

ST2187 Coursework

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Table of Contents:

	<u>Page</u>
Executive summary	3
1. Dashboard 1 (Overview)	4
2. Dashboard 2 (Market Potential)	5
3. Dashboard 3 (The United States Market Analytics)	7
4. Dashboard 4 (Product Analytics)	8
5. Dashboard 5 (RFM Analysis)	9
6. Conclusion	11

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Executive Summary:

The report investigates retailer profiles in-depth and uses data visualisation to provide unique business insights for executives. This improves and strengthens different aspects of the company. In this report, a story can be divided into five dashboards, namely "Overview", "Market Potential", "The United States Market Analytics", "Product Analytics", and "RFM analysis." First, a rough overview of the company's retail transaction history for these four years is introduced. Then, an analysis of the data from three different perspectives: market, product and customer. These three different aspects can yield different valuable results and even corroborate each other. However, this report is also paired with dashboards for a clearer understanding of the reasons behind each business insight. Furthermore, since the entire data is complete and to maximise the value of these data, a conclusion, suggestion, and business strategy will be given at the end to the supervisor.

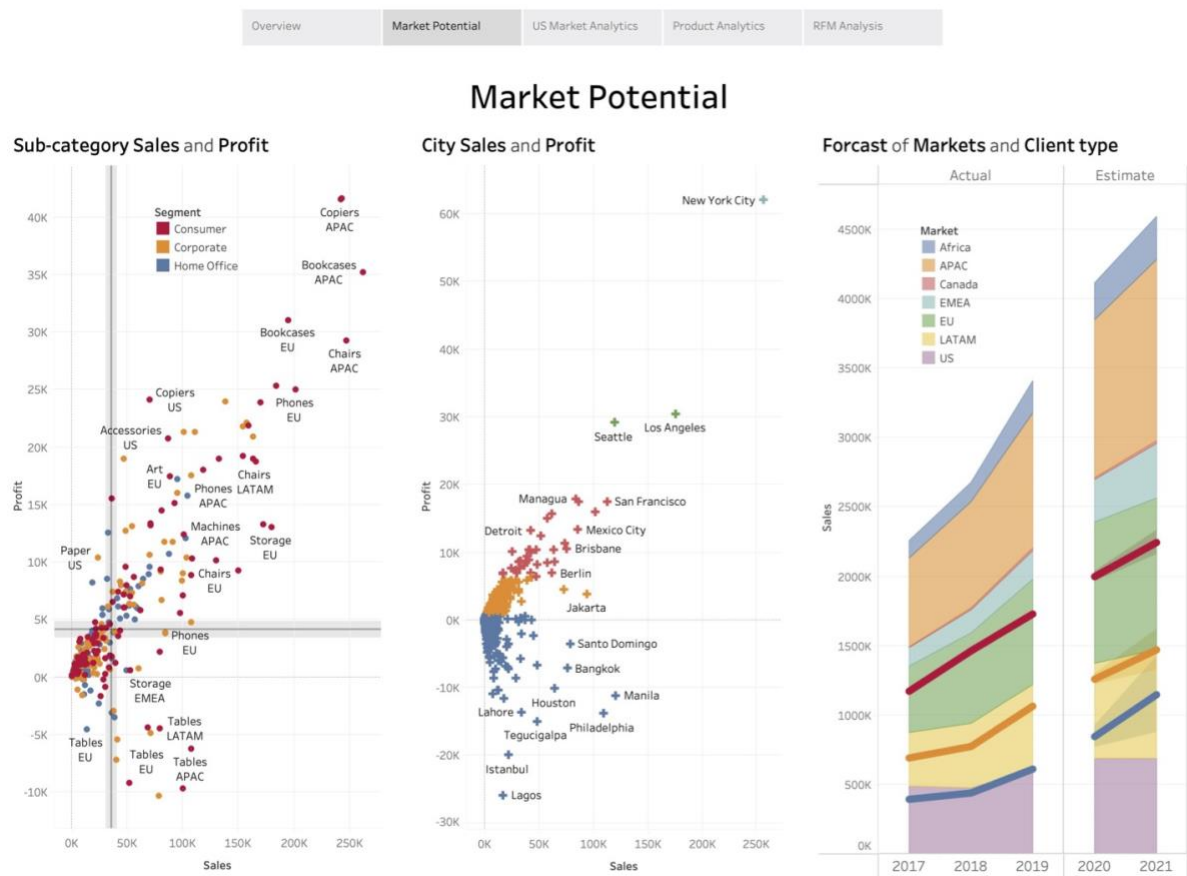
Dashboard 1 (Overview):



We can see that it is a good sign that overall profits continue to rise, with "Technology" accounting for the largest growth. At the same time, the profit from "Consumer" is the largest among the segment. However, it is also obvious to see the whole pattern. The first quarter of each year gained the lowest profit and gradually rose to the peak in the fourth quarter. Furthermore, we can find that the profit portion from "Office Supplies" has been high, and the "Table" had no profit even lost money. Here, the company can consider selling more office products to make such products more comprehensive and increase the market share. Also, the company should carefully analyse the value chain of the "Table" to identify which stage went wrong and fix the sustaining losses in business.

The world map and packed bubble chart tell us the sales and customers from which country or market. However, we can understand by these two graphs that the company's sales area is not very extensive, in other words, most of the sales are still concentrated in a few countries. In this case, rather than developing completely untapped areas, it is better to first promote middle-consuming countries to high-consuming countries, such as China, France, and Germany, to increase sales.

Dashboard 2 (Market Potential):



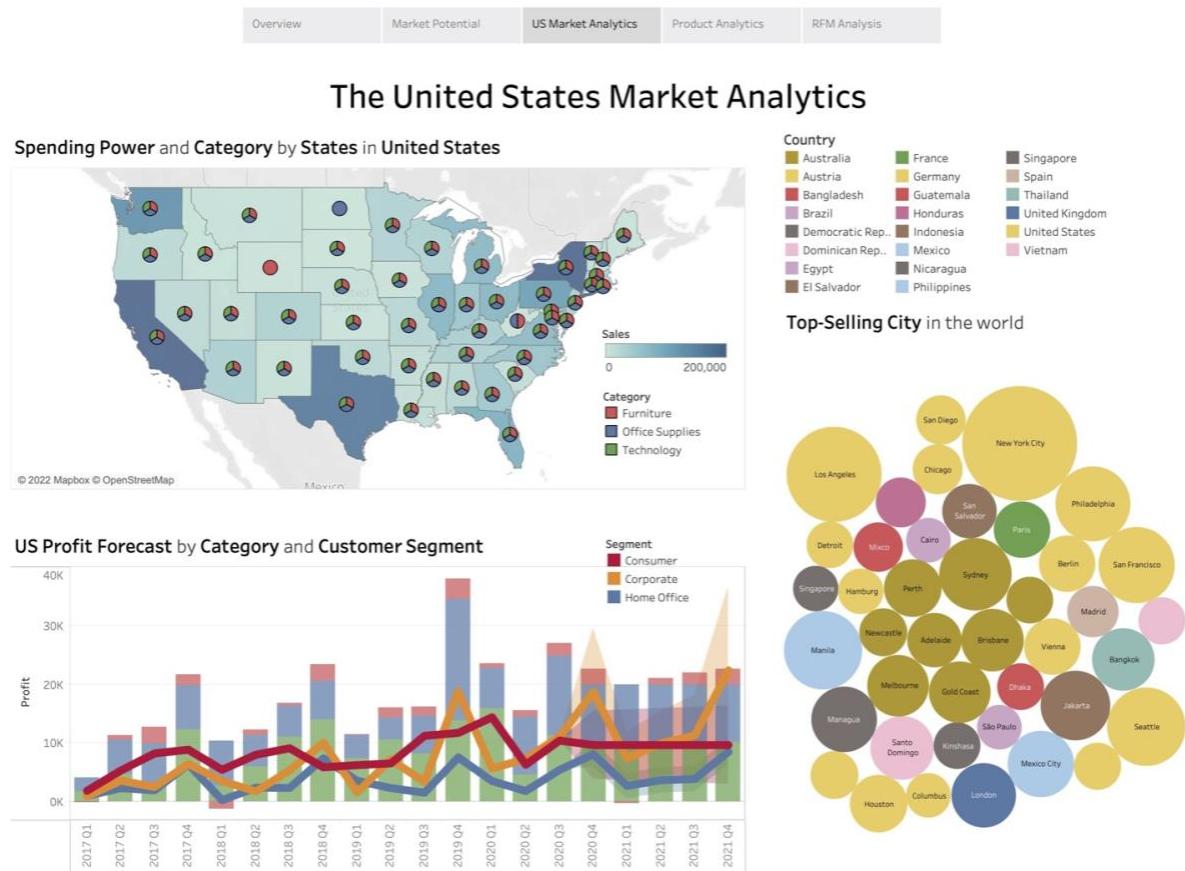
The first chart clearly shows the sales and profit of which product from what kind of buyer in a particular region. The grey line also represents the average. In this way, we can know which groups to target with different strategies or adjustments. For instance, bookcases purchased by "Consumers" have high sales and profits in the APAC region, but they lost money in the United States. The company can try to apply the sales model in the APAC to the United States, understand which stage went wrong, or maybe these bookcases are actually not suitable for use in the United States. Similarly, although tables in the APAC sales are high, it brought more losses. The company should improve for these commodities in the lower of the chart to stop losing money.

The city chart consists of five clusters, easy to understand the sales and profit of each city. However, the company should maintain the sales and profit in cities with green. It needs to increase consumption in red cities, prompting them to upgrade to green cities. Moreover, although cities in blue gained low profit and sales, they are potential customers. The company should maintain a good relationship with them. Finally, for the orange cluster, the company needs to figure out the problem of these money-losing cities and fix it.

Next, the area chart shows the sales growth in each market and segment, also making forecasts. The European and Asian markets will have substantial growth and will continue to occupy

the first and second places, confirming and corroborating what has been said before. The company should allocate resources on strengthening Asia and Europe markets, rather than those countries or regions that have not yet been touched. At the same time, "Home Office" also shows great potential in the next two years. The company can consider focusing on more "Office Supplies" to attract more new "Home office" customers and drive them to spend more.

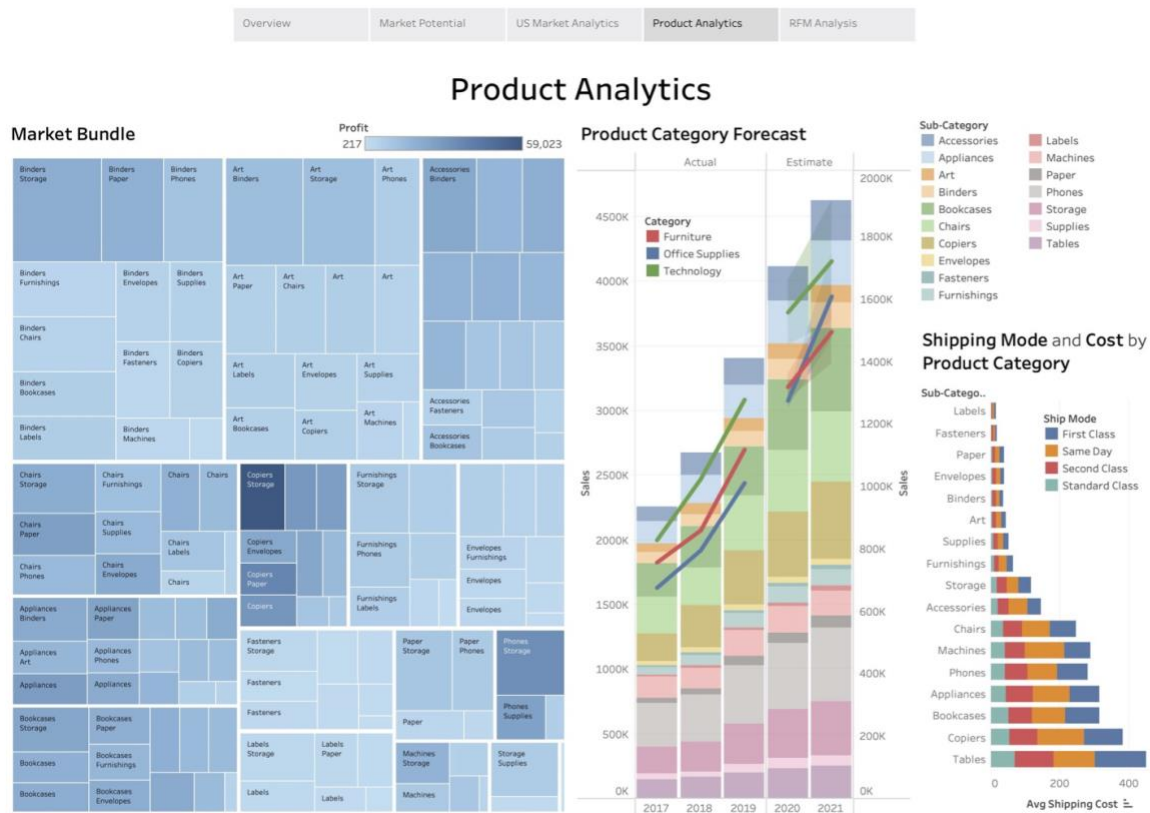
Dashboard 3 (The United States Market Analytics):



Although the US owns high sales and profits, it still has much room for improvement. To begin with, sales in the East and California are much better than in the Central. The top-selling city chart also shows that consumption in the United States is still concentrated in specific cities. However, the ethnic, geographical, and economic characteristics within the United States are similar compared to other markets, leading to a low entry barrier. In short, it would be a good attempt to expand to other states. After all, the cost is low, and it can enjoy the benefit of exerting Economies of Scale and Experience Curve effects within a short time.

The profit forecasting graph also shows that in the United States, future profits from the “Corporate” will be higher than from the “Consumer.” Since its largest customer group has changed, it should adopt different strategies for different segments. In this way, the customised strategies make it easier for buyers to purchase more frequently and spend more money. However, we also notice that “Furniture” in the first season has a high chance of losing money, especially tables, chairs, and bookcases. The company must find out the reason for the loss and turn it into profits, or even cancel selling this item to at least not lose money.

Dashboard 4 (Product Analytics):



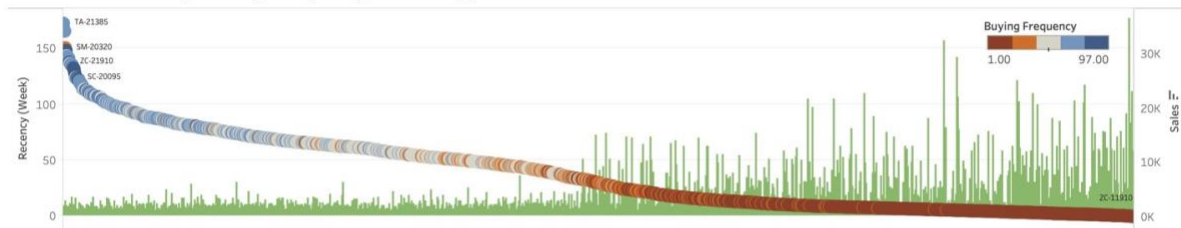
We can clearly see which products are usually purchased together in the market basket analysis, knowing how much profit this combination brings us. For example, "Binders" and "Storage" are often purchased together, and the combination of "Copiers" and "Storage" can bring high profits. In this way, the company can formulate different marketing strategies for each product. When customers buy "Storage" products, promoting "Binders" advertisements can increase the probability of their purchases. It doesn't have to be just advertising. The additional purchase price or free shipping would also be a good way. In conclusion, the market basket analysis gives a more accurate and effective marketing strategy.

In the forecast chart, all kinds of products will continue to grow in the next two years. Interestingly, "Office Supplies" will grow the most, even surpassing the sales of "Furniture". As mentioned in the previous paragraphs, "Office Supplies" has become a trend near future. The company should add more products to this category and attract more new customers to increase market share.

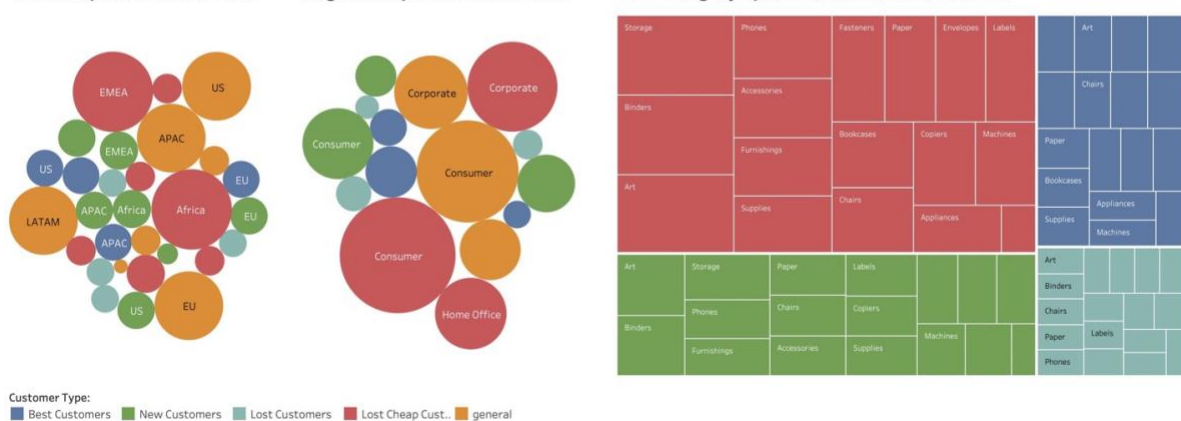
In the Shipping chart, you can see the difference in shipping costs between different categories. In addition, It can also match the market basket analysis to propose free shipping discounts. For example, "Binders" and "Paper" are often consumed together, and the shipping costs of these two are also low. If there is a free shipping promotion of this combination, it will promote more consumption.

Overview	Market Potential	US Market Analytics	Product Analytics	RFM Analysis
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Customers Status (Recency, Frequency, Monetary)



Sub-Category by Customers Status (remove general)



The graph on the top shows the customers' status (Recency, Frequency, Monetary) of all customers. The following three pictures can quickly see the market, segment, and sub-category of these five types of customers. These three aspects are closely linked together. For example, we can find many “Lost cheap Customers” in the African market. The company can investigate why the

strategy or products do not meet African customers. Next, we can find that the "Consumers" type is the majority of "New Customers," it can be specially offered new-membership gifts for consumers to retain this type of customer group.

Conclusion:

First, the company should develop “Office Supplies” due to its high profit and greater demand in the future. Next, the company must carefully analyse the entire value chain of “Table” to identify problems and fix them to avoid losing money. However, this story also specifies the balance from specific locations, products, and customer types or cities, helping the company formulate business strategies while knowing which specific groups needed to make quick adjustments to avoid long-term losses.

Nevertheless, the company should also allocate resources to countries with high consumption rather than the untouched ones. It is also a good attempt to focus more on the Asian and European markets because they have high potential. Furthermore, the company should develop the market in various states of the United States, which can achieve high returns quickly.

At the same time, the change in major customer types also requires customised business strategies to increase their spending and buying frequency. The market bundle and shipping cost also give the company a more precise direction to marketing, improving customers' purchase intention. Finally, the RFM analysis divides the customers into five groups. The company could develop, improve, and optimise strategies based on the characteristics of those groups.