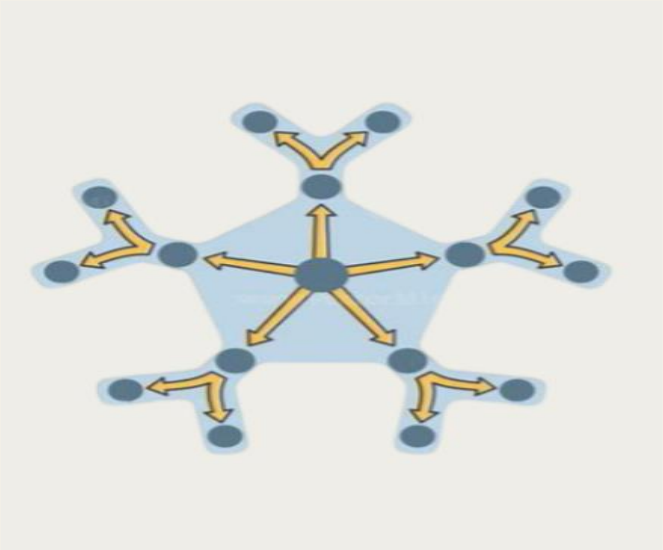
- **ContinentName:** The name of the continent and the data show 3 continents (Asia, Europe, North America).
- **GeographyType:** The type of geographical entity is represented by 4 types (e.g., "City", "State/Province", "Country/Region", "Continent").
- **RegionCountryName:** Country name and according to the data there are 34 countries

Business Questions

1) What are the Total Sales, Total Cost, Total Profit, Total Orders and Total Quantity?
2) What is the monthly trend of Ordered Amount vs. Delivered Amount?
3) What are the Top 5 Subcategories from Top Category by sales?
4) How many KPIs are over target?
5) How many KPIs are under target?
6) What is the Actual vs Target achievement?
7) What are the Total Sales, Total Orders, Quantity sold, Employee Count and Total Stores?
8) What percentage of stores are Active?
9) What percentage of stores are inactive?
10) Which countries have the highest sales?
11) What are the sales by store type and their percentages?
12) How many stores closed due to Relocation?
13) How many stores closed directly (store closures)?
14) How many orders are expected in the next 7, 15 days, 1 month, and 6 months?
15) What are the Total Clicks, Maximum Discount % in Promotions, Active Promotions and Average Clicks per Day?
16) What are the Active Promotions Count by Month?
17) What is the Clicks trend over time (2023–2025)?
18) What is the number of promotions by discount percent?

Data Modelling

Building Snowflake Schema



The Snowflake Schema is a highly normalized dimensional model where dimension tables are broken down into multiple, related sub-dimension tables.

And it is using to separate hierarchical attributes, significantly reducing data redundancy and improving storage efficiency and data integrity

It consists of Fact_Tables and Dimension_Tables

The Fact Table is the central table in the dimensional model. Its primary purpose is to store the core Measures and Quantitative Data that are analyzed in the project, in my project Fact Table is a Sales Table.

Data Modelling

Building Snowflake Schema

Dimension Tables: Dimension tables are designed to provide the necessary context for analyzing sales transactions, in my project Dimension Tables are:

Dim_Channel: contains names of channels

Dim_Date: shows the date that can use in data

Dim_Geography: contains regions and continents

Dim_Marketing: Represents the number of clicks

Dim_Product: contains Brand Name, unit and cost price

Dim_ProductCategory: contains ProductCategory names

Dim_ ProductSubcategory: contains Productsubcategory names

Dim_Promotions: Represents promotion names

Dim_Stores: shows store names and type

Data Modelling

Building Snowflake Schema

Relationships: These tables are connected via foreign keys (e.g., "channel FK," "store FK," and "promotion FK") to enable detailed analysis, such as attrition by channel, store, promotion, ProductSubcategory, Product, Marketing, Geography and ProductCategory.

This structure was chosen to provide the following critical benefits for model quality and performance:

Achieve High Normalization and Reduce Redundancy:

Descriptive attributes (e.g., Category names) are stored only once in their dedicated tables.

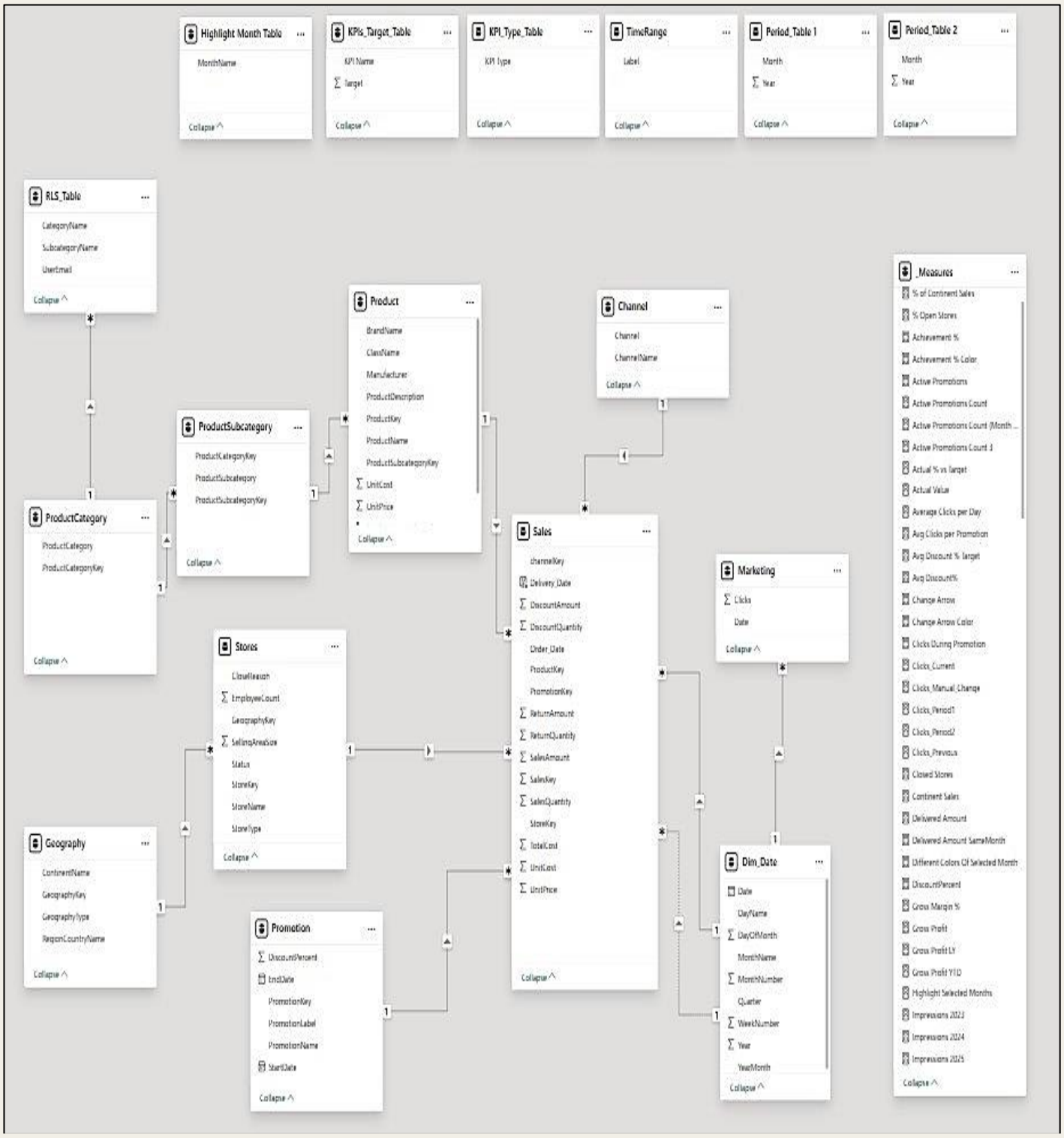
This design significantly minimizes data redundancy across the model.

Support Complex Hierarchies and Deep Analysis:

The organized structure is ideal for dimensions with multiple levels (Category/Subcategory), facilitating efficient and flexible Drill-down analysis

Data Modelling

Building Snowflake Schema



Creating Measures

The measures are designed to calculate specific metrics based on the data in the fact and dimension tables.

Here's a brief overview of how these measures contribute to the dashboard:

- **Total Orders:**

```
Total Orders = DISTINCTCOUNT('Sales'[SalesKey])
```

This measure calculates the total number of unique customer orders placed. It uses the DISTINCTCOUNT function to count the unique values in the [SalesKey] column within the Sales table

- **Total Cost:**

```
Total Cost = SUM('Sales'[TotalCost])
```

This measure calculates the sum of the total cost of goods sold (COGS) for all transactions recorded

- **Total Profit:**

```
Total Profit =
SUMX (
    Sales,
    Sales[SalesAmount] - Sales[TotalCost] - Sales[DiscountAmount]
)
```

This measure calculates the total overall profit across all transactions.

- ## Total Returns:

```
1  Total Returns = SUM('Sales'[ReturnAmount])
```

This measure calculates the total monetary value of all product returns across all transactions

- ## Total Sales Growth %:

```
1 Total Sales Growth % = DIVIDE([Total Sales] - [Total Sales LY], [Total Sales LY], 0
```

This measure calculates the percentage of sales growth between the current period's [Total Sales] and the [Total Sales LY] (Last Year)

- ## Net Sales Diff LY

```
1  Net Sales Diff LY = [Net Sales] - [Net Sales LY]
```

This measure calculates the absolute difference between the current period's Net Sales and the Net Sales from the Last Year

- ## Top 5 Product Subcategories:

```
1  Top5Subcategories =
2  IF (
3      RANKX (
4          ALL ( 'ProductSubcategory'[ProductSubcategory] ),
5          [SubcategorySales],
6          ,
7          DESC
8      ) <= 5,
9      [SubcategorySales]
```

This calculates the total sales for the Top 5 Product Subcategories based on their sales ranking. It returns the sales value only for those subcategories whose rank

- **Max Discount % Promotion:**

```
1 Max Discount % Promotion =
2 MAX ( Promotion[DiscountPercent] )
```

This measure calculates the highest single discount percentage that was offered across all recorded promotions.

- **Open Stores:**

```
1 Open Stores =
2 CALCULATE (
3     COUNTROWS ( Stores ),
4     Stores[Status] = "On"
5 )
```

This measure calculates the total number of stores that are currently open and operational

- **Open Stores %:**

```
1 % Open Stores =
2 DIVIDE ( [Open Stores], [Total Stores] )
```

This measure calculates the percentage of stores that are currently open relative to the total number of stores.

- **Avg Discount %:**

```
1 Avg Discount% = DIVIDE([Total Discount], [Total Sales])
```

This measure calculates the overall average discount rate applied across all sales transactions.

- ## Average Clicks per Day:

```
Average Clicks per Day =
DIVIDE (
    SUM ( Marketing[Clicks] ),
    DISTINCTCOUNT ( Marketing[Date] )
)
```

This measure calculates the daily average number of clicks received from all marketing campaigns

- ## Total Sales by StoreType:

```
Total Sales By StoreType =
SUM ( Sales[SalesAmount] )
```

This measure calculates the sum of all sales amounts from the [SalesAmount] column within the Sales table

- ## TopCategory:

```
TopCategory =
CALCULATE (
    MAX ( 'ProductCategory'[ProductCategory] ),
    TOPN (
        1,
        SUMMARIZE (
            'ProductCategory',
            'ProductCategory'[ProductCategory],
            "SalesAmount", [Ordered Amount]
        ),
        [SalesAmount], DESC
```

This measure uses a complex calculation to identify and return the name of the single product category (ProductCategory) with the highest total sales amount.

- ## Top 5 Products Sales:

```
1 Top 5 Products Sales =
2 IF ( [Product Rank by Country] <= 5, [Ordered Amount]
3
```

This measure calculates the total sales amount ([Ordered Amount]) only for those products that fall within the top 5 rank in their respective country

- ## SelectedSubcategory:

```
1 SelectedSubcategory =
2 COALESCE (
3     LOOKUPVALUE (
4         RLS_Table[SubcategoryName],
5         RLS_Table[UserEmail], USERPRINCIPALNAME()
6     ),
7     "NULL"
```

This measure is designed to implement Row-Level Security (RLS) by retrieving the specific product subcategory a user is allowed to view.

- ## Impressions YTD LY:

```
1 Impressions YTD = TOTALYTD([Total Clicks], 'Dim_Date'[Date])
```

This measure calculates the Impressions YTD for the exact same period, but one year earlier.

- ## YTD Change %:

```
1 YTD Change % =
2 DIVIDE([Impressions YTD] - [Impressions YTD LY], [Impressions YTD LY], 0)
```

This measure calculates the percentage growth or decline of Impressions YTD compared to Impressions YTD LY

Dashboard Building

Building Dynamic Interactive Dashboard

This Power BI dashboard is designed for easy navigation, featuring drillthrough capabilities for detailed analysis and conditional formatting to highlight key metrics, helping sales teams and management identify trends and make data-driven decisions

Dashboard Building

Building Dynamic Interactive Dashboard

Key Measures and Analytics:

Key measures are calculated and displayed across various visualizations, such as bar and line charts, and KPIs. These include:

Ordered Amount: A core measure used to track the total volume of sales orders.

Delivered Amount: A key metric for monitoring the actual value of successfully delivered sales.

Time Intelligence Measures: Advanced measures supporting complex comparisons, such as Last Year (LY) and Year-to-Date (YTD) cumulative analysis.

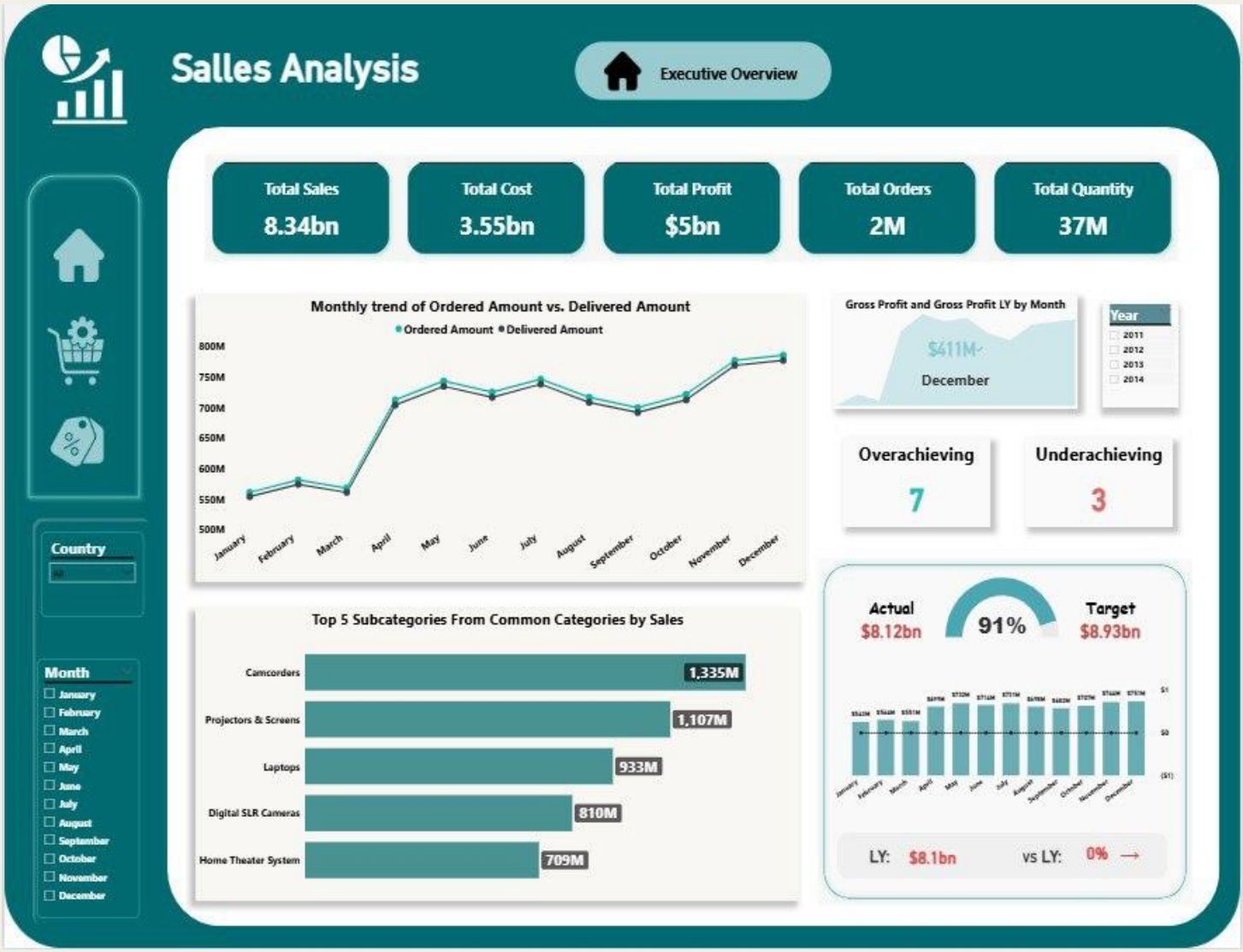
Interactive Features and Depth of Analysis

Interactive elements, including filters and slicers, allow users to drill down into specific attributes, enabling deeper insights into sales patterns:

Drill-Through Capability: Users can analyze sales performance based on region country name and then Drill to view the information about each country

Regional Filtering: Analysis can be performed based on geographical location and date

Dashboard 1: C-Level Executive



Dashboard 1: C-Level Executive

Q1

Monthly trend of Ordered Amount vs. Delivered Amount

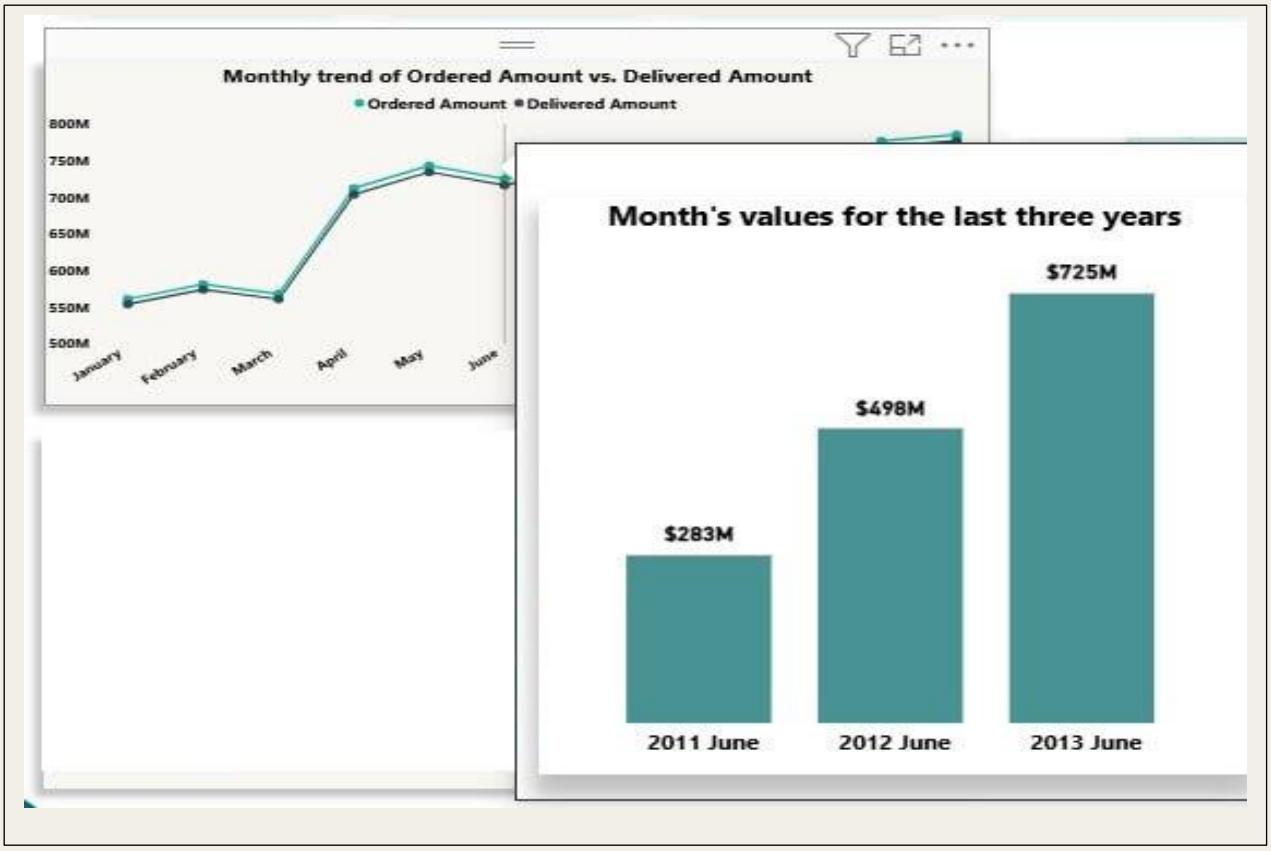
This chart (Line) shows:

The delivered and ordered amounts were closely aligned, indicating low cost and high operational efficiency. December had the highest order volume, while Q1 showed the lowest activity, gradually increasing in Q2, stabilizing in Q3, and rising again by the end of Q4.

Dashboard 1: C-Level Executive

Q1

a tool p on hover that displays this month's values for the last three years of the selected year

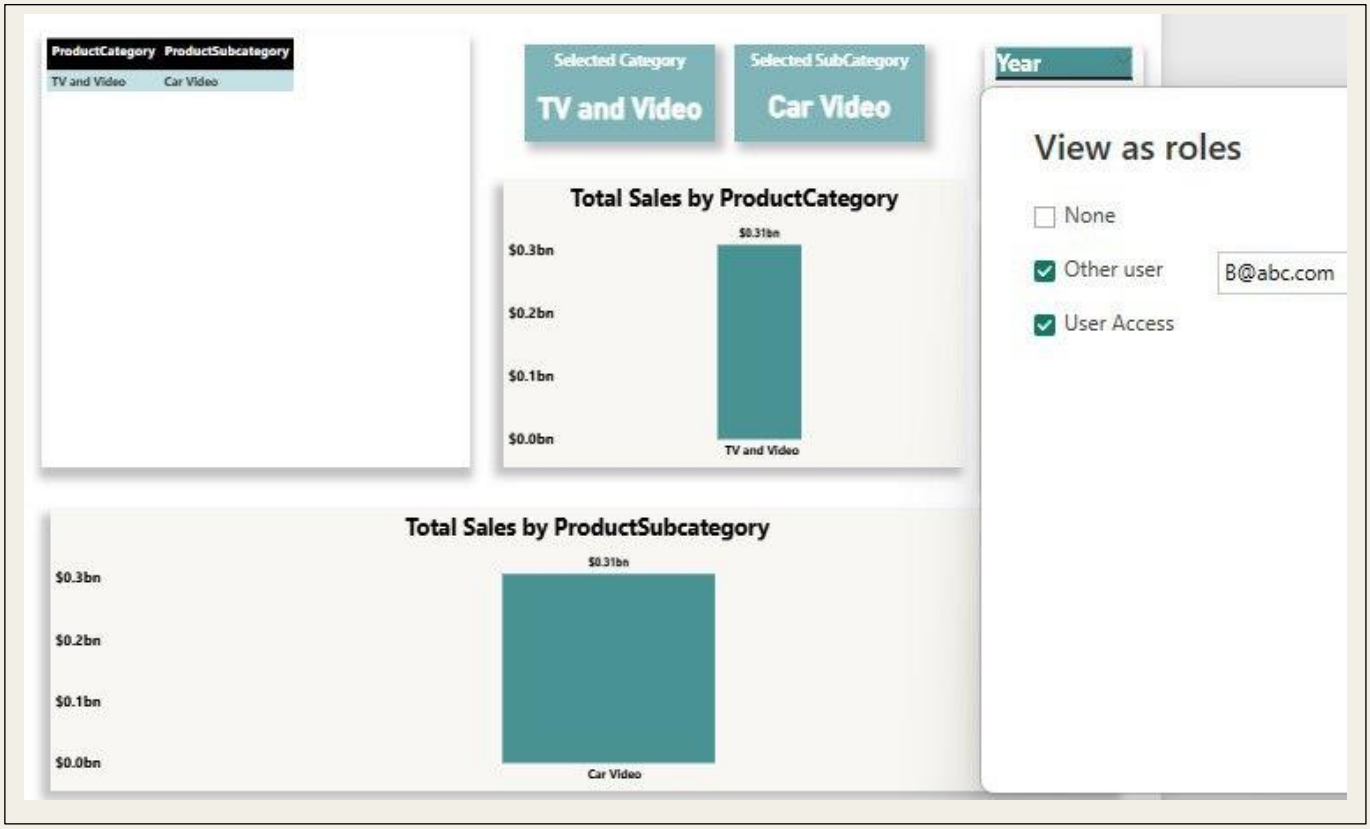


Dashboard 1: C-Level Executive

Q3

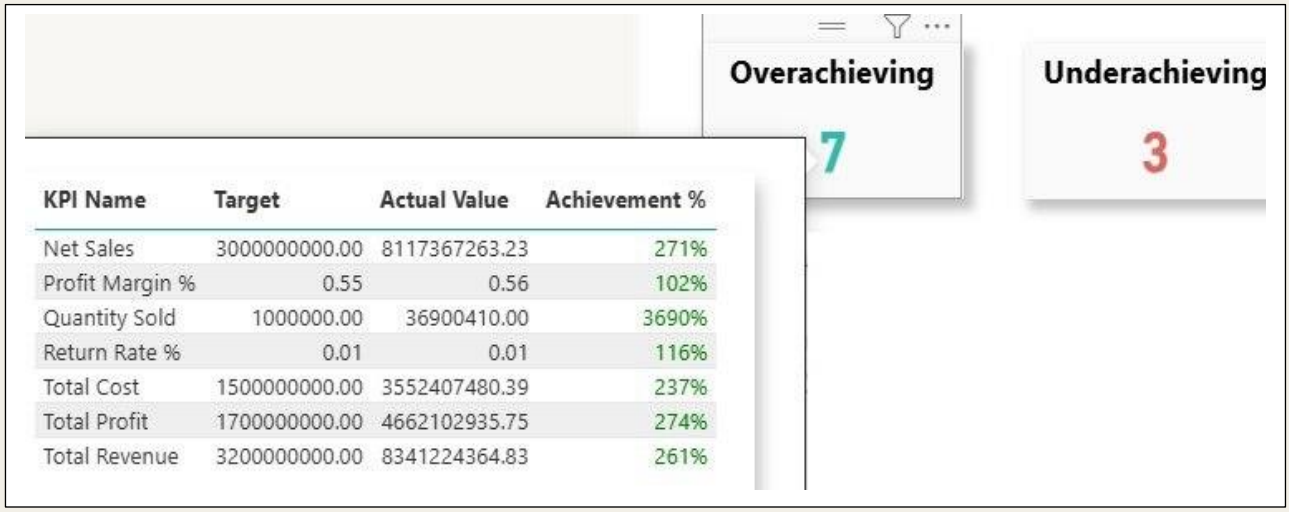
RLS:

User B: Can access specific category in TV and Video.

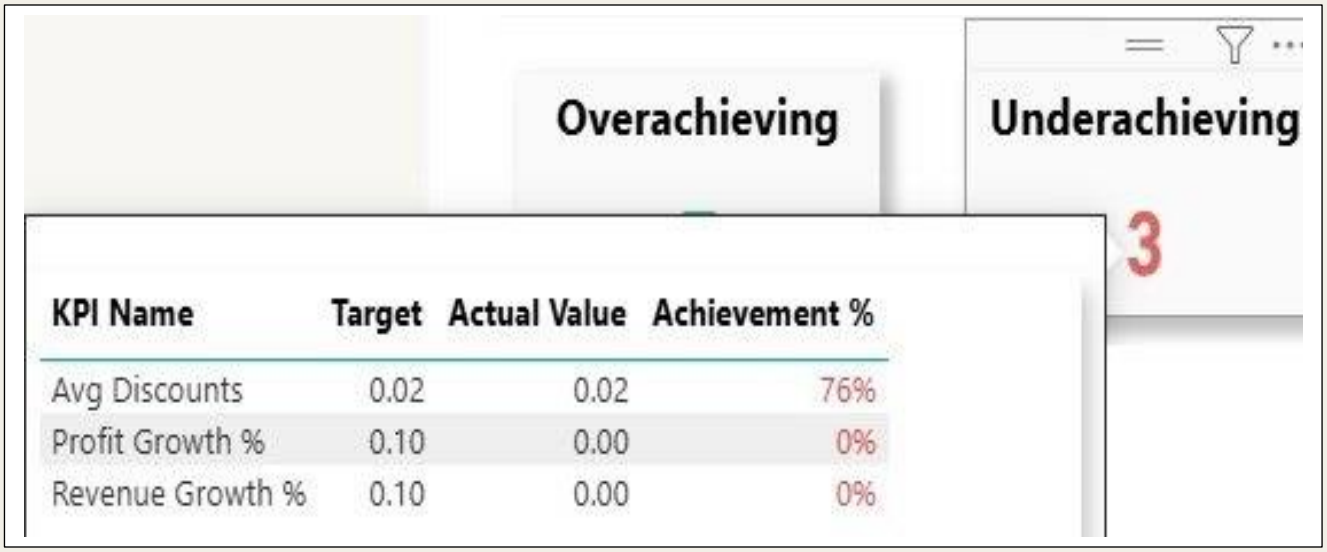


Dashboard 1: C-Level Executive

Q10



KPI Name	Target	Actual Value	Achievement %
Net Sales	3000000000.00	8117367263.23	271%
Profit Margin %	0.55	0.56	102%
Quantity Sold	1000000.00	36900410.00	3690%
Return Rate %	0.01	0.01	116%
Total Cost	1500000000.00	3552407480.39	237%
Total Profit	1700000000.00	4662102935.75	274%
Total Revenue	3200000000.00	8341224364.83	261%



KPI Name	Target	Actual Value	Achievement %
Avg Discounts	0.02	0.02	76%
Profit Growth %	0.10	0.00	0%
Revenue Growth %	0.10	0.00	0%

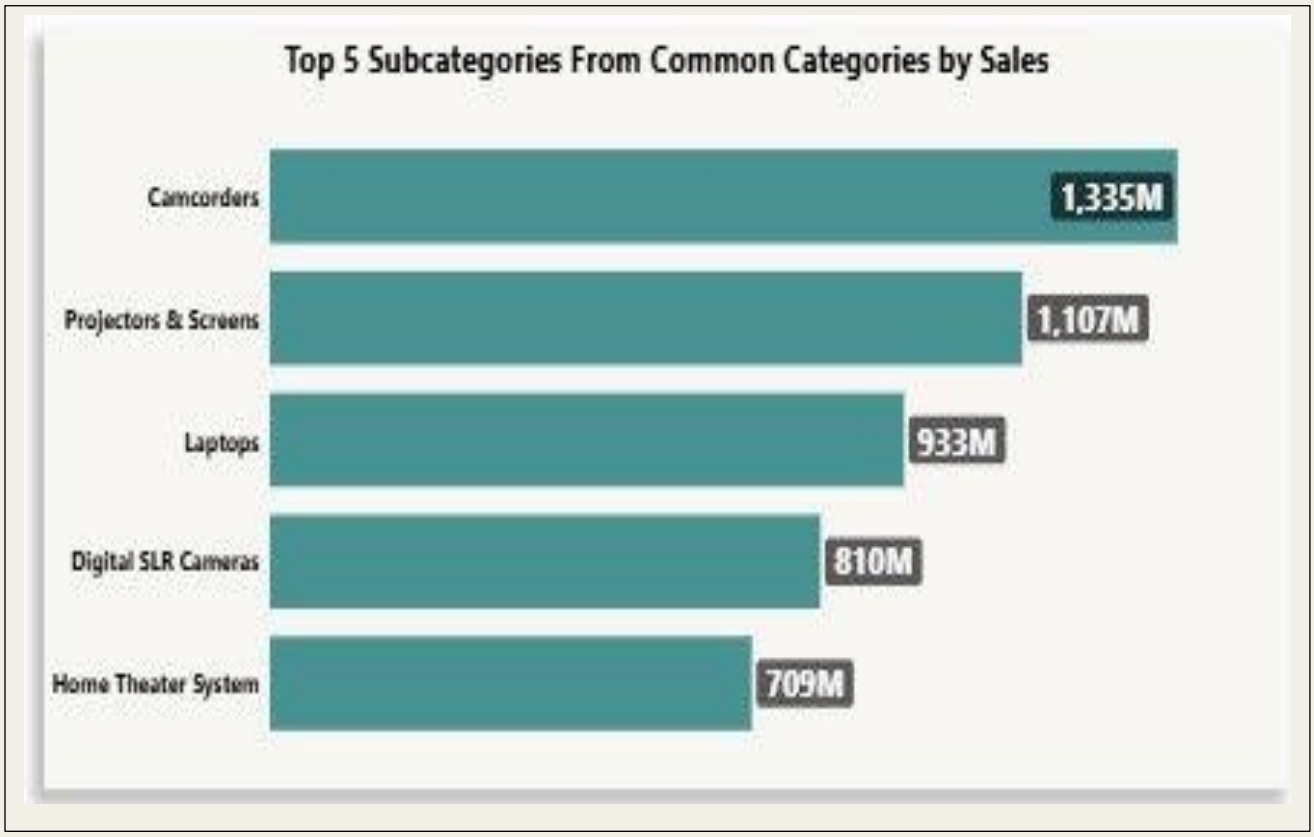
Overachieving KPIs: Net Sales (271%), Profit Margin (102%), Quantity Sold (3690%), Return Rate (116%), Total Cost (237%), Total Profit (274%), and Total Revenue (261%) — showing strong financial and operational performance.

Underachieving KPIs: Profit Growth (0%), Revenue Growth (0%), and Avg Discounts (76%) — indicating lack of growth momentum and limited discount strategy effectiveness.

Dashboard 1: C-Level Executive

Q5

Top 5 Subcategories from common categories by sales



This chart (Clustered Bar) shows:

Visual tech products like camcorders **($1.34M)** and projectors **($1.11M)** lead sales, guiding marketing focus toward these categories.

Dashboard 1: C-Level Executive

Q4

Actual &Target

This chart shows:

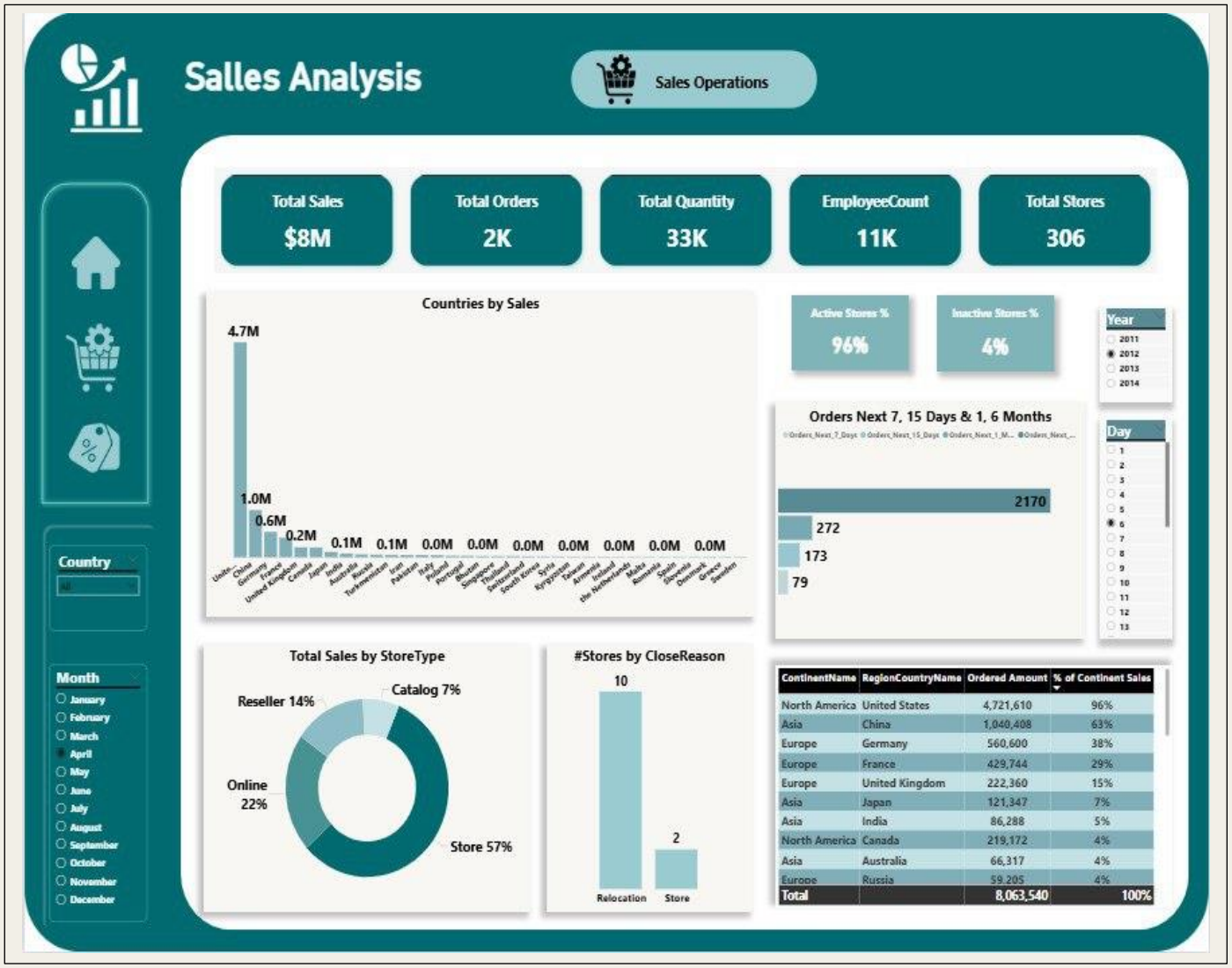
2011: Strong performance (**102%** of target); stable monthly revenue (Apr–Nov) at **283M**; December peak at **300M** likely due to holiday season. No prior year data available.

2012: Underperformance (**76%** of target); **16%** drop vs. last year; weak Q1 (Jan–Mar) suggests seasonal or operational issues.

2013: Achieved 88% of target; slight decline vs. **2012.**

Performance varies across years, indicating market or strategic shifts. **2011** was excellent, while **2012** and **2013** need intervention. Repeated weakness in Q1 suggests seasonal or operational challenges. Inconsistent target achievement may reflect forecasting or planning gaps.

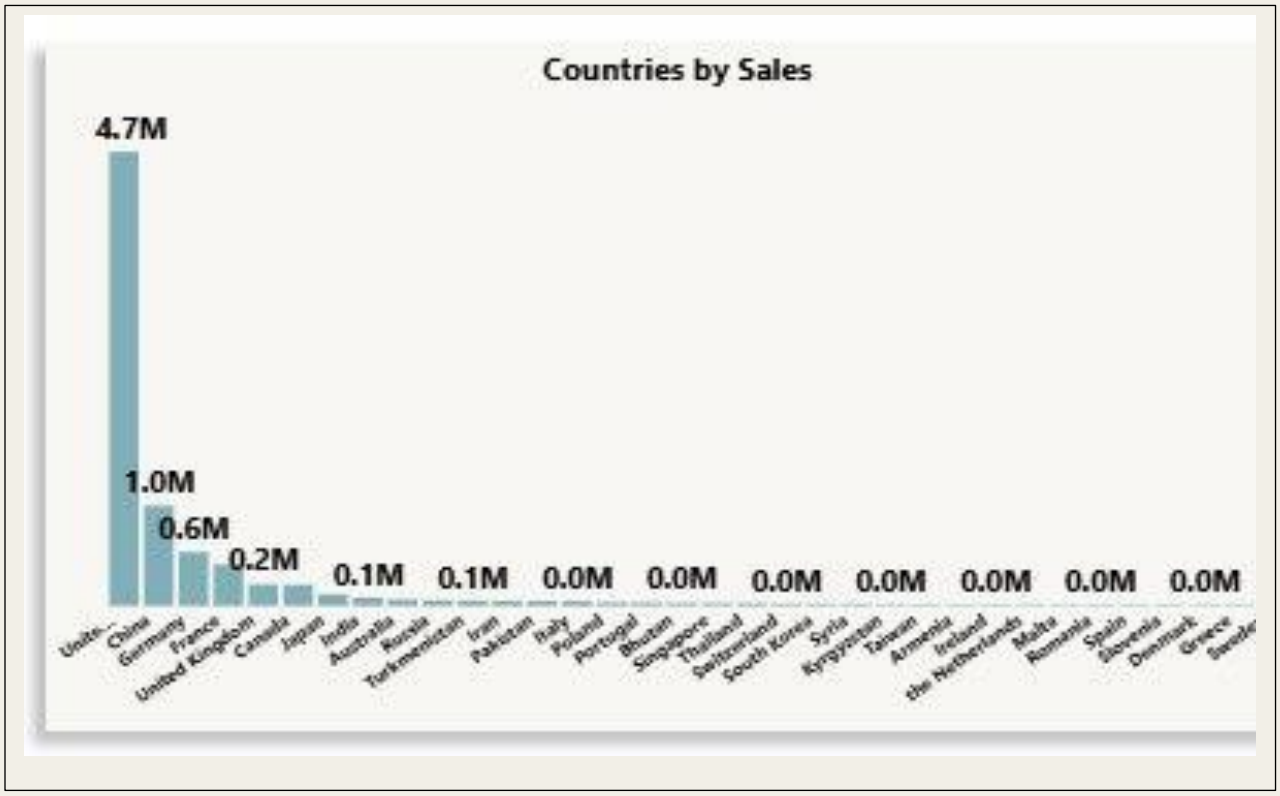
Dashboard 2:SalesTeam/Operational



Dashboard 2:SalesTeam/Operational

Q6

Countries by sales



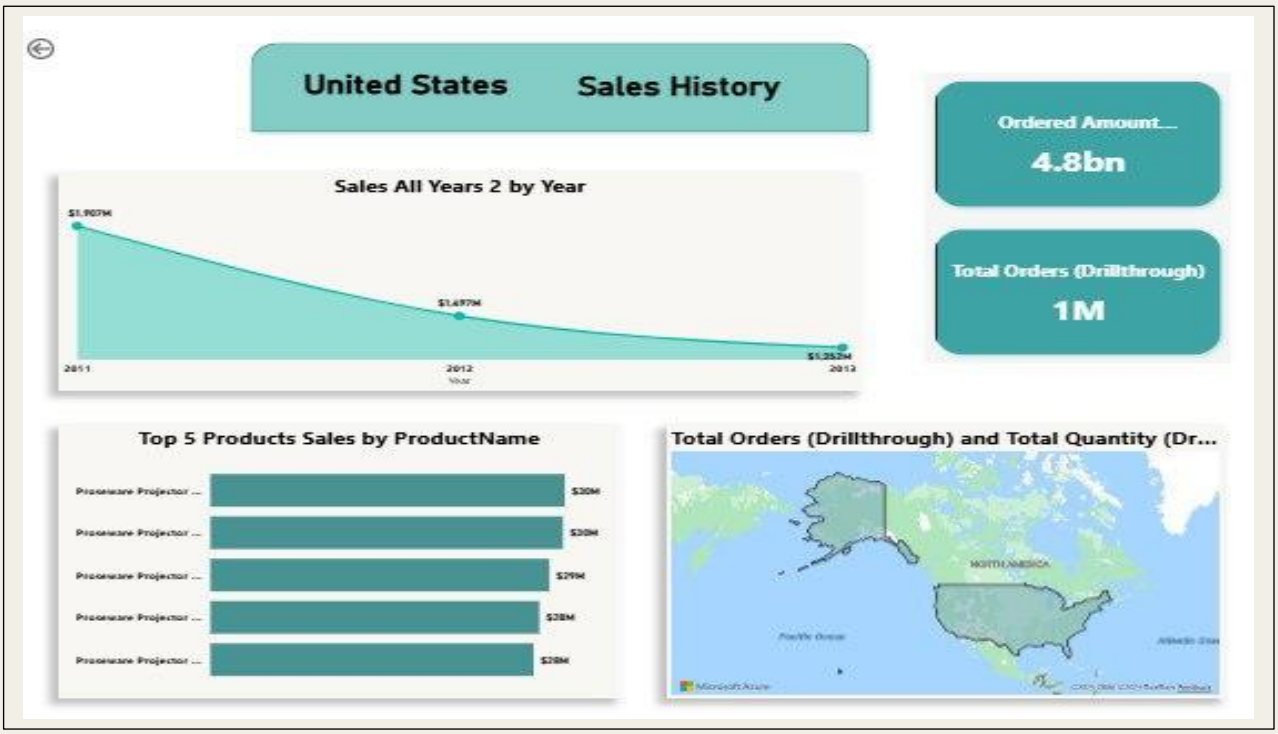
This chart (Clustered Column) shows:

The U.S. is the primary revenue driver with $4.7M in sales, followed by China ($1.0M) and Canada ($0.6M), offering expansion potential. Other countries show weak performance—most under $0.2M in markets like Russia, Germany, and France.

Dashboard 2:SalesTeam/Operational

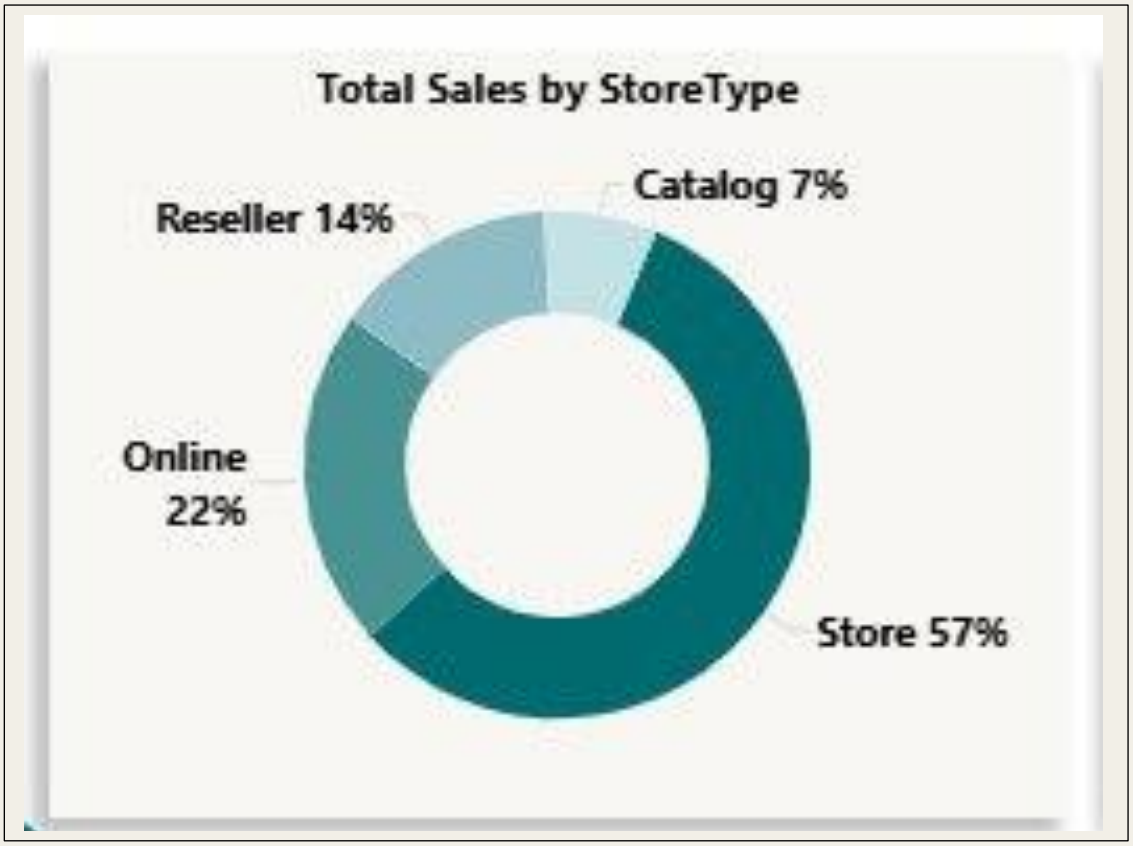
Q6

drill through for Countries by sales



Dashboard 2:SalesTeam/Operational

Total sales by store type



This chart (Donut) shows:

Store sales dominate with 57%, while online channels show growth potential at 22%. Resellers contribute 14%, likely targeting businesses, and catalogs remain the weakest at 7%, possibly due to limited reach or outdated format.

Dashboard 2:SalesTeam/Operational

Number of stores by closereason

This chart (Clustered Column) shows:

83 % of store closures were due to relocation, reflecting strategic shifts in store locations, while only 17% were actual shutdowns likely linked to weak performance or operational issues.

Dashboard 2:SalesTeam/Operational

Q8

Order Next 7,15 Days & 1,6 Months

This chart (Clustered Bar) shows:

Orders next 6 months are 2170, Orders next 1 month are 295, Orders next 15 days are 180 and Orders next 7 days are 81.

Dashboard 2:SalesTeam/Operational

Q7

ContientName & RegionCountryName & Order Amount

ContinentName	RegionCountryName	Ordered Amount	% of Continent Sales
North America	United States	4,721,610	96%
Asia	China	1,040,408	63%
Europe	Germany	560,600	38%
Europe	France	429,744	29%
Europe	United Kingdom	222,360	15%
Asia	Japan	121,347	7%
Asia	India	86,288	5%
North America	Canada	219,172	4%
Asia	Australia	66,317	4%
Europe	Russia	59,205	4%
Total		8,063,540	100%

This chart (Table) shows:

The U.S. dominates global sales with 96% of North American revenue, while China leads Asia at 63%, and Europe shows balanced distribution led by Germany and France

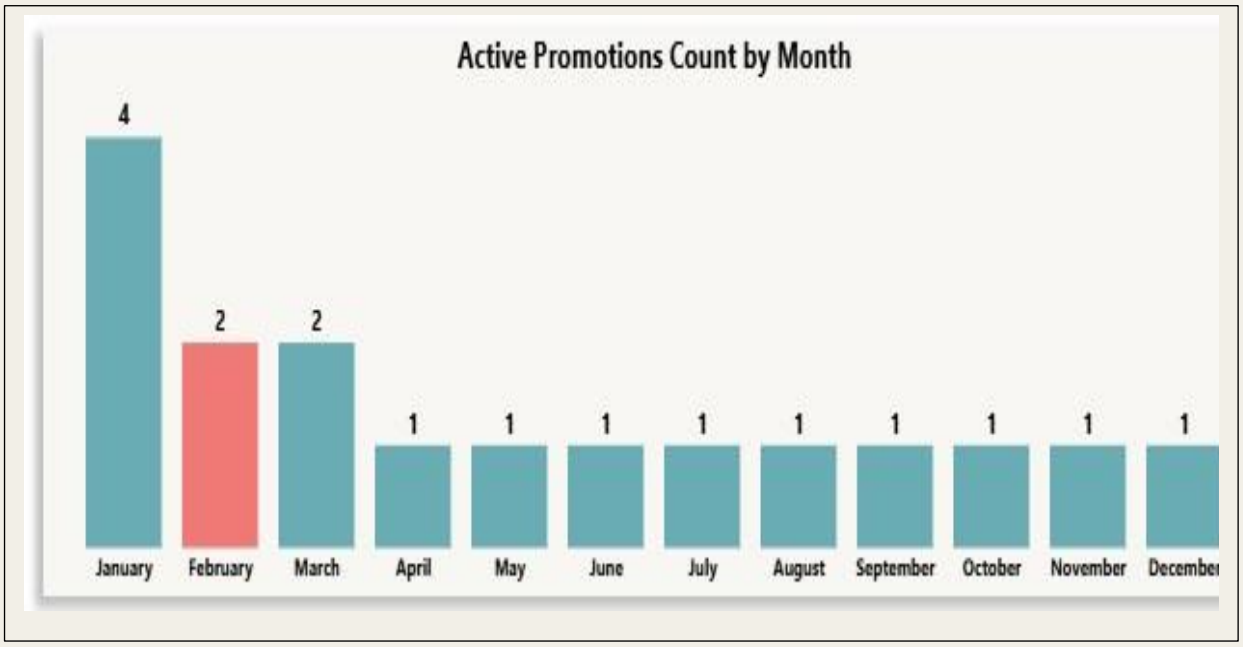
Dashboard 3: Marketing Analysis

Dashboard 3: Marketing Analysis

Q2

Q9

Active promotions count by month

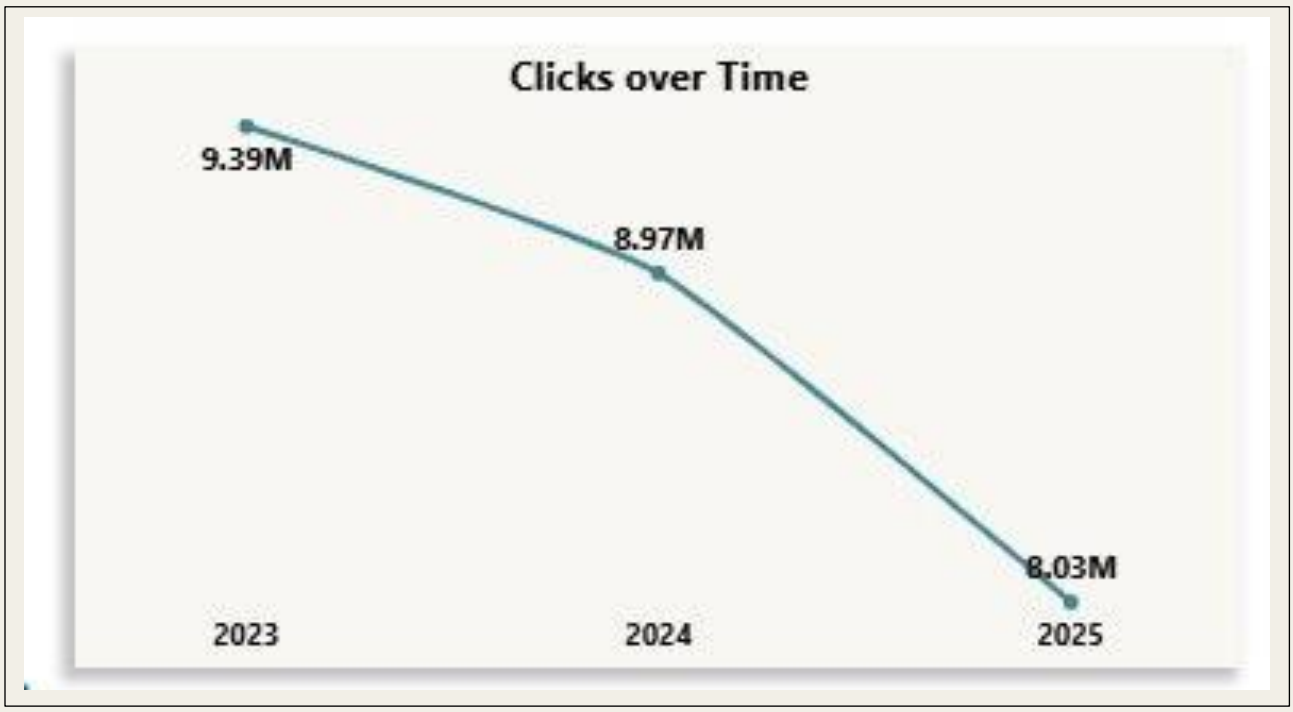


This chart (Clustered Column) shows:

Promotional activity starts strong but drops sharply and remains minimal throughout the year, with limited marketing engagement likely impacting sales and customer interaction

Dashboard 3: Marketing Analysis

Clicks over time



This chart (Line) shows:

Clicks declined steadily from **9.39M** in **2023** to **8.03M** in **2025**—a cumulative drop of over **14%**, signaling a consistent decrease in digital engagement or marketing effectiveness.

Dashboard 3: Marketing Analysis

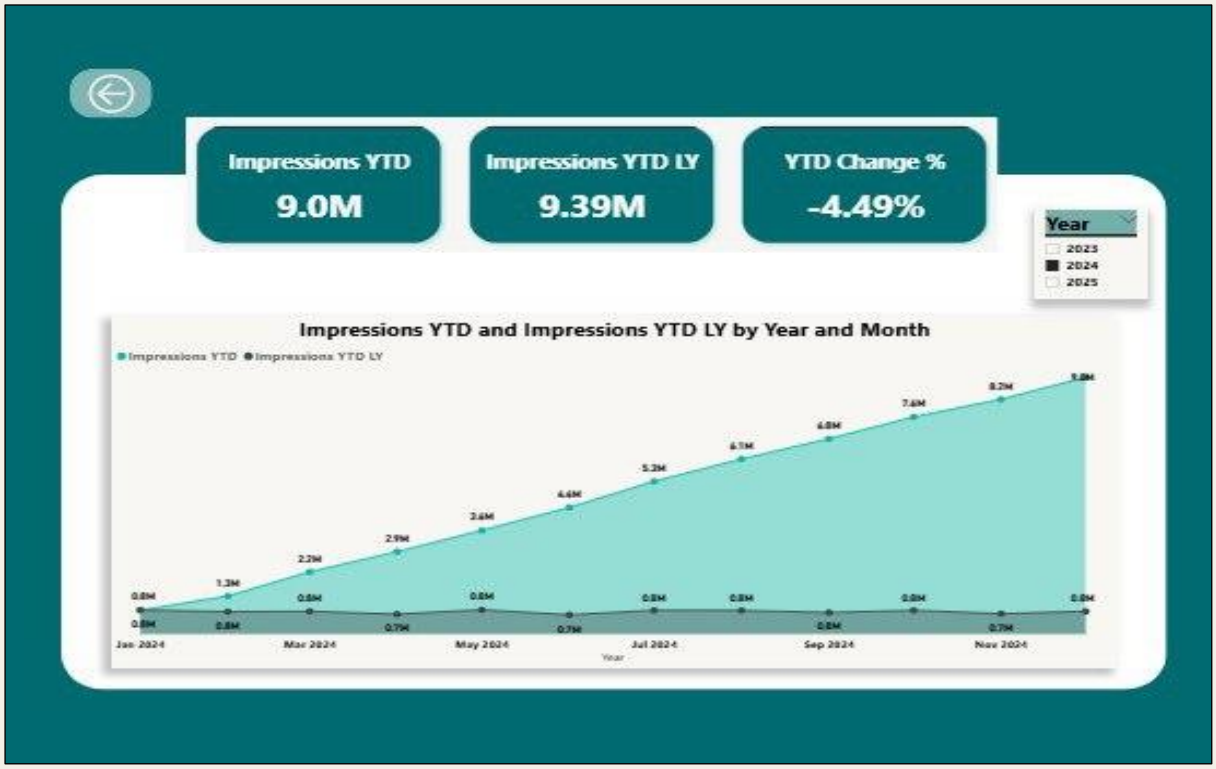
Total Promotions by discountPercent

This chart (Clustered Column) shows:

Discounts of 10% and 20% are the most used and likely the most effective, while mid-range discounts (5% and 15%) are underutilized, and 0% offers are rare and likely ineffective

Dashboard 3: Marketing Analysis

Q11

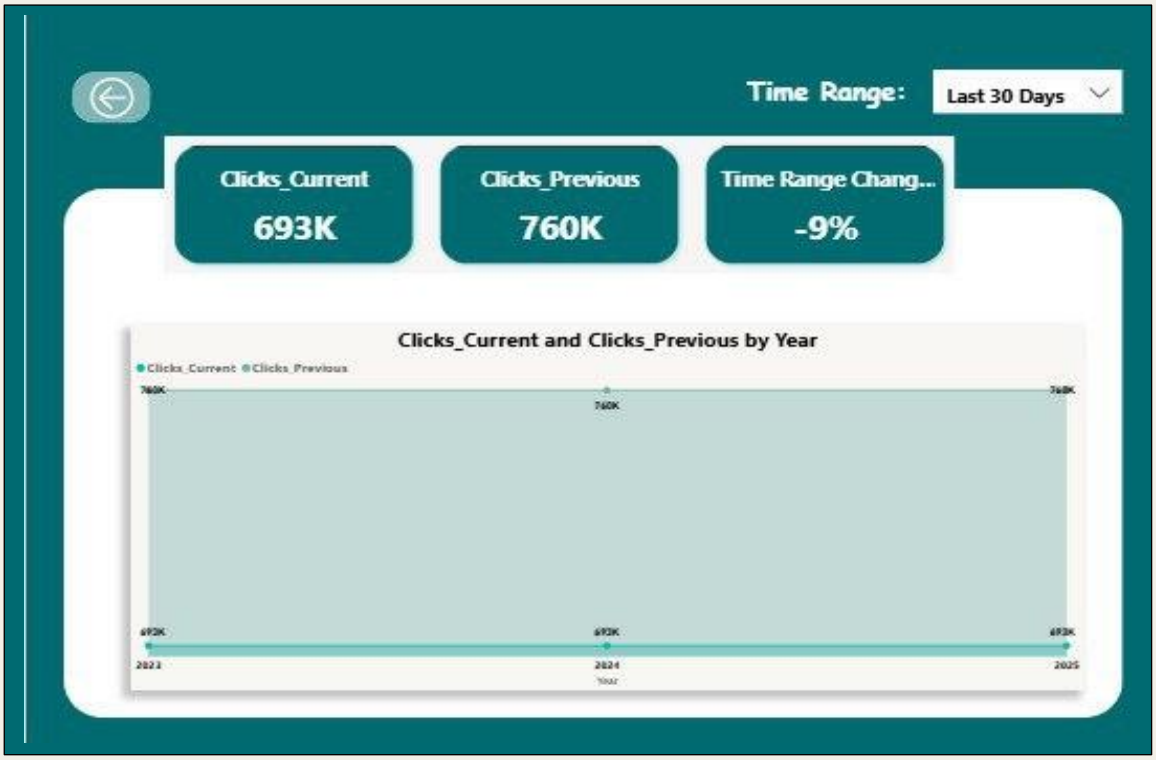


Slight Annual Drop: Total Impressions Year-to-Date (YTD) are down by 4.49% (9.0M current vs. 9.39M last year).

Excellent Monthly Growth: The current performance shows a strong, consistent upward trend month-over-month.

Dashboard 3: Marketing Analysis

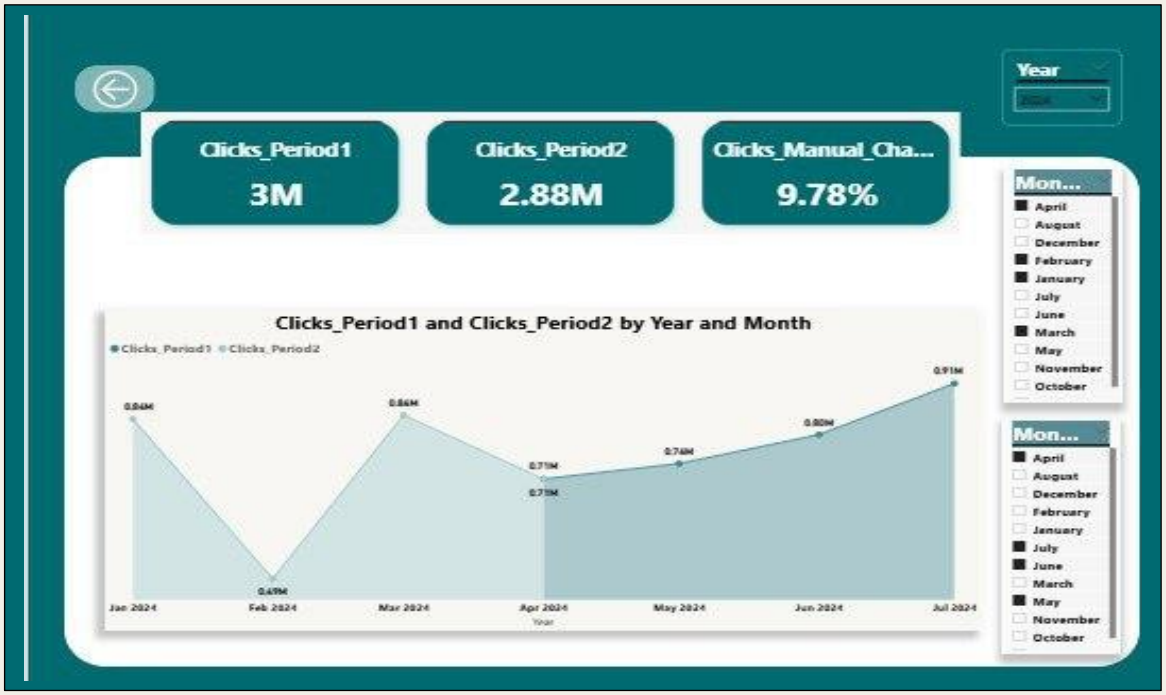
Q11



Clicks dropped by 4% compared to the previous period {725K} down to {698K}). This decrease was consistent as both current and previous daily clicks remained flat across the entire 30-day range.

Dashboard 3: Marketing Analysis

Q11



Clicks Performance Summary: Overall clicks increased by {9.78\%} (based on the "Clicks_Manual_Change" metric). Monthly clicks show a strong, continuous upward trend starting from March 2024, peaking at the highest point on the chart in July 2024 {0.91M}).

Insights:

1) Total sales reached 8.34B with a strong 60% profit margin, driven by 2M orders averaging 4,170 each and 19 units per order—reflecting efficient cost control.
2) The delivered and ordered amounts were closely aligned, indicating low cost and high operational efficiency. December had the highest order volume
3) Visual tech products like camcorders ($1.34M) and projectors ($1.11M) lead sales
4) 2011: Strong performance (102% of target); stable monthly revenue (Apr–Nov) at 283M;
5) Underperformance (76% of target); 16% drop vs. last year; weak Q1 (Jan–Mar)
6) Achieved 88% of target; slight decline vs. 2012
7) $8 million in sales were achieved through 2,000 orders, totaling 33,000 units sold, with 11,000 employees across 306 stores.
8) The U.S. is the primary revenue driver with $4.7M in sales, followed by China ($1.0M) and Canada ($0.6M),
9) Store sales dominate with 57%, while online channels show growth potential at 22%. Resellers contribute 14%
10) 83 % of store closures were due to relocation, reflecting strategic shifts in store locations, while only 17% were actual shutdowns
11) Orders next 6 months are 2170, Orders next 1 month are 295, Orders next 15 days are 180 and Orders next 7 days are 81.
12) The U.S. dominates global sales with 96% of North American revenue, while China leads Asia at 63%
13) 26 million clicks were recorded with a maximum discount promotion of 20%—there is no active promotion now.
14) Clicks declined steadily from 9.39M in 2023 to 8.03M in 2025—a cumulative drop of over 14%
15) Discounts of 10% and 20% are the most used and likely the most effective, while mid-range discounts (5% and 15%) are underutilized, and 0% offers are rare and likely ineffective

Recommendations:

1) Increase inventory and launch marketing campaigns ahead of peak seasons (especially Q2 and Q4).
2) Activate targeted campaigns during low-performing months using special offers, discounts, and social media promotions to boost demand.
3) Conduct a comparative analysis between weak and strong months—focusing on marketing efforts, pricing strategies, product availability, and customer behavior
4) Camcorders and Projectors are leading the market. I suggest increasing marketing efforts around them
5) There's an opportunity to target new customer segments like university students and content creators
6) Strengthen your investment in the U.S. market by maintaining strong marketing campaigns.
7) Focus on improving customer experience and offering products tailored to American consumer needs
8) I suggest investing in user experience improvements, digital advertising campaigns, and seamless payment integration
9) offering technical and marketing support, and reviewing distribution terms to better motivate sales
10) conducting feasibility studies for each new location and reviewing the impact on sales and customer service.
11) Strengthen high-performing markets: The United States and China are the primary growth drivers. I suggest maintaining strong marketing campaigns and continuously reviewing the customer experience to ensure long-term success.

Recommendations:

11) Capitalize on mid-potential markets: Japan, India, Australia, France, and the United Kingdom show promising numbers but remain below their full potential. I recommend launching tailored campaigns for each market and revisiting pricing and distribution strategies to unlock further growth
12) Conduct a full UX audit to assess user experience, and implement improvements in design and browsing speed
13) Launch fresh marketing campaigns using short videos and engaging content to re-attract and activate users
14) Launch seasonal offers during key months such as April (Ramadan), June (summer), November (Black Friday), and September (back-to-school).
15) Review sales and engagement results from January, and apply the same successful tactics to other months
16) Experiment with short-term promotions (3-day or weekend offers) supported by strong social media campaigns to drive urgency and visibility.
17) Add creativity to offers within the 5%–15% discount range. For example, “Buy 2 and get 15% off” or “5% off your first order” can make these promotions more appealing

Thank You And Have A Nice Time