



VISUALIZATION OF COFFEE CHAIN DATA

ISDS 556 Project 1



TEAM 1

Ameya Desai
Ankur Gandhi
Anupama Kamdi
Archit Jajoo
Aryana Joshi
Brandon Travis

Table of Contents

Introduction.....	2
Data Analysis.....	2
Underperforming Products:	2
ROI by product:	3
Best Product by State	3
Product Sales v/s State.....	4
Sales and Profit Contribution of each state	4
Marketing ROI per product:	5
Marketing ROI per State:	5
Conclusion	6
Ameya Desai.....	6
Ankur Gandhi	6
Anupama Kamdi.....	6
Archit Jajoo.....	6
Aryana Joshi	6
Brandon Travis	6

Introduction

Tableau has given the power of visual analytics. We can get many insights using this software. By looking at different kind of charts and graphs we get the understanding on company's business. With the help of these insights, company can change their business strategies and hence improve their business.

For this project, our team has analyzed the data for a Coffee chain business. The data is already cleaned with no missing values and hence no basic operation had to be performed. The data contains information about sales, profits, products offered by the business, marketing budget, inventory and market locations. The data is perfect to analyze using Tableau as it contains the geographical market location.

After analyzing the data for Coffee chain, our team has studied different parameters about the data. We have noticed correlations amongst the entities like profit, sales, marketing etc. We used tableau for visualizing the data and got better understanding of the products which are underperforming, states which are contributing to more profits, return on investment for each product and marketing return on investment per state. Moving ahead in this case study, we have explained these factors using visual dashboards in tableau.

Data Analysis

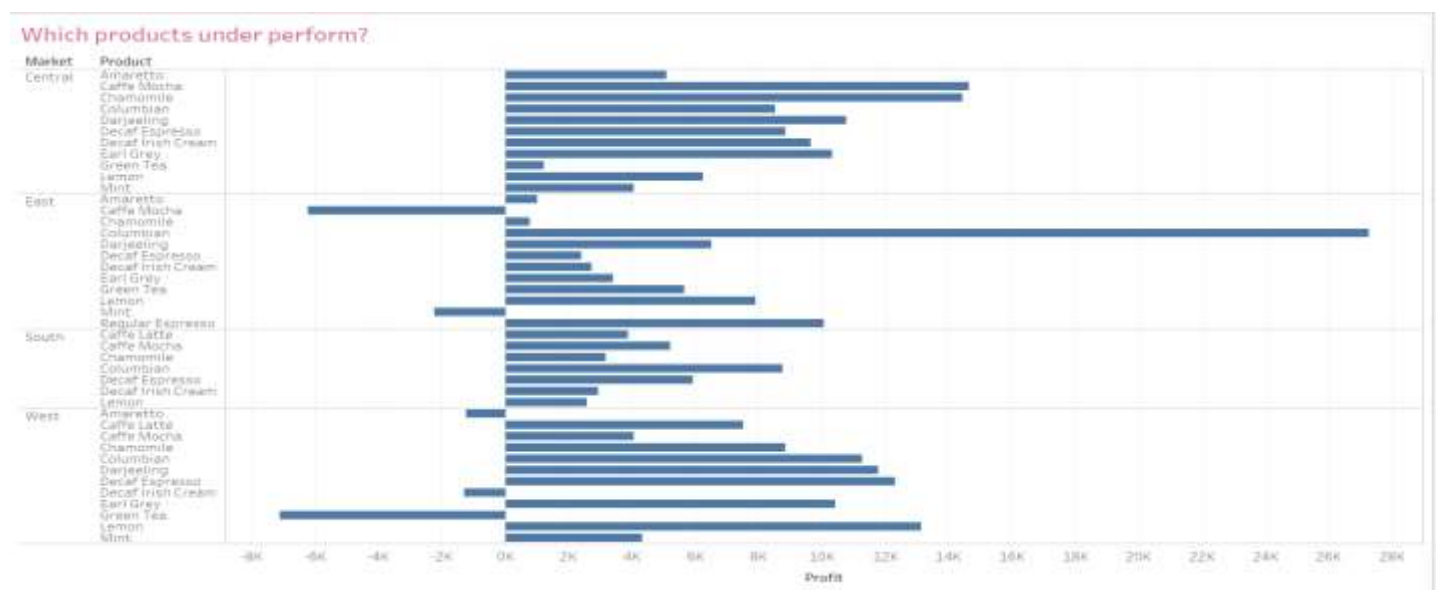
Underperforming Products:

The profitability issue is shown using below chart which shows what products are under performing. We utilized 3 variables profit, market, and product to illustrate a relationship between products and the current sales. In the dashboard below, we have Market and Product variables shown in the rows and Profit shown in the column.

There are 5 products that are underperforming. They are: Caffe Mocha (-5K in profit), Mint (-2K in profit), and Amaretto (-1K in profit), Decaf Irish Cream (-1K), Green Tea (-7K). 2 out of 5 products that underperform are sold in the East Market and 3 other products are sold in the West Market.

Based on this this dashboard, we can conclude that the target audience of the East Market prefer other coffee products than cafe mocha and other tea than Mint. We can also see that this target audience prefers Darjeeling tea than most of other drinks and Darjeeling tea has a profit of 27K. This indicates that we should investigate further whether it is worth it to continue selling Caffe Mocha and Mint product in the East Market.

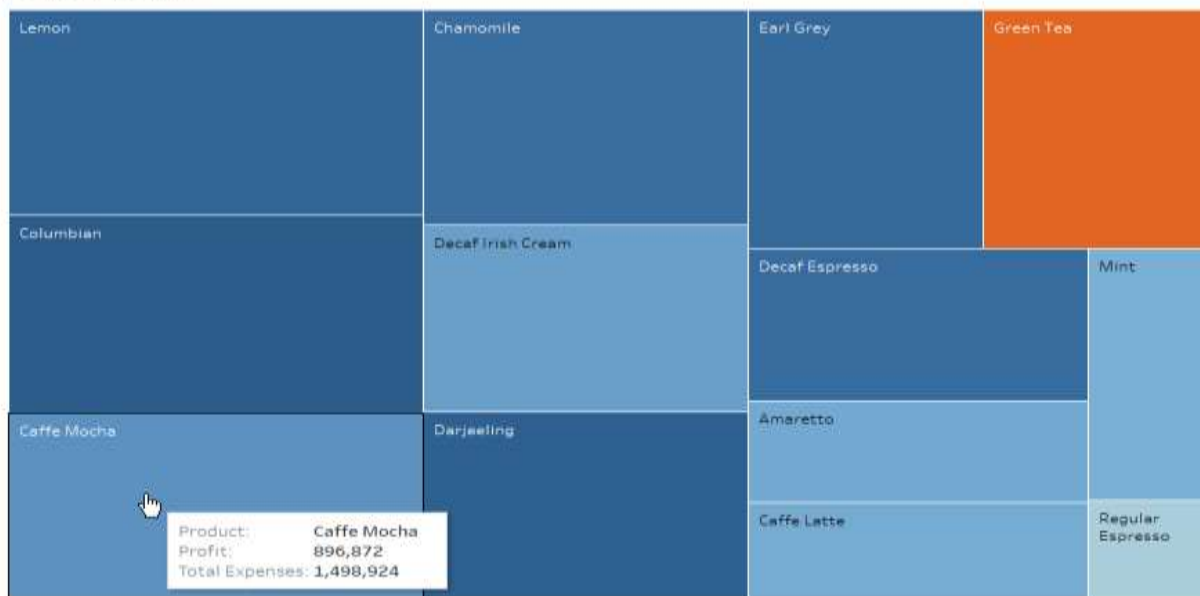
In the West Market; however, the target audience prefer other coffee products than Amaretto and Decaf Irish Cream. The sales of other tea products are also higher than Green Tea product in the West Market, indicating that customers in the West Market do not like to buy our Green Tea product and we need to investigate more regarding it. Out of 5 underperformed products, Green Tea product bring us the most loss.



ROI by product:

The chart below shows ROI by product. Where size of block represents the total amount of expenses on the product and color represents total profit (total sales of product - total expenses of product). This dashboard view is a quick chart for management to see which products are worth their expenses for. These would be cost of both Marketing and Inventory which, looking at this particular representation, would lead management to possibly stop their investments in Green Tea as it continues to leave the company in a loss of \$934,740.

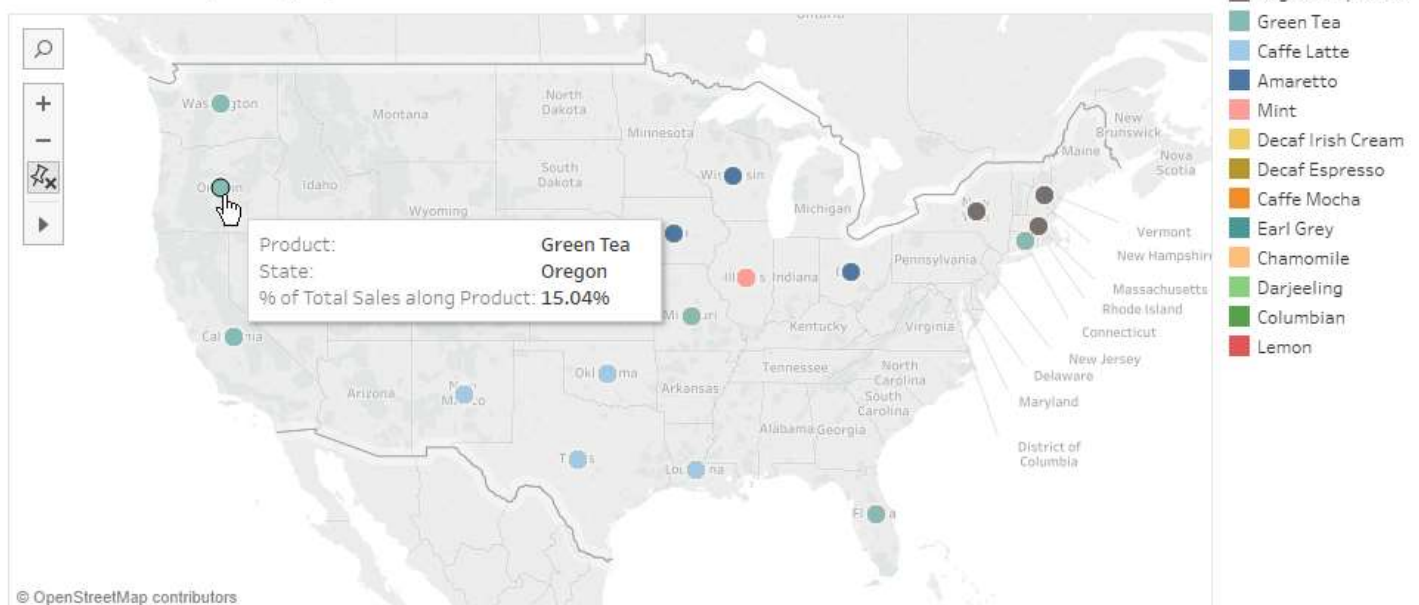
ROI by Product



Best Product by State

This Best Product by State chart displays to the marketing team which product is doing the best in which state in order to see overall effectiveness of the product. As the marketing team looks at which products to advertise for, it is important to note what is already important in the area.

Best Product (Sales) by State



Product Sales v/s State.

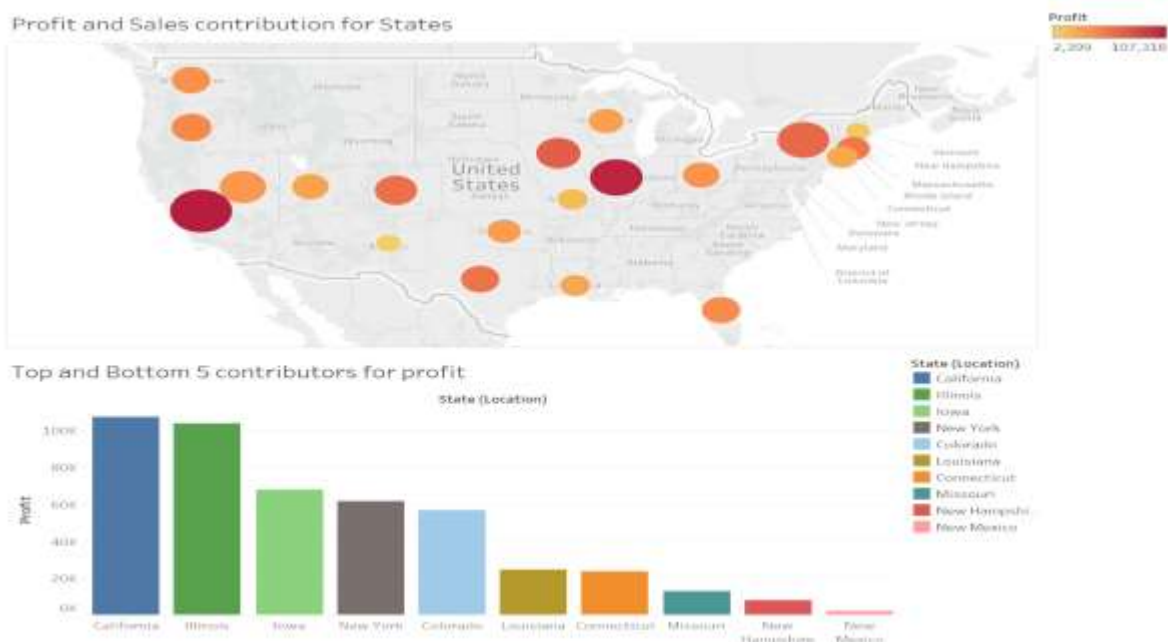
Below is a heat map kind of chart which shows yearly sales of products for each state. Darker the shade, higher the average sales. This heat map is useful for the manager to take decision regarding the performance of the different Coffee with respect to states. It also gives a graded visual which helps the manager to identify the maximum sale of a product at one glance just by looking at the darkest shade of blue for a particular coffee. For example, the sales for Columbian is maximum in the state of California and that of the Cafe Mocha is maximum in Illinois.



Sales and Profit Contribution of each state

The dashboard below represents geographical distribution of sales. In first chart, size of the bubble represents the sales contribution. Bigger the size of bubble more sales contributing the state is. Hence, from the dashboard it is evident that states like New Mexico, Vermont, Missouri and Louisiana are the least contributors to coffee sales.

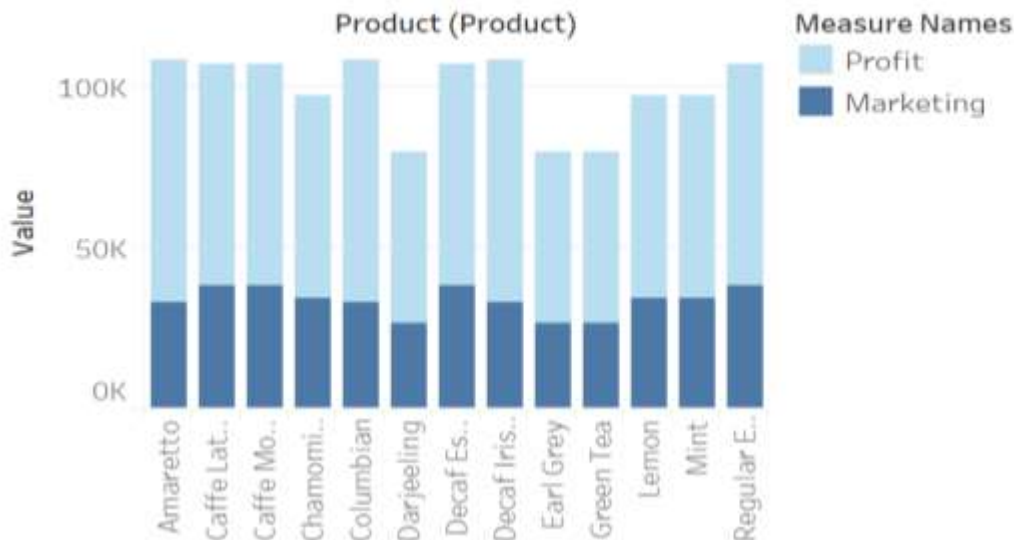
As shown in legends, darker shade of red represents higher profit contribution. The second chart shows in detail the top and bottom 5 profit contributors to the profit. We can see that sales and profit goes hand in hand as the states which contributes lowest for the sales are also low contributors for profit.



Marketing ROI per product:

As explained in earlier charts, some products like Amaretto are underperforming and hence marketing team decides to assign budget to market those products to increase its sale and ultimately earn more profit on those products. The graph below shows how many products are worth investing budget on marketing to get more profit. Almost all the products are assigned equal budget for marketing. The return on investment for few products like Decaf Irish and Columbian is really great compared to others.

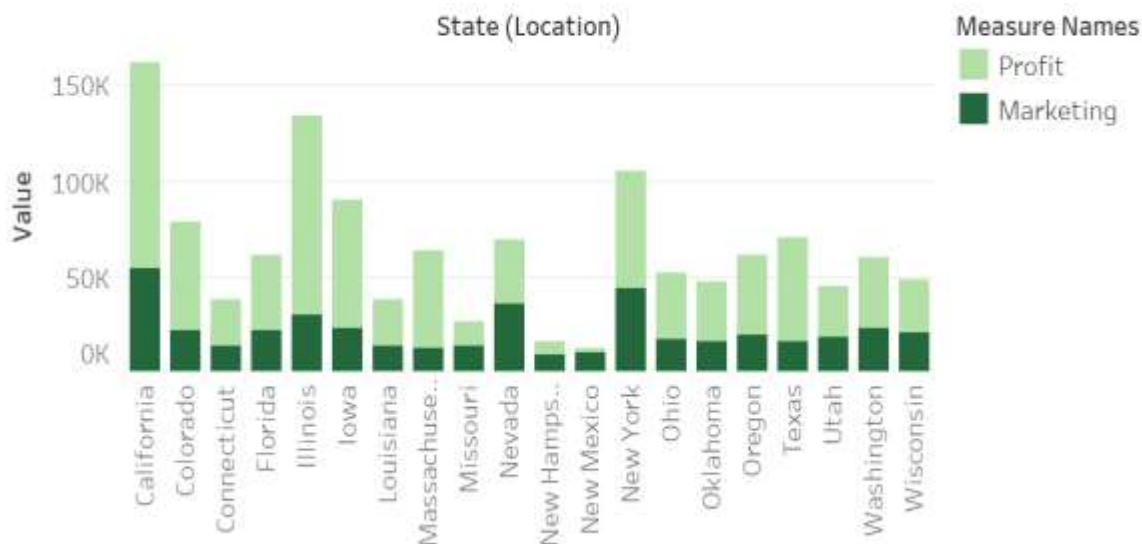
Marketing ROI per Product



Marketing ROI per State:

The next chart also represents the return on investment per state. From this graph, we can see if it is even worth to invest the in marketing in that particular state. Return on investment for states like New Mexico, Hampshire is very low. So, marketing team will reconsider the budget and marketing strategies for such states.

Marketing ROI per State



Conclusion

Ameya Desai

Tableau is new for me and I am learning more and more about it. By using Tableau, I learned how to transform tedious, difficult to understand data into graphical illustrations which are easy to read and understand. I learned the importance of tableau as a tool which can help organizations make informed decision by looking at the big-picture of their organization's working. At my workplace, I can use this knowledge of Tableau for data visualization which can help me as well as my seniors to look at the big-picture and understand the overall scenario when making decisions.

Ankur Gandhi

Tableau is a great BI tool that allows us to business users to perform fairly complex data visualization in a very intuitive, drag and drop manner. It allowed me to learn how to think of converting the huge dataset into a design format such as graph, pie, table charts etc. The use of tableau allowed me to think about how we can research the human perception in the form of visual displays of data. The process of making us think analytically, will even help at my workplace, where we can analyse the future trends through visualization with respect to the data already collected. This will help in decision making more strongly and powerfully.

Anupama Kamdi

Tableau is great visualization tool for analyzing company's business. It gives graphical illustration on how company is performing and what decisions we should take in order to improve the process or earn more profit. For example, the graph about marketing return on investment gives an insight about how much budget to allocate to get appropriate profit. Visual dashboards help in making such decisions. At my workplace, RK's Services, I can make use of similar dashboards to keep track of different kind of services provided at RK's and what services are performing well and are they worth continuing.

Archit Jajoo

By working on the Coffee chain data, Tableau helped me to understand the importance of visualization and how it can lead to the overall development for any organization. At my workplace, SAT Pvt. Ltd. I would use similar dashboards to help my team as well as our agents understand, how we can improve our services and where we are generating more profit i.e. in which region etc. to increase sales revenue and work towards fulfilling customer requirements

Aryana Joshi

Tableau is an interactive data visualization tool which helps to build reports quickly and makes exploration of huge volume of datasets easier. By using Tableau for this project, I learned the underlying meaning of the dataset in a simple graphical form and that with the help of this tool the organizations can find patterns, trends and make decisions with visual data. At my workplace, I would use this knowledge to improve the decision-making process by researching on the data we have. This will bring forward the reason of failures so that they can be avoided in future.

Brandon Travis

Tableau's use as a visualization tool helps by allowing us to gain valuable insight from what seems to be a never-ending amount of data that is generated daily in business operations. I currently work for the State of California's Department of Tax and Fee Administration, and the amount of data generated is pretty high, for obvious reasons. Our current way of viewing and reviewing data is very outdated, but there is currently a program that is entering its final stages of development to help the State better understand and learn from the data. These tools will not be as sophisticated and interactive as tableau, but they do represent the understanding that visualization tools can help with the administration of the tax and fee programs. These tools can help with better audit selections, enabling the ability to point out problem industries that need more attention than others, etc. Visualization tools such as this will allow for more efficient administration of the sales and use tax law.