

ST2187 - Business Analytics, applied modelling and prediction

Coursework – Tableau Report.

UOL Student ID Number: **200643838**

Word Count: 1498

Contents

EXECUTIVE SUMMARY	3
INTRODUCTION	4
ANALYSIS	5
Market Overview	5
Product Analysis	8
Shipping Analysis	10
APAC Market Analysis	13
Customer Analysis	15
CONCLUSION	18

EXECUTIVE SUMMARY

This report focuses on the analysis of an e-commerce retailing company. The Introduction gives an overview about the company which sells various types of goods worldwide. The information obtained from the dataset is divided into 5 sections where each section gives a detailed analysis, including the key insights and recommendations, as follows:

- An overview of the markets based on the sales and profits.
- Analysis on products sold by the company based on profits, sales, and shipping cost.
- An elaborative analysis of shipping to markets including the trends in on-time shipping.
- An in-depth analysis of the highest selling and profitable APAC market and their top 5 countries associated with the most sales and profit.
- An investigation on the new customers that the company gains each year and the sales trend of the segments.

INTRODUCTION

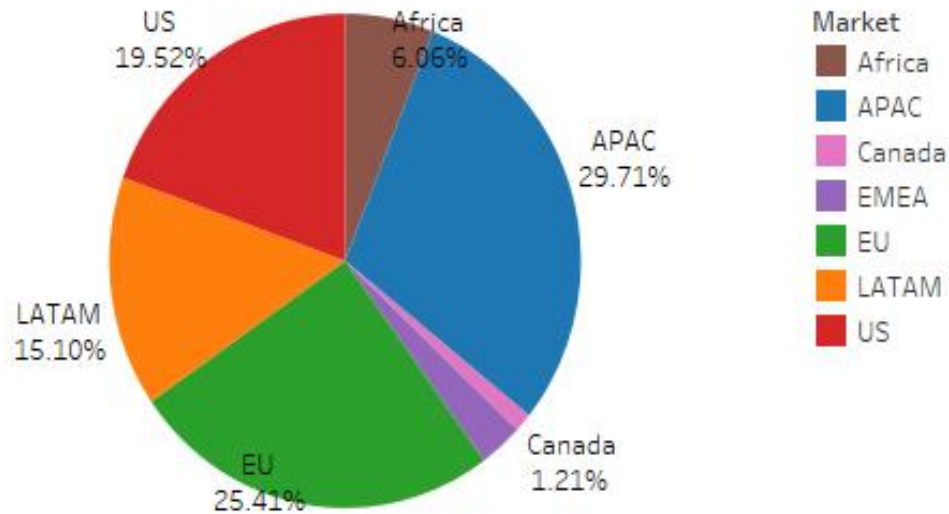
This is an analysis regarding the company's sales, profits of different products it sells and costs it undergoes in the product distribution across 147 countries that is divided into 7 Markets. Markets in the dominating order: APAC, EU, US, LATM, Africa, EMEA and Canada. All products are offered to 3 segments which are Consumer, Corporate and Home Office.

The product categories sold are Furniture, Office Supplies and Technology, under which there are totally 17 subcategories. Types of Ship mode used for shipping goods are First Class, Same Day, Second Class and Standard Class. Shipping Cost varies due to different Order Priorities: Critical, High, Medium, and Low.

ANALYSIS

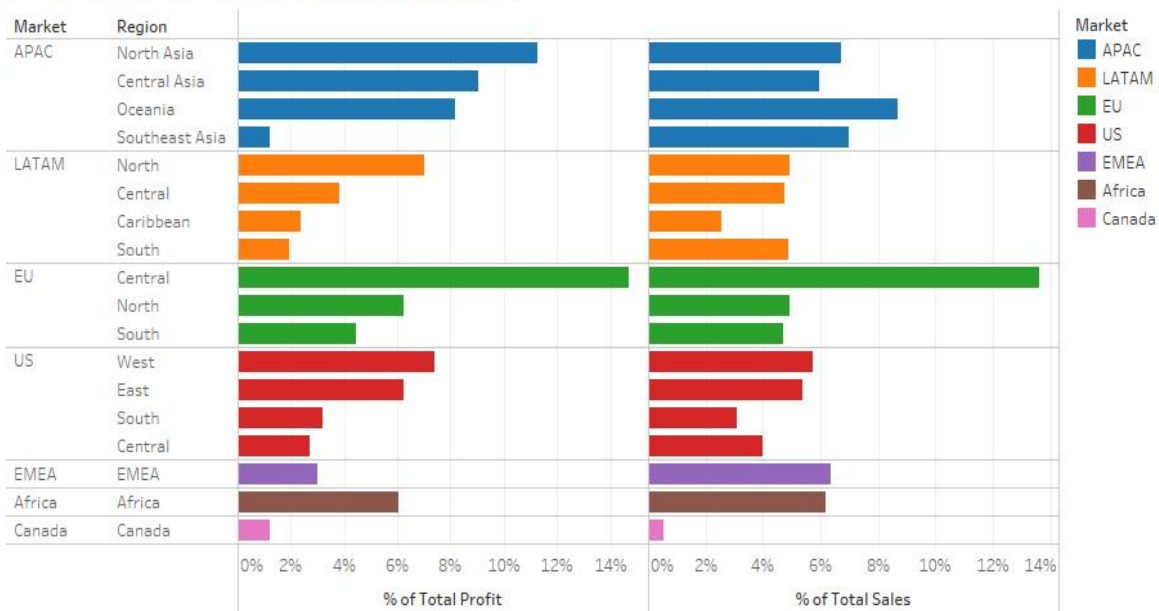
Market Overview

Markets by Profits



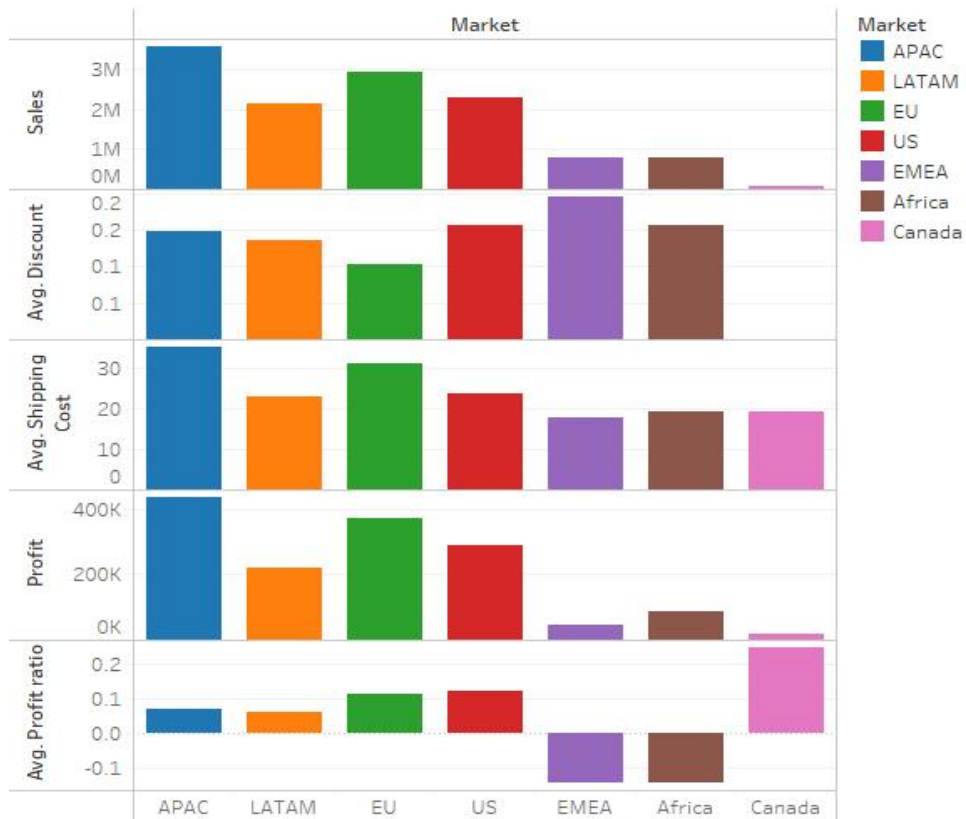
Pie chart above shows different markets under the company sorted according to their profit percentages. The most profitable market is APAC, whopping 29.71% of the total profit and the least profitable is Canada contributing only 1.21% of the total profit.

Sales and Profit by Region of the respective Markets



Central region of EU market is contributing the greatest to profits (14.69%) and sales (13.61%), when separating markets by regions.

Market details



APAC, EU, US and LATAM have contributed most to the total revenue and profit whereas EMEA, Africa and Canada have contributed the least. Although Canada is making the least profit, it has the greatest average profit ratio showing potential of growth. EMEA gives the highest average discount of 0.1961. Low profits and sales in Canada are likely to be because they offer zero discount on products.

Recommendations: -

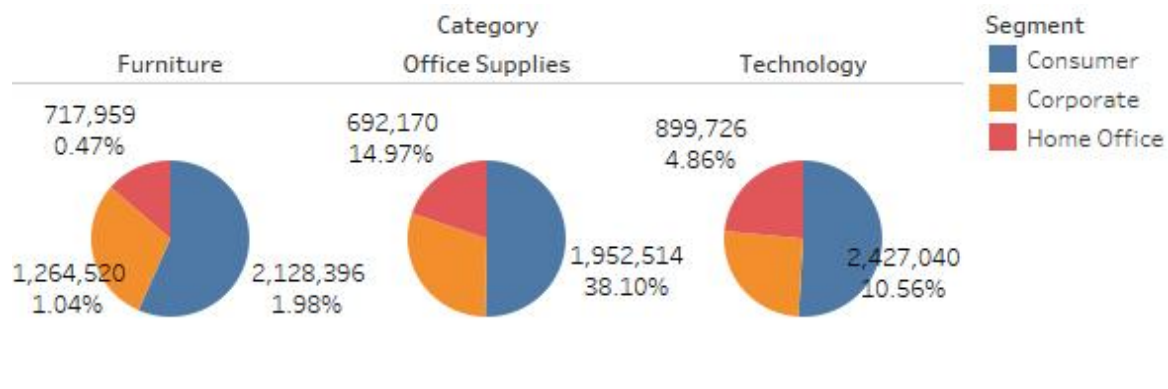
- Raising average discount on products sold in Canada could increase their sales since customers will be attracted to the discount rates and will start purchasing more.
- Enforce plans to promote products, such as digital advertising, and change prices reasonably to attract more customers so that low profitable markets (Canada, EMEA, Africa) can improve profits and sales.
- Since Canada has the highest profit ratio, good marketing strategies such as contests and giveaways must be implemented to boost future sales and profit.

Product Analysis

Product Details

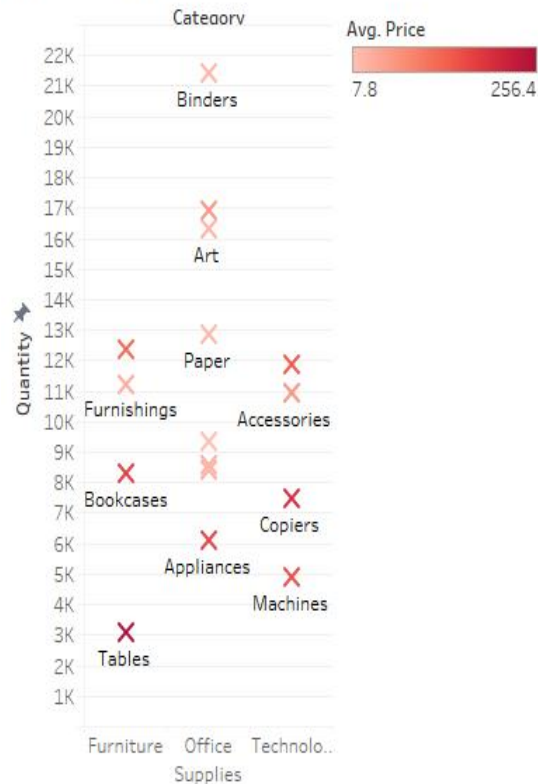


Above diagram focuses on the % of total profit, % of total sales and average shipping cost of each subcategory. Subcategories with the highest sales and profits are Phones (13.5%) and Copiers (17.62%) respectively. Although Tables are making significant sales, they are making an overall loss. It is evident that discount on Tables is the highest (dark-blue bars) and the average shipping cost is also high, hence this might be the possible reason for the loss. Technology appears to be the most profitable category as it contributes 45.23% to the total profit.



The pie charts illustrate how categories under each segment contributed to total sales and profit ratio. Consumer segment is the most profitable segment (51.48%) followed by Corporate (29.07%) and Home Office segments (20.3%).

Quantity sold per Category and Sub-category



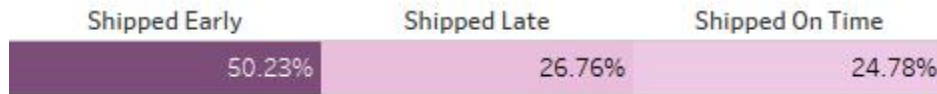
Cross diagram shows the quantity of products sold.

Quantity of tables sold is the lowest (maybe due to the high price and competition) and binders is the highest. Although quantity of Office Supplies sold is the greatest, it makes the lowest sales and Technology makes the highest total sales. Although quantity of Binders sold is the highest, the price of Binders is low. This maybe the reason for low Binder's sales compared to other products.

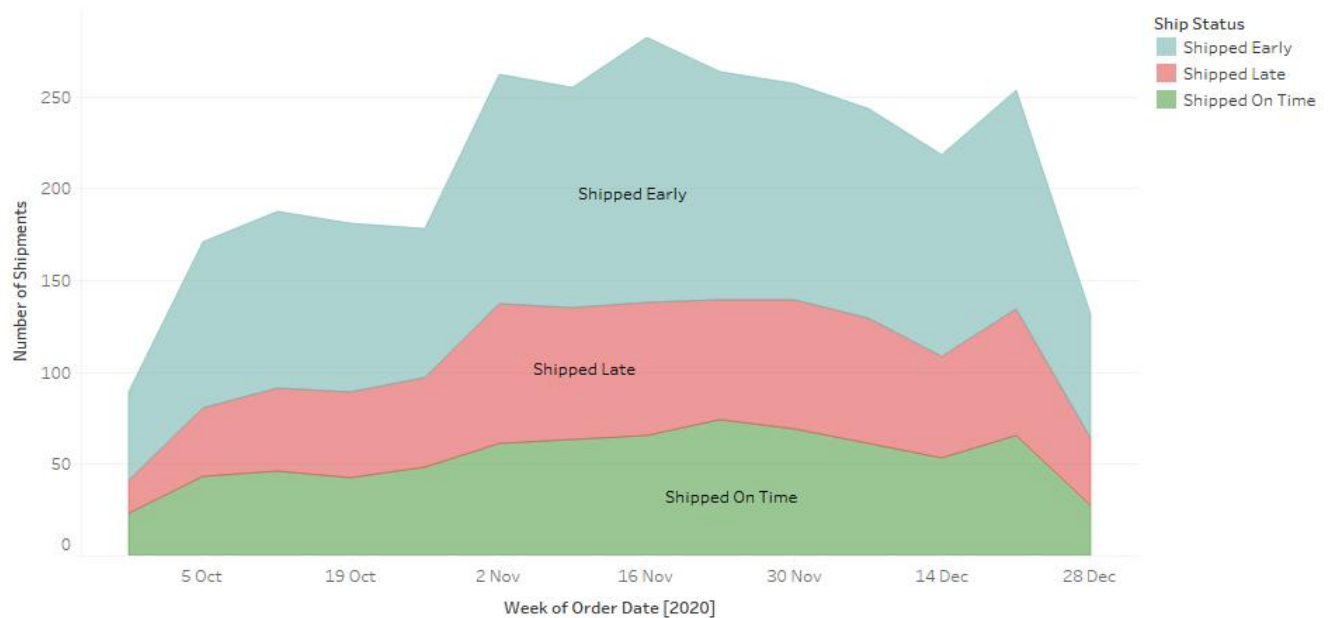
Recommendations: -

- Since tables are making a loss, it is recommendable to stop selling tables but if the company wishes to go ahead with selling tables and expect profits, shipping cost, discount, and price of tables should be lowered to increase Table's profits.
- Quantity of Tables sold can be increased by bundling Tables and Binders together. In this way, we increase the quantity of both Binders and Tables sold by providing a moderate discount on the bundled product.
- Price of the most sold product 'Binders' should be increased to improve the profits from Binders.

Shipping Analysis

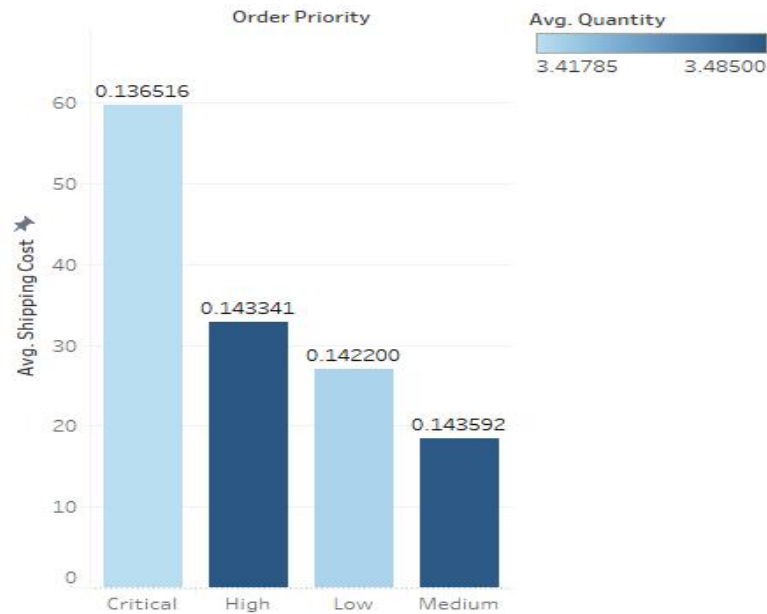


On Time Shipment Trends



50.23% of goods have been shipped early ,24.78% being shipped on-time and 26.76% being shipped late. The company has been doing well in terms of shipment since there is totally 75.01% of goods shipped on or before when customers order it.

Ship cost due to different Order Priorities



Above bar chart demonstrates average shipping cost per Order Priority. Critical has the highest average shipping cost, which is as expected, followed by High. But average shipping cost of Low is greater than that of Medium which doesn't occur normally. Possible reason for this is due to a lot of goods delivered under Medium (dark-blue bar) than Low priority so bulk discount on the cost might have been given.

Average Shipping costs based on Ship modes



APAC Market has the highest average shipping cost in all ship modes. This has been the case for most profitable markets.

Quantity sold and Sales per Ship mode in each year

Ship Mode	Order Date					Sales	
	2016	2017	2018	2019	2020		
First Class		4,576	5,643	6,848	8,972	111	2,534,068
Same Day		1,565	1,968	2,555	3,142		
Second Class	7	6,270	7,220	9,771	12,456		
Standard Class	12	19,013	23,280	28,962	36,052		

Quantity sold and sales per ship mode is gradually increasing overtime, where the quantity of goods shipped and sales under Standard Class are the highest and that of the Same Day goods are the lowest.

Recommendations: -

- Shipping cost for Critical Order priority goods should be reduced by finding cheaper distribution partners, to increase total sales.
- Eliminating bulk discount given on medium priority goods can increase the overall profit of the company since then the shipping cost will increase.
- Number of late shipments should be reduced to ensure that the customers don't switch to the competitors. If due to unavoidable circumstances, shipment is delayed then customers must be informed immediately. A shipment tracking app will be a good option for customers to track their shipments.

APAC Market Analysis

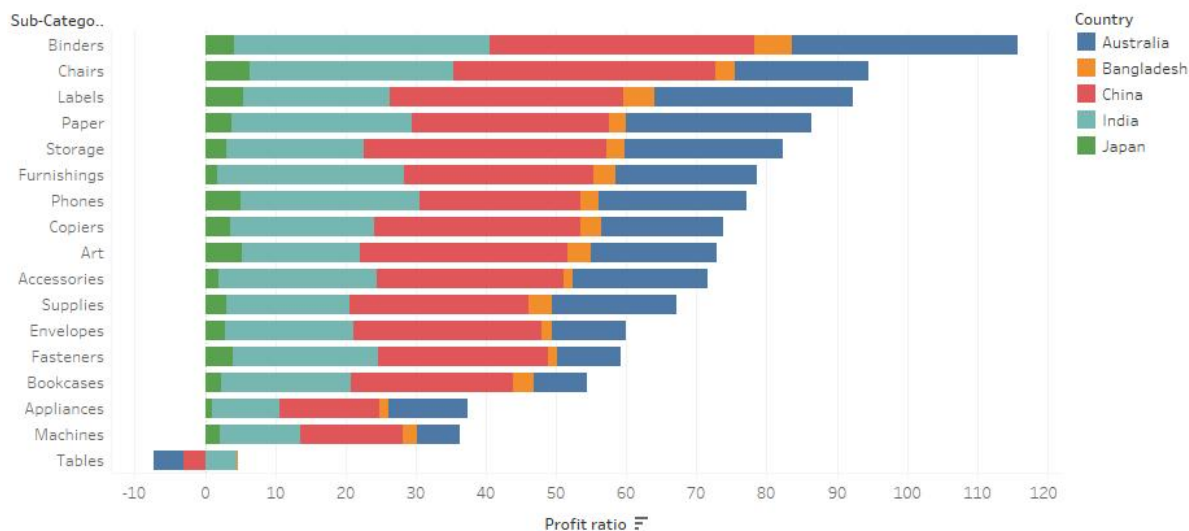
- APAC is the best-selling and most profitable market.

Top 5 Profitable Countries



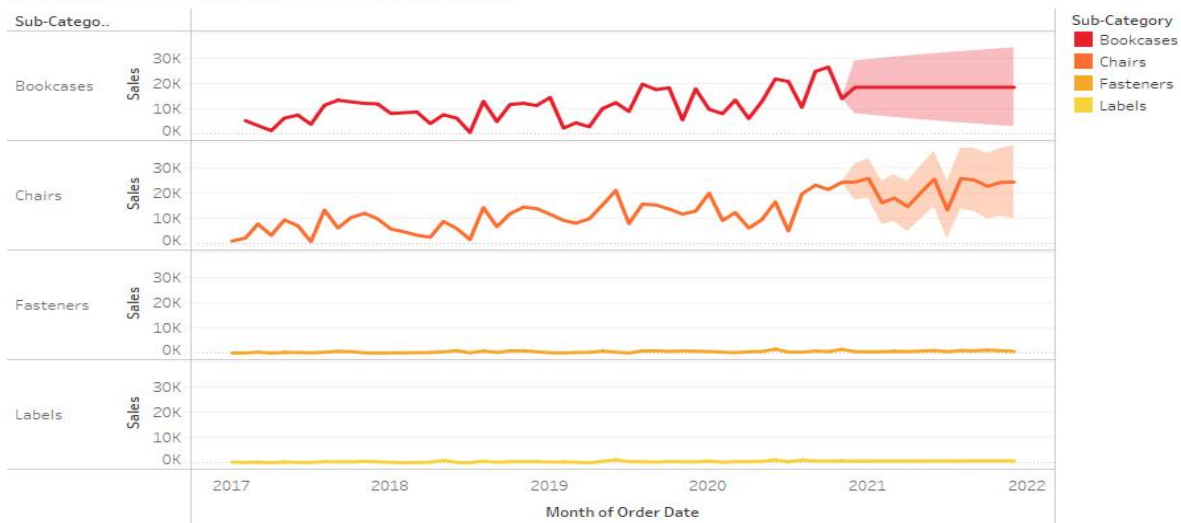
Top 5 profitable countries under APAC are China, India, Australia, Japan, and Bangladesh. China has the highest profit (37.33%), and Bangladesh has the lowest (3.73%). Australia offers the highest discount whereas Bangladesh offers no discount on products, this maybe the reason as to why Bangladesh is having low sales and profit when compared to the other 4 countries. Australia is the sales dominating country (38.64%) due to the large discount it provides. Large profit ratio of China indicates that it has a large growth capacity in the future.

Profit ratio of products in the top 5 profitable countries.



Binders have the highest profit ratio and Tables have the lowest out of all goods sold in the top 5 countries. Furthermore, it is evident that Tables are the only loss-making product, and the loss is in Australia (-4.22) and China (-3.03).

Sales Forecast of top 2 and least 2 selling products



Bestselling products are Bookcases and Chairs whereas the worst selling products are Fasteners and Labels. There seems to be a constant trend in the forecasts of Bookcases, Fasteners and Labels but the Chairs' sales seem to rise at a steady rate in the future.

Recommendations: -

- Sales and profits in low selling countries like Bangladesh need to be raised by providing a moderate discount on the goods.
- Discount on goods in Australia must be reduced since they make only average profit though their sales are large.
- Same tactics that have been used in China must be implemented in other countries since China produces the most profit from a moderate amount of sales.
- Moderate amount of cash must be spent on advertising goods such as Fasteners, Labels and Tables.

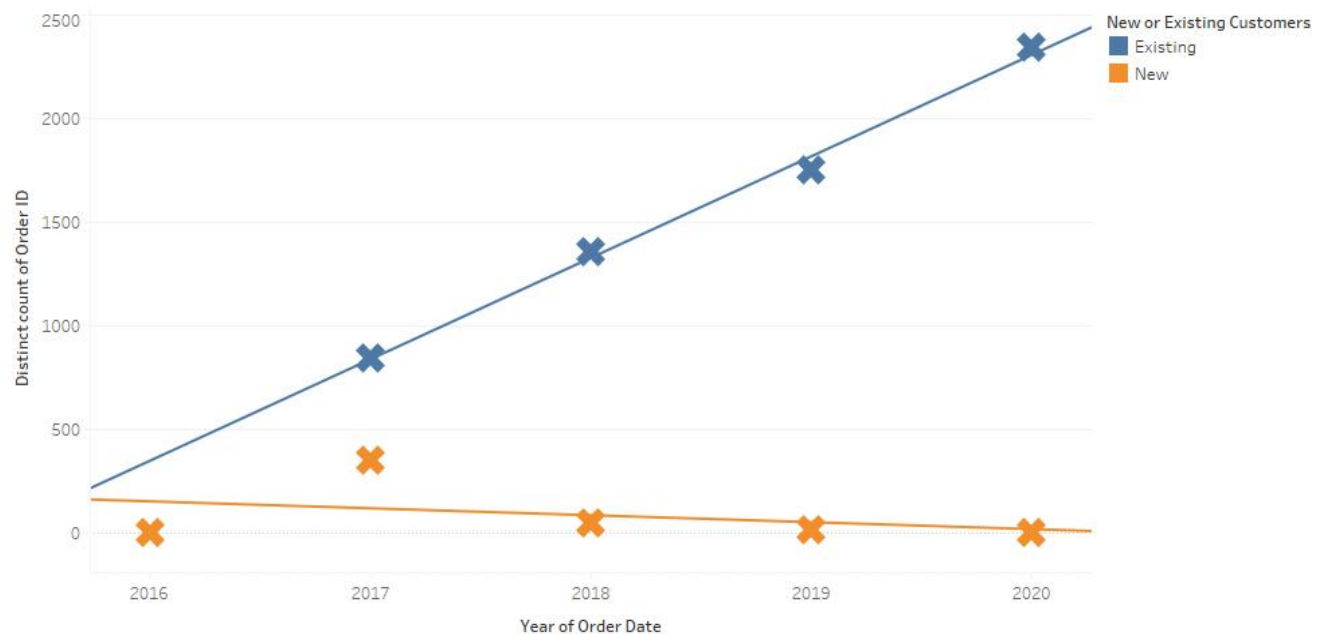
Customer Analysis

The New Customers Per Year

New or Exis..	Order Date					Distinct count of Custo..
	2016	2017	2018	2019	2020	
Existing		976	1,263	1,437	1,509	4
New	4	1,305	210	56	15	1,509

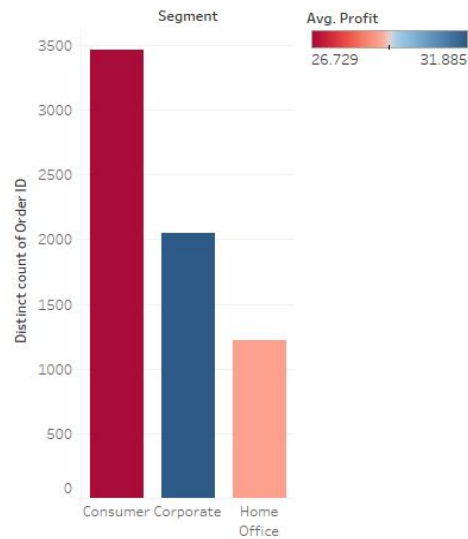
There is good customer loyalty since existing customers who purchase again increase every year but gain in new customers are decreasing overtime.

Ship Delays per year for Customers



Ship delays for existing customers are higher than for new customers every year. This tells that more prominence is given to new customers by reducing their shipping delays. Delays for existing customers is increasing every year but that for new customers is gradually decreasing. If this continues, then existing customers might switch to competitors for purchases.

Ship Delays Per Segment

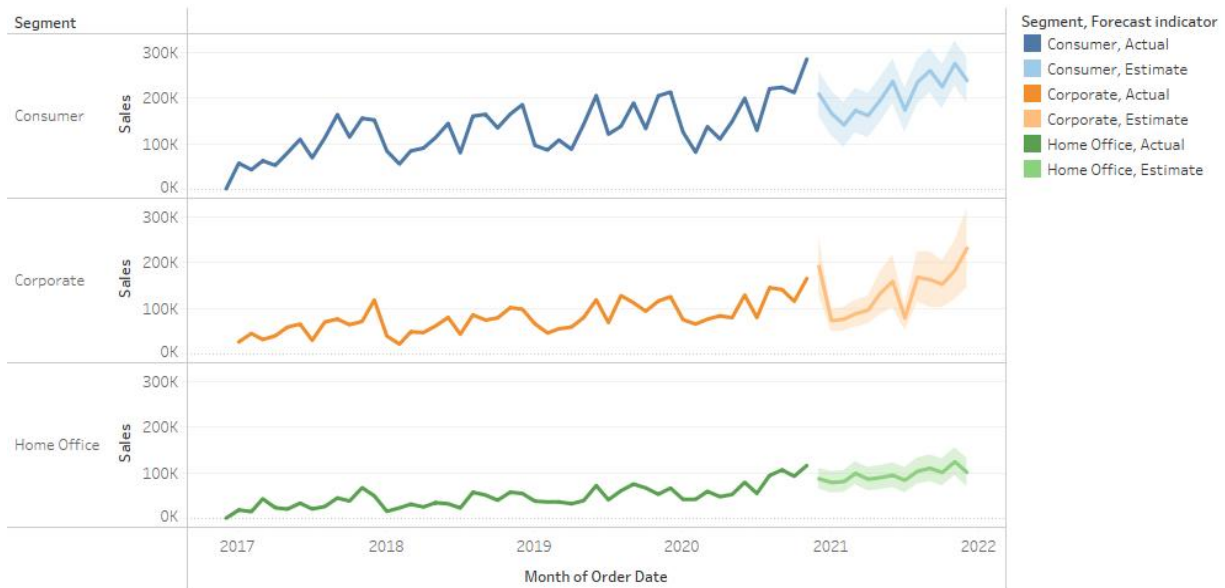


Segments in the increasing order of ship delays:

Home Office<Corporate<Consumer.

Consumer segment has the lowest profit, this maybe due to large shipment delays.

Sales Forecast of Segments



All segments seem to have an increasing trend in future sales, but Consumer and Corporate segment's sales are increasing rapidly whereas that of Home-Office is increasing at a slow pace.

Recommendations: -

- Provide adequate training for the marketing team or hire young marketing skilled workers to promote the brand image of the company worldwide through social media, to increase new customer gains each year.
- Ensuring old customers will buy again from us, we can provide them loyalty cards or send promotional emails weekly.
- Creating a user-friendly website with latest features can increase the customer base so a highly skilled web designer should be employed.
- Ship delays for existing customers could be reduced by finding efficient shipping agencies.
- Introducing new categories to markets can increase the gain in new customers.

CONCLUSION

Key issues and recommendations identified are,

- Canada has the least profit and sales – increase average discount and reduce shipping cost of products sold in Canada.
- Tables makes an overall loss – reduce shipping cost, discount, and price of Tables.
- Shipping cost for products in less profitable markets should be reduced by finding cheaper distribution partners.
- Marketing tactics that are followed by China must be implemented in other countries since China makes the highest profit from moderate sales.
- Hire young skilled workers good at digital marketing to increase new customers every year.
- Bundling low-selling goods with high-selling goods can increase total sales of both goods.
- China under APAC and Canada have high profit ratios showing good growth potential hence should focus on boosting their sales.