DATA-DRIVEN INSIGHTS INTO INOVATECH

E-COMMERCE PROJECT

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01 Overview

1.1 PROJECT SCENARIO

- This project involves delving into data-driven insights from Inovatech, a global e-commerce platform specializing in consumer electronics.

- The goal is to uncover trends in sales performance, customer behavior, refund patterns, loyalty program effectiveness, marketing channel effectiveness, understand regional performance, product impacts, and recommend strategies to optimize marketing and sales processes across different regions and customer segments.

1.2 TECHNICAL TOOLS AND ANALYSIS

- The analysis uses tools such as SQL, Excel, and Power BI, and covers four comprehensive datasets with over 225,000 rows of information.

- These datasets capture critical business metrics across four sales channels, four account creation methods, and over 70 regions worldwide.

- The completed project is in GitHub.

02 Introduction

2.1 STORYMAP

- About Inovatech, it is an innovative e-commerce platform dedicated to providing the latest consumer electronics and accessories to customers worldwide.

- The challenge is that their extensive database covers sales figures, marketing efforts, operational efficiency, product range, and loyalty program data had been analyzed since 2018, and the company has no direction on where to follow.

- These data are now being comprehensively analyzed to reveal insights aimed at enhancing Inovatech's business performance.

2.2 PROJECT'S GOAL

- Sales: This involves a deep understanding of best-selling products, product performance analysis, identifying regions with high sales potential, and assessing different sales channels.

- Customer Behavior: Evaluating the effectiveness of the loyalty program, analyzing product returns, and examining various marketing channels and their return on investment.

03 Data Quality

3.1 DATASET STRUCTURE
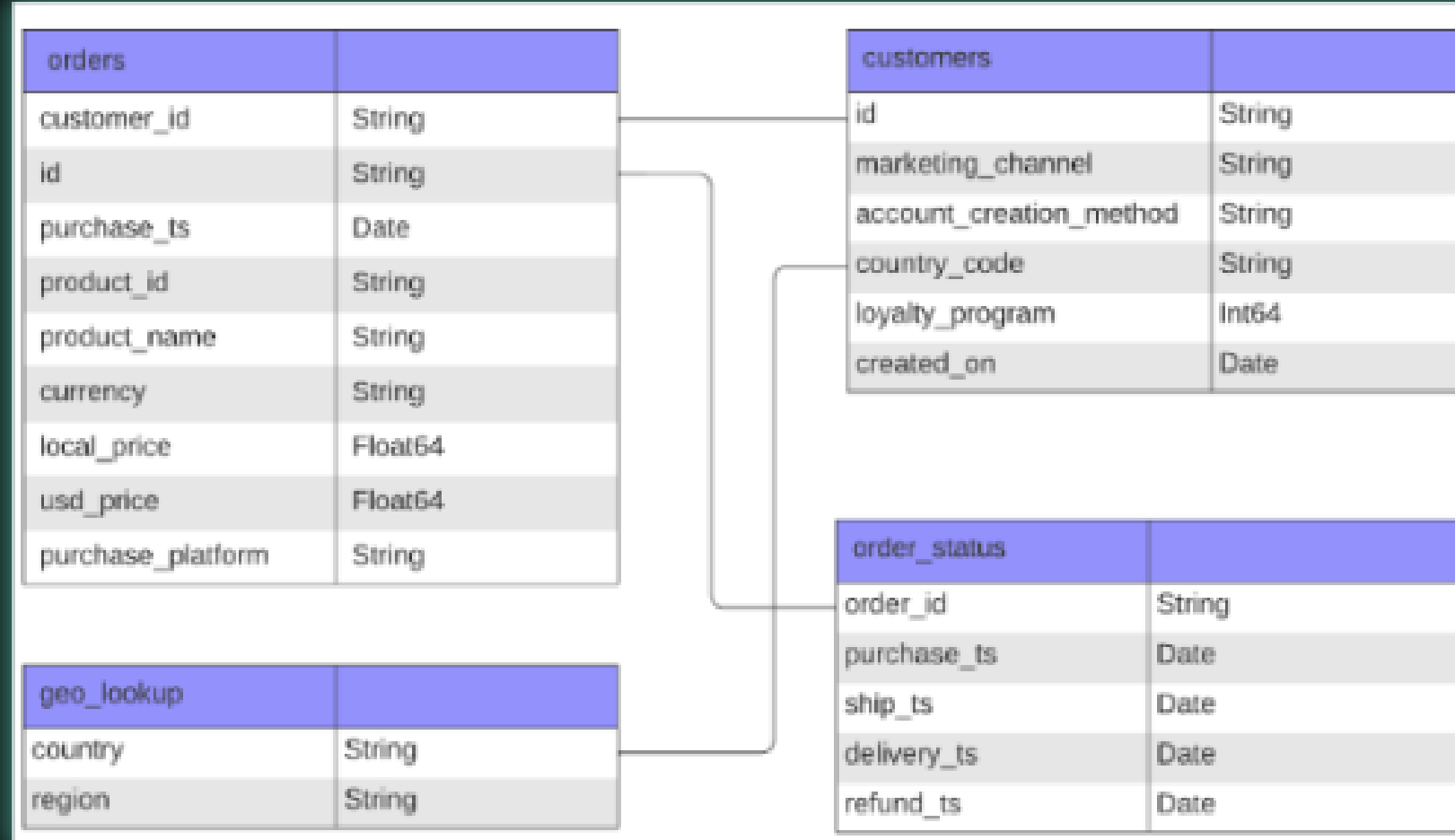
3.2 DATA CLEANING & MODELING

Checks to identify any potential data quality issues:

- Missing Column
- Nulls
- Misnamed Rows

Issues Log file here

3.3 INITIAL CHECKS SQL

- Check Datasets And Formats
- Null Check
- Duplicate Check
- Price Statistics Test
- Purchase Date Range
- Product Order Counts

SQL Check Queries here

04 Business Questions and EDA

4.1 COMMERCIAL PERFORMANCE ANALYSIS SQL Queries here

- YEARLY SALES SUMMARY (total sales, average order value (AOV), total orders, and year-on-year sales growth %)
- MONTHLY SALES SUMMARY (total sales, average order value (AOV), total orders, and month-on-month sales growth %)
- REGIONAL SALES PERFORMANCE
- PRODUCT SALES PERFORMANCE
- MARKETING CHANNEL SALES PERFORMANCE
- DELIVERY & SHIPPING PERFORMANCE (Average time from purchase to shipping, shipping to delivery / total time from purchase to delivery across different regions, years and months)
- REGIONAL PRODUCT REFUNDS (product higher refund rates by region, and what are the yearly trends)
- LOYALTY PROGRAMME PERFORMANCE (the impact of the loyalty program on total sales, AOV, and total orders)

4.2 SALES TRENDS AND CUSTOMER BEHAVIOR SQL Queries here

- REFUND RATE (Most Refunded Products / Product Refund Frequency (Top 3) across all years / Monthly Apple Product Refunds in 2021)
- ACCOUNT CREATION METHODS (Average order value across different account creation methods / Which method had the most new customers)
- MARKETING CHANNELS (Which marketing channels perform the best in each region / how the top channel differ across regions)
- CUSTOMER ORDERS (Average time between customer registration and their first order / Customers who made more than 4 orders across all years, what was the order ID, product, and purchase date of their most recent order)

05 Finds and Insights

5.1 ISSUES AND ACTIONABLE INSIGHTS

Annual Sales Performance

- The highest sales volume was recorded in 2020, with a significant drop in 2021 and an even more pronounced decline in 2022 (over 50% decrease between 2021 and 2022).
- The average order value (AOV) was highest in 2020, but did not show a very significant variation over the years.
- Although the number of orders was higher in 2021, the lower AOV indicates lower profitability per order.

Regional Performance

- North America (NA) is the leading region in terms of sales, performing significantly better than EMEA, APAC, and LATAM.
- Although Latin America has the lowest sales and order volume, return rates are relatively low.
- The highest return rates were recorded in North America (1.86%), followed by APAC and LATAM.

Product Performance

- The 27-inch 4K monitor was the product with the highest annual sales in all analyzed years, with the MacBook Air and ThinkPad also standing out.
- However, the AirPods had the highest number of orders, which shows popularity in terms of sales volume, but with a lower average ticket.

Marketing Channels

- The "direct" marketing channel generated the highest sales and order volume in all years, followed by "email," "affiliate," and "social media."
- Social media channels showed the lowest sales volume, which may indicate an underutilization of this strategy or an audience less inclined to convert directly through social networks.

Return Rates Performance

- Apple products, such as the MacBook Air, ThinkPad Laptop, and iPhone, had the highest return rates. LATAM had the highest return rate for the iPhone, which may indicate product-related issues or consumer expectations.
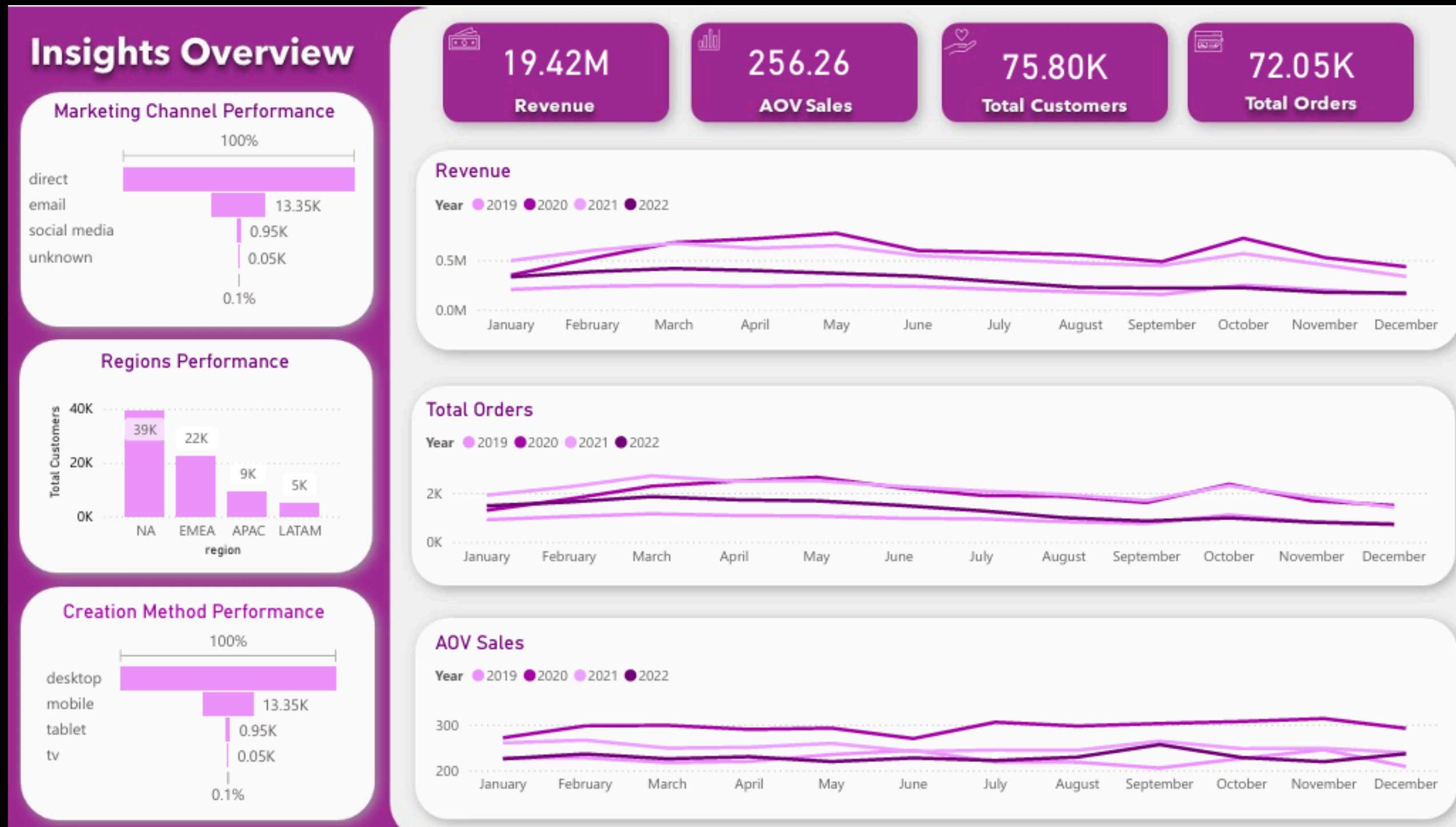
Account Creation Methods

- The account creation method via desktop generated the highest average order value (AOV) in most years, standing out as the main method in terms of profitability per transaction.

Delivery & Shipping

- The company has a relatively uniform shipping process across different regions, which is good for customer experience.

Loyalty Program Performance

- Loyalty program members contribute significantly to total sales and have a higher AOV, indicating that these customers are more valuable.
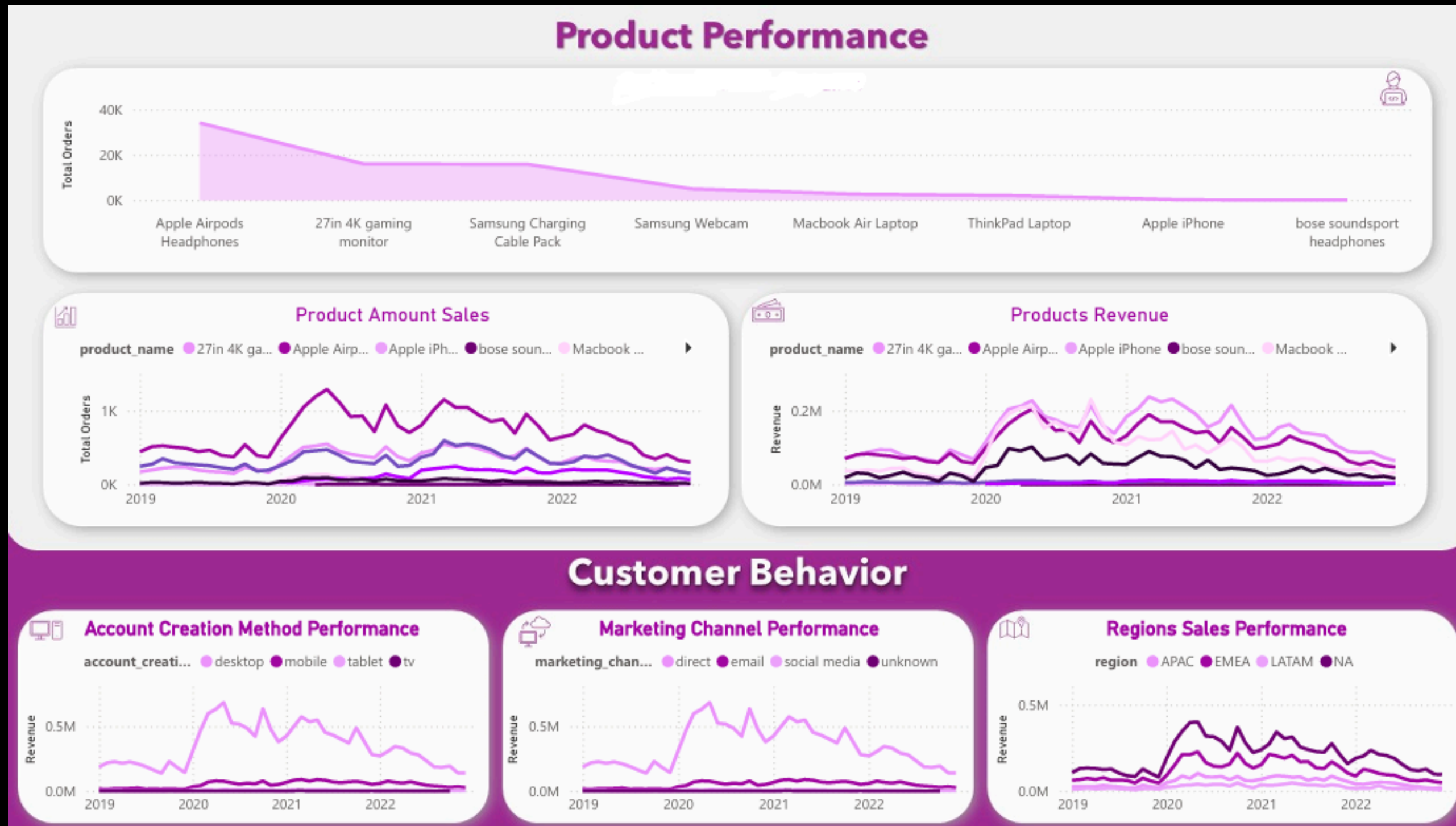
05 Finds and Insights

5.2 DASHBOARDS Dashboards here

06 Recommendations

6.1 ACTION PLAN

Annual Sales Performance

- With the sharp decline in sales in 2021 and 2022, it is essential to review customer retention strategies and reactivate segments that have lost interest.
- Campaigns focused on customers who have not made recent purchases, exclusive offers, and enhanced loyalty programs can help in recovery.

Regional Sales Performance

- Sales in Latin America are the lowest, but this region also has a low return rate. Investing in marketing campaigns and customer service in LATAM could open growth opportunities in a region that has not yet been fully explored.
- Investigate product quality or customer support issues related to high-refund products like Apple iPhones.
- Implement targeted customer support in NA to reduce the overall refund rate.

Product Sales Performance

- Continue to push high-end products but balance the strategy by promoting accessories that can generate high order volumes.
- Consider cross-selling or bundling strategies to promote premium products with smaller, high-frequency items.

Marketing Channels

- Since social media channels generate fewer conversions, it is advisable to review the social media advertising strategy and focus on more targeted and creative campaigns that better connect with younger audiences, while optimizing the use of the "direct" channel, which has the highest performance.

Return Rates Performance

- Need to review the communication of expectations and post-purchase support services, especially in LATAM.
- A simpler return process or extended warranty could reduce customer dissatisfaction.

Delivery & Shipping

- Continue optimizing logistics to ensure delivery times remain competitive, especially in regions with longer shipping distances like LATAM.

Account Creation Methods

- Encourage account creation through desktop platforms and incentivize higher-value purchases with discounts or special offers.
- Simplify the account creation process across all platforms to increase conversion rates.

Loyalty Program Performance

- Enhance loyalty program offerings to encourage more customers to join.
- Personalize marketing efforts for loyalty members with tailored promotions or early access to new products.

06 Recommendations

6.2 NEXT STEPS/ACTION PLAN

1. Sales Recovery Strategy

Objective: Increase sales and customer retention after the decline in 2021 and 2022.

Actions:
- Customer Segmentation: Identify segments of customers who have not made purchases in the last 12-18 months and create targeted campaigns.
- Exclusive Offers: Design special promotions (e.g., discounts, free shipping) for returning customers.
- Loyalty Program Enhancement: Enhance the existing loyalty program by adding tiers or offering unique rewards based on purchase history.
- Timeline: 3 months for campaign setup and launch.
- Owner: Marketing & CRM Team.

2. Regional Expansion in LATAM

Objective: Grow market share in Latin America by leveraging low return rates and improving marketing efforts.

Actions:
- Market Research: Conduct deeper research to understand customer preferences and pain points in LATAM.
- Localized Campaigns: Develop region-specific marketing campaigns with a focus on the unique cultural and consumer behaviors in LATAM.
- Customer Support: Implement localized customer service initiatives, such as a dedicated support team and local-language documentation.
- Timeline: 6 months for research, campaign creation, and support launch.
- Owner: Regional Marketing Team & Customer Support.

3. Optimize Marketing Channels

Objective: Improve conversion rates from social media channels while continuing to maximize performance from direct channels.

Actions:
- Social Media Strategy Overhaul: Redesign social media campaigns with more personalized and engaging content aimed at younger audiences.
- Direct Channel Focus: Optimize the direct channel by improving the user experience on landing pages and offering immediate checkout incentives.
- A/B Testing: Implement A/B testing for all marketing channels to evaluate performance and make data-driven adjustments.
- Timeline: 3-4 months for campaign revisions and testing.
- Owner: Digital Marketing Team.

THANK YOU

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