Fast Moving Consumer Goods

Description

The world of Fast Moving Consumer Goods (FMCG) is a dynamic world that plays a significant role in our daily lives. Have you ever wondered how well-known brands like Coca-Cola, Nivea, and Lay's are being managed? This case study will help you get a better understanding of this industry.

You will start by analyzing a big dataset and by performing your own market analysis. You will go from calculating market share to creating clear visuals to reveal actionable insights. Next, you will use the principles of Net Revenue Management (NRM), which will help you to identify new growth opportunities for your company.

You will have to use a variety of Excel tools and functions to calculate the true potential of these growth buckets. You will not only master everything which relates to PivotTables, VLOOKUP, and forecasting but also have a better understanding of what is happening behind the scenes of your favorite FMCG brands.

Are you ready to use your Excel skills to build a complete business case?

Investigating the dataset

You are the Category Manager for the company HealthMax, market leader in the shampoo industry. You are being asked to analyze the available market and to come with actionable insights to grow the business.

The first step of every analysis is to do a sense-check of the dataset.

- Import dataset_shampoo.csv from the Datasets folder.
- Rename the worksheet to "External Data".

Note that every line contains the unit and value sales for a Brand, sold in a specific Region, during a specific Month and Year. Every brand belongs to only one Subcategory and only one Supplier.

Apparently there is a hardcoded dollar sign ($) in the monthly sales values, which are in the Values Month column.

- Remove the dollar signs.

- Reformat the column into currency formatting.

- Create a PivotTable to make an overview of the different `Brand`s per `Supplier`.
- Rename the new worksheet to "Brands per Supplier".

Year-over-year growth

HealthMax's management wants to know how their brands evolved over the last couple of years. Your job is to calculate the year-over-year growth per brand.

- Create a PivotTable in a new Worksheet.
- Rename the new Worksheet to "HealthMax Growth".
- Display the value sales per brand for all years.
- Filter on HealthMax as a supplier.
- Change the displayed values to growth numbers compared to the previous year by right-clicking the values in the PivotTable and using the *Show Values As* section.
- We only have 3 months of data for 2023, so it doesn't make sense to compare it to 2022. Hide 2023 in your pivot table.

Year-to-Date

The dataset contains unit and value sales per month for all years from 2018 to 2023. You would however like to look at different time periods to calculate your KPI's. Let's calculate the Year-To-Date (YTD) for all the dataset points in this exercise.

- Go back to the External Data tab and add a new column to the table, call it "Units YTD".

Let's first calculate the yearly total on the most granular level: unit sales by brand by region by year. We'll adapt the formula to change the calculation to YTD in the next step.

You can calculate the YTD numbers by using a SUMIFS() function:

- Use Units Month as a sum range.
- Add the column Brand as the first *criteria_range* and then the first cell in the column Brand as the criterium.
- Repeat the previous step for the columns Region and Year.

Your formula should look like this `=SUMIFS(H:H,D:D,[@Brand],____,____,____,____))`.

Hint

For the Year-To-Date (YTD) calculation we only want to sum up the values of the months that are before or the same as the current month.

Year-To-Date (YTD)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year -1	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

The last two elements of your SUMIFS formula should look like this: =SUMIFS(_____,G:G,"<="&[@Month])

- Create a new column in your table and calculate the Values YTD using again the SUMIFS() formula.
- Reformat the column into currency formatting.
- Manually verify in the first rows of your dataset whether your calculated Units YTD and Values YTD are correct.

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.

Reminder: MAT is the sum of the latest 12 months.

Moving Annual Total (MAT)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year -1	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year -2	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

- Go back to the External Data tab and add a new column to the table, call it "Units MAT".
- Calculate the `Units MAT` by using the reusing the calculated `Units YTD` and adding the remaining values 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.
- `Units MAT = ____ + SUMIFS(____,____,____,____,____,F:F,[@Year]-1,G:G,">"&____)`
- Create a new column in your table and calculate the Values MAT.
- Manually verify in the first rows of your dataset if your calculated Units MAT and Values MAT are correct.
- Calculate the total turnover (revenue) of the total shampoo category using a PivotTable using the MAT values you calculated. Make sure you only show the latest MAT values (March 2023).
- Rename the new worksheet to "MAT Value Total Category".

Market Share

You just calculated the size of the total annual category, let's now try to identify the market share of the biggest players on the market. We'd like to create a graph to see how our brands evolved over the years and see if there are regional differences.

Create a new PivotTable to calculate the total value sales per year, per brand in a new worksheet called "Market Share". As we would like to create a graph that shows an evolution over time, put your time-related data in the Rows field.

- Change the displayed values in your PivotTable from the total sales to the market shares per year.
- Sort the brands from big to small.
- Delete the Grand Total for the columns, as we cannot use this calculation in this exercise.
- Visualize the data by creating a line chart out of your PivotTable.
- Resize your chart to better see the difference between the different top suppliers.
- Put the legend at the bottom of the chart.
- Add the title "Shampoo Brands Market Share Value Evolution" above the chart.
- Hide all field values on the chart.
- Add a slicer to see if the market share evolution of the brands is different in different regions of the country.

Net Revenue Management

Net sales

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

- Import internal_sales_data.csv from the Datasets folder.
- Rename the worksheet to "Internal Sales Data".
- Apply currency formatting to columns Retail Price, Net Price and COGS.
- Add a thousands separator to Volume 2022.
- Add a row total to the table and make sure the sum of `Volume 2022` is displayed in the total row of your table.
- Create an extra column called "Net Sales 2022" and calculate the total net sales per product.
- Make sure the sum of `Net Sales 2022`is displayed in the total row of your table.
- Apply currency formating to `Net Sales 2022`.

Gross margin

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 profitability for each product in this exercise.

The table in the Internal Sales Data worksheet contains the different prices, costs and volumes for all different products in HealthMax' portfolio.

- Create an extra column called "Gross Profit per unit" and calculate HealtMax' gross profit per unit for all products.
- Apply currency formating to Gross Profit per unit.
- Create an extra column called "Gross Profit per product" and calculate the total gross profit every product generates.
- Make sure the sum of `Gross Profit per product` in the total row.
- Apply currency formating to Gross Profit per product`.
- Add an extra column called "Gross Margin" and calculate HealthMax's gross margin for all products.
- Change the number formatting of your new column to percentage.
- Calculate your (weighted) average gross margin in the row total.
- Change the number formatting to percentage.

Profitability matrix

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.

You decide to make a Scatter Plot to compare the gross margin to the net sales contribution for the different products.

- Add a new column to your table called "Net Sales Contribution". Calculate it by dividing the Net Sales 2022 by the total of Net Sales 2022.
- Change number formatting to percentage.

Create a Pivot Table in a new worksheet called "Profitability Matrix".

- Your PivotTable should look like the below:
  - Columns: Gross Margin
  - Rows: ProductID
  - Values: Net Sales Contribution
- You can delete the row total and the column total.
- Change the Net Sales Contribution number formatting to percentage.

Excel doesn't allow to create a Scatter Plot straight out of the PivotTable.

- Copy and paste the data right underneath the PivotTable and create a Scatter Plot.
- Switch the rows and columns of the Scatter Plot to have the Gross Margin on the horizontal axis and Net Sales Contribution on the vertical axis.
- Resize the graph to be a square.
- Rename the chart to "HealthMax Profitability Matrix".

- Add a Primary Horizontal Axis Title "Gross Margin".
- Add a Primary Vertical Axis Title "Net Sales Contribution".

To identify the fastest growing category, let's go back to the External Data worksheet.

- Create a new pivot table to identify the subcategory that realized the biggest growth when comparing 2022 to 2018.
- Make sure you calculate the growth in units and not in values.
- Call the new worksheet "New Category Opportunity".
- Filter your years and only keep 2018 and 2022.
- Have a look at the displayed values, to determine the fastest growing subcategory (in units) since 2018.

Now that we determined the fastest growing subcategory, we would like to make a full year estimate of the size (in units) of this subcategory for 2024. Let's see what the latest yearly size of this subcategory was, using the `Units MAT` values for March 2023 (latest data available).

- Create a new PivotTable right underneath to display the `Units MAT`, for the fastest growing subcategory. Do not forget to filter for the latest datapoint (March 2023).
- Now that you calculated the latest size of that subcategory, you like to make an estimation of the size for full year 2024. Looking at the historic trend, you estimate that this category size for full year 2024 will be 20% higher than the March 2023 MAT values.
- Make an estimation of the total units sold in 2024 in your identified subcategory and store it in a cell underneath your PivotTable with a short description of the figure on its left.

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.

Marketing sent you a table with the given data for both products.

- Import new_product_launch.csv from the Datasets folder.
- Rename the worksheet to "Organic Shampoo Launch".
- Apply percentage number formatting to Estimated Unit Market Share.
- Apply currency number formatting to Net Price and COGS.
- Calculate the column `Estimated units sold 2024`, based on the market size you calculated in your previous exercise
- Apply a thousands separator to your values.
- Make an estimation of the Net Sales per product.
- Make sure your column has currency number formatting.
- Calculate the `Gross Profit per unit` and `Gross Profit per product` for both products.
- Make sure your column have correct number formatting.
- Calculate the `Gross Margin` for both products.
- Apply the correct number formatting.

Net Revenue Management: Pillar 2, 4 & 5

Price 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 and shared some assumptions so you can build your business case. Let's calculate the potential of a smaller shampoo bottle.

- Make a duplicate of the Internal Sales Data tab and call it "50ml Shampoo 2024".
- Delete the total row and the column Net Sales Contribution.
- Let's look at the pricing of our current products.
- Use the `Retail Price` to calculate the `Price per ml`, with 3 decimals, in a new column.

You decide to launch your best rotating product, the Starbust Ultra Soft 100ml, in a 50ml format.

- Add a row to your table and fill in the first four columns.
- To define the retail price, you can take a 50% mark-up of the Price per ml of the 100ml pack.
- The `Net Price` is $2.30 and the `COGS` amount to $0.70.
- Fill in the remaining columns in your table and assume that the `Volume 2022` will be 10% of the volume of the 100ml pack in 2022.

Promotion Management

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

Let's calculate the ROI for the three different promotions.

Let's go back to the External Data tab to analyze market data.

- Create a pivot table with the value sales by month for the brand "Shinez" in 2022 in a new worksheet called "Promotion Graph".
- Create a PivotChart out of the PivotTable to visualize the sales numbers.
- Rename the *Chart Title* to "Shinez Value Sales 2022".
- Import `promotion_analysis.csv` from the `Datasets` folder.
- Rename the worksheet to "Promotion Analysis"
- Fill in the `Value sales` by using `VLOOKUP()`. Look up the `Values Month` in the PivotTable in `Promotion Graph` for the corresponding month in the table.
- Calculate the `Baseline Sales` by taking the average `Values Month` of the months where no promotion was active. Don't forget to lock your cells in the formula.
- Apply currency formatting to both columns.
- Calculate the generated `Uplift` per promotion.
- Calculate the ROI per promotion.

Forecasting

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 start by making a forecast for the net sales in 2024 without our NRM initiatives. We'll base ourselves on the market sales until 2022, extrapolate the current trend until 2024 and calculate what it represents in net sales. You will create the waterfall graph in the next exercise.

Let's start by forecasting the estimated total market sales of HealthMax for 2023 and 2024.

- Create a PivotTable which shows the yearly value sales of HealthMax until 2022.
- Rename the worksheet to "Sales until 2022".
- Remove the Grand Total in your PivotTable.
- Apply currency formatting to the values in your PivotTable.
- Make a forecast for the full year 2023 and 2024 using the *Forecast Sheet* function.
- Rename the header of column B `Values` to `Market values` to avoid confusion.
- Rename the new worksheet to "Forecast 2024".
- You forecasted the market values for 2023 and 2024. Let's calculate the amount in Net Sales to see how this will impact the company's revenue.
- Add two columns to the table called "Net Sales" and "Ratio".
- Look up the Net Sales 2022 in the Internal Sales Data tab, add it to the table for the year 2022.
- Calculate the Ratio for 2022 by dividing the Net Sales by the Market values.
- Calculate the Net Sales for 2023 and 2024, using the forecasted values and the Ratio of 2022.

Waterfall

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!

- Create a new worksheet called "Waterfall"
- Add the following columns to the first row of the worksheet (in that order): Estimated net sales 2023, Natural growth, Organic shampoo, 50ml shampoo,Estimated net sales 2024.
- Look up the 2023 Estimated Net Sales 2023 in the Forecast 2024 sheet so that it shows the value in the Waterfall sheet.

- Natural growth is the difference between the forecasted Net sales of 2024 and 2023. Add it to the Waterfall sheet as well.
- Let's not forget to add the extra NRM initiatives you identified!
- Look up the generated Net sales of the launch of the Organic shampoo (product 2) and the 50ml shampoo.

- Let's assume the growth initiatives don't cannibalize each other.
- Estimate the 2024 sales by adding all initiatives (including the natural growth) together.
- Create a waterfall graph from your table and name it "Estimated Net Sales 2024".
- Set `Estimated net sales 2024` as a total.