QLik Report
Case Study

Lorenzo Albani

"Management Planning and Control" Course

Horsa Insight Project

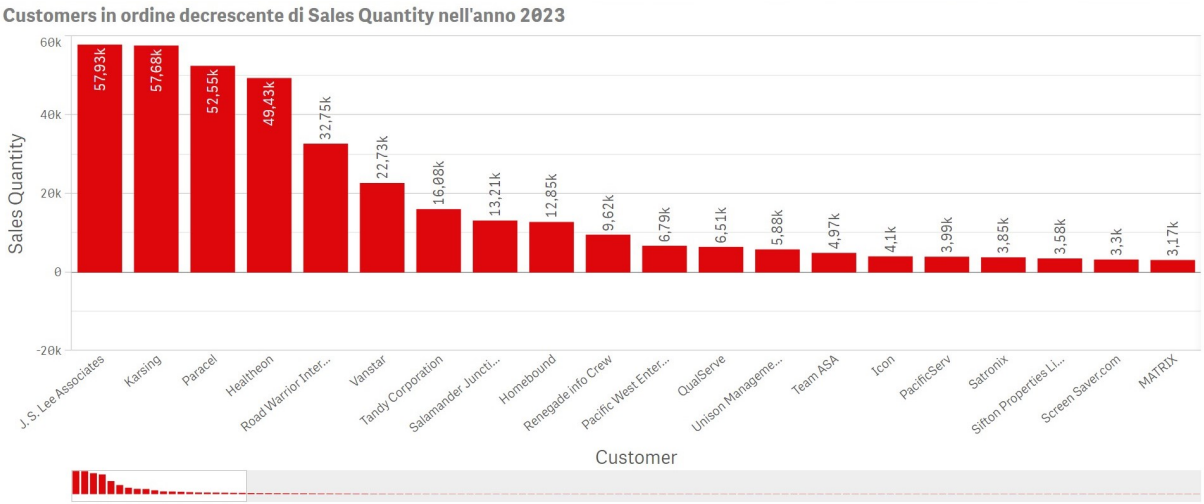
UNIVERSITÀ DI PISA

Horsa insight

Qlik

Question 1

Which are the 5 customers with the highest sales quantity in 2023?



Method: A **bar chart** was used to represent the data, with the variable "Customer" as the dimension and the expression "Sum([Sales Quantity])" as the measure. In addition, the data was filtered using a **filter box** containing the dimension "Year" with the value "2023".

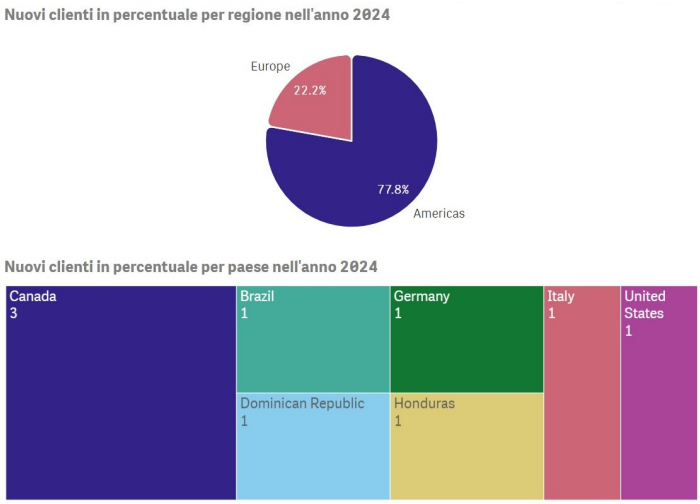
Answer: The 5 customers with the highest "sales quantity" in 2023 **are, in order:**

- **J.S. Lee Associates (57,93k)**
- **Karsing (57,68k)**
- **Paracel (52,55k)**
- **Healtheon (49,43k)**
- **Road Warrior International (32,75k)**

Question 2

How many new customers joined in 2023?

Customer	Nuovi Clienti
Totali	**9**
DCS International	1
eDistrict	1
Miles Laboratories, Inc.	1
Onestar	1
Sage	1
Sigma	1
Soloman Brothers	1
Zero Assumption Recovery	1
Zitel	1



Method: First, a new measure called "New Customers" was created. The expression used is shown below:

Listing 1: Measure "New Customers"

```
COUNT(DISTINCT
    {<[Customer] = E({<[Fiscal Year]={$(=(vCurrentYear)-2)}>}[
       Customer])>}
    [Customer]
)
```

This expression was created based on the two existing measures CY Sales and LY Sales.
E(): Identifies the excluded values, so that Customers from this year who are not in last year's Customers are counted.
DISTINCT: Ensures that each customer is counted only once.
Then, a **table** was created with the variable "Customer" as the dimension and "New Customers" as the measure, in order to find the new customers from the last year.
After that, a **pie chart** was created containing the dimension "Region" and the measure "New Customers", to see the regions of origin of the new customers, followed by a **tree map** containing "Country" as the dimension and again "New Customers" as the measure, allowing for a more detailed view of each customer's country of origin.

Answer: The new customers in 2024 **are 9, respectively:**

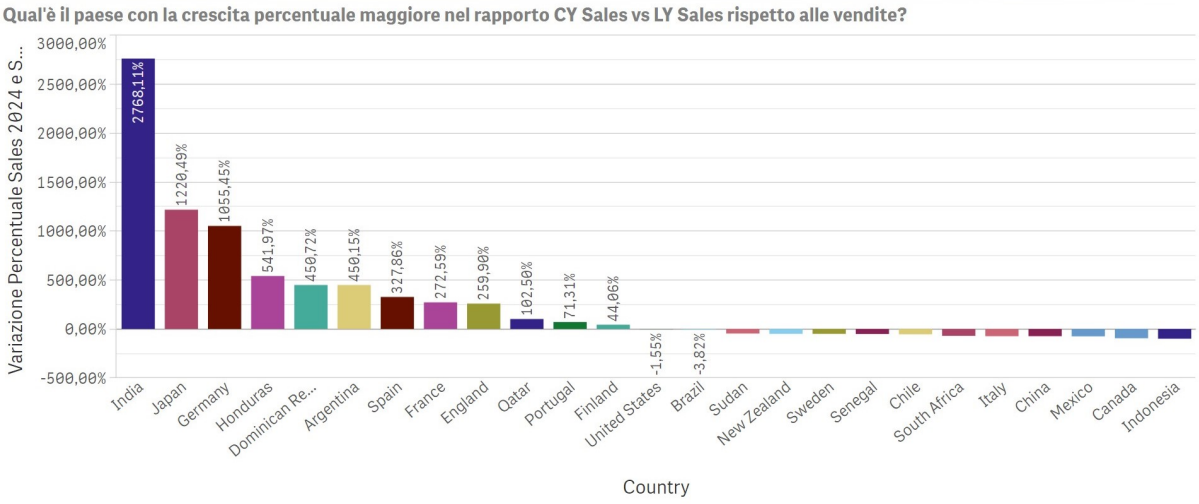
- **DCS International**
- **eDistrict**
- **Miles Laboratories, Inc.**

- **Onestar**
- **Sage**
- **Sigma**
- **Soloman Brothers**
- **Zero Assumption Recovery**
- **Zitel**

They come from **22.2% Europe** and **77.8% the Americas**, specifically from 7 countries: **Canada, Brazil, Dominican Republic, Germany, Honduras, Italy, and the United States.**

Question 3

Indicate the Country with the highest percentage growth CY vs LY in sales



Method: The measure "Percentage Change in Sales 2024 and Previous Years" was created using the following expression:

Listing 2: Measure "Percentage Change in Sales 2024 and Previous Years"

```
1 (SUM({<[Fiscal Year]={$(=(vCurrentYear)-1)}>}[Sales Amount]) -
     SUM({<[Fiscal Year]={$(=(vCurrentYear)-2)}>}[Sales Amount]))
2 /
3 SUM({<[Fiscal Year]={$(=(vCurrentYear)-2)}>}[Sales Amount])
```

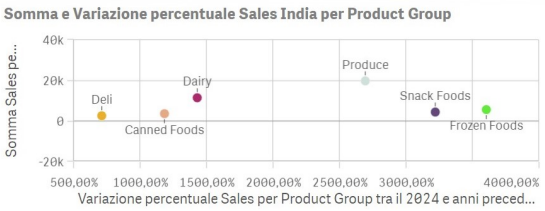
The first part of the expression represents the sum of all sales made in 2024, namely "CY Sales", while the second part of the expression, which is the divisor, represents the sum

of sales made in the years prior to 2024, namely "LY Sales".
Subsequently, a **bar chart** was created containing "Country" as the dimension and "Percentage Change in Sales 2024 and Previous Years" as the measure.

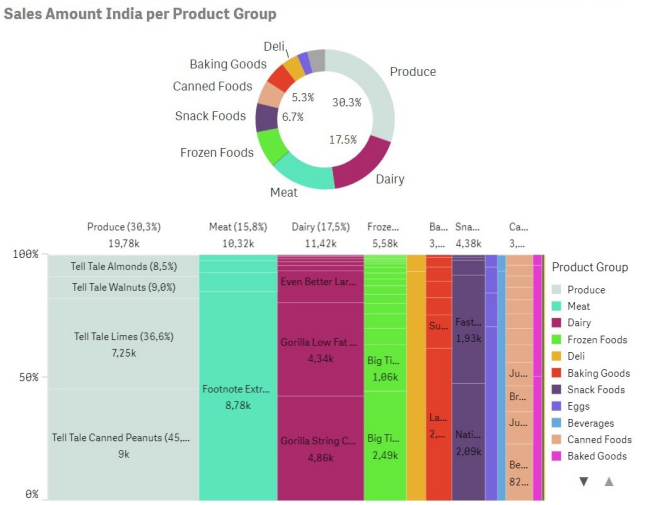
Answer: The country with the highest percentage growth in sales **is India**, with a **2768.11% growth** in sales.

Question 4

Indicate the product group(s) with the worst percentage growth within the country with the highest percentage growth.



Product Group	LY Sales	CY Sales	Sales Amount	Variazione percentuale Sales per Product Group tra il 2024 e anni precedenti
Totali	**2.140,54**	**61.392,96**	**65.372,59**	-
Frozen Foods	146,79	5.437,18	5.583,97	3604,05%
Snack Foods	128,03	4.249,94	4.377,97	3219,49%
Produce	683,96	19.099,18	19.783,14	2692,44%
Dairy	702,15	10.720,47	11.422,62	1426,81%
Canned Foods	198,75	2.544,18	3.570,06	1180,09%
Deli	280,86	2.268,18	2.549,04	707,58%
Alcoholic Beverages	0,00	0,00	0,00	-



Method: First, the measure "Total Sales per Product Group" was created:

Listing 3: Measure "Total Sales per Product Group"

```
SUM(AGGR(SUM([Sales Amount]), [Product Group]))
```

For each product group, the sum of sales is calculated; this will be used for the **scatter plot**.
Next, another measure is created, "Percentage Change in Sales per Product Group between 2024 and Previous Years", namely:

Listing 4: Measure "Percentage Change in Sales per Product Group between 2024 and Previous Years"

```
AGGR(
    (
        SUM({<[Fiscal Year]={$(=(vCurrentYear)-1)}>}[Sales Amount
            ])
        -
```

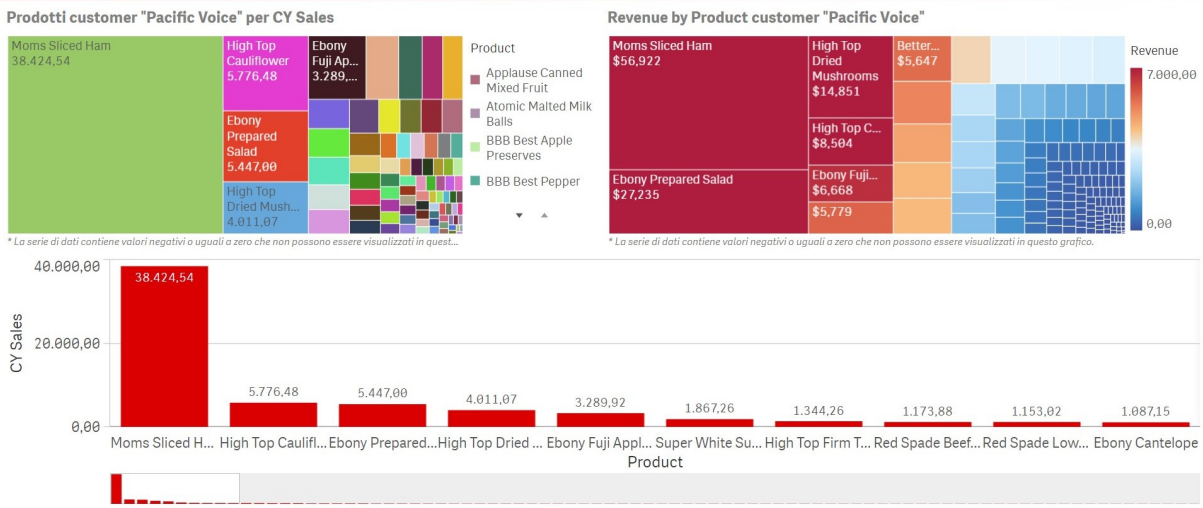
```
        SUM({<[Fiscal Year]={$(=(vCurrentYear)-2)}>}[Sales Amount
            ])
    )
    /
    SUM({<[Fiscal Year]={$(=(vCurrentYear)-2)}>}[Sales Amount]),
    [Product Group]
)
```

This measure is a more elaborate version of the expression from the previous paragraph, as it also incorporates division by Product Group within it.
The data is filtered through a filter box with the value "India".
A **table** is created containing "Product Group" as the dimension and using the measures: LY Sales, CY Sales, Sales Amount, and the new measure "Percentage Change in Sales per Product Group between 2024 and Previous Years".
Subsequently, the results are graphically represented through a **scatter plot** (dimension: "Product Group"; measures: "Total Sales per Product Group" and "Percentage Change in Sales per Product Group between 2024 and Previous Years"), which allows us to see the correlation between the total sales of a product group and the change that occurred in 2024, and a **donut chart** (dimension: "Product Group"; measure: "Sales Amount"), to break down total sales by Product Group.
To further explore total sales broken down by product group, a **Mekko chart** was created, which also provides a graphical representation of the individual products within each product group.
Color persistence is applied to all three charts.
Regarding the percentage changes of the product groups, some groups were purchased only in the last year (present only in CY Sales), so they have no value for the change. Additionally, the "Alcoholic Beverages" group has no sales, so again we do not have a change value.

Answer: The product category with the worst percentage growth within the country with the highest percentage growth (India) **is "Deli"**, with a **growth of 707.58%.**

Question 5

For the Customer "Pacific Voice", find the top 3 Products by CY sales



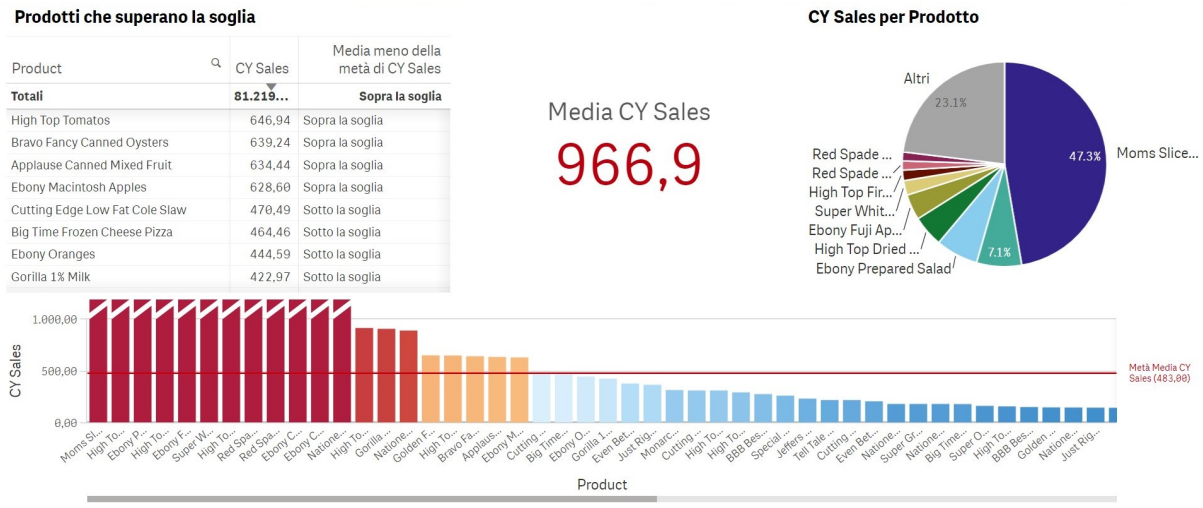
Method: First, the customer "Pacific Voice" was selected through a **filter box**.
Then, a **tree map** was created containing the dimension "Product" and the measure "CY Sales". This chart allows us to see the impact each product had on current year sales.
To have another view on the distribution of values, a **bar chart** was created with the same dimensions and measures.
Subsequently, an **additional tree map** was created with the dimension "Product" and the measure "Revenue", to graphically represent the economic impact (the income generated) of each product. This aspect was particularly highlighted through a color gradient ranging from dark blue to dark red tones.

Answer: The top 3 products by "CY Sales" for the customer "Pacific Voice" **are in descending order:**

- **Moms Sliced Ham (38.424,54)**
- **High Top Cauliflower (5.776,48)**
- **Ebony Prepared Salad (5.447,00)**

Question 6

After filtering for the customer Pacific Voice, find the products that generated less than half of the average sales (with respect to "CY Sales").



Method: The **filter box** for the customer 'Pacific Voice' was kept active.
First, the total average of CY Sales, corresponding to 966.9, was found and represented using a **KPI chart**.
Subsequently, a new measure was created to indicate which products exceed or do not exceed the threshold corresponding to half of the total average of CY Sales (483).
The measure "Average less than half of CY Sales" is equal to the following expression:

Listing 5: Measure "Average less than half of CY Sales"

```
IF((AVG(AGGR
(SUM({<[Fiscal Year]={$(=(vCurrentYear)-1)}>}[Sales Amount]),
    [Line Desc 1]
))) < 483, 'Sotto la soglia', 'Sopra la soglia')
```

This measure takes the average of CY Sales for each product and then compares it with the threshold, returning as output either "Below Threshold" or "Above Threshold".
All values below the threshold are found using **a table** containing the dimension "Product" and the measures "CY Sales" and "Average less than half of CY Sales".
These values are then graphically represented through a bar chart with a descending gradient based on the measure. A horizontal line was added along the X-axis of the chart to represent the threshold below which products contributed less than half of the average CY Sales to sales.
Finally, the impact of each product on the total "CY Sales" is analyzed in more detail using **a pie chart** with the dimension "Product" and the measure "CY Sales".

Answer: Ignoring the products not sold, which have a "CY Sales" value of 0, **we can list** all the products that generated less than half of the average sales with respect to "CY Sales": Cutting Edge Low Fat Cole Slaw, Big Time Frozen Cheese Pizza, Ebony Oranges, Gorilla 1% Milk, Even Better Low Fat Cottage Cheese, Just Right Fancy Canned Sardines, Monarch Ravioli, Cutting Edge Foot-Long Hot Dogs, High Top Squash, High Top Baby Onion, BBB Best Pepper, Special Grits, Jeffers Wheat Puffs, Tell Tale Tomatos, Cutting Edge Chicken Hot Dogs, Even Better Low Fat Sour Cream, Nationeel Mini Donuts, Super Grape Preserves, Nationeel Low Fat Popcorn, Big Time Ice Cream, Super Oregano, High Top Macintosh Apples, BBB Best Apple Preserves, Golden Beef TV Dinner, Nationeel Chocolate Chip Cookies, Just Right Beef Soup, Fabulous Diet Cola, Fabulous Orange Juice, Gorilla Low Fat Cottage Cheese, High Top Mixed Nuts, High Top Oranges, BBB Best Strawberry Jelly, Moms Foot-Long Hot Dogs, Bravo Canned Tomatos, Fast Dried Apples, Best Choice Grape Fruit Roll, Super Sesame Oil, Moms Turkey Hot Dogs, Nationeel Sugar Cookies, Best Choice No Salt Popcorn, Best Choice Low Fat Popcorn, Urban Small Brown Eggs, Atomic Malted Milk Balls, Tell Tale Fresh Lima Beans e Golden Frozen Pepperoni Pizza.