Case Study: **Net Revenue Management in Shampoo Market**

Dataset : [Revenue Dataset](#)

HealthMax, a renowned market leader in the shampoo industry, has hired you as a data analyst. You have been tasked with analyzing the available market data and providing actionable insights to drive business growth.

Note: Before you start analyzing anything, it's important to take a good look at the dataset to make sure everything makes sense.

Dataset Description:

The dataset provides detailed information about the sales of various shampoo categories and brands. The products are supplied by different suppliers such as "HealthMax," "FreshCo Industries," "Elite Cosmetics," and "GreenLeaf Distributors." The sales data is categorized by regions, including "Center," "North," and "South," and spans the years from 2018 to 2023.

Columns in the dataset:

1. **Category:** Shampoo, categorized into different types such as "Anti-dandruff," "Color-safe," "Organic," and "Volumizing."

2. **Subcategory:** Specific type of shampoo, denoting the brand or variant.

3. **Supplier:** The company supplying the shampoo products.
4. **Brand:** The brand name of the shampoo.
5. **Region:** The geographical regions where the products are sold, including "Center," "North," and "South."
6. **Year:** The year of sales data, spanning from 2018 to 2023.
7. **Month:** The month of the year when sales occurred.
8. **Units Month:** The quantity of units sold in a specific month.
9. **Values Month:** The corresponding sales values in dollars for the units sold in a specific month.

Data pre-processing

Year-to-Date

The information includes monthly unit and value sales data from 2018 to 2023. However, company want to focus on specific time frames to measure key performance indicators (KPIs). Let's calculate the Year-To-Date (YTD) values for all the data points in the dataset.

- Add a new Units YTD column to the main table using a SUMIFS() formula in column J.

- You want to sum the values by Brand by Region by Year. Finally you only want to sum the data for months that already passed in the year.

- Follow the same methodology to calculate the Values YTD in column K.

Analysis Steps

Year-over-Year Growth:

HealthMax's leaders want to understand how well their brands, "Starbust" and "Shinez", have been doing in the past few years. Your task is to calculate the year-over-year growth per brand.

- Select from cell A1 to I882 nd create a second PivotTable in a new worksheet and rename it to "HealthMax Growth".

- Display the value sales for the HealthMax brands for all years - excluding 2023.

Moving Annual Total

You calculated the YTD values in the previous exercise but would also like to look at a longer period than YTD. Let's calculate the Moving Annual Total (MAT) for all the dataset points in this exercise.

Note: MAT is the sum of the last 12 months.

- Add two new columns to the table: Units MAT and Values MAT.

- Calculate the Units MAT by reusing the calculated Units YTD and adding the remaining values (of last year) with another SUMIFS() function.

- Your new SUMIFS() function should sum up the corresponding values for the months of the previous year that are still included in your current MAT.

Market Share

Now that you have an idea of how big the total annual category is, let's try to identify the market share of the biggest players on the market. We'd like to create a table to see how our brands evolved over the years.

- Create a new PivotTable to calculate the total value sales per year, per brand in a new worksheet called "Market Share".

- Display the values as a % of grand total, with each year adding up to 100%.

- Order in descending order for "Sum of Values Month" using the "Grand Total", using and make sure the total adds up to 100% for each year.

Net Sales

HealthMax is looking to shift investments in between its products and is asking you to make a list of product prioritization in function of their net sales and their profitability. Let's calculate the net sales for each product in this exercise.

- Calculate the "Net Sales 2022" per Product_ID.

- Create a total row and calculate the total Net Sales, and the total volume. Format it in "lightblue" to clarify it's the total row.

Gross Profit and Gross Margin

Net Sales is a key metric, but it's not the only important metric. Calculate the different profitability metrics to better understand which product is performing well.

- Calculate "Gross Profit per unit". Calculate the total as an average.

- Calculate "Gross Profit per product" (including total).

- Calculate "Gross Margin" (including total), Format it as a percentage.

Net Sales and Gross Profit contribution

The final two metrics You need to calculate are the net sales and gross profit contribution. Having this overview will help "Healthmax" make the right decision in the future.

- Calculate "Net Sales Contribution"

- Calculate "Gross Profit Contribution"(including total).

New Category Opportunity

When looking at brand, you realize that "HealthMax" is only active in 2 out of the 5 shampoo subcategories and that it might be interesting to launch a new product to enter a new subcategory. Analyze the fastest growing subcategory.

- Create a pivot table in a new sheet to identify the Subcategory value growth over time. Remove the year 2023 given we don't have complete data.

- Keep both the *Row* and *Column* grand totals and format everything in $ if necessary.

Fastest growing category

Nice job on calculating the value sales! Let's confirm organic is the fastest growing category by calculating the unit growth sales from 2022 vs 2018. Finally you'll make an estimation of the total subcategory values sales for 2024.

- Calculate the 2022 vs 2018 growth for each category (including total).

- The Finance team informs you the Compound Annual Growth Rate (CAGR) for the organic category is 39.23%.

- Use the CAGR to forecast the total value sales for the organic category for the year 2023 and 2024

New product launch

Now that you discovered that the organic shampoo's are booming, your company has two possible products that fit in this category and that can be launched in the beginning of 2024. Let's identify the best candidate by making an estimation of expected net sales, gross profit and gross margin for both products.

- Complete the empty fields in the table: `Estimated units sold 2024`, `Net Sales`, `Gross Profit per unit`, `Gross Profit per product` and `Gross Margin`.

- Answer with the product you would recommend management to launch in 2024.

Price based on Pack Architecture

You see that the smallest shampoo size in your portfolio is 100ml. Research has shown that people that travel are looking for shampoo bottles of 50ml. You contact your colleagues in other countries that do have a 50ml shampoo bottle in their assortment. They told you the small format is very successful. Let's start by calculate the suggested retail price of a smaller shampoo bottle.

- Use the Retail Price to calculate the "Price per ml", with 3 decimals after the comma, in column M for all existing products.

- Calculate the Price per ml for "Starbust Ultra Soft 50ml" price by using a 50% markup on the "Price per ml" of the 100 ml variant.

- Finally, calculate the recommended retail price for the new product.

Sales Estimation

A retail price alone is not enough to make a decision. Your finance colleagues shared some assumptions for the new variant so you can build your business case: The Net Price is $2.30 and COGS is $0.70. Let's calculate the market potential of the "Starbust" Ultra Soft 50ml.

- Fill in the remaining columns in your table, assume that the Volume 2022 will be 10% of the volume of the 100ML Ultra Soft variant in 2022.

Promotion Management

HealthMax had three different promotions for the Shinez brand in 2022. To build the strategy for 2024, you'd like to come with clear recommendation of which promotions are the most effective ones.

Complete the table and calculate the ROI for the three different promotions.

- Fill in the Value Sales by using the 2022 monthly sales values from "Shinez" using a VLOOKUP() function.

- Calculate the Baseline sales by taking the average values of all months in the year where no promotion was active.

- Uplift can be calculated as the absolute increase (not %) in sales compared to baseline.

- The ROI is the increase in monetary value divided by the campaign cost.

Yearly Sales

Now that you calculated different opportunities based on the NRM pillars in the light of early 2024 yearly planning, it is time to wrap up and present the numbers to your management. Let's start by displaying the yearly numbers.

- Create a small pivot table to visualize "HealthMax" value sales from 2018 until 2022 and remove the total row. Make sure you add Year to *Rows*.

Forecasting Sales

Let's forecast for the net sales in 2024 without our NRM initiatives. We'll base ourselves on the market sales until 2022.

- Forecast the 2023 and 2024 values using the **FORECAST()** function in cell B7 and B8.

Net Value Sales Forecast

We have one final step to do before we can create our Waterfall chart. Let's convert the market values for 2023 and 2024 to net sales. We'll assume the Net Sales/Market Value ratio of 2022 stays constant and use that to estimate the 2023 and 2024 values.

The total Net Sales for 2022 are $20,480,715.

- Calculate the Net Sales Ratio for 2022 and format is as a percentage. Copy the Net Sales Ratio to cell D7 and D8.

- You can use the 2022 Net Sales Ratio to estimate the 2023 and 2024 Net Sales in cell C7 and C8.

Waterfall chart

Now that you calculated different opportunities based on the NRM pillars, it is time to wrap up and present the numbers to your management. You would like to present a waterfall graph to show how your initiatives will have an impact on the company's net sales of 2024. Let's use the forecast you calculated in the previous exercise, add the NRM pillars and make a clear waterfall graph out of it!

- Calculate the Natural Growth in B2 using the 2023 and 2024 sales numbers. Copy and paste this value by selecting *Paste Special*, *Values Only* in the same cell so we can use the number to forecast 2024 growth.

- Fill in the sales of the two NRM initiatives.

- Recalculate the 2024 expected net sales and visualize your data with a *Waterfall chart* by selecting data from A2 to D3