Excel: Net Revenue Management for FMCG

Project & Data Introduction

- Fast Moving Consumer Goods company data
    - Companies like Coco-cola, Pepsi, Proctor & Gamble, etc.
    - Items like cola, shampoo, detergent, etc.
    - Purchased frequently, low price, high shelf rotation (hence fast-moving)
    - Suppliers sell them at huge volume and low margin
- Growth for FMCG comes from 4 Ps –
    - Product
    - Price
    - Place
    - Promotion
    - A bottle of Aquafina water bottle in a vending machine costs $2, whereas at Costco you can get 40 bottles for $6
    - Other examples –

Place	Vending machine
Product	Can of 33cl
Price	$6 / Liter
Promotion	

Place	Supermarket
Product	Bottle of 2L
Price	$2 / Liter
Promotion	Buy 5, get 1 free

- Measurement of Performance –
    - Market share
        - % of sales from our company vs competitors
        - For e.g. of all the shampoos sold in supermarkets, Dove brands account for 5%
    - Growth:
        - (Sales from current period/Sales from previous period) – 1
        - Year-over-year, Quarter-over-quarter, year-to-date
        - Moving annual total (used in this project)

Moving Annual Total Sales

Period #4: Moving Annual Total (MAT)

Growth MAT June = $\frac{MATJuneThisYear}{MATJuneLastYear} - 1$

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

- Net Revenue Management –
    - More than 66% of FMCG companies use NRM initiatives

- It unlocks new growth potential by maximizing net sales and net profit
- Net Sales = Volume * Net Price
- Cost = Volume * Cost of goods sold
- Gross Profit = Net Sales – Cost
- Gross Margin = Gross Profit / Net Sales

| NET SALES($)	COST ($)	GROSS PROFIT ($)	GROSS MARGIN (%)
volume x net price	volume x COGS (cost of goods sold)	net sales – cost	$\dfrac{gross\ profit}{net\ sales}$
100 🍪 x \$5 = \$500	100 🍪 x \$1 = \$100	\$500 – \$100 = \$400	$\dfrac{\$400}{\$500} = 80\%$

- Questions FMCG companies generally ask themselves to identify growth areas (say they make cookies) –
    - I'm selling shampoo in packs of 1. But would packs of 2 be better? Or maybe 3?
    - My shampoo is great; shouldn't I sell them at a higher price?
    - Which shampoo category is the most profitable one for me?
- Five pillars of Net Revenue Management –
    - Brand Portfolio Pricing: If our shampoo is much better than the competition, but are the customers paying a premium price for it? This depends on the customers' willingness to pay and pricing of our competitors' products
    - Pack Price Architecture: Say we sell a 30oz shampoo bottle for \$15 in a big box retail store, we can either choose to sell 2-pack of 30oz shampoo bottles for \$25 in a Wholesale store or a 15oz bottle for \$10 in a Dollar store
    - Mix Management: Changing our product portfolio to maximize margin
    - Promotion Management:
    - Trade Terms Management: Invest more on customers with big potential and less on customers with less potential

NET REVENUE MANAGEMENT

| BRAND PORTFOLIO PRICING	PACK PRICE ARCHITECTURE	MIX MANAGEMENT	PROMOTION MANAGEMENT	TRADE TERMS MANAGEMENT
Capture the **full value** of your brand to consumers in every region or channel.	Provide the **right format, pack** and **price** for each occasion, mission and channel.	Drive our product **mix** to where the profitable growth lies.	Check **profitability** of promotions and ensure their **effectiveness.**	Invest at **winning customers** and adapt **discounts** to be alligned with NRM strategy.

- Data for this project comes from a supermarket retailer where our products and our competitors' products are sold
  - Time period of the data ranges from Jan-2018 to Mar-2022

Analysis

- Used PowerQuery to load Text files into Excel
- Created **Pivot Tables** to –
  - Analyze the number of different brands each company owns. Some companies own just one brand of shampoo, while others own up to 4 brands
    - Our company owns 2 brands of Shampoos
  - Analyze year-over-year growth in sales for our company using Show Values As -> Difference from Previous Year functionality
    - We noticed that the **company's sales in $ grew the most in 2020 (around 4% more compared to 2019)**
    - Of much of the increase in sales was associated with one brand (Shinez) which grew 7.7% in sales $ in 2020 vs 2019
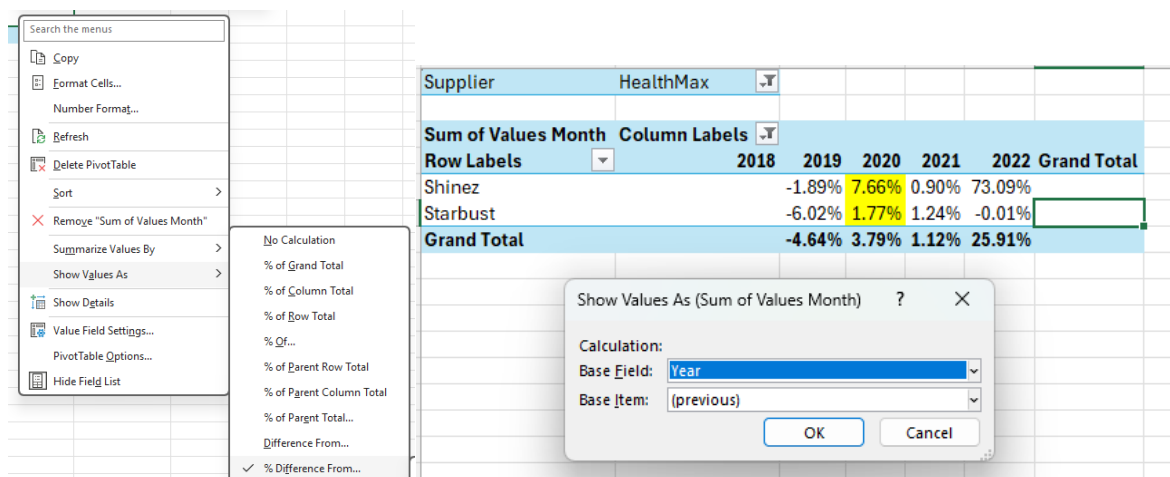
- Created **Pivot Charts** to visualize Market Share overtime
  - Across the country, our company has a 34.7% market share for Shampoos
  - We found our company performs best in the South Region. Our two brands combined have a 49% market share in the South.
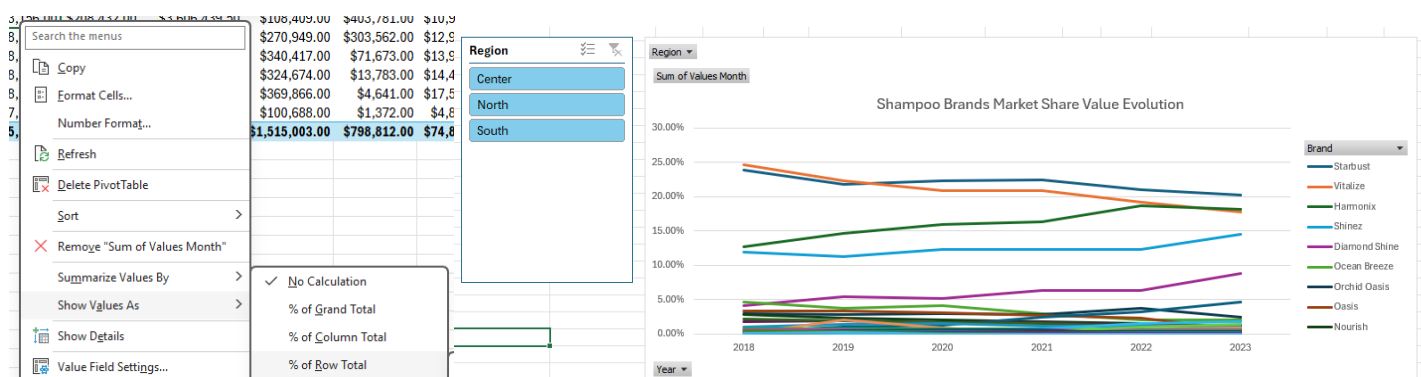
- Used advanced Excel functions like **SUMIFS** to calculate Year-to-date and Moving Annual Total sales $ and volume numbers
  - Units YTD

```
=SUMIFS([Units Month], [Brand], [@Brand], [Region], [@Region], [Year], [@Year], [Month], "<="&[@Month])
```

  - Values YTD

```
=SUMIFS([Values Month], [Brand], [@Brand], [Region], [@Region], [Year], [@Year], [Month], "<="&[@Month])
```

  - Units MAT = Units YTD + Units for months from previous year > current month

```
=[@[Units YTD]]+SUMIFS([Units Month], [Brand], [@Brand], [Region], [@Region], [Year], [@Year]-1, [Month], ">"&[@Month])
```

  - Values MAT = Values YTD + Values for months from the previous year > current month

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```
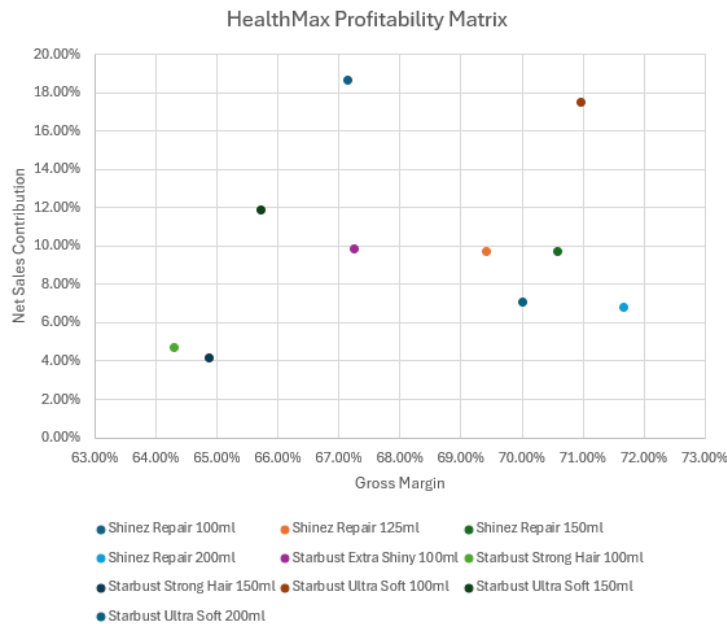
- We analyzed different scenarios to determine impact to gross profit from improvements to sale volume, net sale price or decrease in cost of goods sold

Cost Structure	Current	5% Increase in Sales Volume	5% Increase in Net Price	5% Decrease in COGS
Sales Volume	10,000,000	10,500,000	10,000,000	10,000,000
Net Price	$3.0	$3.0	$3.2	$3.0
Net Sales	$30,000,000.0	$31,500,000.0	$31,500,000.0	$30,000,000.0
Sales Volume	10,000,000	10,500,000	10,000,000	10,000,000
COGS	$1.0	$1.0	$1.0	$0.95
Costs	$10,000,000.0	$10,500,000.0	$10,000,000.0	$9,500,000.0
Gross Profit	$20,000,000.0	$21,000,000.0	$21,500,000.0	$20,500,000.0

- Using Internal company sales data, I estimated the gross profit per unit (net sales price - COGS), gross profit per product, gross margin % and net sales contribution %

Brand	Product	Pack Size (ml)	ProductID	Retail Price	Net Price	COGS	Volume 2022	Net Sales 2022	Gross Profit Per Unit	Gross Profit per Product	Gross Margin
Starbust	Ultra Soft	100	Starbust Ultra Soft 100ml	$ 5.00	$ 3.10	$ 0.90	1,156,348	$3,584,678.80	$2.20	$2,543,965.60	70.97%
Starbust	Extra Shiny	100	Starbust Extra Shiny 100ml	$ 5.00	$ 2.90	$ 0.95	693,809	$2,012,046.10	$1.95	$1,352,927.55	67.24%
Starbust	Strong Hair	100	Starbust Strong Hair 100ml	$ 5.00	$ 2.80	$ 1.00	346,904	$971,331.20	$1.80	$624,427.20	64.29%
Starbust	Ultra Soft	150	Starbust Ultra Soft 150ml	$ 7.00	$ 3.50	$ 1.20	693,809	$2,428,331.50	$2.30	$1,595,760.70	65.71%
Starbust	Strong Hair	150	Starbust Strong Hair 150ml	$ 7.25	$ 3.70	$ 1.30	231,270	$855,699.00	$2.40	$555,048.00	64.86%
Starbust	Ultra Soft	200	Starbust Ultra Soft 200ml	$ 9.00	$ 5.00	$ 1.50	289,087	$1,445,435.00	$3.50	$1,011,804.50	70.00%
Shinez	Repair	100	Shinez Repair 100ml	$ 6.00	$ 3.50	$ 1.15	1,089,532	$3,813,362.00	$2.35	$2,560,400.20	67.14%
Shinez	Repair	125	Shinez Repair 125ml	$ 7.00	$ 4.25	$ 1.30	466,942	$1,984,503.50	$2.95	$1,377,478.90	69.41%
Shinez	Repair	150	Shinez Repair 150ml	$ 8.00	$ 5.10	$ 1.50	389,118	$1,984,501.80	$3.60	$1,400,824.80	70.59%
Shinez	Repair	200	Shinez Repair 200ml	$ 10.00	$ 6.00	$ 1.70	233,471	$1,400,826.00	$4.30	$1,003,925.30	71.67%
Total							5,590,290.00	$20,480,714.90		$14,026,562.75	68.49%

- Created a Profitability Matrix to prioritize products in function of their net sales and their profitability. Based on this analysis, we found products (in the top right quadrant) with high profitability and high net sales contribution as primary drivers of our profit. We also identified two products that have low margin and low net sales contribution (bottom right quadrant)

HealthMax Profitability Matrix

Legend:
- Shinez Repair 100ml
- Shinez Repair 125ml
- Shinez Repair 150ml
- Shinez Repair 200ml
- Starbust Extra Shiny 100ml
- Starbust Strong Hair 100ml
- Starbust Strong Hair 150ml
- Starbust Ultra Soft 100ml
- Starbust Ultra Soft 150ml
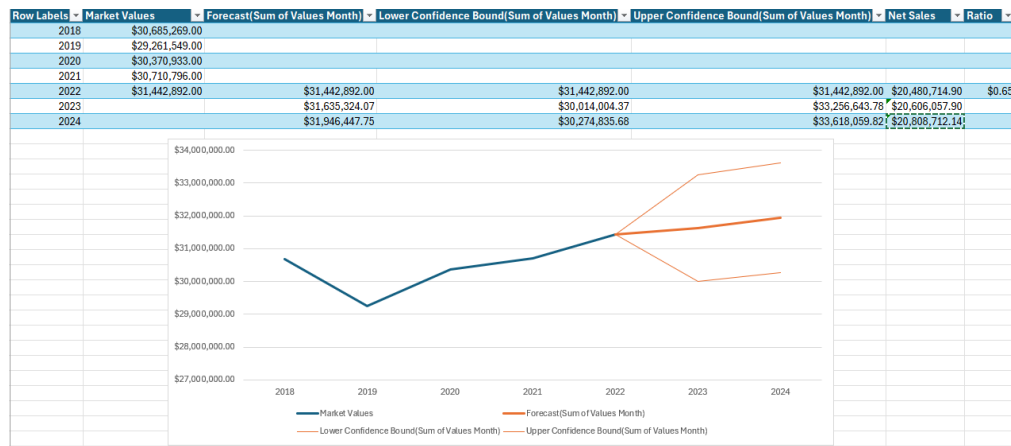- Starbust Ultra Soft 200ml

- Given that HealthMax has active products in only 2 categories, I looked through external competitors' data to find the category with the most growth since 2018 that we don't have a product in. We can potentially launch a new product to enter a new subcategory.
  - We identified that Organic shampoo sales have grown over 275% in volume between 2018 and 2022

Sum of Units Month	Column Labels	
Row Labels	2018	2022
Anti-dandruff		11.53%
Color-safe		-35.22%
Moisturizing		19.14%
Organic		275.82%
Volumizing		-11.05%
Grand Total		-4.95%

- I analyzed two upcoming products in the Organic Shampoo category which are in the pipeline to be released in the next year to identify the best candidate by making an estimation of expected net sales, gross profit, and gross margin for both products. I found that one product had 6% more margin compared to the other due to lower COGS
- **Pack Price Architecture:** I analyzed if selling shampoos in smaller sizes (50ml vs 100ml) would gain enough traction with people who travel
- **Promotion Management:** I compared the different promotions run by the company to boost sales and to recommend promotions which are most effective. I calculated the uplift from the promotion by comparing the net sales on products during promotion months vs baseline (non-promotion months). Since promotions involve a cost to run, the ROI of the promotion was positive (if the uplift in sales is greater than the cost involved in running the promotion). We found that one promotion (Buy 2 Get 20% Off) had a 11.8% ROI proving to be very successful. A different promotion (Buy 1 Get 1 Free) was found to be too costly for the business and had a negative ROI (-2.45%). Wrote VLOOKUP formulas to pull net sales $ for promotion months –

```
=VLOOKUP([@Month], 'Promotion Graph'!$A$5:$B$16, 2, FALSE)
```

- **Forecasting:** Created full year forecasts for 2023 and 2024 using the Forecast Sheet function in Excel

Row Labels	Market Values	Forecast(Sum of Values Month)	Lower Confidence Bound(Sum of Values Month)	Upper Confidence Bound(Sum of Values Month)	Net Sales	Ratio
2018	$30,685,269.00					
2019	$29,261,549.00					
2020	$30,370,933.00					
2021	$30,710,796.00					
2022	$31,442,892.00	$31,442,892.00	$31,442,892.00	$31,442,892.00	$20,480,714.90	$0.65
2023		$31,635,324.07	$30,014,004.37	$33,256,643.78	$20,606,057.90	
2024		$31,946,447.75	$30,274,835.68	$33,618,059.82	$20,808,712.14	

Conclusions:

- Our biggest competitor, FreshCo Industries, decided to stop their TV advertisements as from January 2023 and shift all investments to digital advertising. Assuming everything else stayed the same, we analyzed whether we should recommend our management to also switch all investments from TV advertising to digital advertising.
  - In March 2023 for FreshCo, we see that:
    - Their monthly market share is 26%
    - Their YTD market share is 28%
    - Their MAT market share is 30%
  - MAT values look at values of the last 12 months, or from April 2022 to March 2023. Their market share over that period is 30%, but both YTD and monthly values are lower: 28% and 26%, meaning their market share is declining. It is therefore not a good idea to shift all investments to digital advertising.
- Additional revenue from NRM initiatives: While the natural growth between 2023 and 2024 is expected to be around $202,654 annually, our NRM initiative on Price Pack Architecture (50 ml shampoo) and Mix Management (new Organic Shampoo) drive significantly higher growth to sales (over $600K annually). Implementing learnings from Promotion Management could yield even more upside for 2024.

Definitions

- **Year-to-Date (YTD):** Say the current month is Jun-2025. YTD for the current month would be the sum of Jan-25 + Feb-25 + Mar-25 + Apr-25 + May-25 + Jun-25
- **Moving Annual Total (MAT):** Say the current month is Jun-2025. MAT for the current month would be the sum of Jul-24 + Aug-24 + Sep-24 + Oct-24 + Nov-24 + Dec-24 + Jan-25 + Feb-25 + Mar-25 + Apr-25 + May-25 + Jun-25
- **Profitability Matrix:** A visual where we plot the Gross Margin % of every product vs the Net Sales Contribution %. Products in the top right quadrant are the best ones since they have high margin and high net sales. Products in the bottom right quadrant are lagging products since they are low margin and low volume