

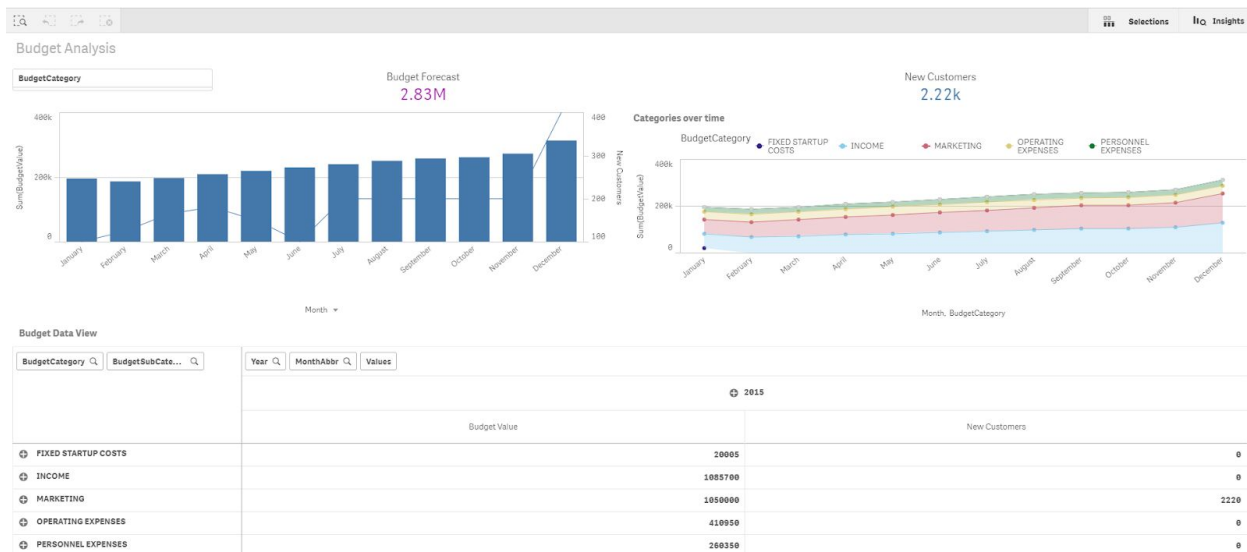
Tools used: **Qlik Sense, SQL, Microsoft Excel, MS SQL Server**

The data is of a company that sells goods on retail as well as an online e-commerce platform. It is end to end data from inventory, budgets, sales, payrolls, and customers. I am going to perform a complete analysis of each segment of data to understand the following as well as highlight my analytical and visualization skills:

- ★ performance drivers
- ★ failure point points
- ★ area of improvement
- ★ high-level business operation rules

Budget Analysis

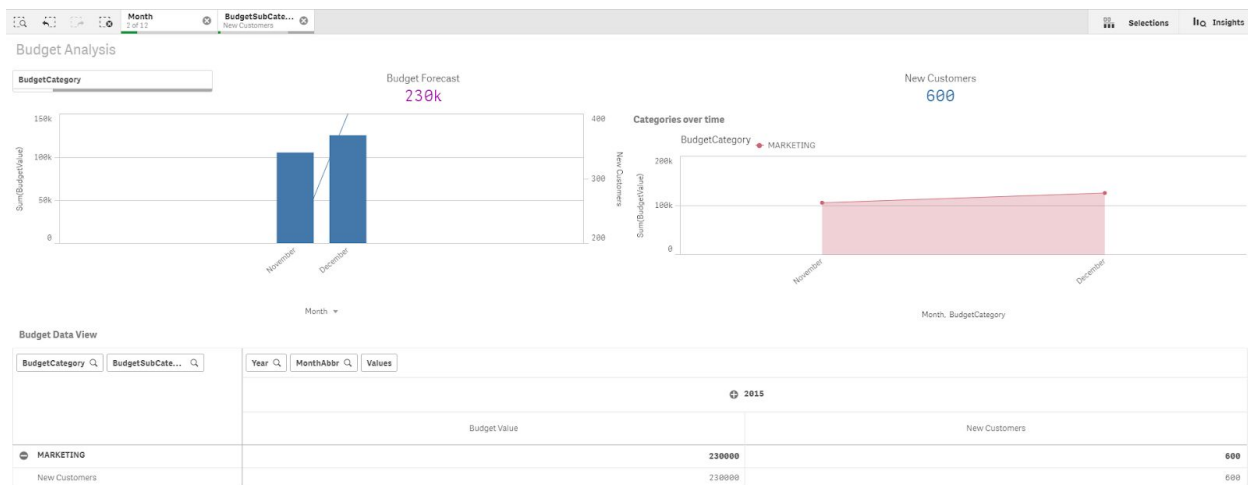
This is the home page of the Stock performance analysis app without any selections:



- Metrics used in KPI's are:
 - Budget Forecast
 - New Customers
- Combo Chart
 - Bars give the distribution of total budgets value over each month
 - The line gives the number of new customers acquired in each month
- Line Chart
 - Gives the distribution of budget value allocated for each category/department in the company
- Pivot Table
 - Gives the details of each category and its respective budget value distribution across each month for the year 2015 and new customers acquired

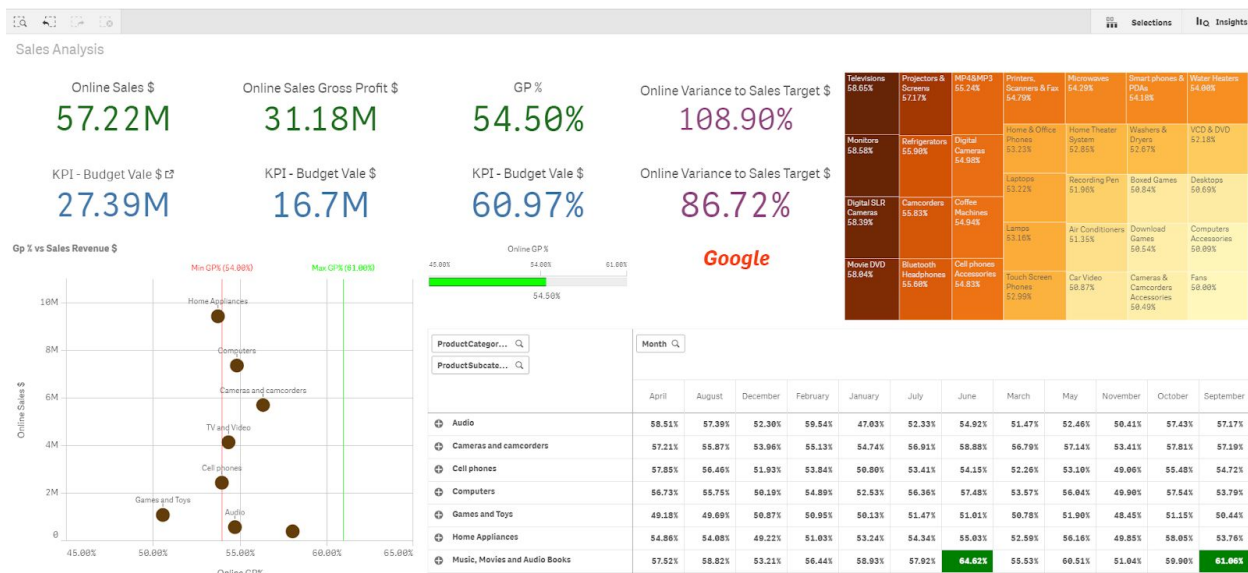
Below we can observe that the number of new customers increased by 100% from November to December. So, let us investigate. We can see that between all the departments only Marketing was

successful in acquiring new customers through their marketing campaigns by using the allocated budget value of \$23k. Whereas all the other departments failed to produce new customers. Therefore we should continue to allocate a similar or greater budget for marketing and reallocate budget for other departments:



Sales Analysis

This is the home page of the Sales analysis app without any selections:



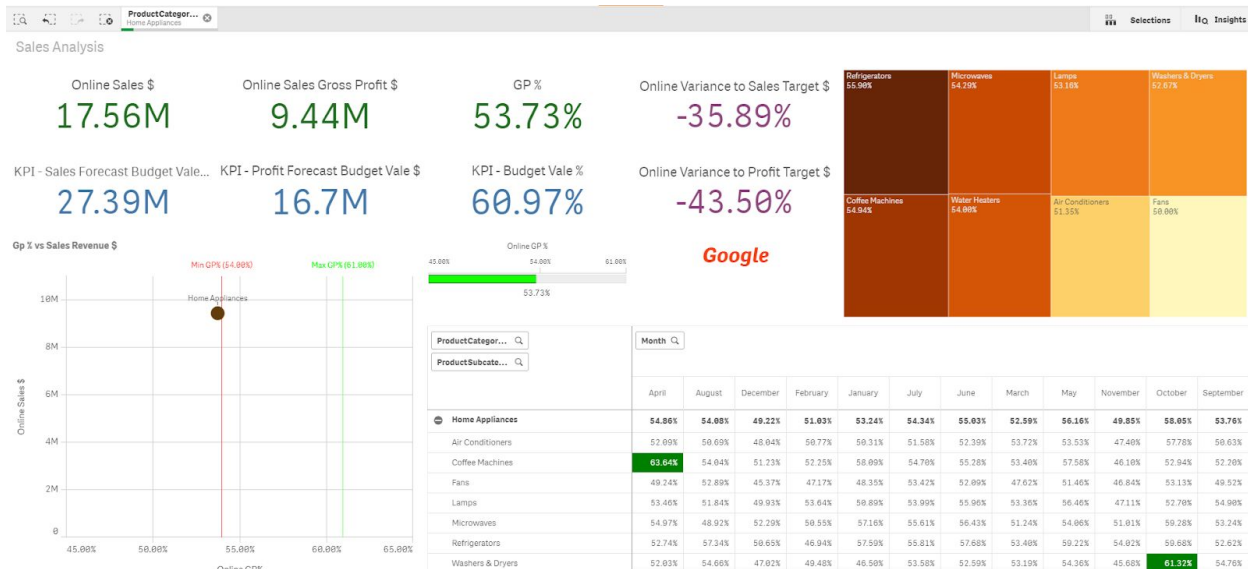
- Metrics used in KPI's are:
 - Online Sales (\$)
 - Online Sales Gross Profit (\$)

- Gross Profit (%)
- Online Variance to Sales Forecast Target (\$)
- Online Variance to Profit Forecast Target (\$)
- Sales Forecast Budget Vale \$
- Profit Forecast Budget Vale \$
- Budget Vale %
- Scatter Plot Chart
 - Gives the distribution of Product Category on the basis of how much each product category has generated Online Sales (x-axis) vs how much gross profit percentage (y-axis)
- Heat Map
 - Gives the distribution percentage of Product Subcategory
 - Is color-coded according to percentage
- Pivot Table
 - Gives details about each product category and its constituent product subcategory
 - The distribution of subcategory in percentage over each year and month
- KPI Hyperlink
 - Google
 - If you click the google symbol then it will directly take you to “<https://www.google.com/>” in a new tab

Google

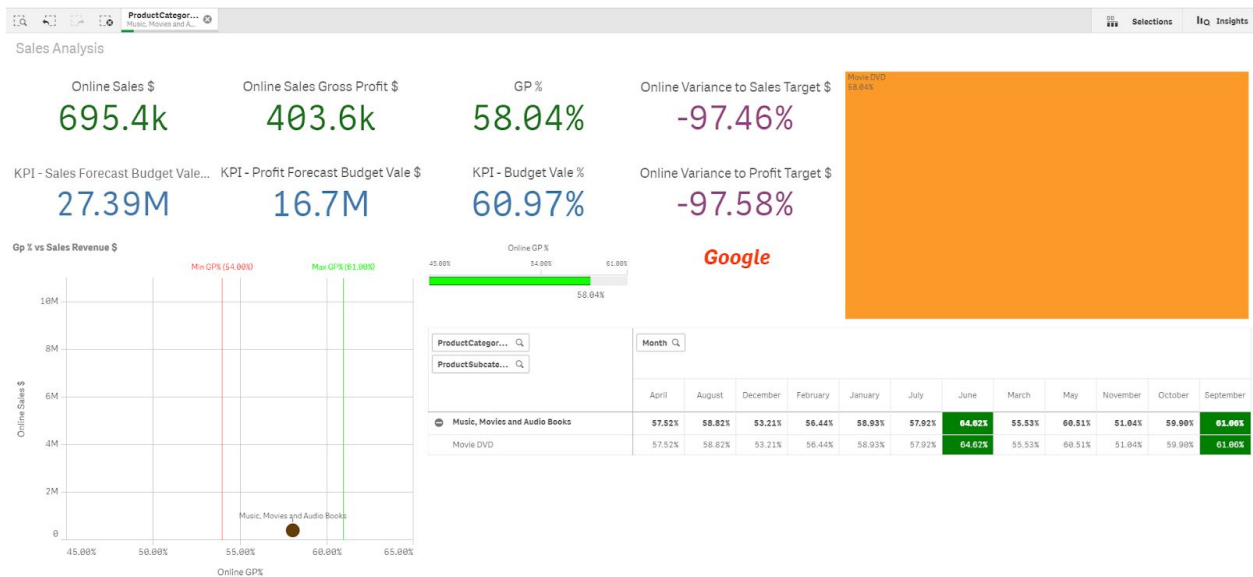


The companies set standard for a product to be considered well-performing is if that product's generated a gross profit $\geq 60\%$ per month. These values are highlighted with a background color of “green”.



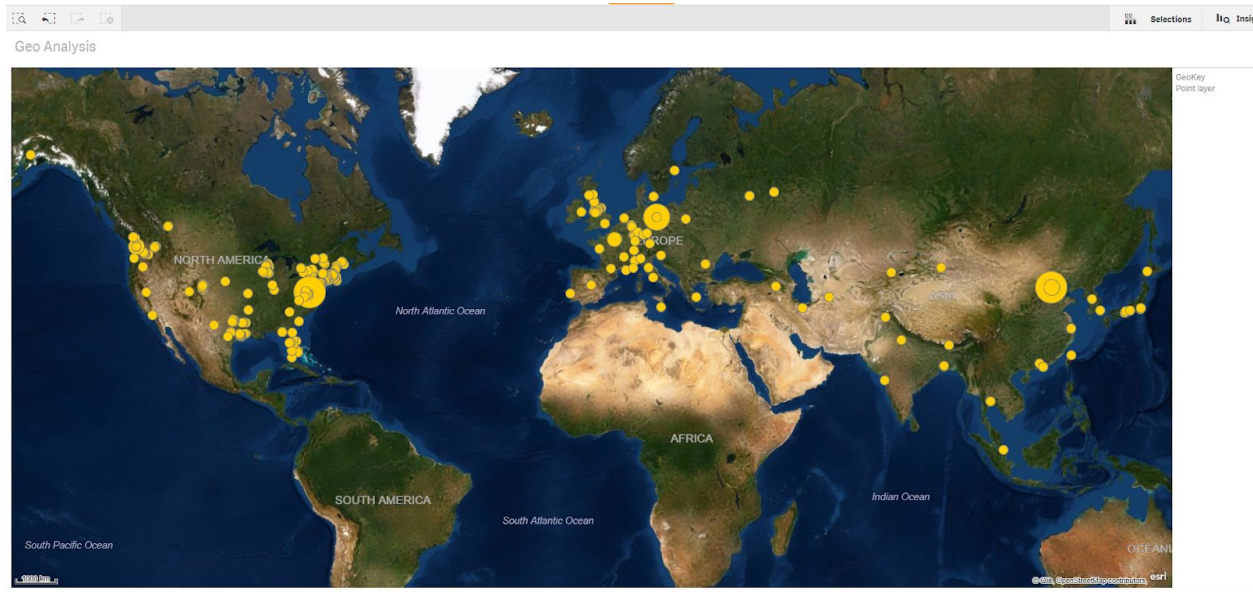
Above we can see that the product category “Home Appliance” has the highest online sales of 17 million with specific subcategories performing well such as “coffee machines” in April & “Wash & Dryers” in October.

Next,



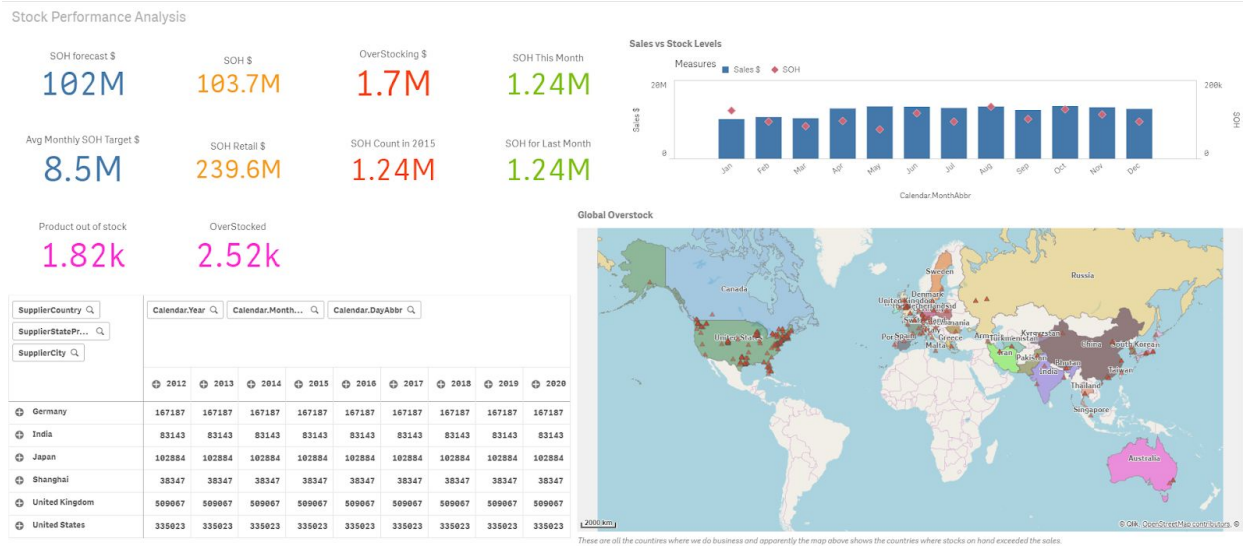
Above we analyze the weakest performing product category “music, movies & audiobooks”. They have the lowest online sales of \$695k but since the company has allocated marketing budget accordingly beforehand hence the gross profit has been consistent and closer to well-performing standards with a value of 58%.

Also, if you click the Sales Forecast Budget Vale \$ twice it is embedded with a hyperlink to the next sheet which shows the distribution of our Online Sales Forecast budget across the world on a dynamic 3D map depicting Geo Analysis as shown below:



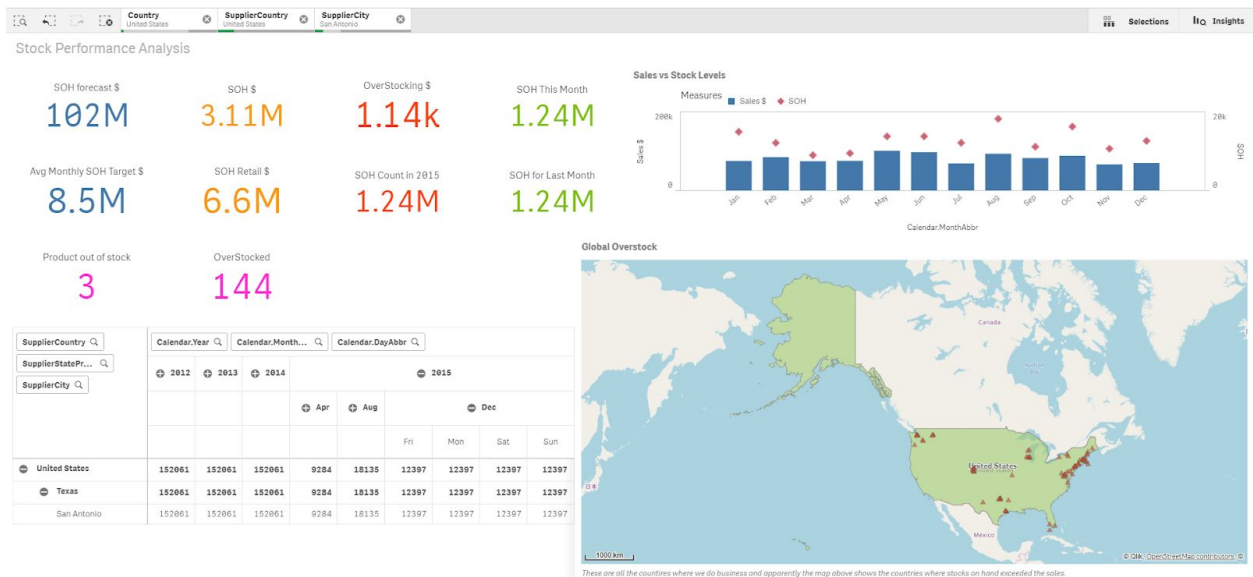
Inventory Analysis

This is the home page of the Stock performance analysis app without any selections:



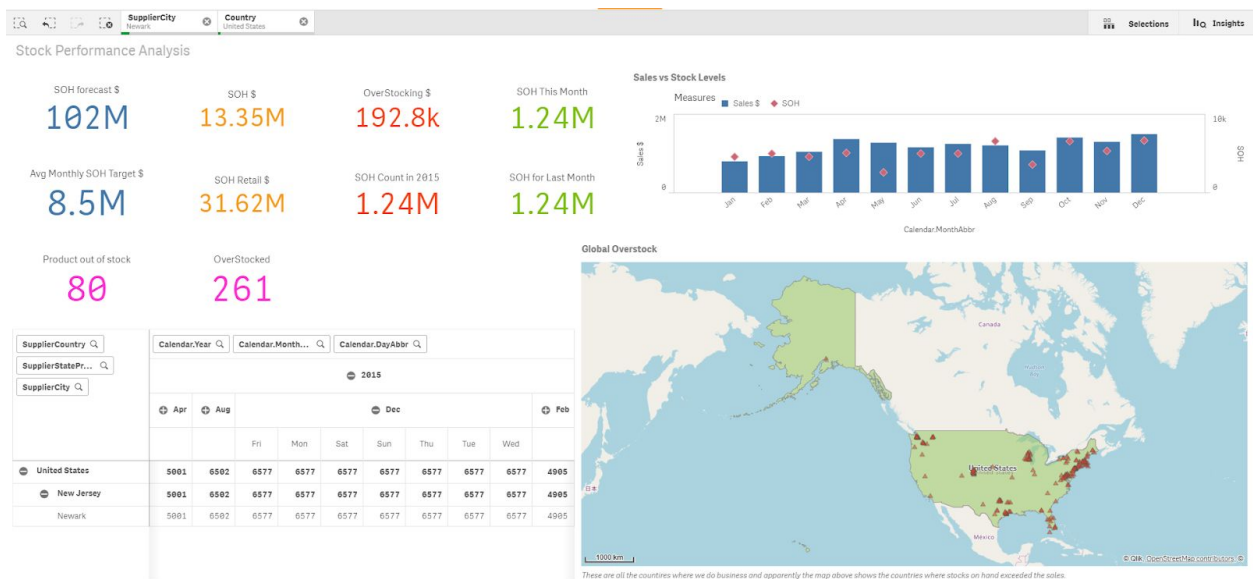
- Metrics used in KPI's are:
 - Stock on Hand SOH(\$)
 - SOH Retail (\$)
 - SOH Forecast (\$)
 - Avg Monthly SOH Target (\$)
 - Over Stocking (\$)
 - SOH Count in the Year 2015 (\$)
 - SOH this month (\$) for a selected month
 - SOH for last month (\$) for the month selected above
 - No. of Products of out Stock
 - Over Stocked Count
- Bar chart
 - Shows the number of sales per month vs the no of stocks in the inventory per month
- Pivot Table
 - Shows the supplier country, supplier state, supplier city is broken down by year, month, day
- Map
 - Shows the latitude and longitude coordinates of the supplier cities as per selection

Below we will see the stock performance in San Antonio, Texas, United States for the year 2015 in the month of December.



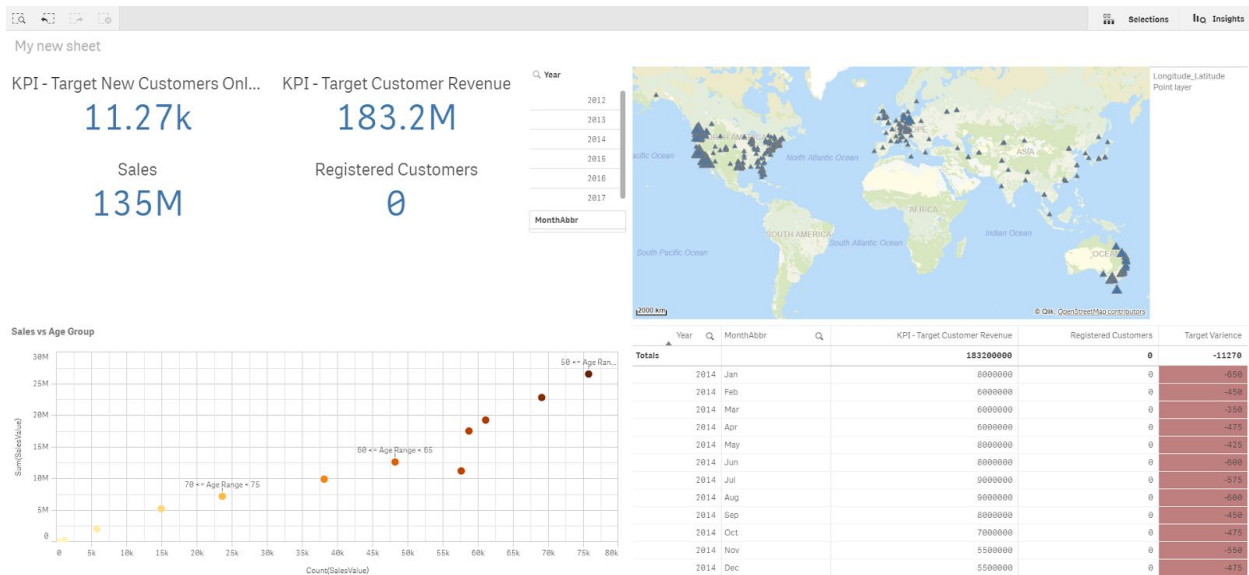
We can see that sales in San Antonio have not been going well due to its location and less demand in the area for the products, as a result, the stock on hand is greater than the sales in the month of December.

Whereas if we see the sales in Newark, New Jersey, United States, it has been comparatively better because except the following months (January, August) the sales have been higher than the stock on hand as shown below:



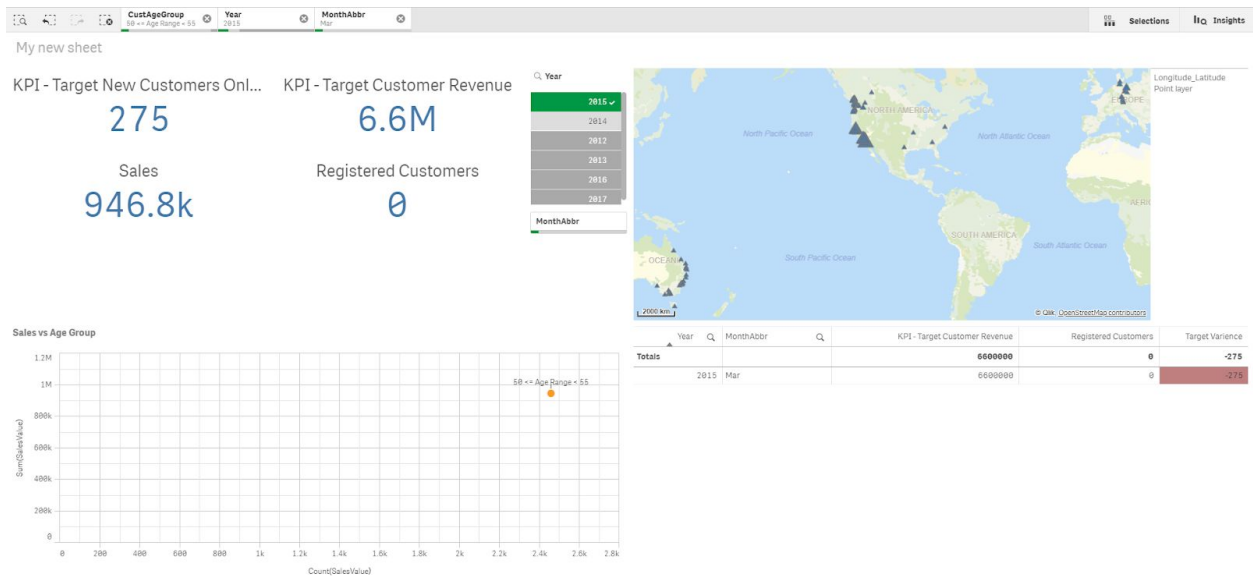
Customer Analysis

This is the home page of the Customer analysis app without any selections:



- Metrics used in KPI's are:
 - Target New Online Customers
 - Target Customer Revenue (\$)
 - Sales (\$)
 - Registered Customers
- Scatter Plot chart
 - Customers in our data set have been segmented on the basis of their "AGE"
 - We have created multiple buckets to incorporate customers who are in the age groups of:
 - 40 to 45
 - 45 to 50
 - 50 to 55
 - 55 to 60
 - 60 to 65
 - 65 to 70
 - 70 to 75
 - 75 to 80
 - 80 to 85
 - 85 to 90
 - 90+
 - The scatter plot shows the number of sales (x-axis) each customer group has done and the total revenue (y-axis) generated by each customer group
- Map
 - The map shows the location of the distribution of each customer group on a 2D plane
 - The map is dynamic and changes as per selection
- Table
 - Shows us details about all the metrics that are important to us
 - Also, give the total variance which is Total revenue generated by customers - total marketing budget value

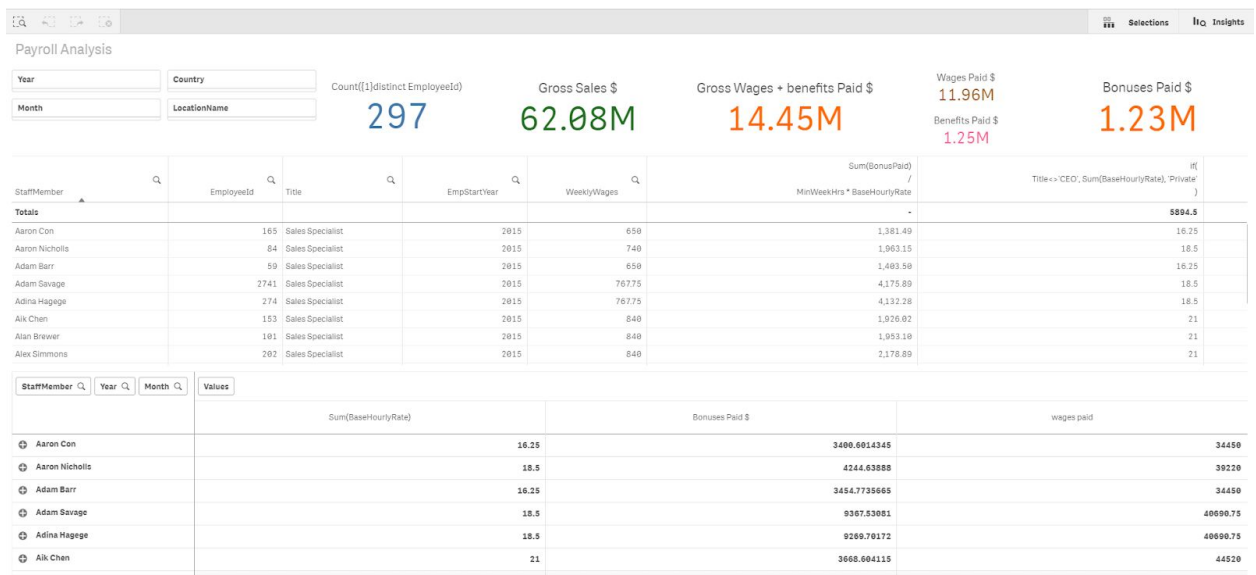
From the scatter plot we can observe that the customer group that has generated the most revenue seem to be customers between the age of 50 to 55. So, let us dig deep and see:



From the selections above we can see that customers between the age of 50 to 55 are based out of Australia, North America, and Europe. This group has generated a total number of sales of 946k whereas the targeted revenue expected was 6.6 million dollars for the month of March in the year 2015.

Payroll Analysis

This is the home page of the Payroll analysis app without any selections:



- Metrics used in KPI's are:
 - Count of distinct employees in the company
 - Gross Sales (\$)
 - Gross Pay (\$) = Gross Wages + Benefits Paid

- Gross Wages (\$)
- Benefits Paid (\$)
- Bonuses Paid (\$)
- Table
 - Provides the following details about each employee:
 - Name
 - Employee ID
 - Designation
 - Weekly Wages
 - Bonuses + Weekly salary
 - Base Rate (here if it is the CEO then we will hide the base rate)
- Pivot Table
 - Give details about:
 - Name of employee
 - Base rate
 - Bonuses paid
 - Total wages paid

In our data, we have three designations Sales specialist, Area Manager, and CEO.
Now let us look at one of the area managers and their distribution of details:

Title		StaffMember	Month				Selections	Insights
Area Manager		Anna Bedecs	December					
Payroll Analysis				Count([1]distinct EmployeeId)	Gross Sales \$	Gross Wages + benefits Paid \$	Wages Paid \$	Bonuses Paid \$
Year <input type="text"/> Country <input type="text"/> Month <input type="text"/> LocationName <input type="text"/>				297	19.02k	5.35k	4.4k	447
							Benefits Paid \$	
							500	
StaffMember	EmployeeId	Title	EmpStartYear	WeeklyWages	Sum(BonusPaid) / MinWeekHrs * BaseHourlyRate	Title <- CEO, Sum(BaseHourlyRate), Private		
Totals					307.30	27.5		
Anna Bedecs	65	Area Manager	2015	1100	307.30	27.5		

StaffMember	Year	Month	Values
			Sum(BaseHourlyRate)
Anna Bedecs			27.5
2015			27.5
April			27.5
August			27.5
December			27.5
February			27.5
January			27.5
			Bonuses Paid \$
Anna Bedecs			5530.74551025
2015			5530.74551025
April			738.8353
August			741.50578
December			446.982784
February			553.03157475
January			284.72412
			wages paid
Anna Bedecs			55300
2015			55300
April			4400
August			5500
December			4400
February			4400
January			5500

Here we can see that Anna Bedecs, who is an area manager gets varying Bonuses per month on the basis of her performance.

We have made a selection to see details for the month of December, she has got \$447 as bonuses along with her weekly wage of \$4400. Her base salary is \$27.5 and she has generated 19k in sales to the company in the whole month of December.

Now let us look at our CEO and how his information differs from other employees

*****E-N-D*****