Revenue Analysis and Future Strategy Recommendations

Introduction

The objective of this report is to analyze the previous earnings since 2016 to understand and identify actionable recommendations to improve sales performance for next quarter and beyond. Using SQL for data extraction, Python for analysis, and Matplotlib for visualization, the report highlights trends, key areas of opportunity, and actionable insight.

Data Collection

1. **Sales Data:** Order details such as order date and quantity
2. **Products:** Product details like name, cost, and revenue.
3. **Stores:** Store location and size.
4. **Customer Data:** Demographics and spending patterns

Data Analysis

1. **Sales by Product**

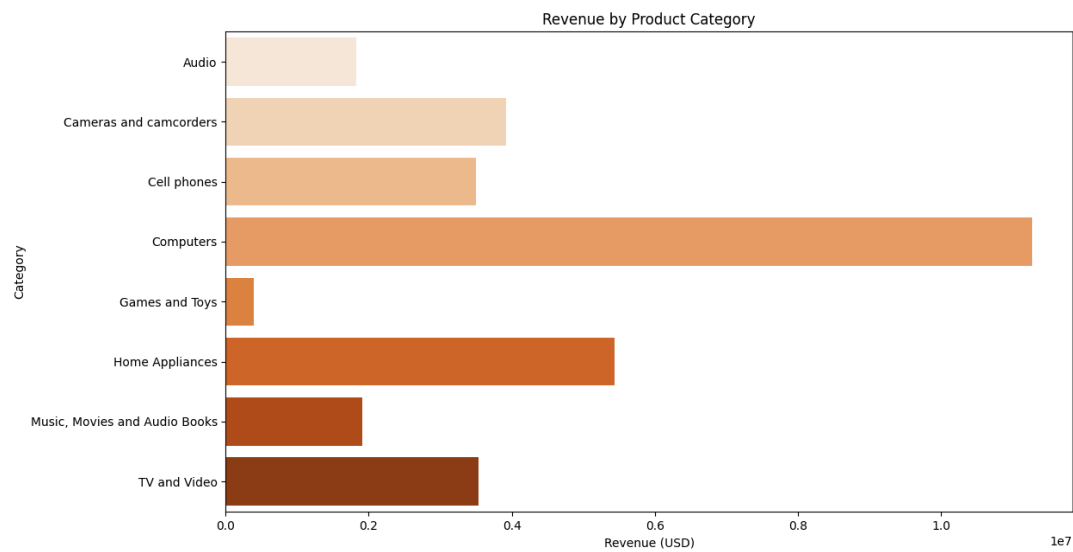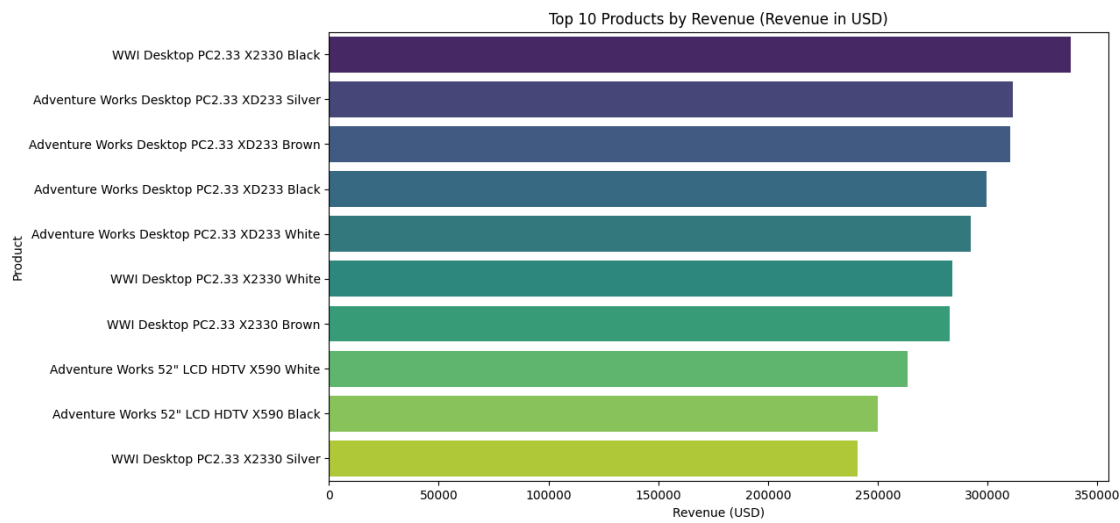**Figure 1. Product categories based on their revenue by product**

Revenue by Product Category

Figure 2. Top 10 Products by their Revenue (USD)

Top 10 Products by Revenue (Revenue in USD)

The most profitable products include high-end items such as the "WWI Desktop PC2.33 X2330 Black," "Adventure Works Desktop PC2.33 XD233 Silver," and the "Adventure Works Desktop PC2.33 XD233 Brown." All ten of the leading products show clear resemblance to Computer products leading many of the high yielding revenue generated.

2. Sales by Region

Figure 3. Regions based on their revenue

Top 10 Regions by Revenue
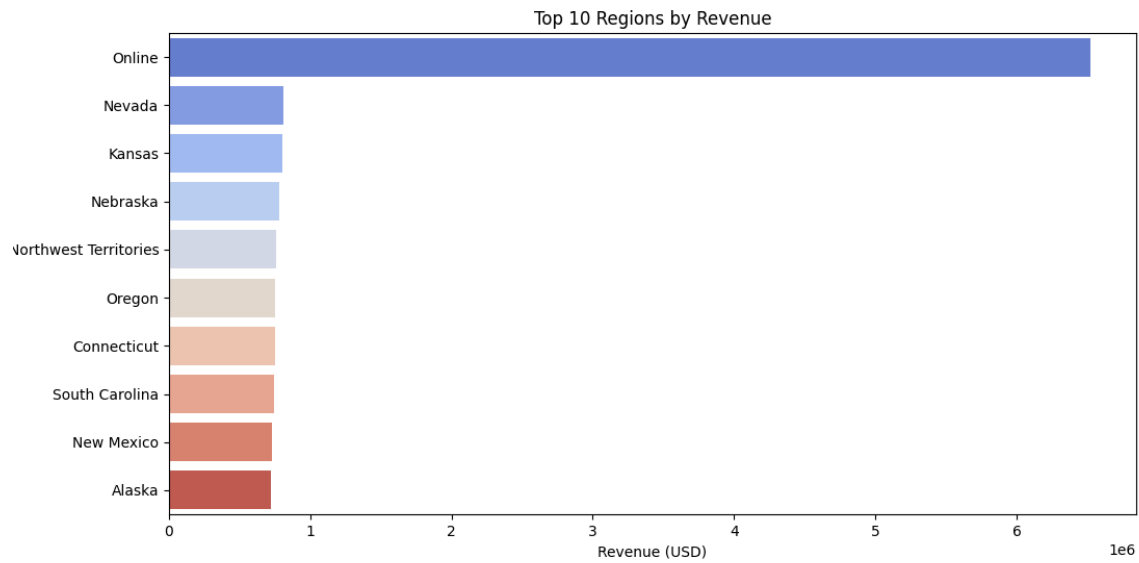
Online sales dominate over all other regions, showcasing a strong online presence. Nevada and Kansas, like many other regions are highlighting some campaigns, however none of the other regions come close to over a six times margin of revenue as online brings.

3. Store Efficiency

Figure 4. Comparing the revenue of a store based on the amount of square meter
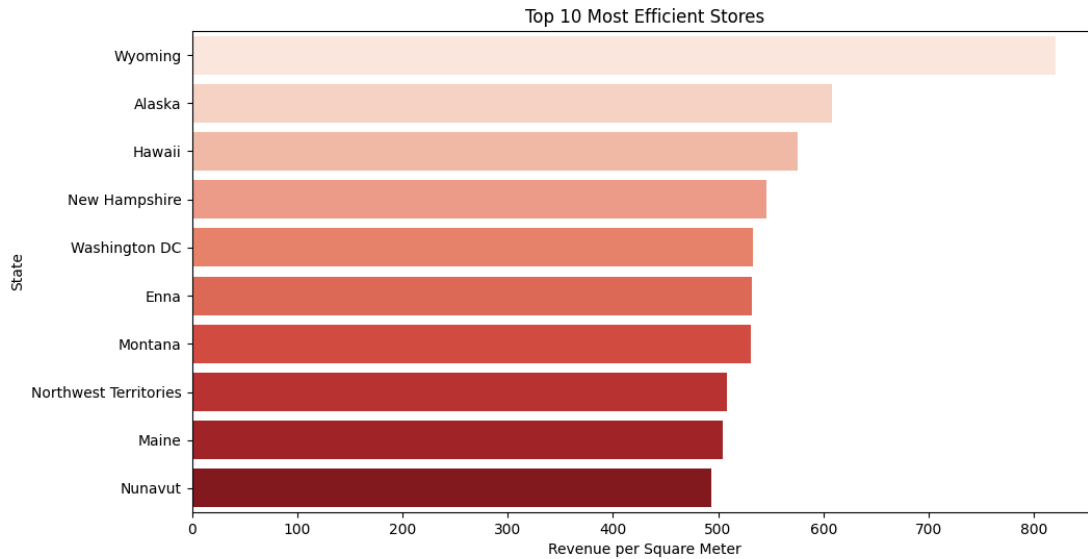

**Figure 5. Comparing revenue to the store size**

Wyoming and Alaska are the most efficient with store size. Focusing on replicating their strategies (i.e., inventory management) could help improve other stores. Furthermore, we see a correlation with larger stores generating more revenue. However, efficiency peaks vary, suggesting diminishing returns after a certain size.

4. Customer Analysis

**Figure 6. Customers based on how much revenue they bring to store**

Top 10 Customers by Lifetime Revenue (Revenue in USD)
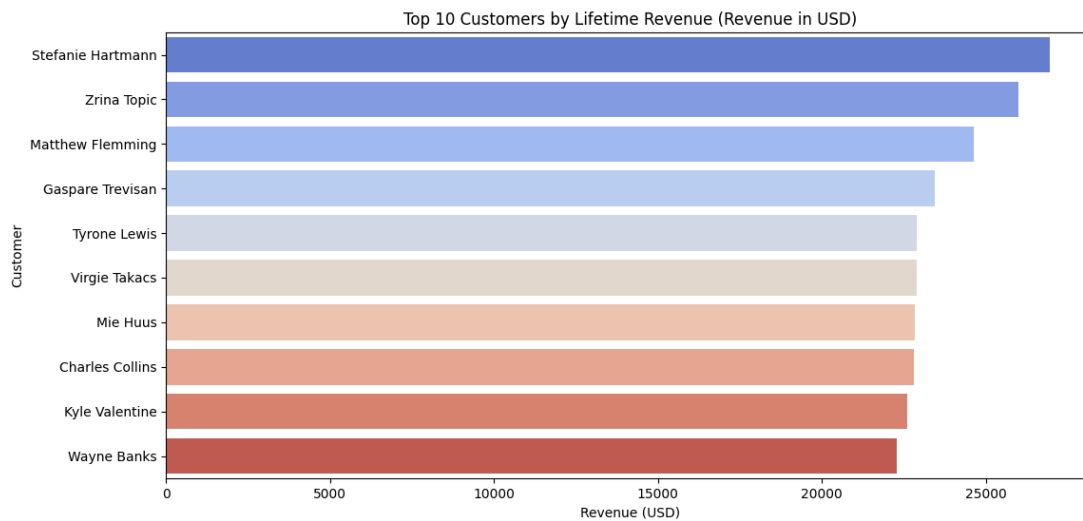
Figure 7. Customers based on the amount of total orders

Top 10 Customers by Total Orders
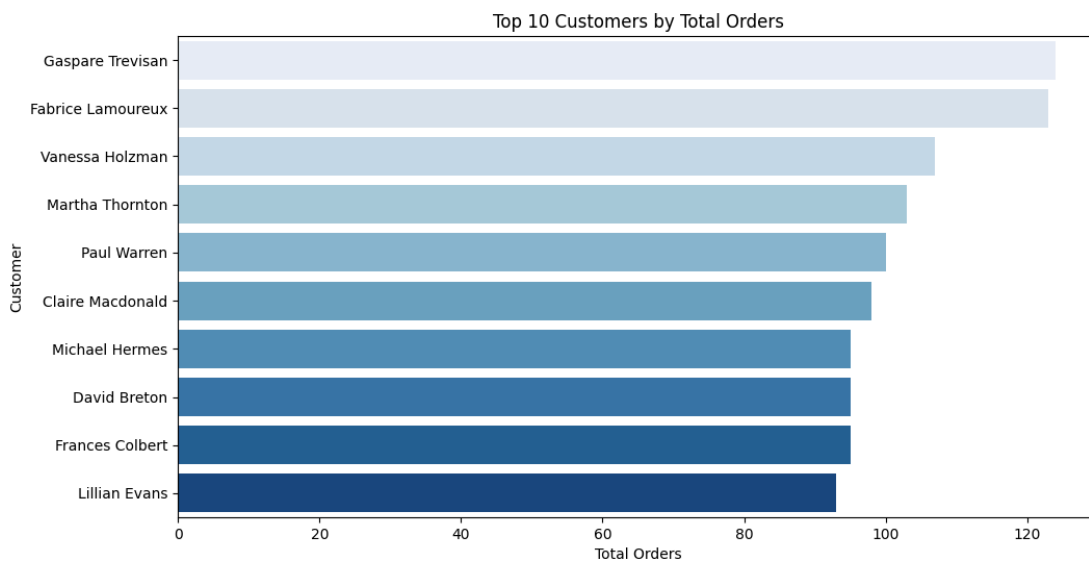
Customers like Stefanie Hartmann and Gaspare Trevisan seem to contribute significantly to revenue. Possibly incentivizing loyalty, like exclusive offers, can drive sales even further.

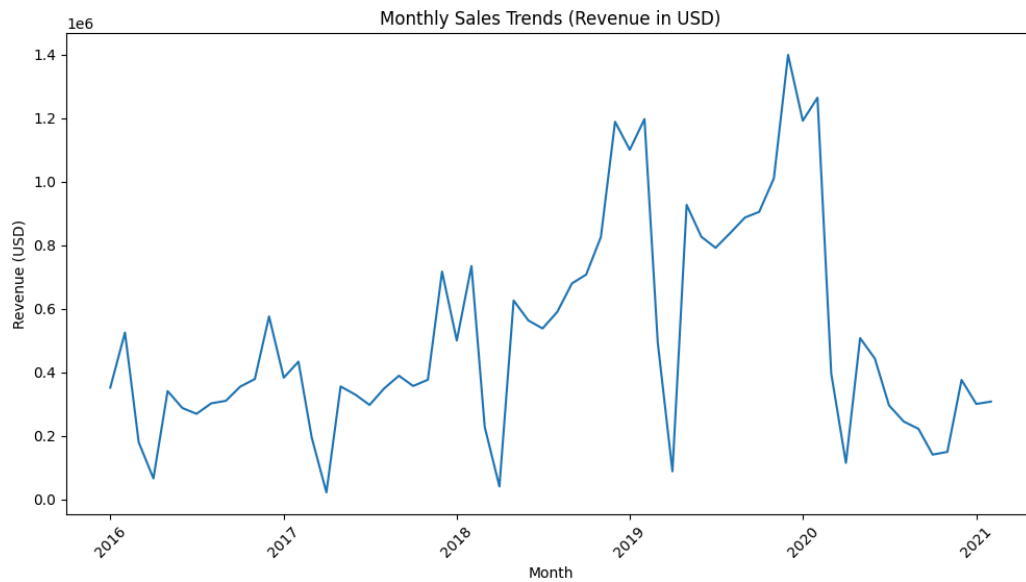## 5. Impact of Profits on Quantity Sold

Figure 8. Amount of quantity sold when on based on profit

Impact of Discounts on Sales Volume
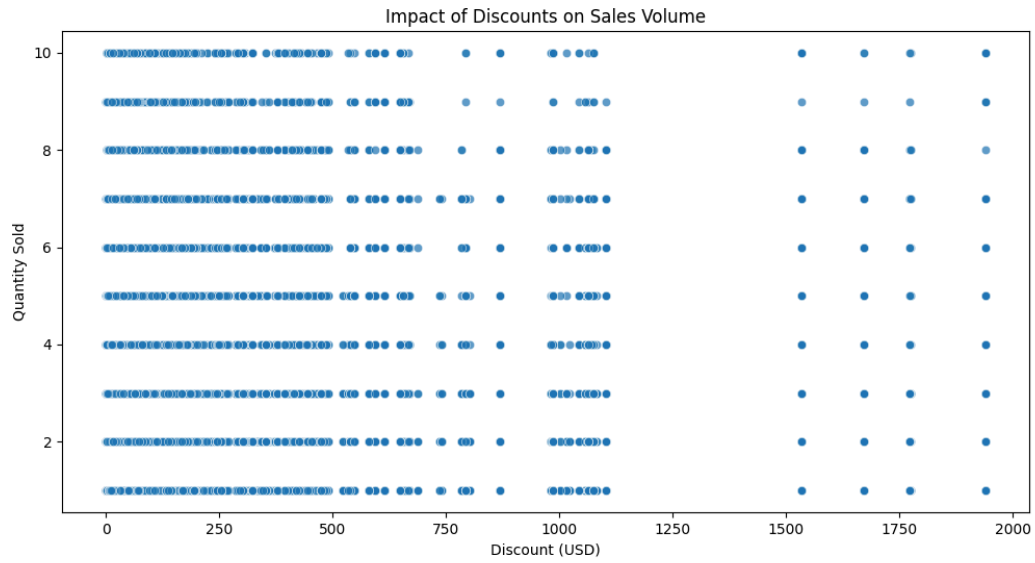
The relationship between quantity and revenue is not linear, meaning there doesn't seem to be an increase of sales.

6. Yearly Sales Trends

Figure 9. Yearly Sales Trends from 2016-2021

Monthly Sales Trends (Revenue in USD)

There are clear peaks in Q4 due to the holiday seasons, suggesting seasonal demand spikes. Planning inventory around these times is crucial.

Recommendations

- **Focusing on High-Performing Products**
  - Pushing the sales of top products like the "WWI Desktop PC2.33 X2330 Black," "Adventure Works Desktop PC2.33 XD233 Silver," and the "Adventure Works Desktop PC2.33 XD233 Brown."
  - Make sure these products are consistently in stock
  - Target marketing campaigns towards premium products
- **Enhance E-Commerce Strategies**
  - As the market continues to shift towards a more online based shopping experience, start pushing more sales to be online. Physical stores will inevitably be phased out overtime and it is important from a company standpoint to stay ahead of the curve before it is too late.
  - Continue to optimize for a better user experience. No one wants to use a bad online platform.

- **Improve Regional Performance**
  - Incentivize physical regional performance. Use physical stores to draw customers in and capitalize on the face to face interaction and bring better sales.
  - Use insights from top performing stores to optimize the weaker stores
- **Seasonal Planning**
  - Creating promotions around the holidays to draw even more customers in
  - Increase inventory for holidays based on very large influx of orders in Q4
- **Optimize Discounts**
  - Implement data-driven discount strategies to ensure maximum profitability
  - Q1 seems to be very weak after the holidays. Maybe target for sale opportunities?
- Customer Retention Programs
  - Develop loyalty programs for top customers to keep retention
 - Offer personalized discounts to high-value customers

Conclusion

This analysis provides actionable insights to improve sales performance by focusing on high-performing products, optimizing potential discounts, leveraging regional trends, and enhancing the online space for shopping strategies. Implementing these recommendations will likely improve sales and profitability for the next quarter.

IMPROVEMENTS?
Record Late Deliveries (see if there is room for improvement)
Currently showing top performers. Also show weak performers?
Use Geopandas to plot global sales?
1. Fix monthly -> yearly
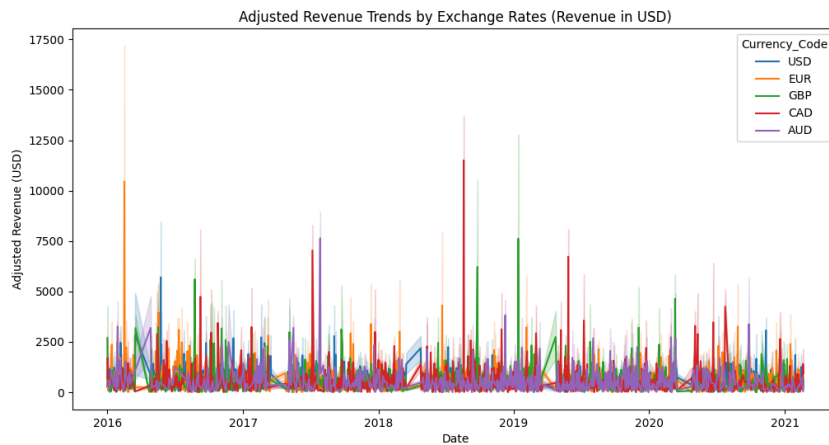
Incorporating Exchange Rate Data?