E-COMMERCE PERFORMANCE ANALYSIS AND STRATEGIC RECOMMENDATIONS

(2018-2022)

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Date: 15 January 2023

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EXECUTIVE SUMMARY

Rainbow Retail, a fictitious South African e-commerce retailer specialising in office supplies, furniture and technology products, has demonstrated consistent growth from 2018 to 2022. This report provides a comprehensive analysis of the company's sales performance during this period and offers strategic recommendations to optimise business strategies and drive future growth.

1.   INTRODUCTION

1.1.   Company Overview

Rainbow Retail is an established e-commerce player in the South African market, focusing on three main product categories: office supplies, furniture, and technology products. The company has shown resilience and adaptability in the face of significant local and global economic events, including the COVID-19 pandemic.

1.2.   Objectives

The primary objectives of this analysis are to:

- Evaluate Rainbow Retail's sales performance from 2018 to 2022.
- Identify key trends and patterns in sales data.
- Provide actionable recommendations for business optimisation and growth.

1.3.   Methodology

This analysis is based on synthetic data representing customers, sales, products and temporal entities, allowing for comprehensive tracking of sales transactions and trends. The dataset spans from January 2018 to December 2022. Advanced analytical tools, including Excel (Power Query and Power Pivot) and SQL, were employed for data extraction, transformation, loading and analysis.
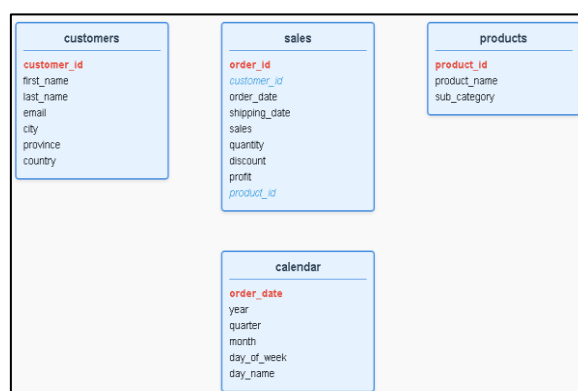
2. MARKET OVERVIEW

2.1. E-commerce Landscape in South Africa

The South African e-commerce market has experienced significant growth, particularly accelerated by the COVID-19 pandemic. Factors such as increased internet penetration, smartphone adoption and changing consumer behaviours have contributed to this growth.

2.2. Economic Context

The analysis period (2018-2022) encompasses several significant economic events, including:

- Global trade tensions
- COVID-19 pandemic and subsequent lockdowns
- Supply chain disruptions
- Shifts in consumer spending patterns

Rainbow Retail's performance should be viewed within this broader economic context.

3. ANALYSIS

3.1. Sales and Revenue Growth Trend
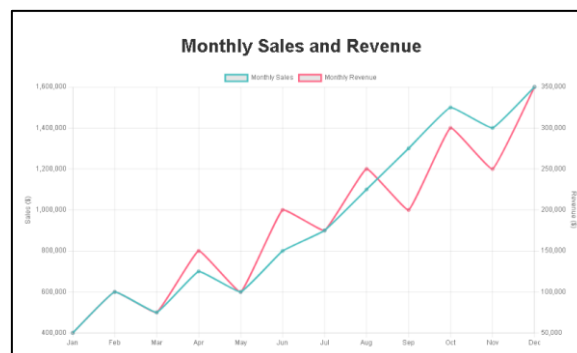
- <u>Insights</u>: A general upward trajectory in monthly sales and revenue indicates robust growth. Rainbow Retail's ability to maintain growth is noteworthy given the economic turbulence. This suggests the company successfully adapted to changing market conditions and consumer behaviours.

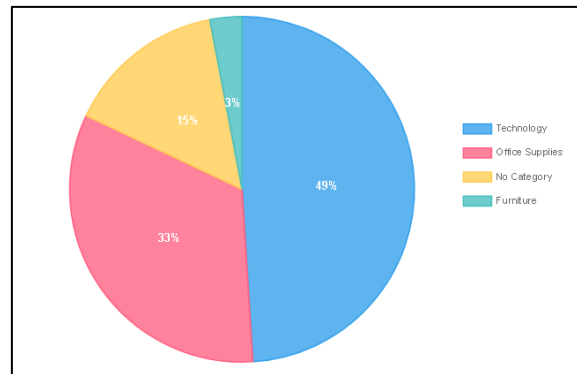- <u>Strategic Goal</u>: *Market Expansion*. Capitalise on the growth trend by exploring new market segments and expanding product lines to maintain momentum.

3.2. Product Category Performance

- <u>Insights:</u> Technology products dominate with 49% of total revenue. Office supplies contribute significantly. Furniture category underperforms at 3% of revenue. The strong performance of technology products aligns with global trends accelerated by the pandemic, such as increased demand for computers, tablets and related accessories due to remote work and online learning. The underperformance of the furniture category may be attributed to:

  o Higher shipping costs for bulky items
  o Logistical challenges in delivery and returns
  o Consumer hesitancy to make large purchases online during economic uncertainty

- <u>Strategic Goal</u>: *Product Diversification*. Expand the range of technology products and enhance the promotion of underperforming categories like furniture to reduce dependency on a few product lines.

3.3. Top-Selling Products
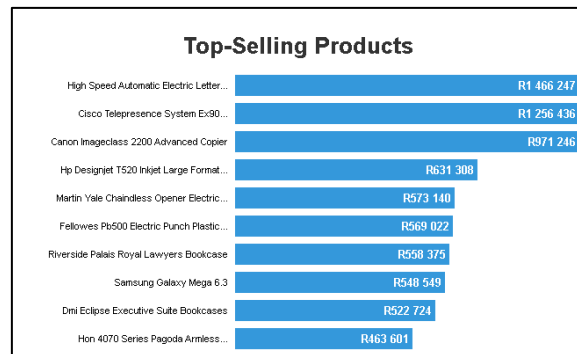
- <u>Insight</u>: Analysis reveals that a few key products, such as the High-Speed Automatic Electric Letter Opener, drive significant sales.

- <u>Strategic Goal</u>: *Revenue Maximisation*. Develop upselling and cross-selling strategies around these top-performing products to boost the Average Order Value (AOV) and overall revenue.

3.4. Sales by Province
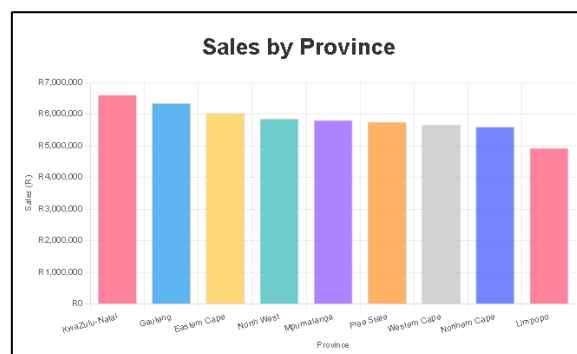
- <u>Insights</u>: Sales are heavily concentrated in a few provinces:

  - KwaZulu-Natal
  - Gauteng
  - Eastern Cape

  Underserved regions with growth potential include:

  - Limpopo
  - Northern Cape

This disparity may be due to:

- o Economic differences across provinces
- o Varying levels of internet penetration and e-commerce adoption
- o Need for targeted growth strategies in underperforming areas

- <u>Strategic Goal</u>: *Geographical Expansion.* Focus marketing efforts on underperforming regions to balance sales distribution and enhance overall market penetration.

3.5. Average Order Value (AOV)

- <u>Insight</u>: Overall AOV: R4,467. Higher AOVs observed for technology and furniture products. Regional variations in AOV, potentially reflecting:

- o Differing economic conditions across provinces
- o Varying product preferences or availability

- <u>Strategic Goal</u>: *Customer Retention and Value Enhancement*. Implement targeted marketing campaigns and "*smart shopper*" programmes to encourage higher spending and repeat purchases.

4. SWOT ANALYSIS

4.1. Strengths

- Strong market position in technology products
- Consistent growth despite economic challenges
- High performance in key provinces

4.2. Weaknesses

- Underperforming furniture category
- Uneven regional sales distribution
- Potential over-reliance on a few top-selling products

4.3. Opportunities

- Expansion into underserved regions
- Growth potential in the furniture category
- Leveraging top-selling products for upselling and cross-selling

4.4. Threats

- Economic uncertainties and potential recessions
- Increasing competition in the e-commerce space
- Supply chain disruptions affecting product availability

5. RECOMMENDATIONS

Product Portfolio Optimisation

- Expand the technology product line to maintain market leadership
- Develop strategic partnerships to boost the furniture category
- Investigate unclassified products to identify emerging market trends and potential new product categories.

Sales and Marketing Strategy Enhancement

- Intensify marketing efforts in high-performing regions
- Develop targeted campaigns for regions with growth potential
- Utilise AOV analysis insights to create tailored product bundles and promotional offers
- Investigate and address barriers to growth in underperforming regions

Data Analysis and Reporting Enhancement

- Improve data categorisation to ensure accurate reporting and deeper customer behaviour analysis
- Develop predictive models incorporating economic indicators to anticipate market trends
- Implement real-time dashboards for monitoring key performance indicators (KPIs)

6. IMPLEMENTATION PLAN

6.1. Short-term (0-6 months)

- Conduct a detailed analysis of the furniture category to identify improvement areas
- Launch targeted marketing campaigns in underperforming regions
- Implement a loyalty programme

6.2. Medium-term (6-18 months)

- Expand the technology product line
- Develop and launch an improved e-commerce platform with enhanced user experience
- Establish partnerships with local furniture manufacturers

6.3. Long-term (18+ months)

- Implement advanced data analytics and AI-driven predictive models
- Explore expansion into neighbouring countries
- Consider developing a private label product line in high-performing categories

7. ASSUMPTIONS

Data Completeness: The significant portion of revenue from 'unclassified' categories (15%) suggests potential issues with product categorisation or data entry processes. This could lead to incomplete insights about true category performance.

8. TECHNICAL

- Utilised advanced Excel features, including Power Query and Power Pivot, for data extraction, transformation and loading (ETL).
- Used Power Query for initial data cleaning tasks such as filtering, merging and reshaping data.
- Employed Power Pivot to create data model and facilitate advanced exploratory data analysis (EDA) through interactive pivot tables and charts.
- Utilised MySQL for querying the database, enabling sophisticated data manipulation and extraction of insights using SQL.

9. CONCLUSION

Rainbow Retail has demonstrated strong performance and resilience in a challenging economic environment. By implementing these strategic recommendations, the company can enhance its sales performance, optimize product offerings, and strengthen its market presence. Aligning data insights with strategic business goals will ensure sustained growth and competitive advantage in the South African e-commerce market.

The key to success will be the company's ability to adapt to changing market conditions, leverage its strengths in technology products, address weaknesses in the furniture category, and capitalize on regional growth opportunities. Continuous monitoring and analysis of market trends, consumer behaviour, and economic indicators will be crucial for maintaining Rainbow Retail's growth trajectory and market leadership.

10. APPENDIX: AD-HOC QUERIES

The SQL snippets below answer some common business questions asked by managers.

```
-- Query 1: Top Products by Total Sales Amount


WITH ProductSales AS (

    SELECT p.product_name, SUM(s.sales) AS total_sales

    FROM sales s

    JOIN Products p ON s.product_id = p.product_id

    GROUP BY p.product_name

)
SELECT product_name, total_sales,

      RANK() OVER (ORDER BY total_sales DESC) AS sales_rank

FROM ProductSales;
```

Output 1:

product_name	total_sales	sales_rank
High Speed Automatic Electric Letter Opener	1466247	1
Cisco Telepresence System Ex90 Videoconferen…	1256436	2
Canon Imageclass 2200 Advanced Copier	971246	3
Hp Designjet T520 Inkjet Large Format Printer -…	631308	4
Martin Yale Chadless Opener Electric Letter Ope…	573140	5
Fellowes Pb500 Electric Punch Plastic Comb Bind…	569022	6
Riverside Palais Royal Lawyers Bookcase	558375	7
Samsung Galaxy Mega 6.3	548549	8
Dmi Eclipse Executive Suite Bookcases	522724	9
Hon 4070 Series Pagoda Armless Upholstered S…	463601	10

```
-- Query 2: Customer Ranking by Total Purchase Amount


WITH CustomerSales AS (

    SELECT    c.customer_id,    CONCAT(c.first_name,    '    ',    c.last_name)    AS
customer_name, SUM(s.sales) AS total_purchase

    FROM Sales s

    JOIN Customers c ON s.customer_id = c.customer_id

    GROUP BY c.customer_id, customer_name

)

SELECT customer_id, customer_name, total_purchase,

        RANK() OVER (ORDER BY total_purchase DESC) AS purchase_rank

FROM CustomerSales;
```

Output 2:

customer_id	customer_name	total_purchase	purchase_rank
457	Herbert Nixon	526777	1
82	Rutherford Truman	486777	2
58	Calvin Polk	449784	3
690	Rutherford Coolidge	431336	4
488	Harry Ford	422916	5
444	John Van Buren	342772	6
295	Woodrow Truman	312325	7
9	Calvin McKinley	278577	8
348	John Hoover	257412	9
382	Benjamin Harding	249757	10
11	Ulysses Harding	244005	11

```
-- Query 3: Products with Sales Above Average


SELECT p.product_id, p.product_name, SUM(s.sales) AS total_sales

FROM Sales s

JOIN Products p ON s.product_id = p.product_id

GROUP BY p.product_id, p.product_name

HAVING SUM(s.sales) > (

    SELECT AVG(total_sales) FROM (

        SELECT SUM(s.sales) AS total_sales

        FROM Sales s

        JOIN Products p ON s.product_id = p.product_id

        GROUP BY p.product_id

    ) subquery

);
```

Output 3:

product_id	product_name	total_sales
367	Xerox 1908	40391
393	Fellowes Bankers Box Staxonsteel Drawer File/S...	53854
54	At&T Cl83451 4-Handset Telephone	92985
542	Office Star - Mesh Screen Back Chair With Vinyl ...	54278
1210	Novimex Fabric Task Chair	39261
408	Hon 4700 Series Mobuis Mid-Back Task Chairs W...	138300
575	Bush Andora Bookcase	103558
1341	Safco Mobile Desk Side File	37337
1295	Belkin 5 Outlet Surgemaster Power Centers	48984
1811	Zebra Gk420T Direct Thermal/Thermal Transfer ...	39057
65	Global Value Mid-Back Manager'S Chair	39314