

Data Analysis Report

Prepared by [Hoi-Kwan Kwok]
kaijunguo06@gmail.com
August 31, 2022

Overview

This report shows the current business performance of an online retail store in 2011 and suggests metrics that would enable them to make the decision on expansion. The CEO and CMO have recently met to finalise 4 questions and would like me to provide them with some analysis and visuals that would help answer their questions. Based on the findings,

Methodology

I would need to make sure that the data I am using is of good quality and does not contain any bad data that would have an adverse impact on your analysis. Once the data is cleaned, the next step would be to create the visuals in Tableau.

Data Cleaning

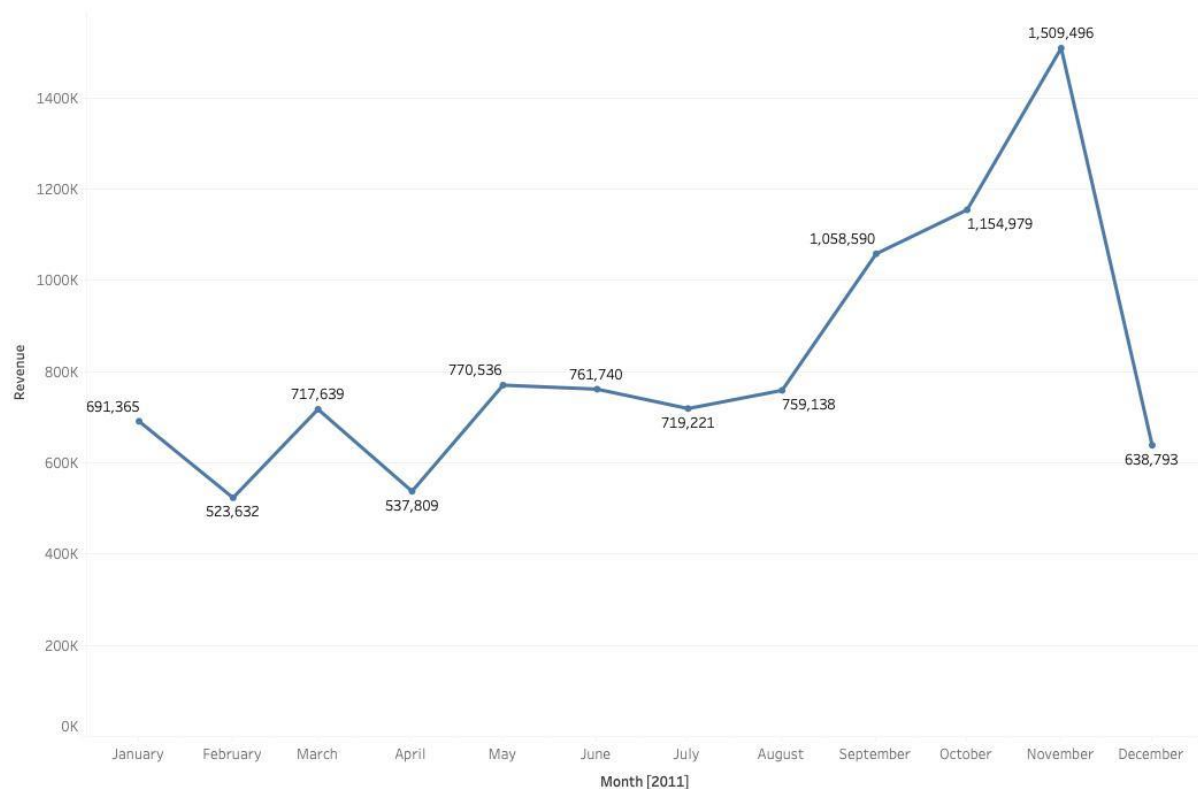
- 1) Create a data source filter in Tableau that filters out the quantity below 1 unit
- 2) Create a data source filter in Tableau that filters out the Unit price below \$0

Findings

Finding 1

Question: the CEO of the retail store is interested to view the time series of the revenue data for the year 2011 only. He would like to view granular data by looking into revenue for each month. The CEO is interested in viewing the seasonal trends and wants to dig deeper into why these trends occur. This analysis will be helpful for the CEO to forecast for the next year.

2011 Monthly Sales



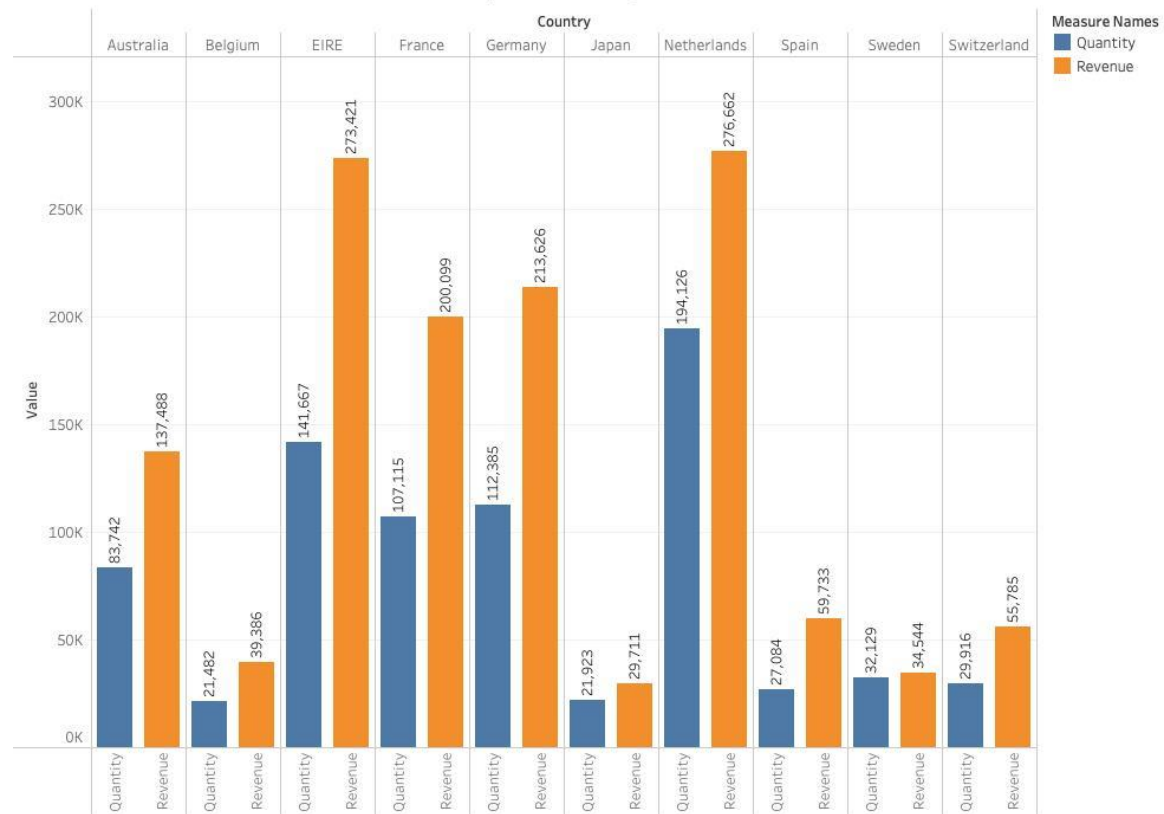
The trend of sum of Revenue for Invoice Date Month. The marks are labeled by sum of Revenue. The data is filtered on Invoice Date Year, which keeps 2011.

The graph above illustrates the monthly sales trend for 2011. From January to August, monthly sales have fluctuated around 700,000. We can then see that since September, monthly sales have increased dramatically and peaked at 150,000 in November. However, in December monthly sales dropped to around 600,000. This analysis shows that the retail store sales are impacted by the seasonality which usually occurs in the last 4 months of the year.

Finding 2

Question: the CMO is interested in viewing the top 10 countries which are generating the highest revenue. Additionally, the CMO is also interested in viewing the quantity sold along with the revenue generated. The CMO does not want to have the United Kingdom in this visual.

Top 10 countries by revenue and quantity (excluding UK)



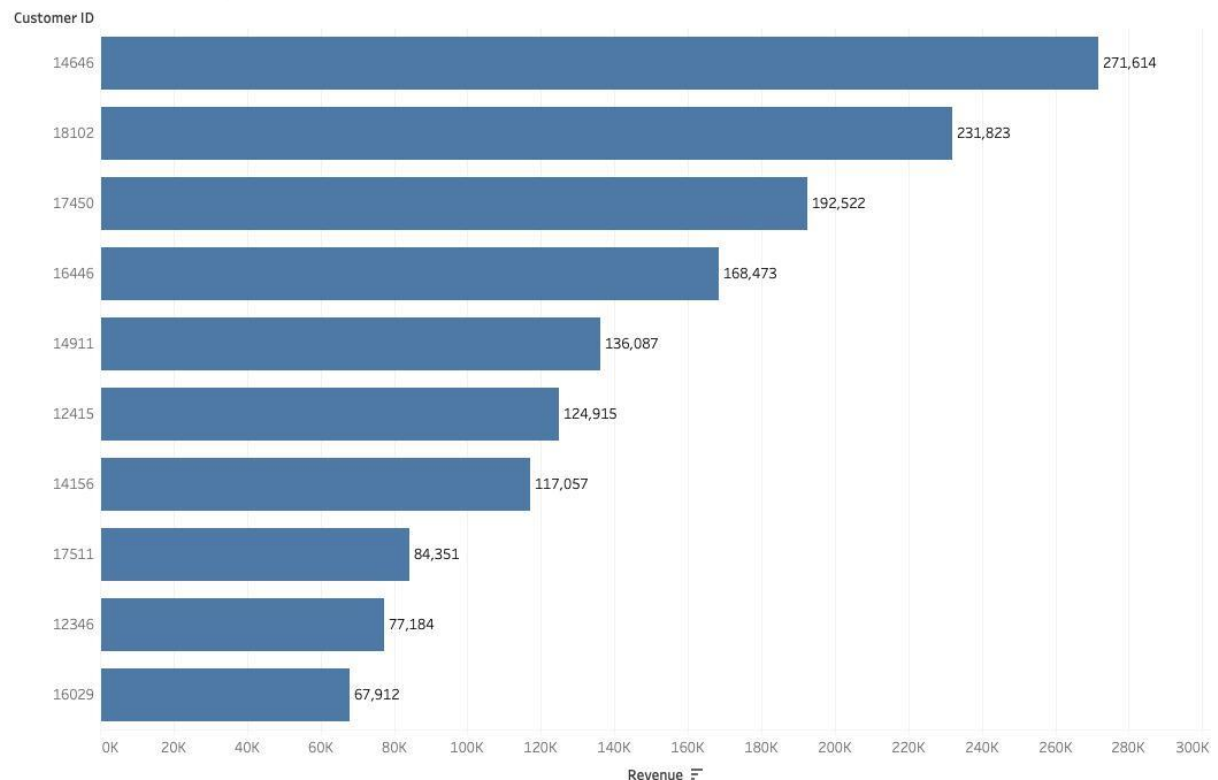
Quantity and Revenue for each Country. Color shows details about Quantity and Revenue. The marks are labeled by Quantity and Revenue. The data is filtered on Invoice Date Year, which keeps 2011. The view is filtered on Country, which keeps 10 members.

The bar chart above illustrates the top 10 countries that generated revenue for the business in 2011. From the chart, we can see that outside of the UK, Netherlands had the highest revenue and volume, followed by Ireland. Therefore, Netherlands and Ireland would be the top two countries for business expansion.

Finding 3

Question: the CMO of the online retail store wants to view the information on the top 10 customers by revenue. He is interested in a visual that shows the greatest revenue generating customer at the start and gradually declines to the lower revenue generating customers.

Top 10 Customers by Revenue



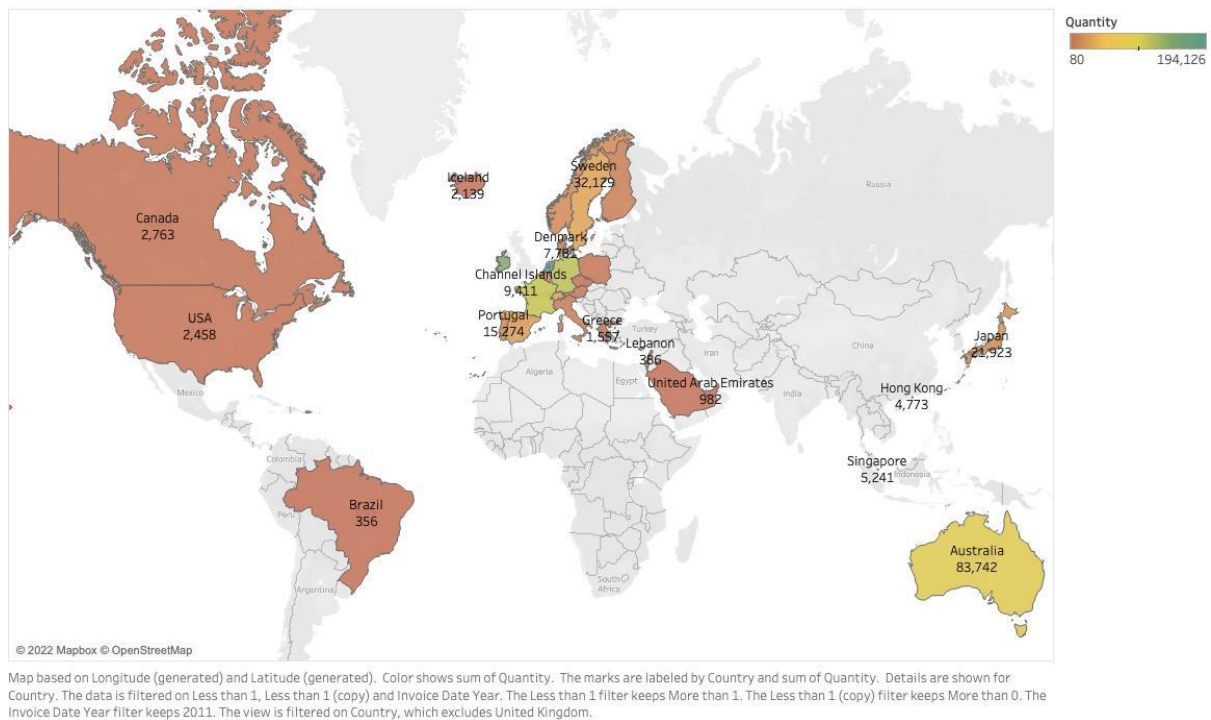
Sum of Revenue for each Customer ID. The marks are labeled by sum of Revenue. The data is filtered on Invoice Date Year, which keeps 2011. The view is filtered on Customer ID, which keeps 10 members.

The column chart above illustrates the top 10 revenue generating customers in 2011. From the chart, we can see that 2 customers spent over \$200,000 and 5 customers spent over \$100,000. The remaining 3 customers spent less than \$100,000 but more than \$60,000. The data shows that there is not much of a difference between the purchases made by the top 10 customers. The highest revenue generating customer only purchased 17% more than the 2nd highest which shows that the business is not relying only on a few customers to generate the revenue. This shows that the bargaining power of customers is low and the business is in a good position.

Finding 4

The CEO is looking to gain insights on the demand for their products. He wants to look at all countries and see which regions have the greatest demand for their products. He wants to view the entire data on a single view without the need to scroll or hover over the data points to identify the demand. There is no need to show data for the United Kingdom as the CEO is more interested in viewing the countries that have expansion opportunities.

Question 4



The map above shows the total sales volume in each country in 2011. The greener the country, the more was sold in that country. On the other hand, the redder the country, the more sales were made in that country. The map also shows that most of the sales are only in the European region with very few in the American region. Africa and Asia do not have any demand for the products, along with Russia. A new strategy targeting these areas has the potential to boost sales revenues and profitability.

Conclusion

The retail store sales are impacted by the seasonality which usually occurs in the last 4 months of the year. Netherland and Ireland are the top two countries where the company should consider expanding their business. The bargaining power of customers is low and the business is in a good position. Most of the sales are only in the European region with very few in the American region. Africa and Asia do not have any demand for the products, along with Russia.