

Analytic and Data Visualization of Coffee Chain Data using Tableau

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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 case study, 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.

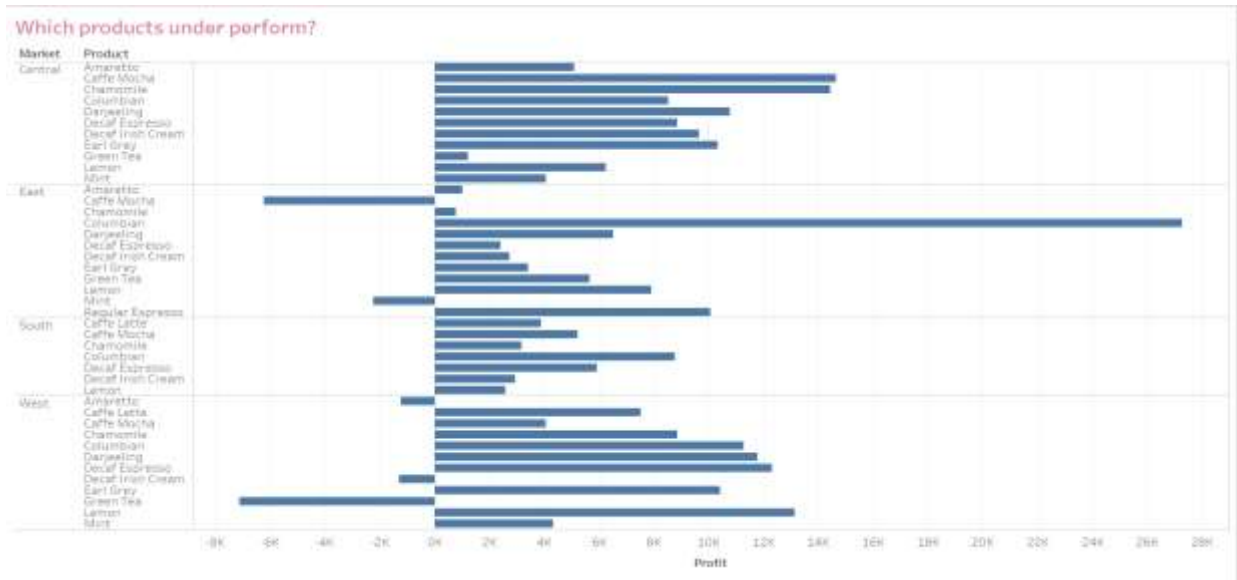
- **Underperforming Products:**

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 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.

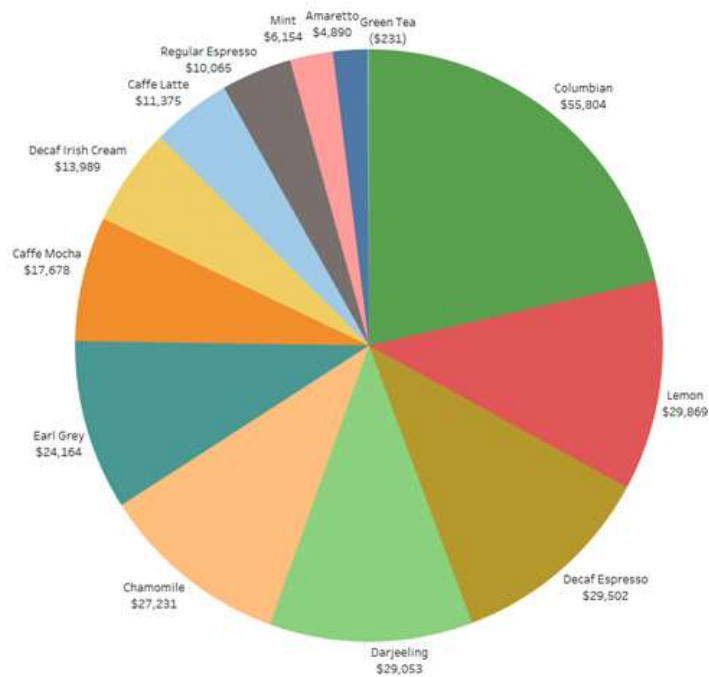


- Profit per product:**

The pie chart below displays product profits, from the lowest (Green Tea) with a loss of \$231 to the highest (Columbian) with a profit of \$55,804. Using a pie chart helps managers identify relative proportions between products. By looking at profit, managers can see which product are bringing in more profit to the company. With other charts, managers can determine which products should be pushed towards consumers through increased marketing efforts so that there is an increase in profits.

After reviewing this chart, we can see that Green Tea is making a loss of \$231. Managers can then look into where Green Tea is selling and the possible reasons for the loss. This may be due to ineffective marketing efforts or customer preference. On the other hand, Colombian seems to be doing very well with a profit of \$55,804. Managers can look into this product and perhaps decide to push this product onto customers more in an effort to increase profits. They can also try expanding where this product is selling to be able to accompany more locations.

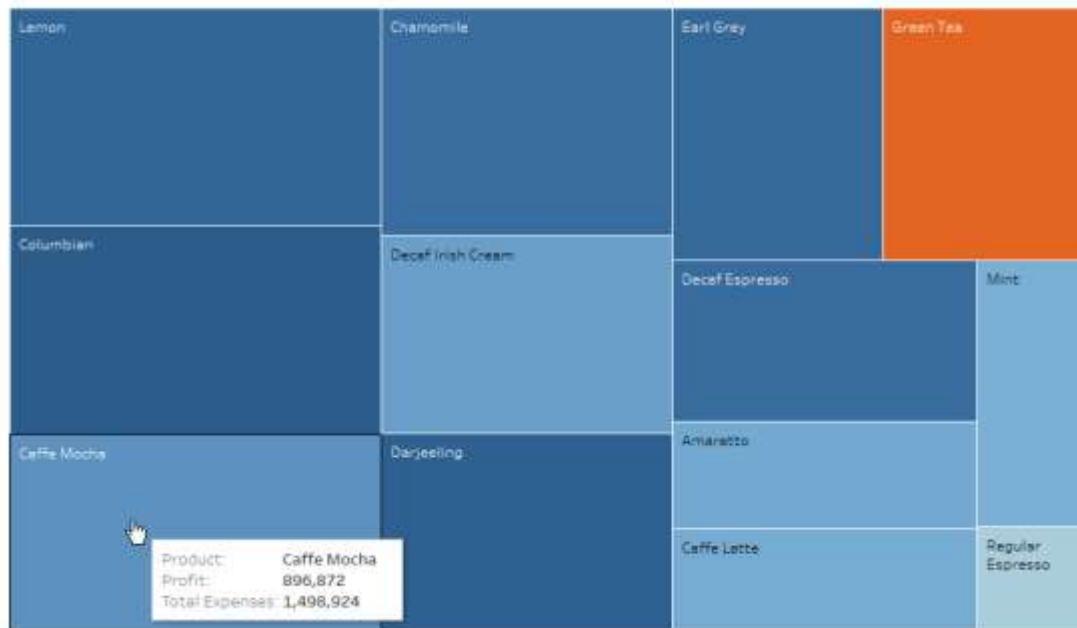
Product Profit



- **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



- This 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.

Sheet 1

State	Year of Date	Product											Ama
		Columbian	Lemon	Caffe Moc..	Decaf Espr..	Chamomile	Darjeeling	Earl Grey	Decaf Iris..	Caffe Latte	Mint	Green Tea	
California	2010	8,940	6,210	3,768	7,151	3,055	3,183	2,276	1,832	5,875	1,863	1,965	
	2011	9,305	6,471	3,923	7,456	3,178	3,324	2,364	1,907	6,126	1,944	2,062	
New York	2010	8,940	7,272	811			3,055	3,183			2,033	2,276	
	2011	9,305	7,570	843			3,178	3,324			2,122	2,364	
Illinois	2010	5,199	1,863	7,151	5,875	3,183	2,276	1,965	3,651		3,055		
	2011	5,411	1,944	7,456	6,126	3,324	2,364	2,062	3,800		3,178		
Nevada	2010	965	5,199	593	613	3,768	7,151	5,875	825	516	3,651	304	
	2011	1,007	5,411	616	642	3,923	7,456	6,126	858	542	3,800	318	
Iowa	2010	825	3,651	613	516	7,151	5,875	7,068	506				
	2011	858	3,800	642	542	7,456	6,126	7,381	531				
Colorado	2010	1,863	1,433	2,276	1,965	3,810	1,418	1,460	3,055		1,515	1,581	
	2011	1,944	1,502	2,364	2,062	3,988	1,484	1,531	3,178		1,587	1,656	
Oregon	2010	1,526	1,581	1,515	3,810	875	676	2,799	1,291	1,418		3,068	
	2011	1,601	1,656	1,587	3,988	915	712	2,913	1,355	1,484		3,194	
Washington	2010	2,047	1,243	1,562	2,068	3,378	1,697	1,371	2,890	1,074		1,706	
	2011	2,128	1,298	1,632	2,154	3,545	1,781	1,438	3,008	1,119		1,791	
Florida	2010	2,799	1,562	2,890	2,393	1,074	1,070		3,068		2,068	1,417	
	2011	2,913	1,632	3,008	2,494	1,119	1,114		3,194		2,154	1,474	
Texas	2010	6,210	1,291	3,183	2,276	1,515			1,863	1,965			
	2011	6,471	1,355	3,324	2,364	1,587			1,944	2,062			

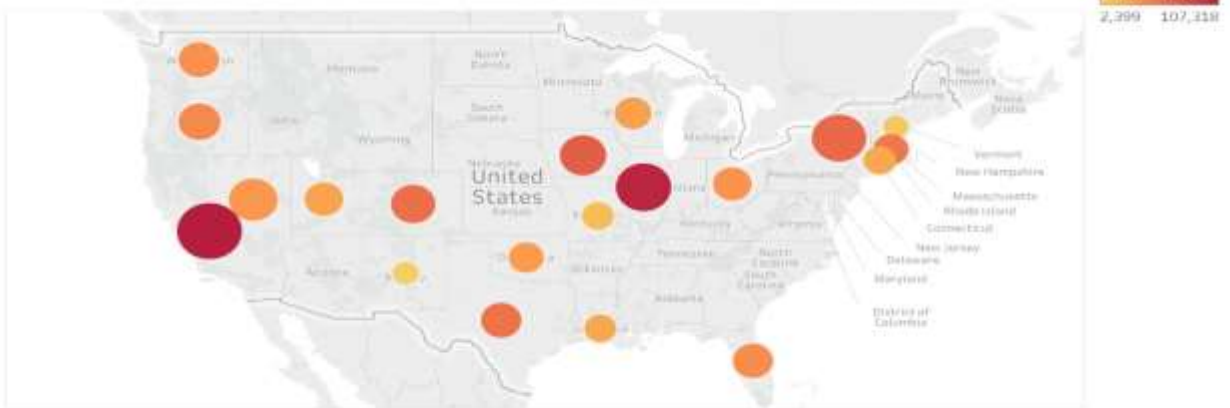
AVG(Sales)
25.3 77

- **Sales and Profit Contribution of each state**

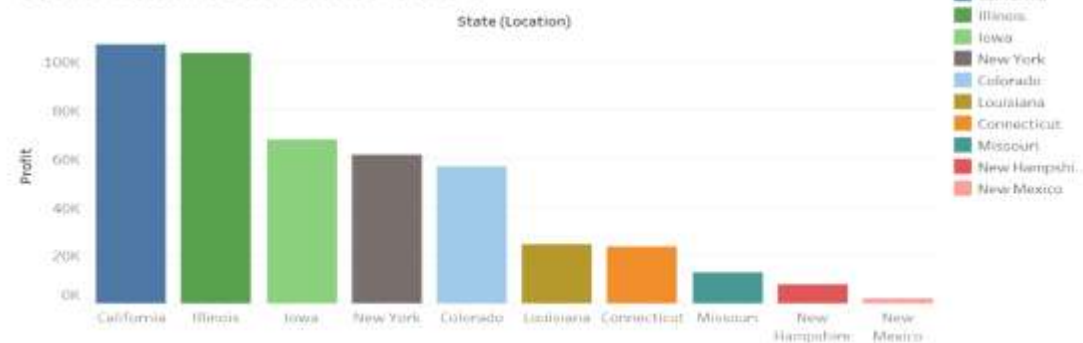
The dashboard below represents geographical distribution of sales. In first chart, size of the bubble represents the sales contribution. Bigger the size of bubble more sales contributing the state is. Hence, from the dashboard it is evident that states like New Mexico, Vermont, Missouri and Louisiana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

Profit and Sales contribution for States



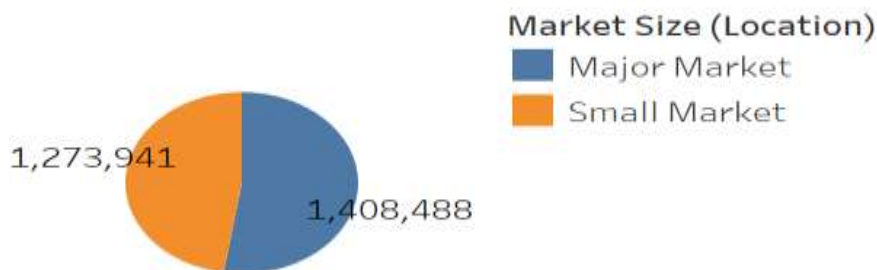
Top and Bottom 5 contributors for profit



- Market Consumption:**

For every organization, it is very important to know how the organization is performing in market and where does it stand in small and Major market. The market consumption chart shows that the product almost has equal contribution in both Major and small market. It shows that the product received good response in both niche and major markets which is beneficial for company's growth.

Market Consumption



- **Regional Sales and Profit Margin:**

One of the main decisions to be taken by organization is about deciding margin in order to increase profits per unit sale. The sales market location chart shows region wise comparison of sales and profit with respective profit margin.

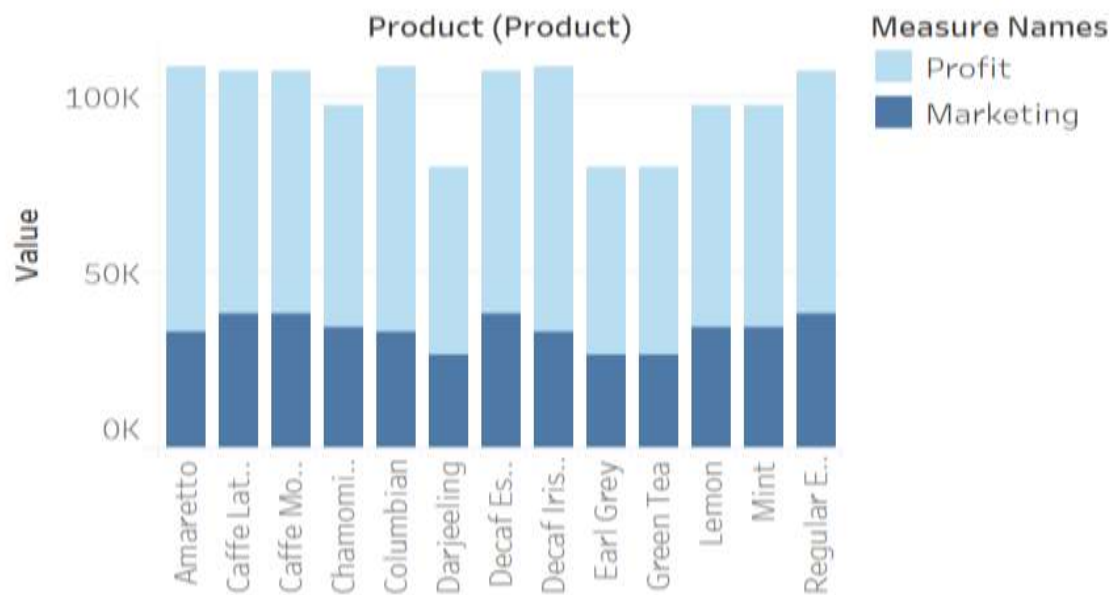
Sales_MarketLocation



- **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

