ValueFrenzy - Data Analysis Project Report

1. Company Overview

ValueFrenzy is a well-established supermarket chain specializing in fast-moving consumer goods (FMCG), with operations spanning three key markets: the United States, Mexico, and Canada. Founded in 2006, ValueFrenzy has built a reputation for offering a diverse range of products, from everyday groceries and household essentials to electronics and furniture. The company's commitment to affordability, quality, and customer satisfaction has allowed it to grow into a trusted brand across North America.

With a network of 100+ stores strategically located in urban and suburban areas, ValueFrenzy serves millions of customers annually. Its product portfolio is categorized into low-tier (groceries and basic goods), medium-tier (household items and appliances), and high-tier (electronics and luxury furniture). In addition to offering national brands, the company has expanded its focus on developing private label brands, providing value-driven alternatives to premium products.

In recent years, ValueFrenzy has adopted a customer-first approach by enhancing its omnichannel shopping experience, integrating physical stores with a robust online platform that offers convenient home delivery options. As part of its ongoing efforts to maintain competitiveness in the evolving FMCG sector, the company is continuously looking for innovative strategies to boost operational efficiency and ensure sustainable growth.

2. Problem Statement

As ValueFrenzy embarked on a strategic review of its operations from 2021 to 2023, it became clear that the company was experiencing a significant decline in revenue and profitability. This downward trend was most pronounced in the USA market, where a sharp drop in Average Transaction Value (ATV) and demand for high-tier products like electronics and furniture raised concerns among senior management about the company's ability to stay competitive in a challenging economic environment.

The project was initiated when Sarah Jamieson, the company's Chief Operating Officer (COO), reached out to me, a consultant data analyst specializing in FMCG performance analysis. Sarah expressed an urgency to address these performance issues and requested a comprehensive data analysis project focusing on key performance indicators (KPIs): Total Revenue, Gross Profit, Quantity Sold, Total Transactions, and Average Transaction Value (ATV), with a detailed analysis across all regions—USA, Mexico, and Canada—over the past three years.

The goal was to identify gaps, gain insights into customer purchasing behavior, and provide actionable recommendations to help ValueFrenzy improve its profit margins and overall business performance going forward.

3. Project Scope and Timeline

Scope of the Project:

<u>In-Scope:</u>

- *Data Analysis:*
  - Analyze the performance of Total Revenue, Gross Profit, Quantity Sold, Total Transactions, and Average Transaction Value across three regions (USA, Mexico, and Canada) for 2021-2023.
  - Segment analysis by product tiers (low, medium, and high-tier products) to understand the contribution of each category to revenue and profits.
  - Provide insights into year-over-year trends, identify seasonal patterns, and highlight key periods where declines occurred.
  - Uncover potential regional differences in sales performance and customer behavior.
- *Recommendations:*
  - Develop data-driven recommendations aimed at recovering ATV, boosting gross profits, and increasing sales of medium and high-tier products.
  - Suggest strategies for improving customer engagement through promotional offers, loyalty programs, and marketing efforts targeted by region and product tier.
  - Identify operational improvements that can help reduce supply chain costs and improve profitability in lower-performing regions like Canada.

<u>Out of Scope:</u>

- *Customer Survey Data:* The analysis will not include qualitative data (such as customer satisfaction surveys) unless provided by ValueFrenzy.
- *Detailed Supply Chain Analysis:* While supply chain costs are a factor in profitability, this project will not delve into logistics and supply chain optimization strategies.
- *Operational Data:* Data related to internal operations, staffing, or infrastructure will not be covered in this analysis unless it directly impacts sales or profitability.

Timeline:

The project was completed in four phases over a total of four weeks:

Phase 1- Requirements Gathering, Data Collection, and Initial Preparation (1 Week)

- <u>Stakeholder Meetings:</u> Met with Sarah Jamieson (COO) and other stakeholders to understand business objectives and project goals. Identified key performance indicators (KPIs) that reflected ValueFrenzy's performance. Progressively had back-and-forth discussions to refine these KPIs.
- <u>Finalized KPIs:</u> Collaboratively finalized KPIs (Total Revenue, Gross Profit, Quantity Sold, Total Transactions, ATV) and decided on segmentation criteria (region, product tier).
- <u>Data Collection:</u> Gathered historical sales data for the years 2021, 2022, and 2023 across the USA, Mexico, and Canada.
- <u>Initial Data Exploration:</u> Performed a quick review of the raw data to assess its quality, completeness, and relevance.

Phase 2- Data Cleaning, Transformation, and Preliminary Analysis (1 Weeks)

- **Data Cleaning:** Addressed data quality issues such as missing values, duplicates, and inconsistencies. Transformed and structured the data to make it ready for analysis (e.g., creating time-series data, cleaning up product categories).
- **Data Transformation:** Used tools like Power Query for handling messier data and ensured it aligned with the project's objectives (e.g., segmenting by product tier and region).
- **Stakeholder Feedback Loop:** Shared the initial data preparation with Sarah and key stakeholders to confirm that the data was accurate and that it's aligned with business requirements.
- **Preliminary Analysis:** Conducted a basic exploratory analysis to ensure the data looked sound and was ready for deeper insights. Looked for immediate trends or anomalies.

Phase 3- In-Depth Data Analysis and Insights Development (1 Weeks)

- **Detailed Data Analysis:** Performed an in-depth analysis of key KPIs (Total Revenue, Gross Profit, Quantity Sold, Total Transactions, ATV) using Data Modeling and DAX within Power Pivot. Broke down performance by region, product tier, and time periods.
- **Trend Identification:** Identified key trends, such as revenue fluctuations, profitability gaps, and ATV patterns. Highlighted periods of growth and decline.
- **Drafted Insights:** Shared early findings with stakeholders to gather feedback. Refined the analysis based on this input to ensure alignment with business priorities.
- **Feedback and Refinement:** Presented initial insights to Sarah and key team members. Revised and updated the analysis based on their feedback, ensuring the focus was on actionable business insights.

Phase 4- Report/Dashboard Creation and Presentation (1 Week)

- **Drafted Report and Dashboard:** Compiled the final findings, insights, and recommendations into a report and created a visually appealing, easy-to-understand dashboard in Excel.
- **Internal Review:** Shared the draft report and dashboard with Sarah and selected stakeholders for feedback. Revised based on their input, making sure it addresses all business concerns.
- **Presentation Preparation:** Prepared a polished presentation for Sarah and the executive team. Included key insights, trends, and actionable recommendations (e.g., strategies to recover ATV, boost revenue, etc.).
- **Final Presentation:** Delivered the final report and dashboard to Sarah and other stakeholders, allowing for discussion and follow-up questions. Ensured that all insights were linked to strategic business decisions.

4. Key Stakeholders

Stakeholder	Position
Sarah Jamieson	Chief Operating Officer (COO)
David Lee	Chief Financial Officer (CFO)
Amanda Cole	Head of Sales and Marketing
Michael Rogers	Regional Manager, USA
Isabella Martinez	Regional Manager, Mexico
Ethan Carter	Regional Manager, Canada
Karen Blake	Head of Product Development and Strategy
Nitin Kunigal	Data Analyst (Consultant) for ValueFrenzy

5. Assumptions and Constraints

Assumptions:

- **Business Continuity:** It is assumed that ValueFrenzy operated without major interruptions (like store closures, large-scale logistical issues, or changes in regional policies) that would affect sales over the period of 2021-2023, except during the noted drop in ATV from Q4-2021 to Q1-2022.
- **External Factors:** Macroeconomic conditions such as inflation, supply chain disruptions, and changes in consumer behavior post-2021 have influenced the decline in revenue and profits. It is assumed these factors are consistent across the regions but not unique to ValueFrenzy alone.
- **Regional Consistency:** Assumptions about consumer preferences across the three regions (USA, Mexico, and Canada) hold true throughout the three-year period, with no drastic demographic changes impacting sales patterns.
- **Comparable Store Performance:** It is assumed that performance metrics between stores in each region are relatively comparable, with similar product availability and pricing strategies across different outlets in each country.
- **Market Share:** ValueFrenzy's market share remains relatively stable over the 2021-2023 period, and any changes in sales trends are reflective of internal factors (like product performance, pricing, and promotions) rather than substantial shifts in competition.
- **No Major New Product Introductions:** The analysis assumes that no major new product lines were introduced in the three-year period that could skew performance or sales figures significantly.
- **Consumer Behavior:** Consumer behavior remains predictable, with low-tier products seeing higher volume sales and medium- and high-tier products contributing more to profits, as is common in FMCG.

Constraints:

- **Limited Time Frame:** The analysis is constrained to the years 2021, 2022, and 2023, meaning any long-term trends before 2021 or after 2023 are excluded from the project. Key performance indicators (KPIs) are only evaluated within this window.
- **Granularity of Data:** The data provided may lack granular breakdowns, such as specific promotions, marketing activities, or inventory details, limiting the depth of some analyses (e.g., promotional impacts on specific product categories).

- **Regional Differences:** The regions of the USA, Mexico, and Canada have different consumer behaviors, economic conditions, and regulatory environments. As such, certain KPIs (such as ATV and gross profit) may not be directly comparable across regions, constraining the ability to apply uniform recommendations globally.
- **Data Processing Limitations:** The analysis is conducted within Microsoft Excel, which may limit the scale and complexity of the data processed. Advanced data cleaning or analysis requiring tools like SQL or Python is not included in this project.
- **Operational Data Omission:** The project is focused on sales and financial data. Other operational metrics, such as supply chain efficiency, staffing, or inventory management, are out of scope and thus not analyzed or considered in the recommendations.
- **External Economic and Market Conditions:** The analysis is constrained by the lack of access to detailed external data (e.g., competitor performance, market growth rates, inflation data) which could provide additional context for ValueFrenzy's performance trends.
- **Stakeholder Availability:** The project's timeline is dependent on the availability of key stakeholders for feedback and validation. Delays in stakeholder responses (e.g., Sarah Jamieson or other regional managers) could impact the project's progression.
- **Unpredictable Variables:** Unforeseen events such as natural disasters, pandemics, or significant political changes that could have affected consumer behavior during 2021-2023 are not accounted for in this analysis, unless specifically noted in the dataset.
- **No Access to External Consumer Data:** This project will not include external customer behavior data, like customer loyalty programs, foot traffic insights, or competitor analyses unless provided by the company.

By considering these assumptions and constraints, the project remains focused on delivering actionable insights based on the internal sales data of ValueFrenzy, helping the company address its current challenges in revenue and profit performance.

6. Key Performance Indicators

Total Revenue:
Total revenue generated by ValueFrenzy across all regions and product categories.

Gross Profit:
Profit after deducting COGS (Cost of Goods Sold) from total revenue.

Quantity Sold:
Total units sold across all regions.

Total Transactions:
Number of customer transactions.

Average Transaction Value (ATV):
Average amount spent per transaction.

7. Rationale Behind Selected KPIs

In our analysis of ValueFrenzy, we focused on five key performance indicators (KPIs) — Total Revenue, Gross Profit, Quantity Sold, Total Transactions, and Average Transaction Value (ATV). This selection was made based on several important considerations:

- **Alignment with Analysis Objectives:** The chosen KPIs directly align with the primary objectives of this analysis, emphasizing revenue generation, profitability, and customer purchasing behavior, all of which are crucial in the FMCG sector.
- **Data Availability and Quality:** The analysis relied on data that was readily available and of sufficient quality. Some potential KPIs may have lacked accurate data representation, which influenced our focus.
- **Simplicity and Actionability:** Concentrating on these five KPIs allowed for a clearer, more actionable analysis. Including too many metrics can complicate the interpretation and decision-making process without significantly enhancing insights.
- **Economic Context:** The analysis was conducted within a specific economic environment, where understanding revenue, profit, and transaction trends was more pertinent than broader metrics like market share or customer acquisition costs.
- **Industry Best Practices:** Our KPI selection is consistent with industry benchmarks that prioritize specific metrics over others in the FMCG landscape, ensuring that our analysis is grounded in recognized practices.
- **Future Exploration:** While our analysis focused on these KPIs, we acknowledge that other metrics could provide further insights in future assessments, allowing for a more comprehensive understanding of the business dynamics.

8. Insights, and Recommendations

Insight 1:

Declining Revenue and Gross Profit:

Insight: Total revenue declined sharply from $13.8M in 2021 to $9.7M in 2022 and 2023, while gross profit dropped from $8.2M in 2021 to $5.8M for both 2022 and 2023.

Root Cause: The revenue and profit decline were mainly driven by reduced high-tier product sales (electronics and furniture) in the USA and Mexico. This drop in customer spending was likely influenced by economic pressures, such as inflation and shifting consumer priorities. A simultaneous drop in ATV aggravated the issue, particularly after Q4 2021.

Significant **DECREASE** in **PROFITS** (especially, in the **USA**) from **Nov-2021** to **Jan-2022** due to a significant **DROP** in the overall **Average Transaction Value (ATV)**
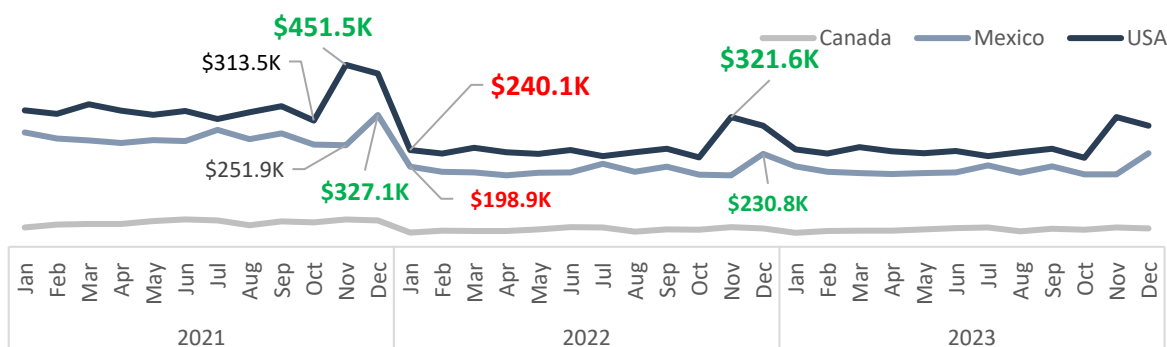
Recommendation 1:

Address Declining Revenue and Gross Profit:

- **Revitalize High-Tier Product Sales in the USA**: Given the sharp decline in revenue and gross profit in the USA, it is crucial to revive high-tier product sales (particularly electronics and furniture) that have been most impacted. Introducing targeted promotions during peak shopping periods (e.g., holiday sales) and offering flexible payment plans (such as 0% interest financing or extended installment plans) can encourage customers to make higher-value purchases.
- **Strengthen Customer Engagement**: In-store and online customer engagement strategies can be enhanced by offering personalized shopping experiences. Use customer data to provide tailored product recommendations based on purchase history, which will help drive high-value sales.

Insight 2:

Stable Quantity Sold but Declining Profit Margins:

Insight: Although Quantity Sold remained steady, with 15.7M units sold over the period, profit margins declined, especially in the USA. Sales of low-margin items made up 49% of total sales, while high-tier products, which have higher profit margins, saw reduced demand (17%).

Root Cause: The stable overall sales volume masked a product mix shift, with high-tier product sales declining due to economic constraints. Customers prioritized essential items like groceries and household products while delaying large purchases, particularly in electronics. The decline in high-tier purchases in the USA was particularly damaging to profitability.
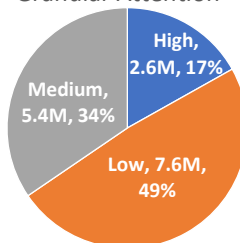
Recommendation 2:

Optimize Product Mix and Encourage High-Tier Sales:

- **Focus on Growth in Medium- and High-Tier Products:** Medium- and high-tier products show significant potential for growth, especially in Mexico and Canada. ValueFrenzy should focus marketing efforts on these product segments by highlighting the benefits of premium products (e.g., quality, durability) while positioning them as aspirational yet affordable.
- **Introduce Bundled Offers and Cross-Selling:** Cross-selling and bundling of complementary products will help increase overall spending. For example, offering appliance bundles in Mexico or electronic accessories with high-tier electronics in Canada can boost the overall ATV while increasing product sales volume.

Insight 3:

Disparity Between Transactions and ATV Trends (Oct–Dec):

Insight: While transaction volume increased in late 2021 (especially during the holiday season), the ATV remained flat. More transactions were processed without corresponding increases in the amount spent per transaction.

Root Cause: A shift towards lower-priced goods (groceries and household essentials) drove this disparity. Promotions on lower-tier products and a reduction in high-tier purchases during this period contributed to stagnant ATV, especially from Oct-Dec across all the years.

Sharp **ATV DROP** from **$75.30** to **$53.13** between **Dec-2021** to **Jan-2022**. **ATV** remained consistent across regions and product tiers due to **STABLE PURCHASING PATTERNS**. Despite a **TRANSACTION INCREASE** in late 2021, **ATV** remained steady, driven by **FREQUENT** low-tier purchases
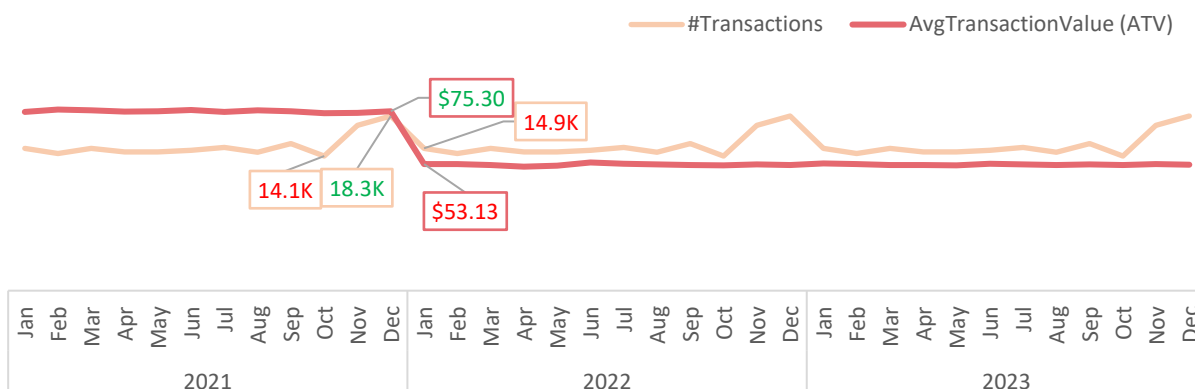
Recommendation 3:

Boost Average Transaction Value (ATV):

- **Enhance Loyalty Programs:** Establish a loyalty program that rewards frequent shoppers with exclusive discounts or points that can be redeemed for medium- and high-tier products. This will incentivize larger purchases and increase ATV, especially among repeat customers.

- **Upselling and Cross-Selling Strategies:** To drive up the ATV, employ strategies such as upselling during the checkout process. Encourage customers to add premium items or complementary products to their cart (e.g., suggesting batteries with electronics or cleaning supplies with household goods).

Insight 4:

Regional Performance Disparities:

Insight: The USA accounted for 51% of total revenue and gross profit, but it also saw the steepest declines. Mexico performed relatively better but also experienced a slight drop in high-tier sales, while Canada showed the most stable performance overall.

Root Cause: Economic instability in the USA, paired with shifting consumer habits, had the most significant impact on ValueFrenzy's revenue. In Mexico, lower spending on non-essential items contributed to a slight drop, while Canada's smaller market was less affected by these broader economic trends.

Recommendation 4:

Improve Regional Performance with Tailored Strategies:

- **Develop Targeted Marketing for Regional Needs:** Each region (USA, Mexico, and Canada) has unique market dynamics and consumer behavior. ValueFrenzy should develop region-specific marketing campaigns that address local preferences and economic conditions. In the USA, promote electronics and furniture with financing options; in Mexico, emphasize medium-tier household products; and in Canada, encourage high-tier purchases with limited-time offers.
- **Conduct Local Market Research:** Invest in ongoing market research to better understand evolving consumer behavior in each region. Insights from such research can help adjust product offerings, promotions, and pricing strategies that align with regional trends and customer preferences.

Insight 5:

Impact of Macroeconomic Conditions on Purchasing Patterns:

Insight: Average Transaction Value (ATV) dropped across all regions but was especially pronounced in the USA. A drop from over $75 in 2021 to approx. $53 in 2022-2023 across all regions indicated a broader shift in purchasing behavior toward lower-priced, essential goods.

Root Cause: Macroeconomic factors such as inflation, rising operational costs, and changing consumer preferences toward value-for-money products led to fewer purchases of high-ticket items like electronics thereby reducing overall transaction values. Customers in all regions adjusted their shopping habits due to these external pressures.

Recommendation 5:

Adapt to Macroeconomic Conditions:

- **Leverage Private Label Brands:** In response to rising inflation and changing consumer preferences, ValueFrenzy should continue to promote its private label brands as affordable alternatives to national brands. This will help retain price-sensitive customers while maintaining profitability.
- **Improve Operational Efficiency:** To mitigate the impact of external economic factors (e.g., supply chain disruptions, inflation), invest in optimizing supply chain operations and cost-saving

measures. This will allow ValueFrenzy to maintain competitive pricing while ensuring profitability in a challenging market environment.

The insights and root causes show how KPIs are interlinked and affected by economic factors, product tier performance, and regional disparities. The primary focus should be on recovering revenue and profit margins by improving sales in high-margin categories while maintaining steady performance in core product areas like groceries and household goods.

By implementing these data-backed strategies, ValueFrenzy is well-positioned to overcome its current challenges and achieve sustainable growth across all markets.

9. Conclusion

The data analysis project for ValueFrenzy provided a comprehensive understanding of the company's sales performance from 2021 to 2023, highlighting critical areas for improvement across its key markets—USA, Mexico, and Canada. Through the evaluation of five KPIs—Total Revenue, Gross Profit, Quantity Sold, Total Transactions, and Average Transaction Value (ATV)—we identified several key challenges, such as declining revenue and gross profit, regional discrepancies in sales, and shifts in customer purchasing behavior.

These insights offer a clear direction for ValueFrenzy to address current performance gaps, improve customer engagement, and adapt to evolving market conditions. By leveraging data-driven strategies and operational improvements, the company is well-positioned to enhance its competitiveness in the FMCG sector and create a sustainable path for future growth. The outcomes of this analysis will serve as a foundation for informed decision-making, allowing ValueFrenzy to navigate challenges and seize new opportunities in the market.