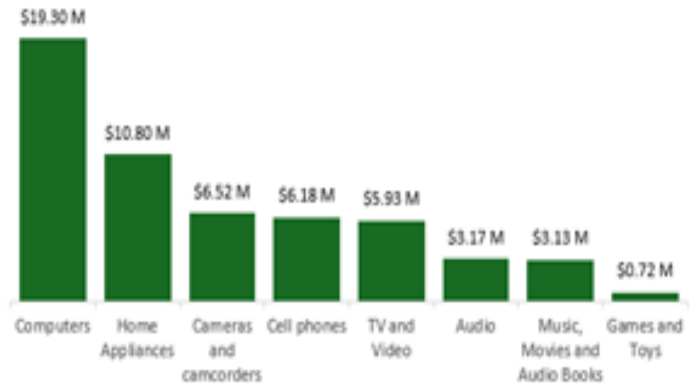
MAVEN ELECTRONICS SALES REPORT

Total Revenue	Total Orders	Total Stores	Average Order Value	Average Shipping Days
$55.76 M	26,326	67	$2,118	4.5

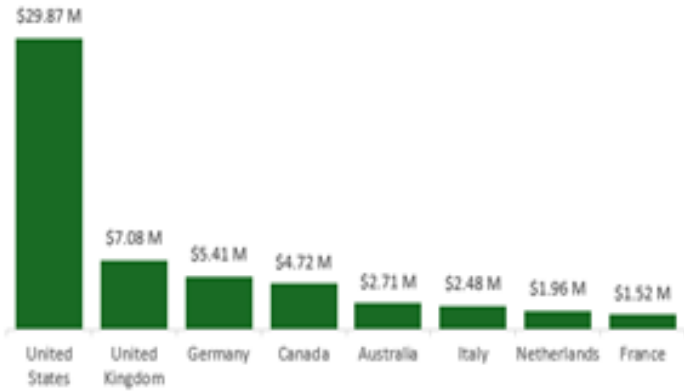
Store Type: In-Store | Online

Date: All Periods (YEARS) — 2016 2017 2018 2019 2020 2021

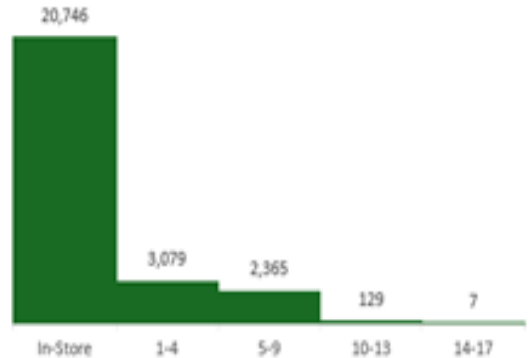
Revenue per Product Category



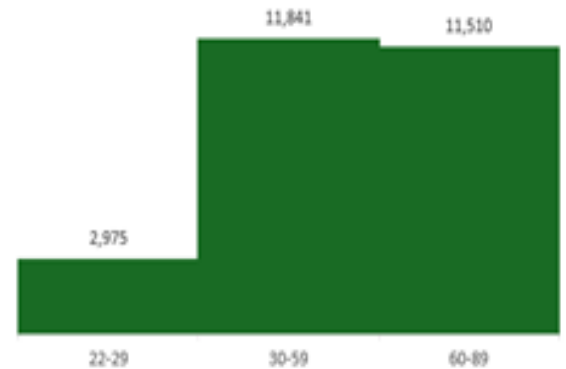
Revenue per Country



Orders per Shipping Days

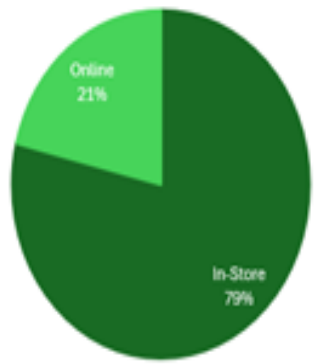


Orders per Customer Age

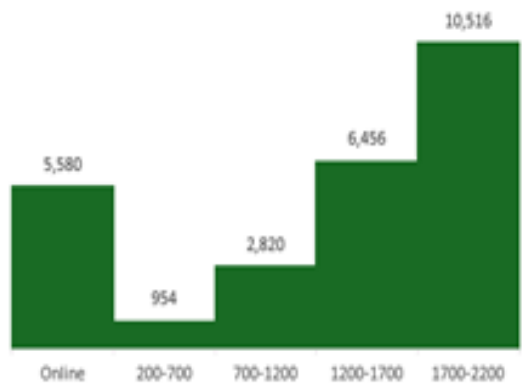


Profit Trend

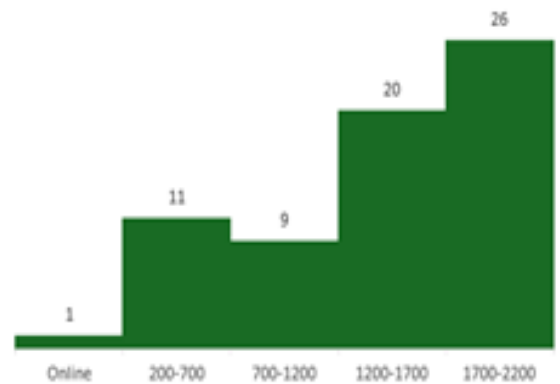
Order Breakdown



Orders per Store Area (Square Meters)



Stores per Store Area (Square Meters)



Objective

- I have just been hired as a Data Analyst for Maven Electronics.
- Maven Electronics is a global retailer that sells computers, cell phones, TVs, cameras, appliances, and more, both online and in-store.
- Revenue has been on a downward trend, and management needs my help consolidating the data to conduct an exploratory analysis.
- My goal is to build an interactive report that the management team can use to explore sales performance.
- I will also be providing my data-driven recommendations to determine a solution for recovering from the lost revenue and profitability.

Approach

- I performed a product sales analysis on Maven Electronics.
  - My analysis was a holistic evaluation of sales performance.
- I used Microsoft Excel for this project.
  - I used Power Query to add calculated fields.
  - I used Power Pivot to create a relational data model.
  - I used Pivot Tables to create an interactive sales report dashboard.
- I uploaded the files for this project onto my GitHub.

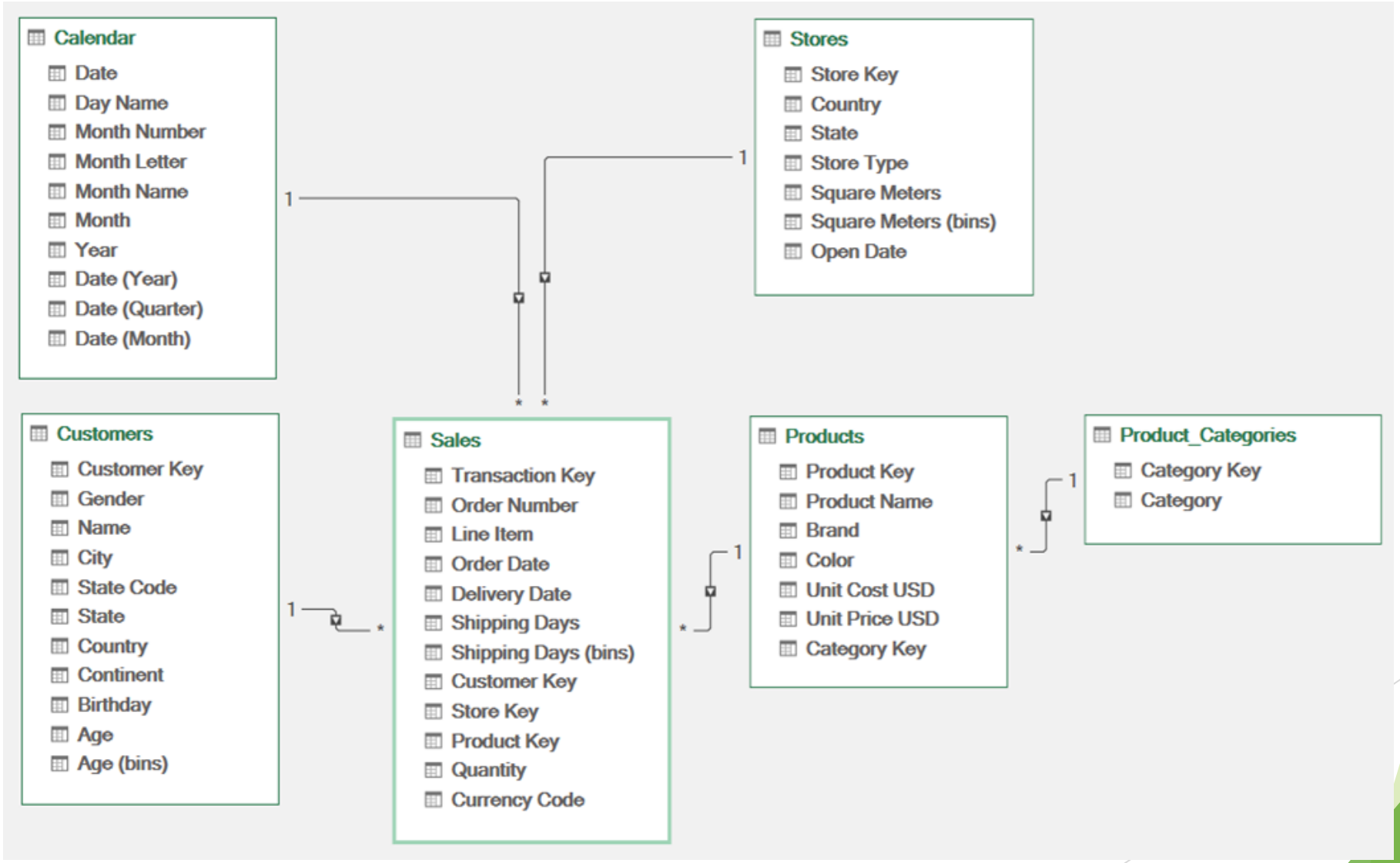
Scope of Analysis

- My analysis will focus on the following areas:
  - Seasonality
  - Product and Sales Performance
  - Revenue and Profitability Optimization
- My analysis will assess the following information:
  - Profit Trend (Month-over-Month)
  - Profit per Country
  - Profit per Product Category
  - Share of Order Types (Online and In-Store)
  - Distribution of Orders per Store Area (square meters)
  - Distribution of Orders per Shipping Days
  - Distribution of Orders per Customer Age
  - Number of Stores per Store Area (square meters)

About the Data Set

- The data for this project consists of the following tables:
  - Fact Table
    - Sales
      - A table containing the log of all the sales transactions from Maven Electronics
  - Dimension Tables
    - Calendar
      - A table containing all the dates of years 2016-2021.
      - This table was used for aggregation in the pivot tables.
    - Customers
      - A table containing the information of all the customers of Maven Electronics.
    - Stores
      - A table containing the information of all the Maven Electronics stores.
    - Products
      - A table containing the information of all the products of Maven Electronics.
    - Product Categories
      - A table consisting of all the product categories for Maven Electronics.
      - This table was created in the Power Query editor.

Data Model


Calendar
Date
Day Name
Month Number
Month Letter
Month Name
Month
Year
Date (Year)
Date (Quarter)
Date (Month)
Stores
Store Key
Country
State
Store Type
Square Meters
Square Meters (bins)
Open Date
Customers
Customer Key
Gender
Name
City
State Code
State
Country
Continent
Birthday
Age
Age (bins)
Sales
Transaction Key
Order Number
Line Item
Order Date
Delivery Date
Shipping Days
Shipping Days (bins)
Customer Key
Store Key
Product Key
Quantity
Currency Code
Products
Product Key
Product Name
Brand
Color
Unit Cost USD
Unit Price USD
Category Key
Product_Categories
Category Key
Category
1
*

Data Cleaning Strategy

- I renamed these columns in the Customers, Stores, Products, and Sales tables:
  - “CustomerKey” to “Customer Key”
  - “StoreKey” to “Store Key”
  - “ProductKey” to “Product Key”
  - “CategoryKey” to “Category Key”
  - “Delivery Days” to “Shipping Days”
- I added these calculated fields to the following tables:
  - Sales
    - **Shipping Days:** The number of days it took to ship online orders to customers.
    - **Shipping Days (bins):** A bin column for the shipping days for aggregation in the Pivot Tables
  - Stores
    - **Square Meters (bins):** A bin column for the square meters for aggregation in the Pivot Tables
    - **Store Type:** A column indicating whether the store is “In-Store” or “Online”
- I created the following DAX measures:
  - **Total Orders:** The total number of orders made
  - **Total Revenue:** The total revenue generated from all orders (USD)
  - **Total Cost:** The total cost of each product (USD)
  - **Average Shipping Days** The average number of shipping days per order
  - **Average Order Value:** The total revenue per total number of orders (USD)
  - **Total Profit:** The total revenue-total cost (USD)
  - **Total Stores:** The total number of Maven Electronics stores.

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Assumptions

- There were null values in the following tables:
  - The square_meters column of the Stores table:
    - There was only one null value associated with the Online store type.
    - So, I assumed that was the reason for the null value because there is no physical location for online stores.
  - The shipping_date column of the Sales table:
    - I assumed that these null values corresponded to in-store purchases.
    - I assumed this for the following reasons:
      - Online stores were the only stores that had non-null delivery dates
      - In-store purchases don’t require any shipping.
    - Because of the above reasoning, I concluded that there were no delayed online orders.

Total Insights

- These are the totals for Maven Electronics:
  - Total Revenue: $55.76 M
  - Total Orders: 26,326
  - Total Stores: 67
  - Average Order Value: $2,118
  - Average Shipping Days: 4.5

Sales Insights

- Computer products brought in the most revenue for Maven Electronics ($19.30 M).
- Games and Toys brought in the least revenue for Maven Electronics ($0.72 M).
- Most of the revenue came from the United States (29.87 M).
- Most of the sales came from In-Store purchases (79%).
  - Sales from online purchases took mostly 1-4 shipping days for delivery (3,079 orders).
- Most of the sales came from customers who were at least 30 years old (23,351 orders).
  - Sales from younger customers were less frequent. (2,975 orders).
- Most of the sales came from stores that were 1700-2000 square meters in store area (10,516 orders).
  - There are 26 of these stores available, which is most of the stores in terms of store area.
  - Sales were significantly lower in stores with smaller store areas.

Time Series Insights

- Total Profitability of Maven Electronics from 2016-2021:
  - Maven Electronics was most profitable during January, February, and December.
  - Maven Electronics was least profitable during March and April.
  - Maven Electronics maintained a steady profit from May to November.
- However, the profits during these years were not very high.
  - The maximum profit that Maven Electronics achieved was around $1.3 M in February 2020.
  - Maven Electronics began to lose profit in 2020.

Conclusion

- Maven Electronics is most profitable during the holiday seasons.
  - The time series insights support this conclusion.
- Maven Electronics is not performing well internationally.
  - Revenue was extremely concentrated in the United States.
  - Revenue from other countries was very insignificant.
- Maven Electronics customers are mostly middle-aged adults and seniors.
- Maven Electronics customers do not prefer shopping online.
- Maven Electronics customers prefer shopping at large stores.
  - The sales insights support these conclusions about the Maven Electronics customers.

Recommendations

- Ensure that larger stores are fully staffed.
  - Since larger stores drew the most sales, these stores should be the highest priority when considering staffing needs.
  - This is especially important during the holiday seasons when Maven Electronics is most profitable.
- Prioritize Computer sales.
  - These products contributed most of the revenue sales for Maven Electronics.
  - Therefore, these products are the most popular.
- Reduce Games and Toys from all stores.
  - Since most customers are middle to senior-aged adults, it is unlikely that they will be buying these products.
  - This could also explain why these products performed so poorly in terms of revenue.
- Make more investments in E-commerce.
  - The fact that most customers prefer to shop in-store, could explain why revenue from Maven Electronics is heavily concentrated in only one country.
  - By investing more in e-commerce, Maven Electronics can grow internationally by reaching new customers online, instead of being limited to only brick-and-mortar customers.