

Part 1: Framing the Business Scenario

Background:

After doing some cleaning I took out the blanks of 2 columns, later I created a new column, "total sales" by multiplying quantity * unit price. Also, I did a filtering on the negative quantities, this change is because forecasting will be more accurate without this numbers.

Also, I excluded United Kingdom from the hole data to get better insight.

Question 1:

Which is the most valuable country as a client therefore at which country shall the company invest the most in marketing and publicity?

Question 2:

What strategy can we take to the top selling products to make more sales.

Question 3:

Which clients are spending the most and on which products? How can we make them buy new products or increase its volume?

Question 4:

Do a forecasting for the sales in the next 6 months and give a suggestion on how we can take advantage of that information.

Part 2: Choosing the right visuals.

First thing I will do is to get to know my data set, for that I will make some calculations, like:

- Sum of quantity to know the universe of products that I have sold.
- Sum of Unit Price to get a feeling of the net worth (all thought this data is tricky because if you sell more than one product the total worth changes).
- Average Quantity Order to get a feeling on the average ticket volume.
- Average Unit Price to get a feeling on the average product price.
- Average Sale to get a feeling on the average ticket (Sale).
- Quantity rate based on price unit and Unite Price Rate based on quantity.

After that I will use a area chart to compare price unit and quantity of all my countries just to get a feeling on which are my top and worst countries as clients.

Also I will use a line chart to compare sales, quantity and unit price vs time to se the general behavior of those parameters.

Also, I will make some calculations and compare them in a table to see the worthiest countries, the calculations I will do are:

- Unique Clients – For this ill use “count distinct”.
- Total Clients – For this ill use “count”.
- Unique Product – For this ill use “count distinct”.
- Total product – For this ill use “count”.

After that I want to visualize in a line chart the sum of quantity by year, month and country and the sum of unit price by year, month and country, all the above with a product description filter.

The previous was to get a general idea of were im standing, now lets choose some visualizations for our questions:

Question 1:

Which is the most valuable country as a client therefore at which country shall the company invest the most in marketing and publicity?

For this question I will use a ribbon chart to visualize the sum of total sales by year, month and country and for that chart ill create many tables as filters so I can play with the information an get more insight.

The tables I want to do create:

- Sum of total sales per year.

- Sum of total sales by country.
- Sum of total sales by product description.
- Sum of total sales by customer ID.

Also, I will add the values of unique client, total clients, unique products and total products so when I filter I can see for each country how many clients and products it moves per year or in total.

With all the above I can filter and see which countrys are more worthy as clients but I can see the insight of it, is the country selling good because they have a trendy product or there are very good clients, the analysis will tell.

Question 2:

What strategy can we take to the top selling products to make more sales.

For this question I need insight in the products behavior, so I'll make 3 graphs:

- A table with the description of the product, sum of quantity and sum of total sale; that table with a date filter.
- Line and clustered column chart with the sum of total sale, sum of quantity and sum of unit price by description (product)
- A tree map of the sum of total sales by description and country (which will be filtered by top 5 products and inside of it, top 3 countries)

Question 3:

Which clients are spending the most and on which products? How can we make them buy new products or increase its volume?

For this question I will also make 3 graphs to get the behavior of my clients, using its ID.

- Pie chart of the sum of total sale by customer and country (Filtering top 10 of clients ID).
- Tree map of the sum of total sale by customer ID and description (Filtering top 4 clients and top 3 products for each client)
- Clustered column chart of the sum of total sale by description and customer ID (Filtering top 10 products).

Question 4:

Do a forecasting for the sales in the next 6 months and give a suggestion on how we can take advantage of that information.

For this final question I need to make many forecasts to understand how the business is behaving as a whole, first ill do 3 line charts, one for quantity, one for unit price and one the last one for total sales, to his 3 charts I will do a forecast of 6 months to see the prediction of each parameter.

After that I will make once again the line chart of total sale but this time ill add many filters as tables, 4 to be precise:

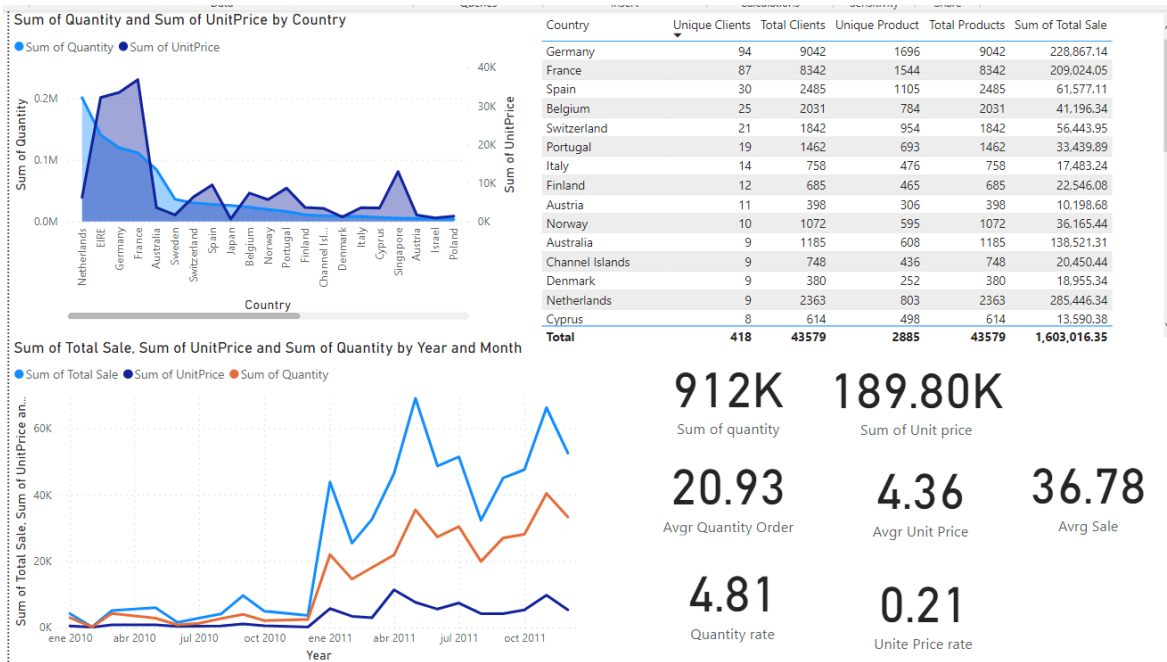
- Description by sum of total sales.
- Country by sum of total sales.
- Customer ID by sum of total sales.
- Stock code and unit price by Sum of total sales.

With the above tables I can filter and see the forecasting behavior depending on the filter that I apply, using this path I pretend to get better insight and come up with a suggestion on how to improve sales.

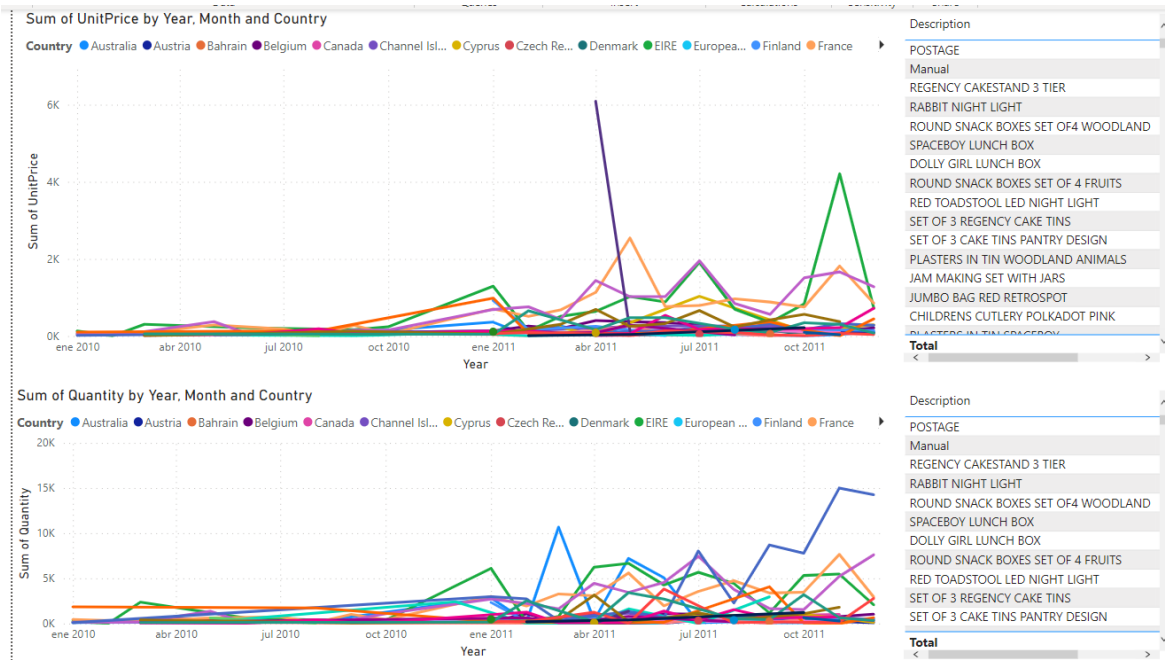
Part 3: Creating effective visuals.

Getting to know my data set:

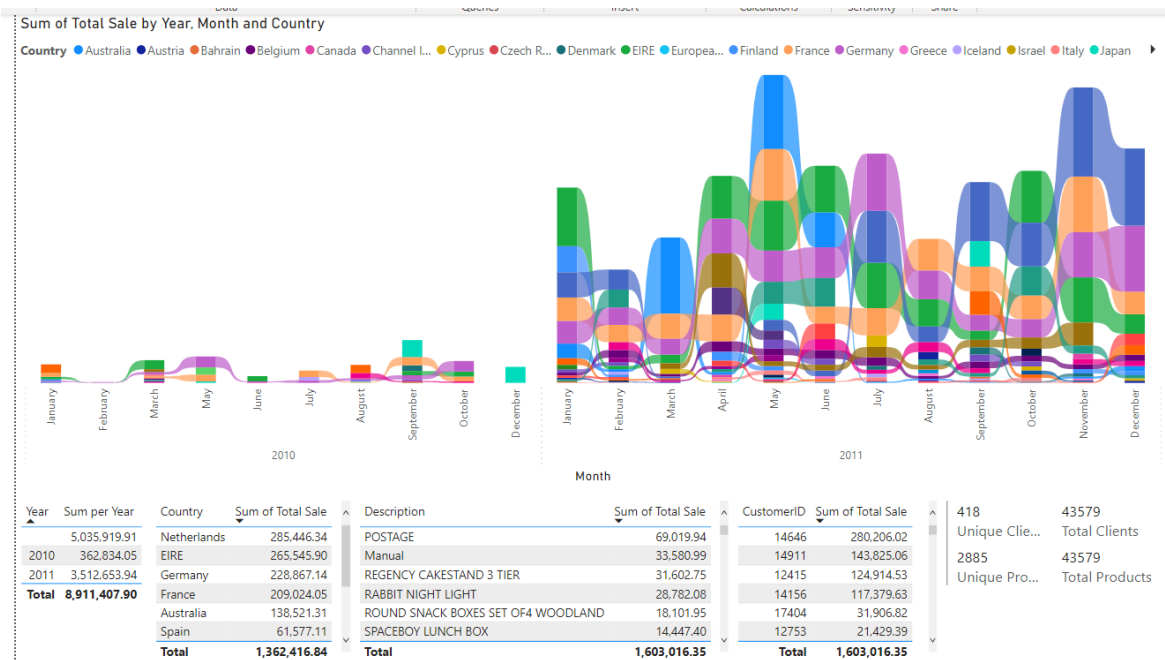
Averages, rates, counts and various calculations.



Unit Price & Quantity by countries.

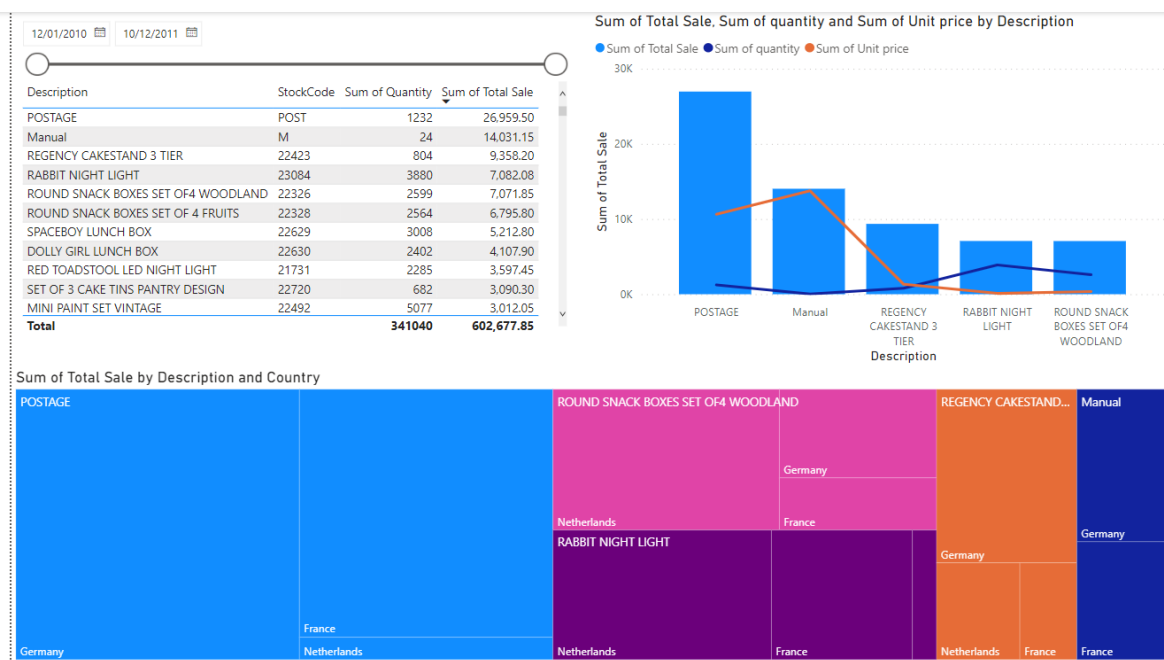


Question 1 visuals

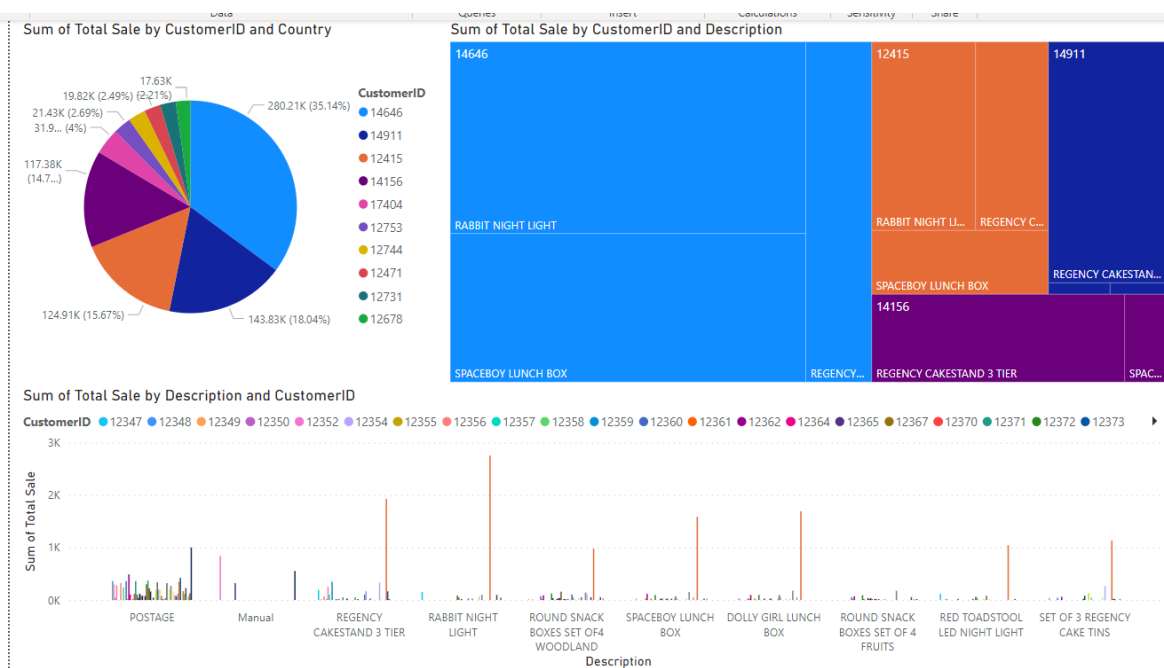


- In this graphs I learned that either the business was starting at 2010 or we are missing data from that year.

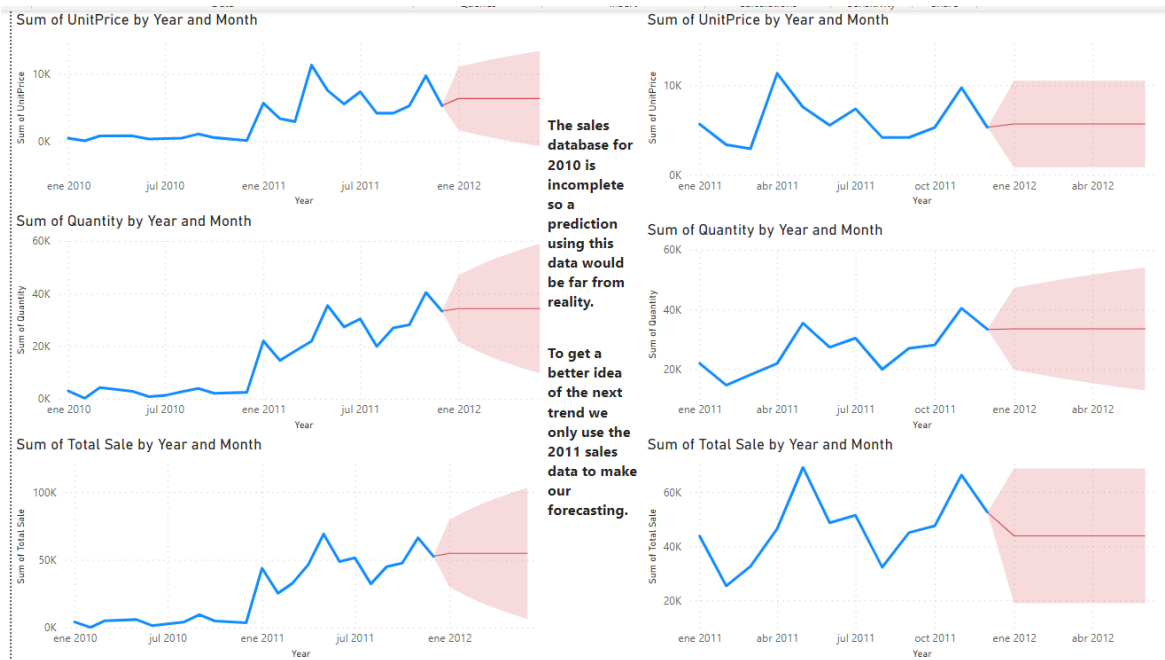
Question 2 visuals



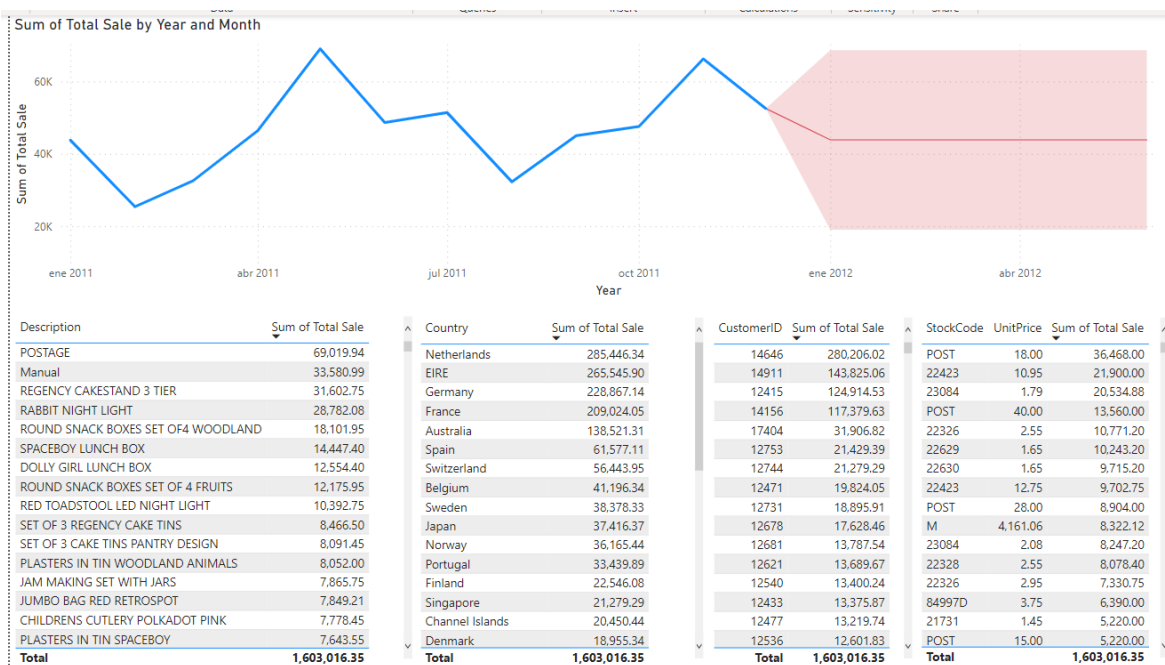
Question 3 visuals



Question 4 visuals



- Because 2010 sales can't be reliable I do a second forecasting with just the data from 2011.



Part 4: Communicating insights and analysis.

Here I'll solve quickly the questions but in the video attached you can see the explanation:

Question 1:

Which is the most valuable country as a client therefore at which country shall the company invest the most in marketing and publicity?

Answer:

Netherlands and Germany should be our top targets for next year,

Netherlands because is the best buyer, it doesn't buy a lot of different products but the ones it buys they do it in great amounts so if we were to push them a new product, we can increase our sales exponentially.

Germany is a market that from the first month of the data set they have been buying and they have grown in purchases by the month, also they have more different clients than any other country and they buy a great variety of products like no other country, this being a stable market we can try new things and new promotions, by the looks of how they cover most the products and have a lot of different clients we can feel sure that what we decide to try will have great success, at least more than the other countries.

Question 2:

What strategy can we take to the top selling products to make more sales.

Answer:

Not having the cost of each product makes it difficult to know how profitable a product can be but if we look just at the sales, quantities, and unit price we can get an idea.

Our top selling products are:

- Manual
- Postage
- Regency Cake stand 3 tiers.
- Rabbit Night Light
- Round snack boxes set of 4 woodlands.

The rabbit night light and the round snack boxes are the most selling products based on volume, this because they have a cheap ticket to buy them, we can make more sales if we were to make the same product with small variations so by having the same ticket price but with more options we can increase the volume of sales.

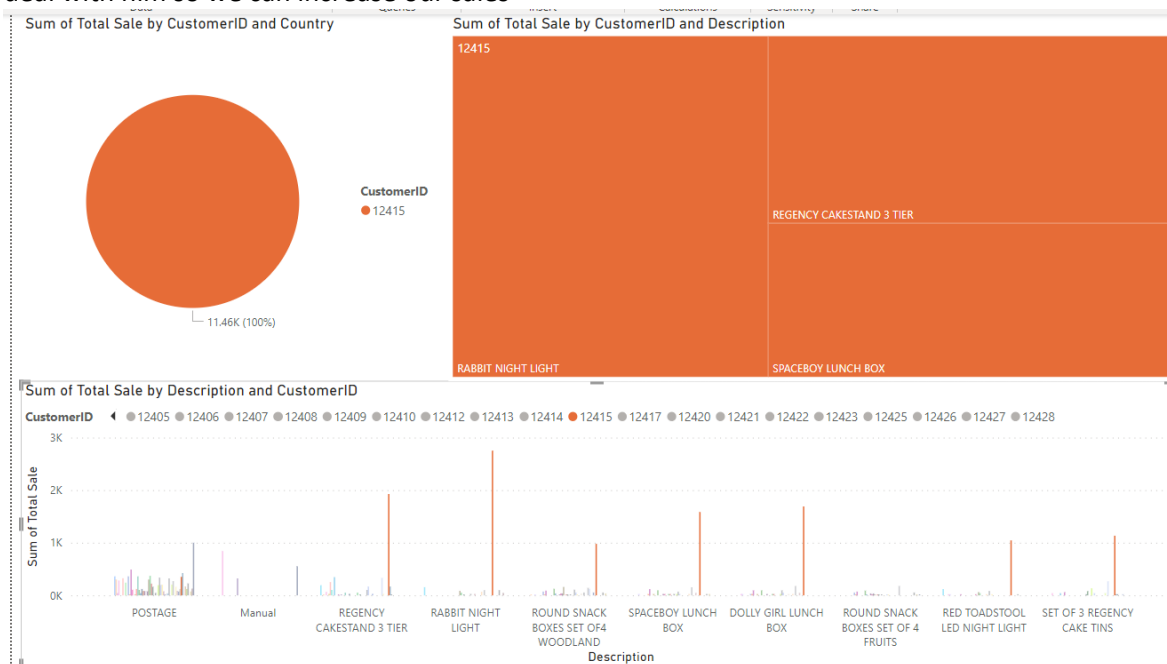
For the manual, postage and regency cake the sale ticket is higher, that's why we don't need to sell a lot to get to the top 5, for these products I propose to make special discounts if you buy in big quantities.

Question 3:

Which clients are spending the most and on which products? How can we make them buy new products or increase its volume?

"Postage" is the product that most clients buy although not all so I propose to make a special campaign advertising this product so we can reach even more clients.

Client 12415 purchases in high volume a lot of different articles, to this client ill make an special deal with him so we can increase our sales



Question 4:

Do a forecasting for the sales in the next 6 months and give a suggestion on how we can take advantage of that information.

First, we had to take out the data from 2010 to have a better look, from what we can see as a hole it looks like for the next six months, we will have a small down followed by a straight line that doesn't show any increase or decreases; from that we can re allocate our budget and try to hold the sales from our good clients like rewards programs or specialized promotions to keep them hooked.

Also if I do a analysis by product on the forecast I can see that the postage and the round snack boxes are decreasing so we can make discounts on those products to raise the possible down in sales on those products.

Rabbit night light and regency cake stand in the other case, these products shows increase and because of that I suggest to increase its marketing budget in relation to the sales increase.

Video link:

<https://www.loom.com/share/4f9add4cd5e147f9b260397be027388c>