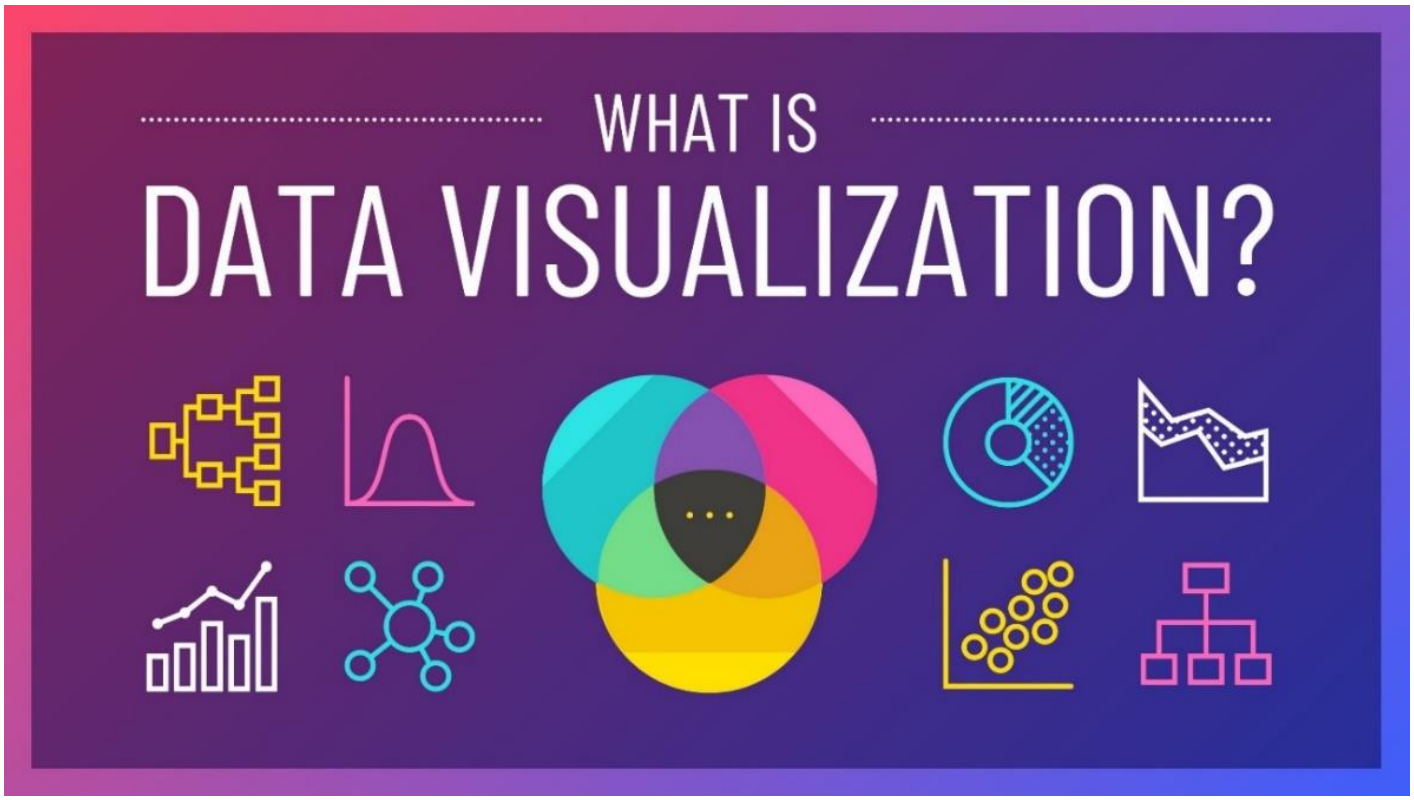

Sales Analysis Report

Emilia Hoang

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1. Data Source

Data source: https://datapot.vn/dataset-chuoi-video-cung-hoc-power-bi-cho-cac-beginner-nganh-du-lieu/

Data choice: Sales activity of a company with data from its business partners who are manufacturers and performance data from different countries in which it provides services. More than million of rows in the dataset offer a challenge when preparing and cleansing data whereas Tableau does not have query function to handle raw data before going to visualisation such as Power BI. All we should do is to have a well-prepared dataset before using Tableau.

2. Analysis Question

Regarding sales data of a company, there are 3 main question a business analyst should consider as following:

Question 1: Which product group/line is bringing the most profit?

Question 2: Are profits growing over time and how is the trend up?

Question 3: Does the actual profit meet the set KPI as planned?

3. Visualization Description

Figure 1.1a – Trendline:

Revenue by Month: The chart includes monthly data of sales through 2013-2018. By presenting the time series data using continuous time, the visualization brings the proper analysis of sales each year. Based on the graph, a trend line can be developed to see the changes and especially the growth of sales, which will assist managers and specialists to make business decision on sales and operation activity of company in the long run.

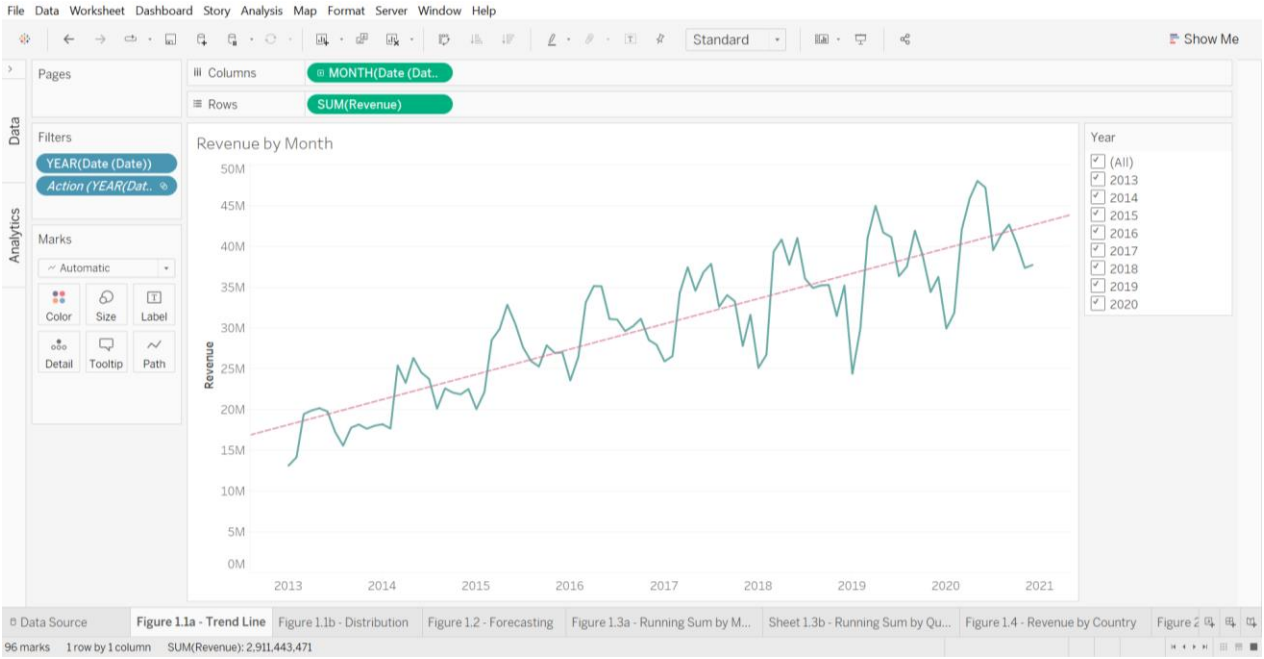


Figure 1.1b - Distribution:

Revenue Distribution : A reference distribution is used to compare the actual plot against target. In this case, a target of $7.5M is set and two standard deviations from the mean value of plot are also calculated. The points above the two standard deviation band are all in recent weeks. Assuming the data is normally distributed,

marks outside of the range indicate abnormal variation that would determine the cause of the variance toward company revenue.

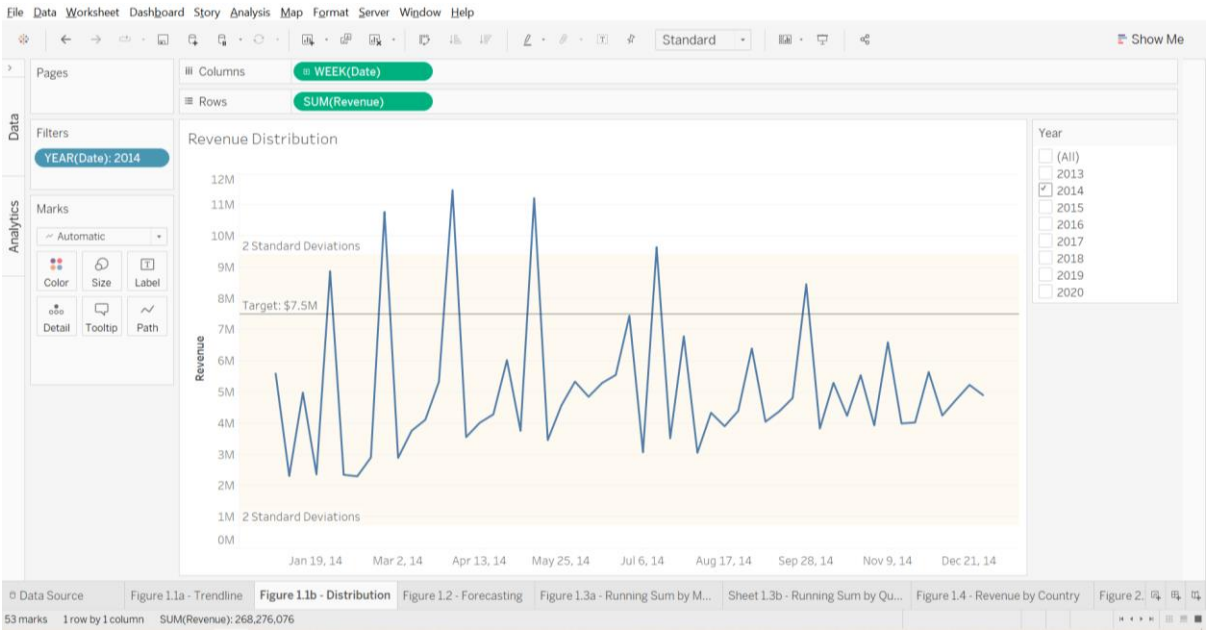


Figure 1.2 - Forecasting:

Forecasting: Concurrently, a forecast technique can be a useful function while developing a simple line graph. Therefore, the company can optimize the time spent on forecasting calculation and implement business strategy to adapt to their business targets.

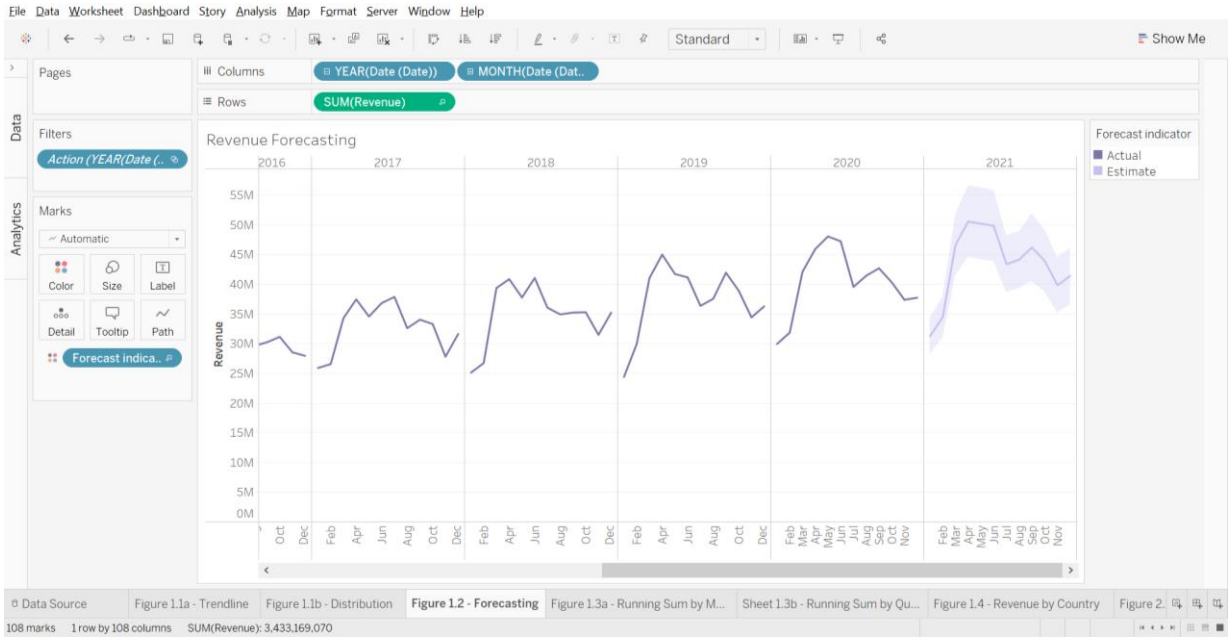


Figure 1.3a – Running sum by Month:

Cum revenue by Month: A running total calculation is employed to calculate the cumulative total revenue of each month in 2016 and 2017, which gives a holistic view of how the company is performing. At the end of December, cumulative sum of revenue was $363.02M compared to $27.94M in the revenue graph. Specialists can track of the overall performance of company as well as the current figures of each month by seeing how they are visualized.

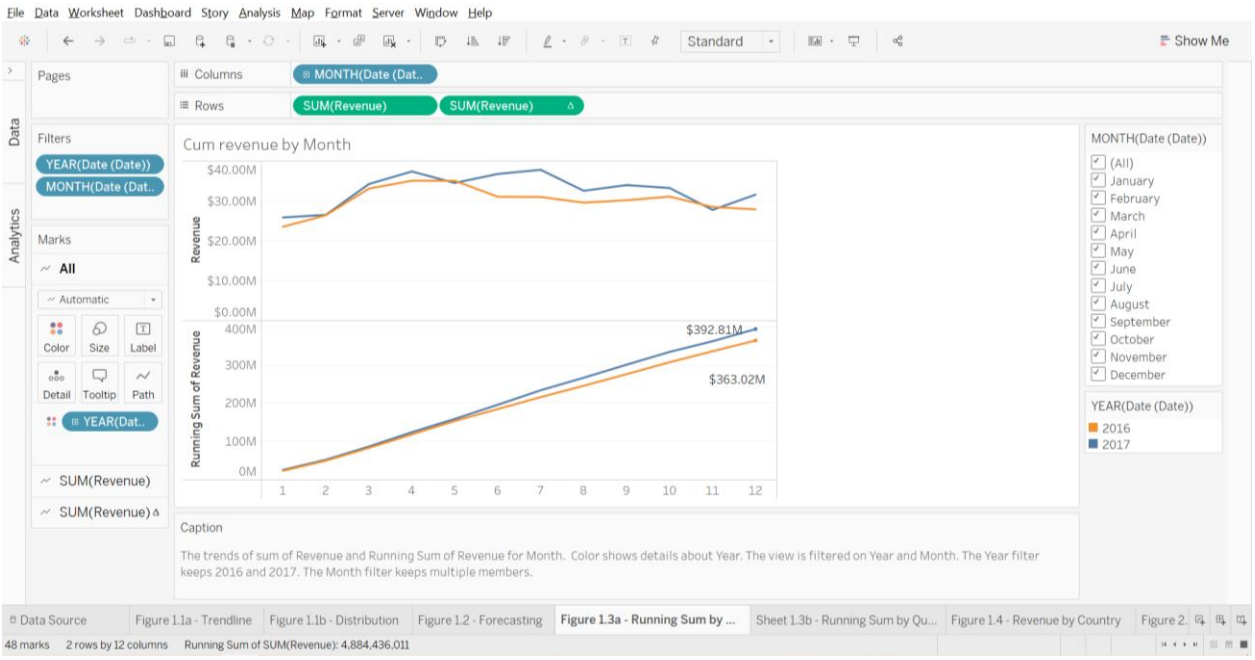


Figure 1.3b – Running sum by Quarter:

Cum revenue by Quarter: Similar to figure 1.3a, a running total method is used with discrete quarter periods.

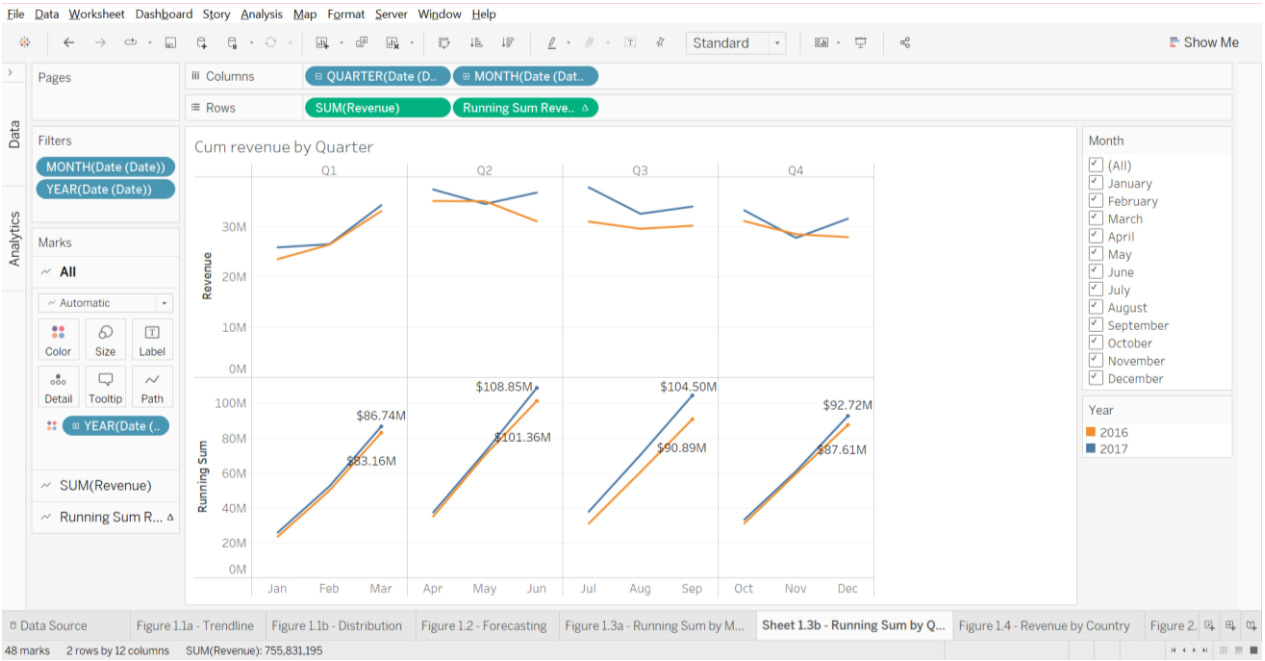


Figure 1.4 – Revenue by Country:

Revenue by Country and Quarter: Consider country as an additional dimension in the time series analysis to see the quarterly trends and dig deeper into why these trends occur in each country. We can observe the increase or decrease regularly through time and repeated patterns from one period to next. The revenue of the USA in Q2 was always the highest in the period of 8 years, whereas Australia experienced the same phenomenon in Q4 each year.

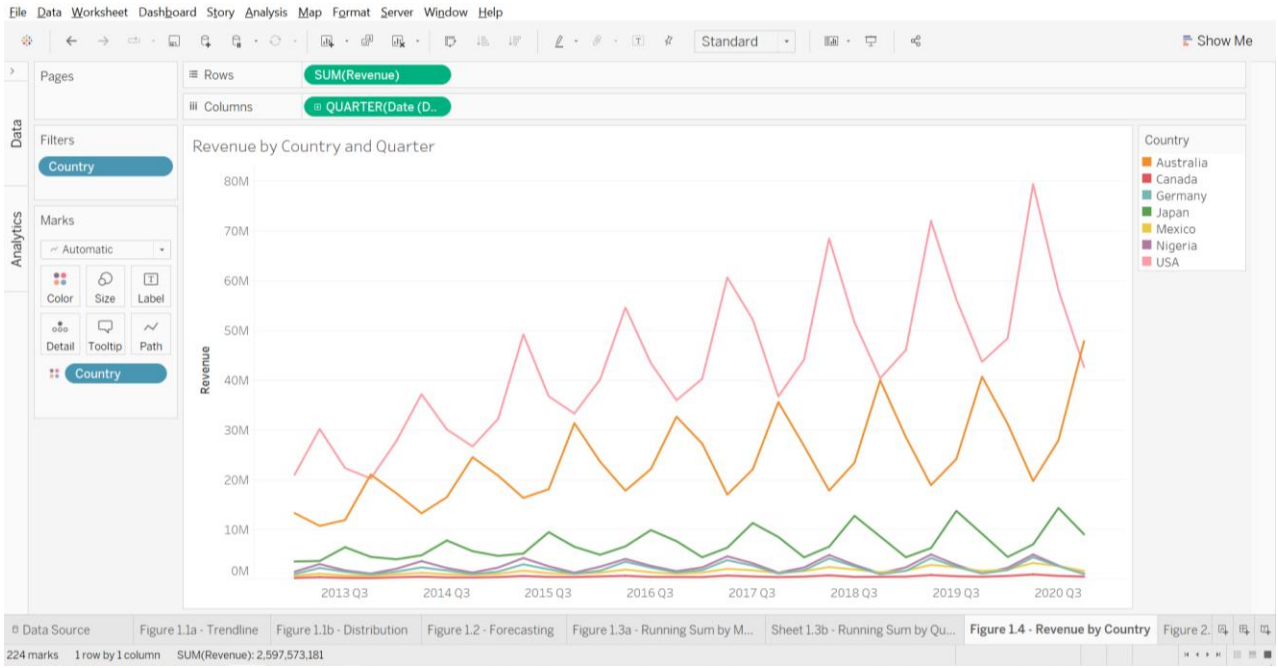


Figure 2.1 – Cum revenue by Segment:

Cum revenue by Segment: Besides applying bar chart into analysis, a secondary table calculation is also used to illustrate the total running sum of revenue by each segment. We can compare the performance of each segment contributed to the total revenue of company. An index is displayed to show the position of segment in the field.

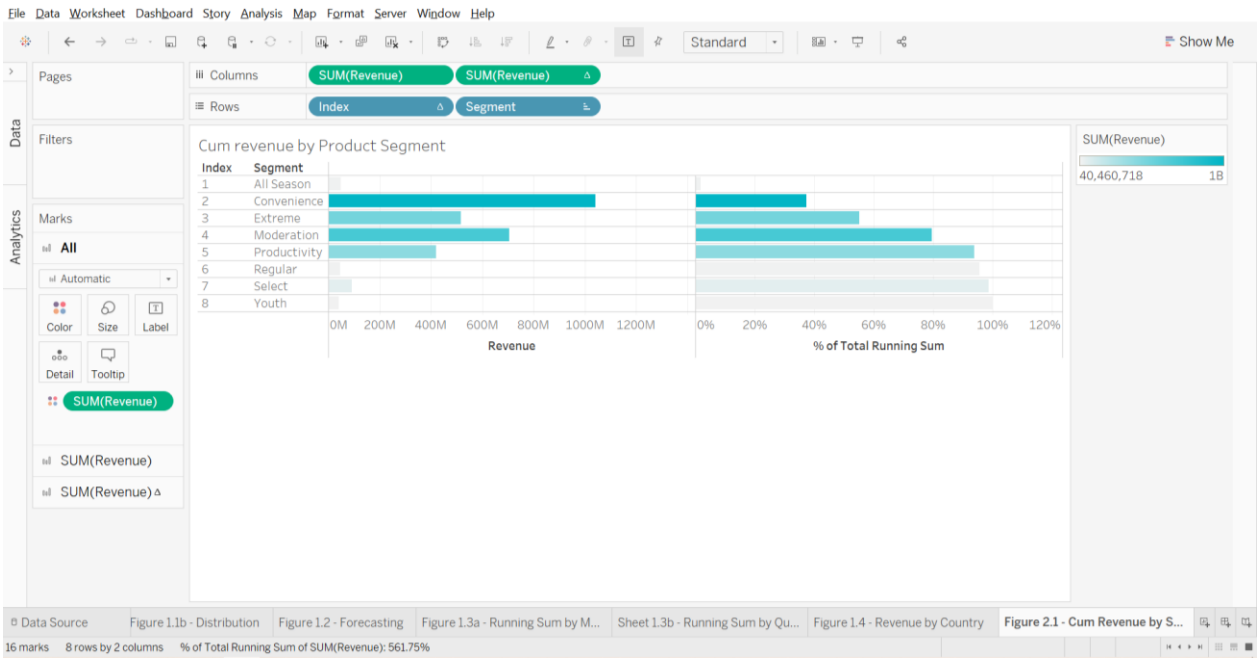


Figure 2.2 – Price per Item:

Price Item by Category and Segment: To analyze the differences of price per item by each segment and each manufacturer, a side-by-side bar chart is implemented. We expect to see which segment has the highest price per item among various manufacturers, from which we can control the input costs while improving the sales.

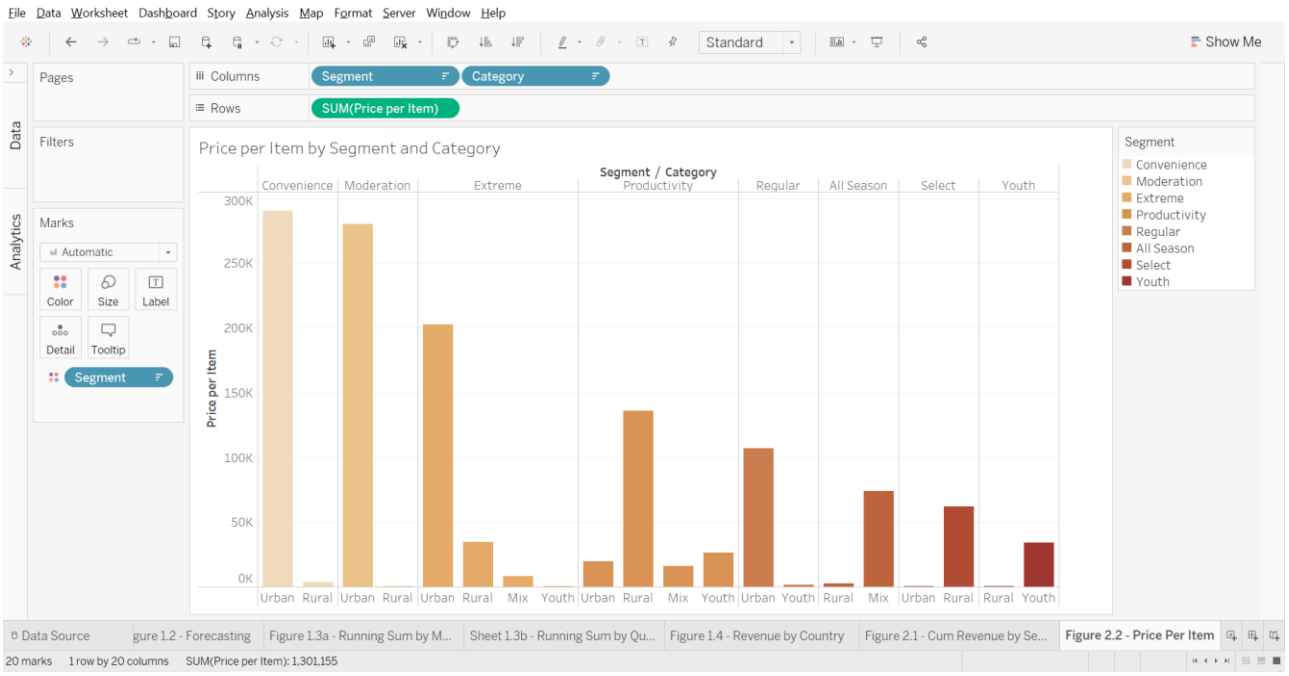


Figure 3.1 – Revenue YOY:

YOY growth of Revenue from 2013 to 2020: A calculated field is created to compute the year-over-year growth of revenue from 2013 to 2020. By employing a text table and date filter, we can visualize the data in the order of time and percentage format. We can use this way to analyze the growth of company and acquire the underlying factors which affect the company's performance.

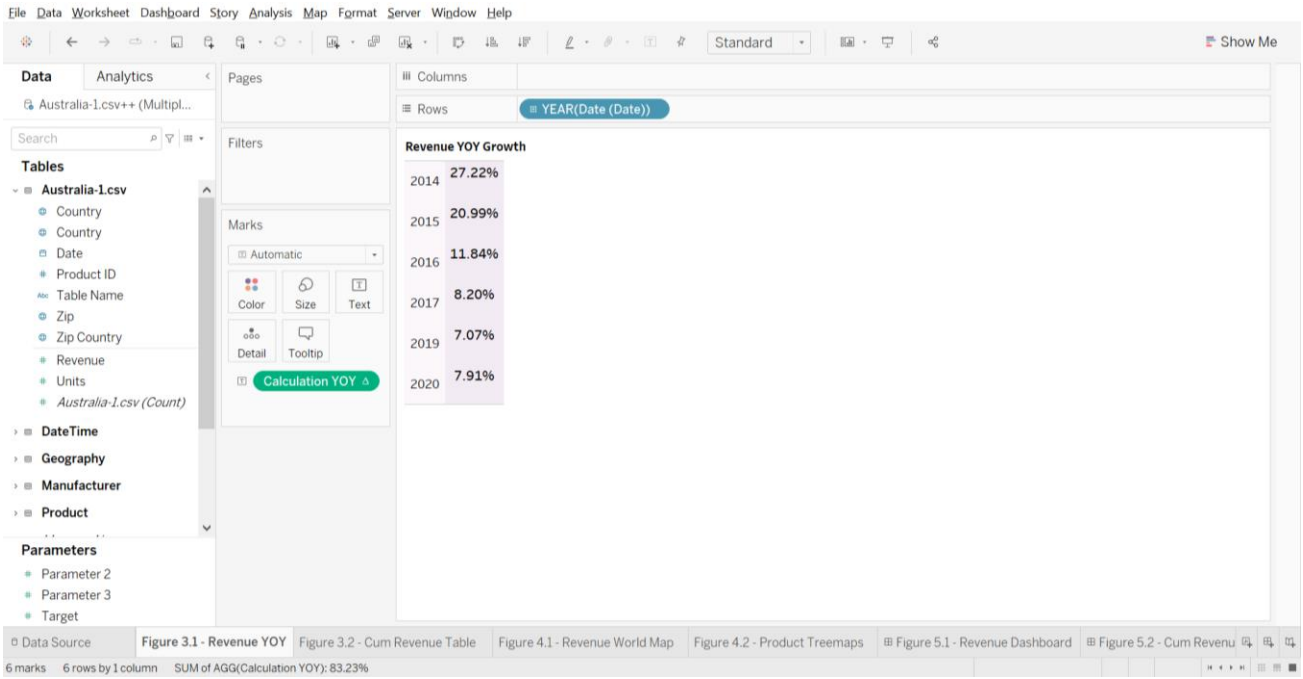


Figure 3.2 – Cum Revenue Table:

Cumulative Revenue by Quarter: Text table is applied into the worksheet to help analyst to view information in details. Besides, a running sum method will be efficient together with filter when we want to look at accumulated revenue in a couple of years. The degree of color can make the visualization more aesthetic and we feel easy to figure out which segment contributes significantly to the total revenue.

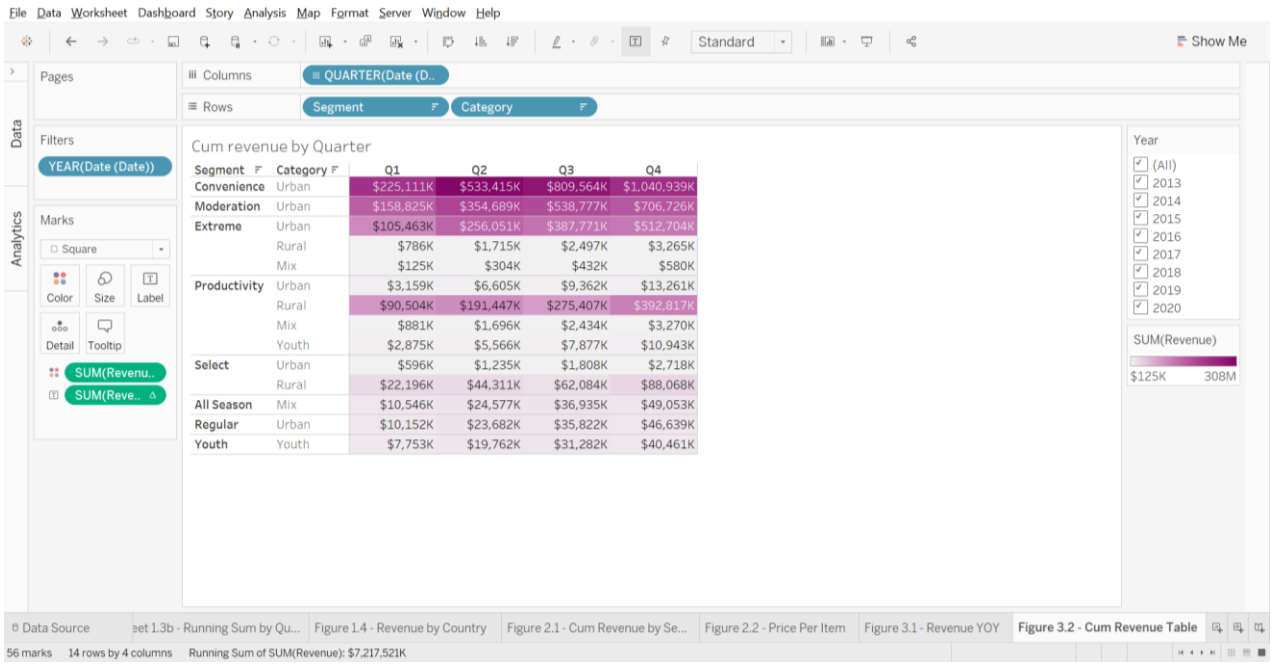


Figure 4.1 – Revenue World Map:

Revenue by Country and Category: Using map to improve insights when we want to plot more complex data. A symbol map is displayed with pie chart in the mark section. It can provide a more visual view of which country has the largest revenue by showing the size of pie chart. Futhermore, product category is also rendered very quickly in Tableau by angle and different color.

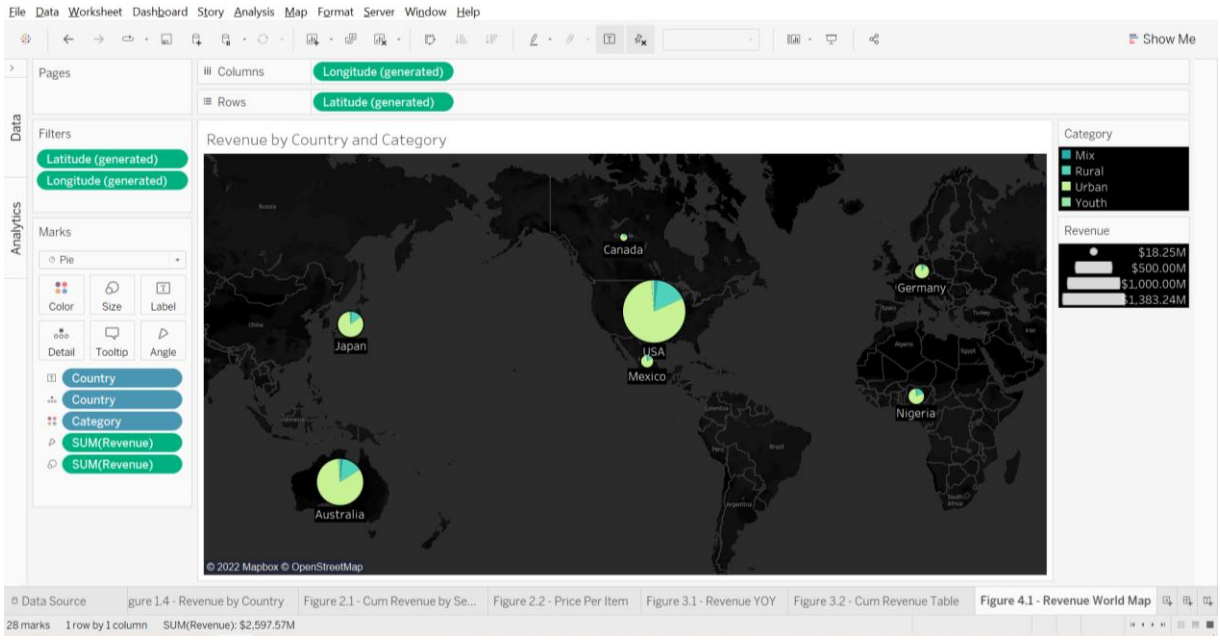
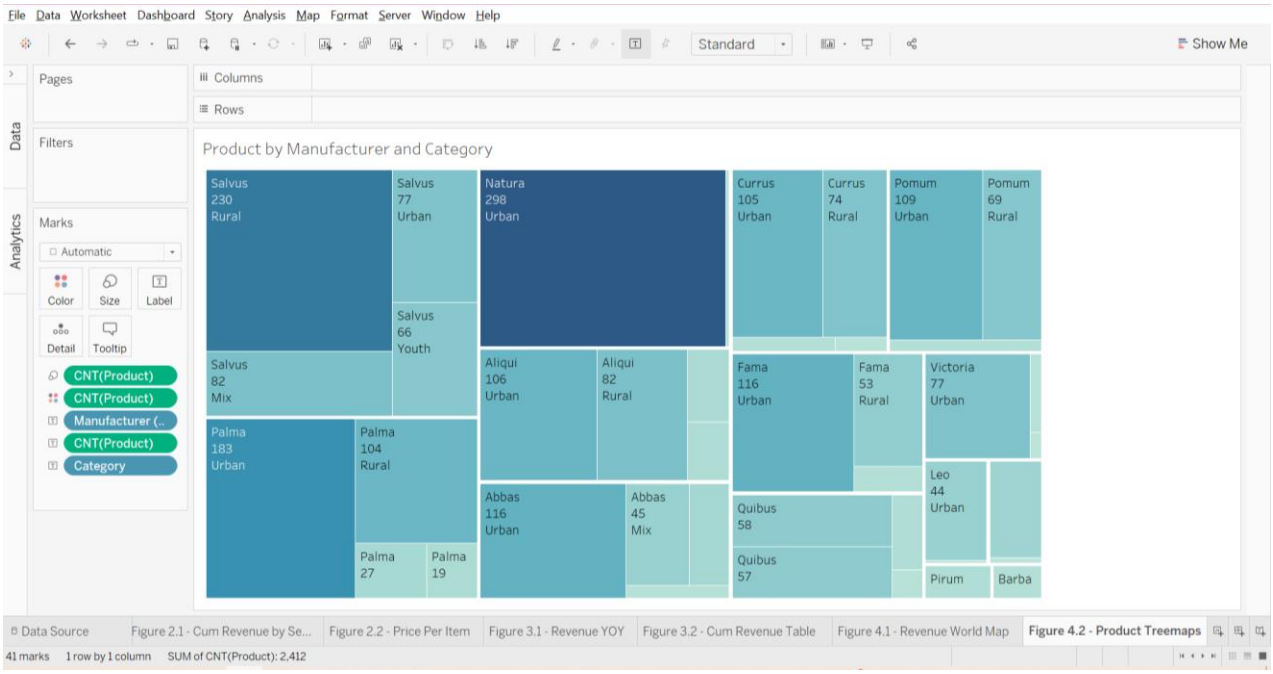


Figure 4.2 – Product Treemaps:

Product by Manufacturer and Category: viewing the total number of products by category and manufacturer, tree-maps are utilized. The size of block will indicate the size of product category relative to each other. Business analysts can evaluate the performance of each category. For instance, if Natura produce the highest total of urban category, we can analyze the potential of this type to see whether it has any room to grow or we

need to focus on other category. We can make further decision to expand the cooperation with Natura if the price-per-item well correlates with the revenue that it yields.



4. Dashboard Description

Figure 5.1 - Revenue Dashboard:

Price per Item by Segment, Category and Cum Revenue by Product Segment are employed at the same time in the dashboard to analyse the correlation between price of each product segment and how it performs in revenue. The highlight selected items feature is also applied to enhance user experience as it allows us to interact with each category when we click onto the bar chart.

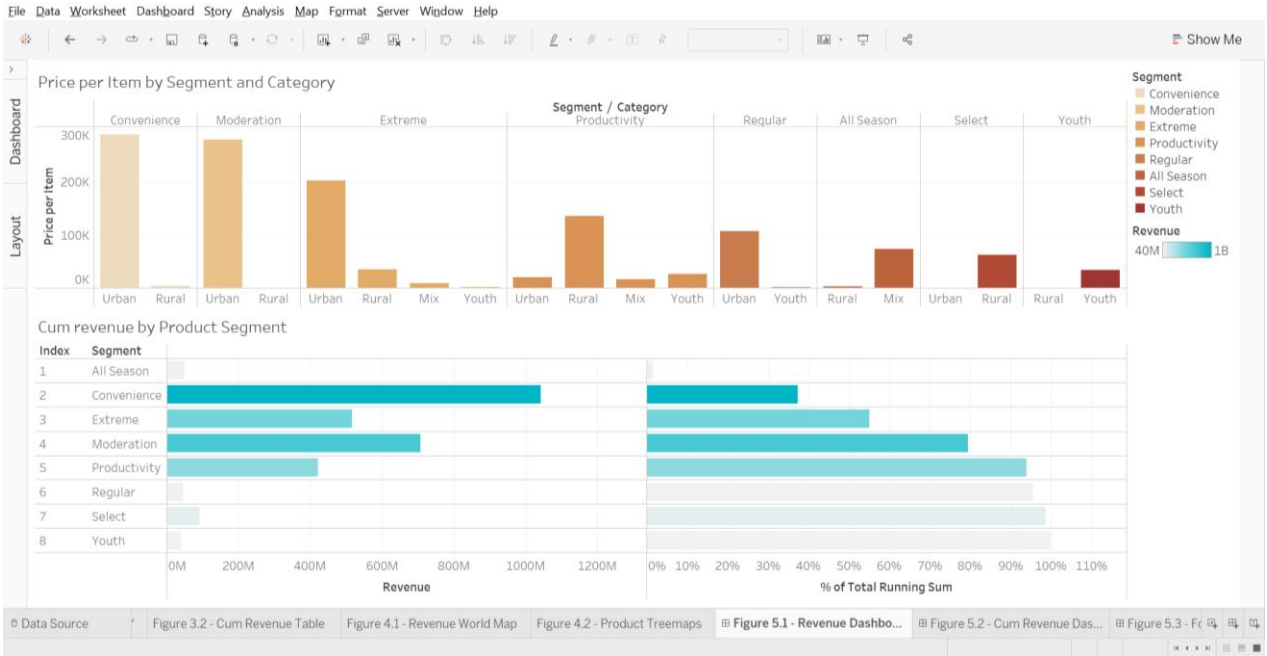


Figure 5.2 - Cum Revenue Dashboard:

Cum revenue by Quarter and Cum revenue by Month are selected for Cum revenue dashboard. A line graph helps us to gain general idea about the trend of revenue. Besides, a text table provides a more detailed insight about revenue with a supporting filter of year and illustrating caption below table. We can look for more information from company website by clicking on the image embedded by a URL. Also, a highlight selected items feature is invoked to increase the experience of user.

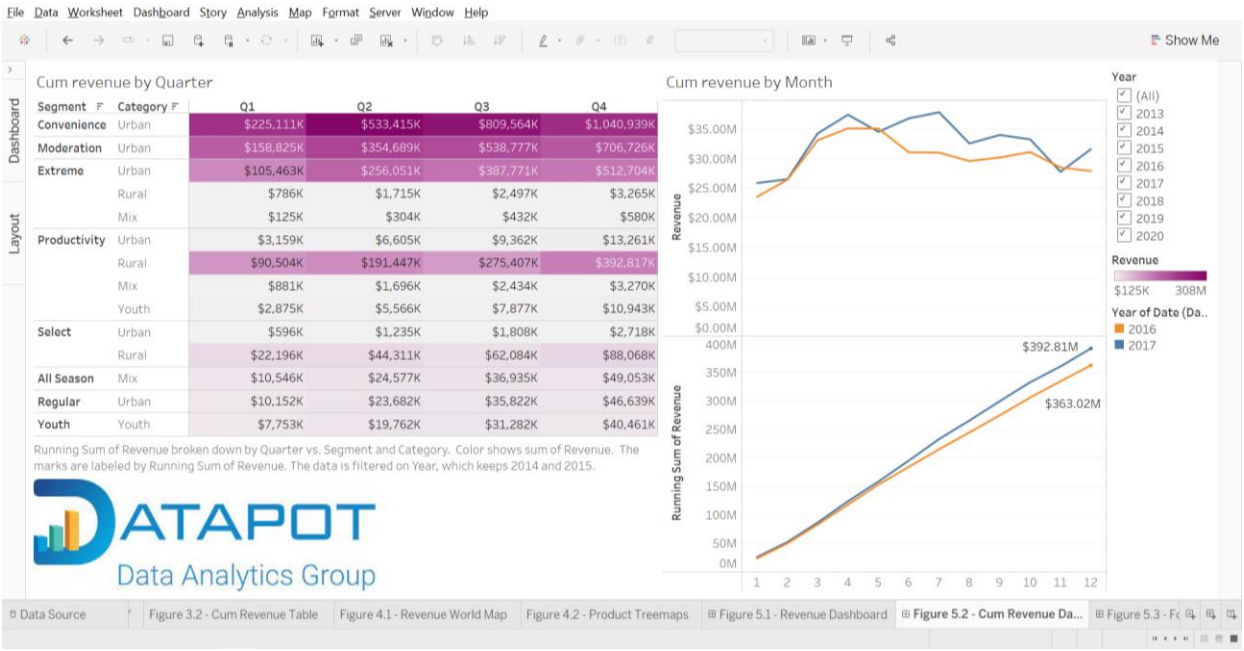
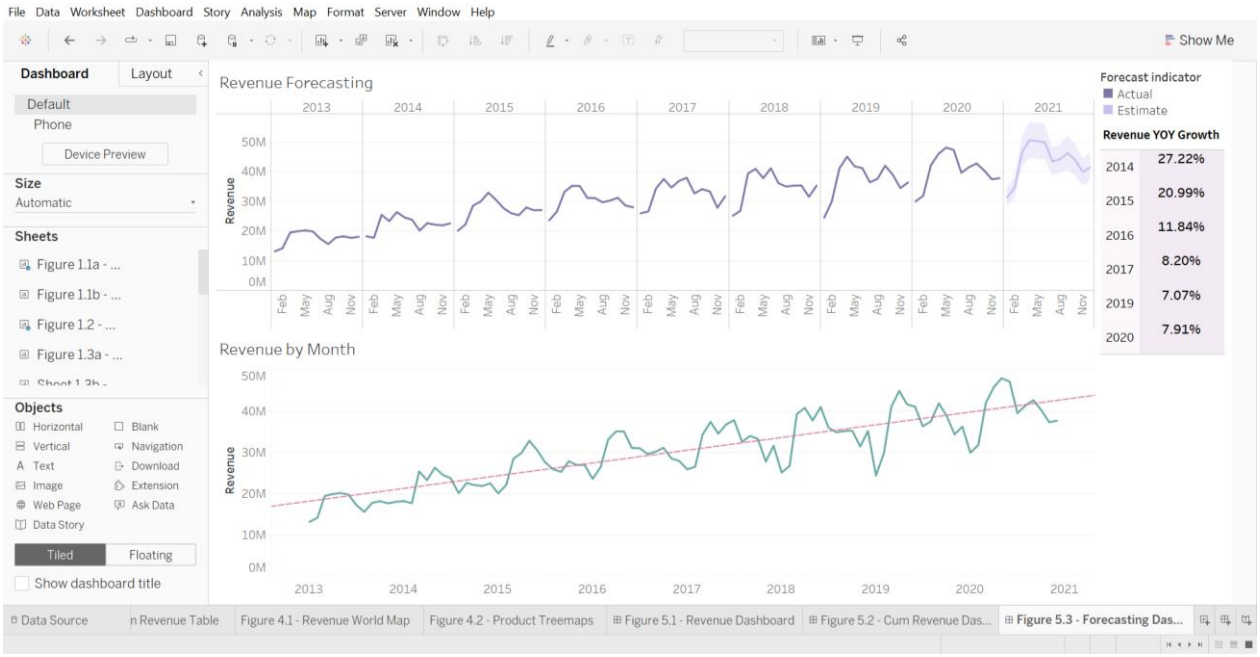


Figure 5.3 - Forecasting Dashboard:

Revenue forecasting and Revenue by Month are used in forecasting dashboard to predict the future revenue of company in 2021 based on the historical data from 2013 to 2020. Futhermore, Revenue YOY Growth sheet is employed as filter action which create a dynamic dashboard whenever we single-click onto Year the other line graphs will change corresponding with user action.

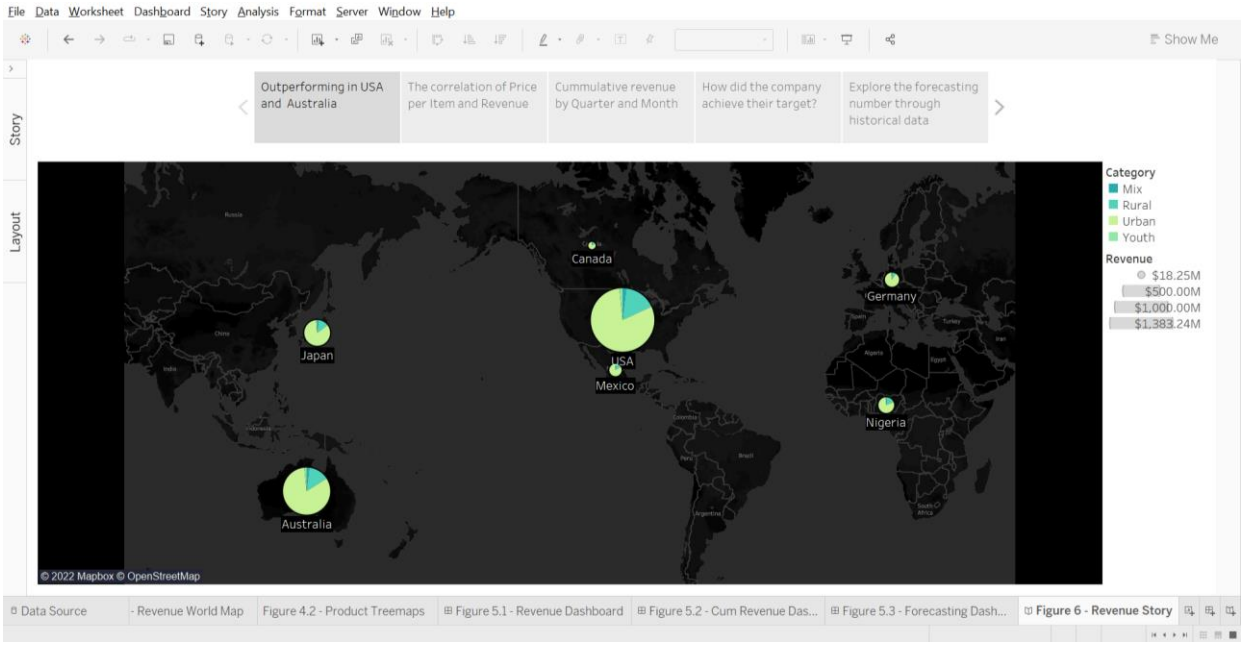


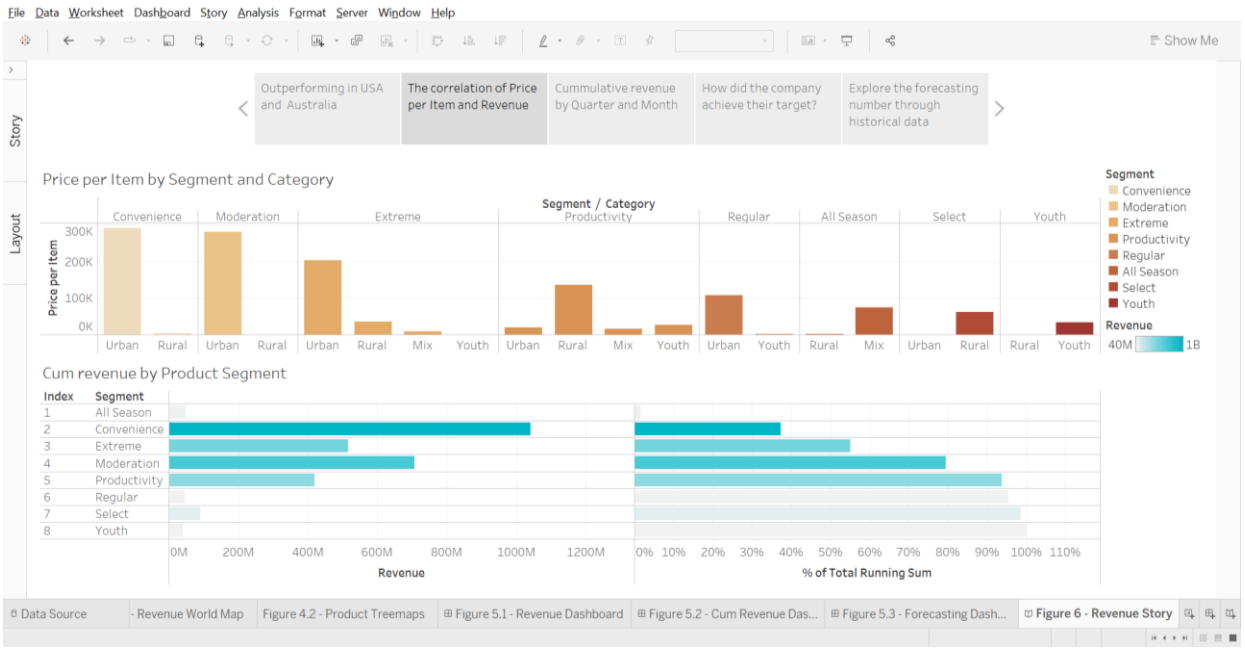
5. Story Description

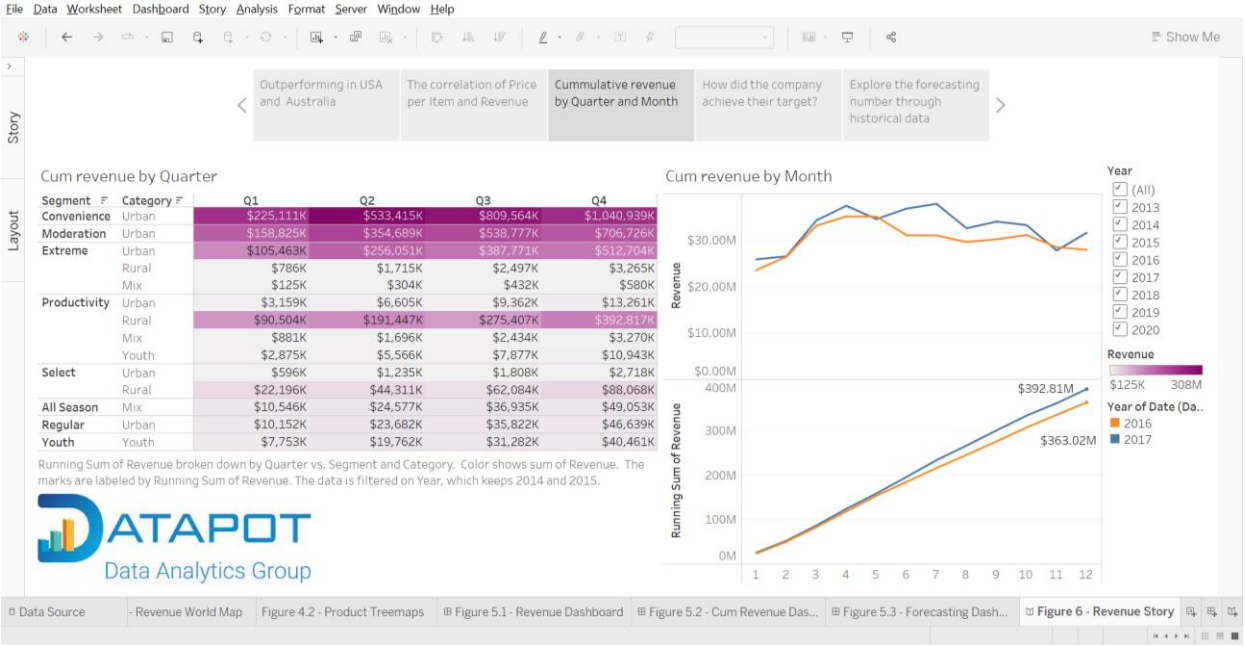
Figure 6 - Revenue Story:

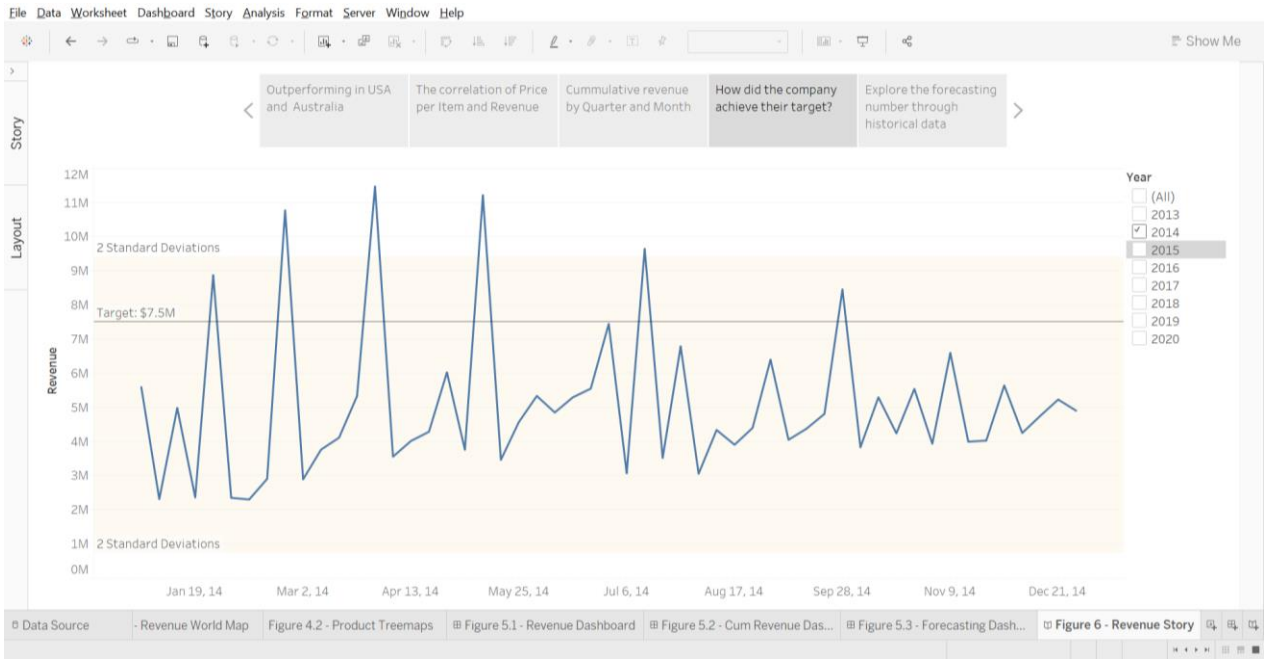
Story line: Outperforming in USA and Australia **->** The correlation of Price per Item and Revenue **->** Cummulative revenue by Quarter and Month **->** How did the company achieve their target? **->** Explore the forecasting number through historical data.

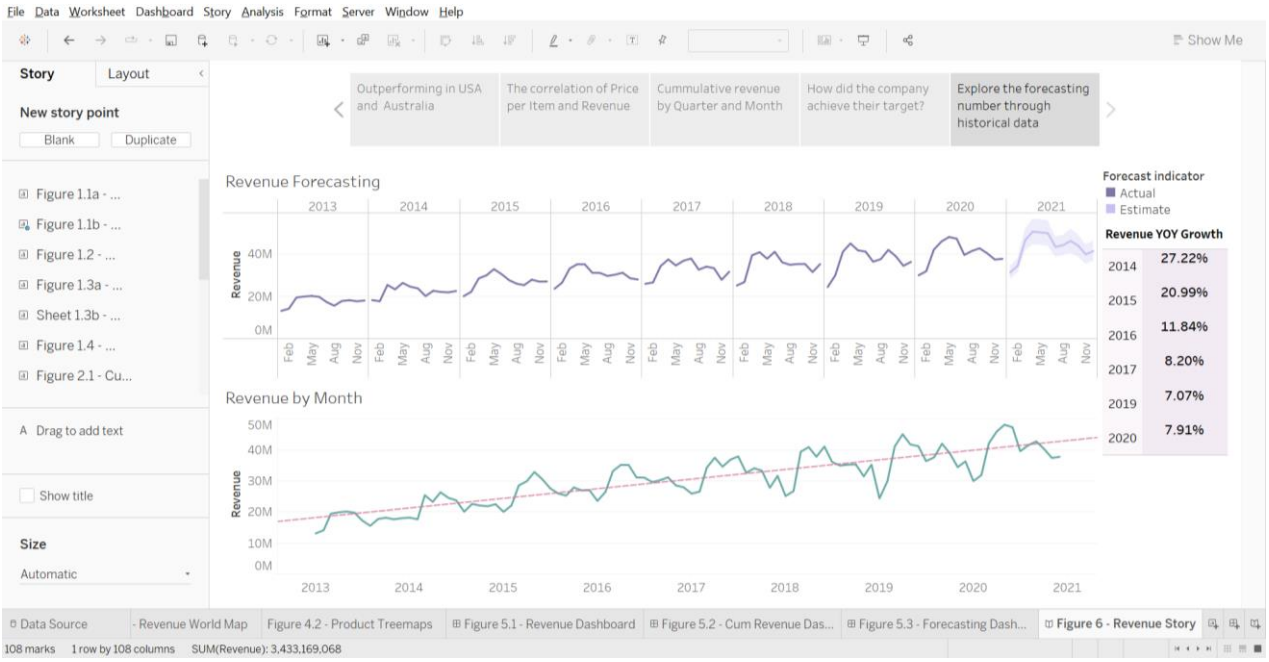
First story is shown by Revenue World Map. It gives the general insight about the company revenue in each country that they provide their products. Second story is more detailed about the correlation between Price and Revenue. The company should know how much they spend on their goods sold so that they can implement more effective business strategies to control the cash flow in and out. Cummulative number by Quarter and Month is displayed in the third story which allows them to go deeper in revenue in each segment and each category. By looking at running sum chart, they can see how significantly revenue each month contributed to the performance of the company. In the fourth story, a distribution pane is employed to show how the company achieve their target by setting up a $7.5M straightline. They can compare revenue each month based on the straightline and even notice the highs and lows to see the difference in revenue. After going through overview and details of revenue, a trendline covering 8 years of data and a forecasting graph are used in the same story to demonstrate the estimated number that the company should follow up in the next year.




File Data Worksheet Dashboard Story Analysis Format Server Window Help
Show Me
Story
Outperforming in USA and Australia
The correlation of Price per Item and Revenue
Cummulative revenue by Quarter and Month
How did the company achieve their target?
Explore the forecasting number through historical data
Layout
Price per Item by Segment and Category
Segment / Category
Convenience
Moderation
Extreme
Productivity
Regular
All Season
Select
Youth
Price per Item
300K
200K
100K
0K
Urban Rural Urban Rural Urban Rural Mix Youth Urban Rural Mix Youth Urban Youth Rural Mix Urban Rural Rural Youth
Segment
Convenience
Moderation
Extreme
Productivity
Regular
All Season
Select
Youth
Revenue
40M 1B
Cum revenue by Product Segment
Index Segment
1 All Season
2 Convenience
3 Extreme
4 Moderation
5 Productivity
6 Regular
7 Select
8 Youth
0M 200M 400M 600M 800M 1000M 1200M
Revenue
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 110%
% of Total Running Sum
Data Source
- Revenue World Map
Figure 4.2 - Product Treemaps
Figure 5.1 - Revenue Dashboard
Figure 5.2 - Cum Revenue Das...
Figure 5.3 - Forecasting Dash...
Figure 6 - Revenue Story


File Data Worksheet Dashboard Story Analysis Format Server Window Help
Show Me
Story
Outperforming in USA and Australia
The correlation of Price per Item and Revenue
Cummulative revenue by Quarter and Month
How did the company achieve their target?
Explore the forecasting number through historical data
Layout
Cum revenue by Quarter
Segment Category Q1 Q2 Q3 Q4
Convenience Urban $225,111K $533,415K $809,564K $1,040,939K
Moderation Urban $158,825K $354,689K $538,777K $706,726K
Extreme Urban $105,463K $256,051K $387,771K $512,704K
Rural $786K $1,715K $2,497K $3,265K
Mix $125K $304K $432K $580K
Productivity Urban $3,159K $6,605K $9,362K $13,261K
Rural $90,504K $191,447K $275,407K $392,817K
Mix $881K $1,696K $2,434K $3,270K
Youth $2,875K $5,566K $7,877K $10,943K
Select Urban $596K $1,235K $1,808K $2,718K
Rural $22,196K $44,311K $62,084K $88,068K
All Season Mix $10,546K $24,577K $36,935K $49,053K
Regular Urban $10,152K $23,682K $35,822K $46,639K
Youth Youth $7,753K $19,762K $31,282K $40,461K
Running Sum of Revenue broken down by Quarter vs. Segment and Category. Color shows sum of Revenue. The marks are labeled by Running Sum of Revenue. The data is filtered on Year, which keeps 2014 and 2015.
DATAPOT
Data Analytics Group
Cum revenue by Month
Revenue
$30.00M
$20.00M
$10.00M
$0.00M
Year
(All)
2013
2014
2015
2016
2017
2018
2019
2020
Revenue
$125K 308M
Year of Date (Da..
2016
2017
Running Sum of Revenue
400M
300M
200M
100M
0M
$392.81M
$363.02M
1 2 3 4 5 6 7 8 9 10 11 12
Data Source
- Revenue World Map
Figure 4.2 - Product Treemaps
Figure 5.1 - Revenue Dashboard
Figure 5.2 - Cum Revenue Das...
Figure 5.3 - Forecasting Dash...
Figure 6 - Revenue Story





6. Final Note

Question 1: Which product group/line is bringing the most profit? -> Confidently answer

Question 2: Are profits growing over time and how is the trend up? -> Confidently answer

Question 3: Does the actual profit meet the set KPI as planned? -> Reconsider

Overall, the dataset gives the audience good enough insight to answer question 1 and 2. However, when it comes to the third question, the lack of information of cost in the company data makes it difficult for business analyst to compute the actutal profit. Instead of only visualize the correlation of price per item and revenue (ref: Figure 5.1 Revenue Dashboard), it is highly recommended that a dashboard of cost and revenue should be displayed.