

Toy Store Performance Analytical Insights



PRESENTED BY:

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PRESENTED TO:

Prompt Bi Hackathon

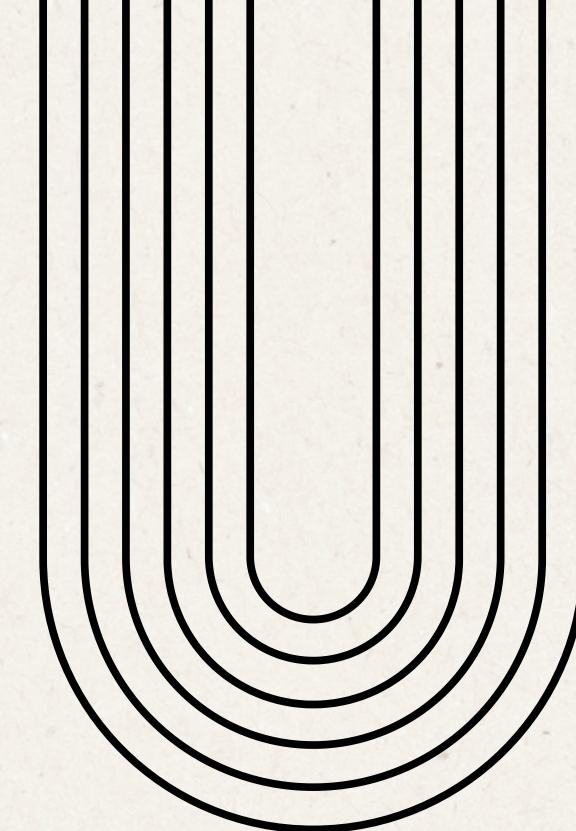
Problem Statement

- The toy store e-commerce business currently lacks insights into its revenue, profitability, and product-level performance. Identifying which products generate the most revenue and profit, understanding the impact of refunds, and determining high-return items are critical for informed operational and inventory decisions. A structured analytics approach is needed to quantify revenue, cost of goods sold, and net profit at both product and order levels.
- Customer behavior and engagement across the website are not fully analyzed. Questions about repeat purchases, average order value, session-to-order conversions, and the influence of traffic sources and device types remain unanswered. Understanding these patterns will help optimize marketing campaigns, improve retention strategies, and identify high-value customers.
- Marketing performance and time-based trends require detailed analysis. The effectiveness of UTM campaigns, referral sources, and device-specific conversions, as well as seasonality in orders, refunds, and product popularity, need to be tracked. Integrating transactional, web session, and product data into a single analytics pipeline will enable data-driven decisions across finance, marketing, and operations.

Hypothesis

Null Hypothesis

- The performance of the toy store's e-commerce business—including revenue, profitability, and customer engagement—is influenced by product characteristics, customer behavior, marketing channels, and time-based trends.



Alternative Hypothesis

- The performance of the toy store's e-commerce business—including revenue, profitability, and customer engagement—is not influenced by product characteristics, customer behavior, marketing channels, and time-based trends.

Supporting Hypothesis

04/10

Revenue and Profitability

- H1: Products with higher unit prices generate more gross profit.
- H2: Orders with high refund rates reduce net profit significantly.
- H3: Certain product categories consistently outperform others in terms of revenue.

Customer Behavior

- H4: Repeat customers have a higher average order value than new customers.
- H5: Users with multiple sessions convert at a higher rate than single-session users.
- H6: Average order value varies by device type and traffic source.
- Marketing & Traffic

Marketing and Traffic

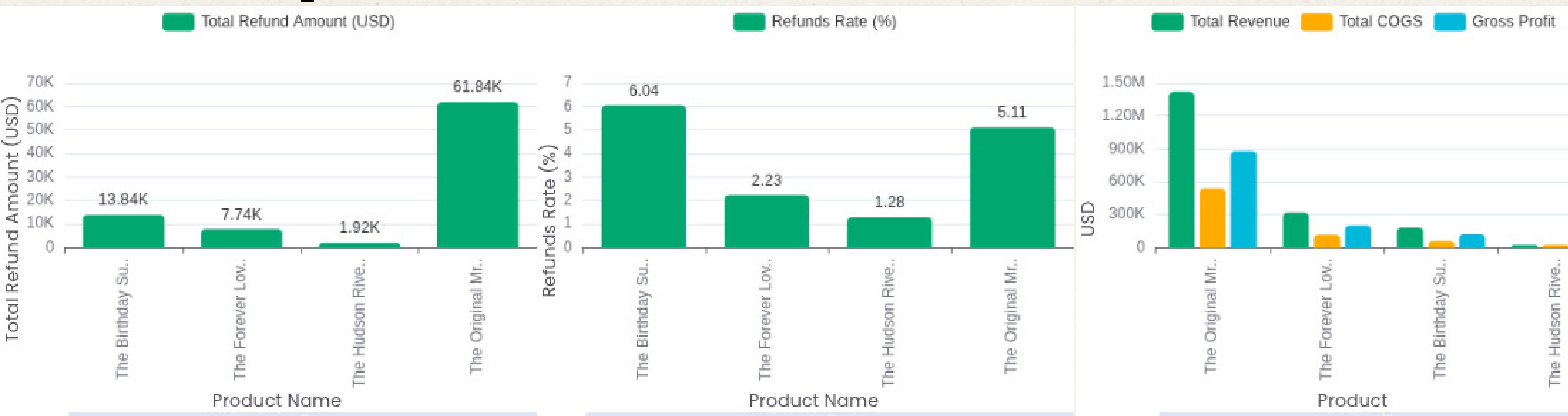
- H7: Campaigns with specific UTM sources or campaigns drive higher conversion rates.
- H8: Referral traffic contributes more to high-value orders than direct traffic.

Time Based Trends

- H9: Revenue and order volume exhibit seasonality and weekly/daily patterns.
- H10: Refunds spike after specific promotional periods or product launches.

Top Products

05/10

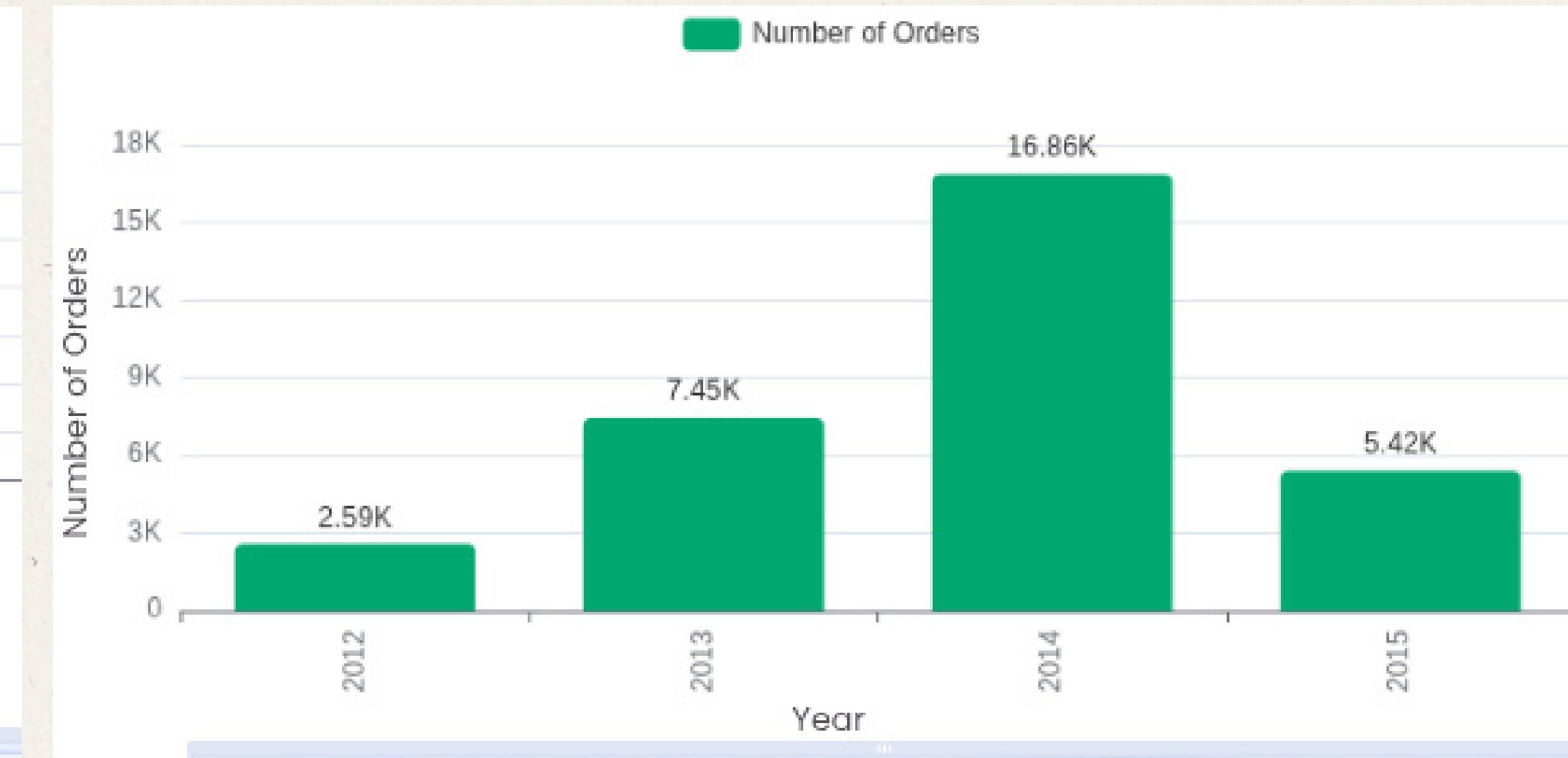
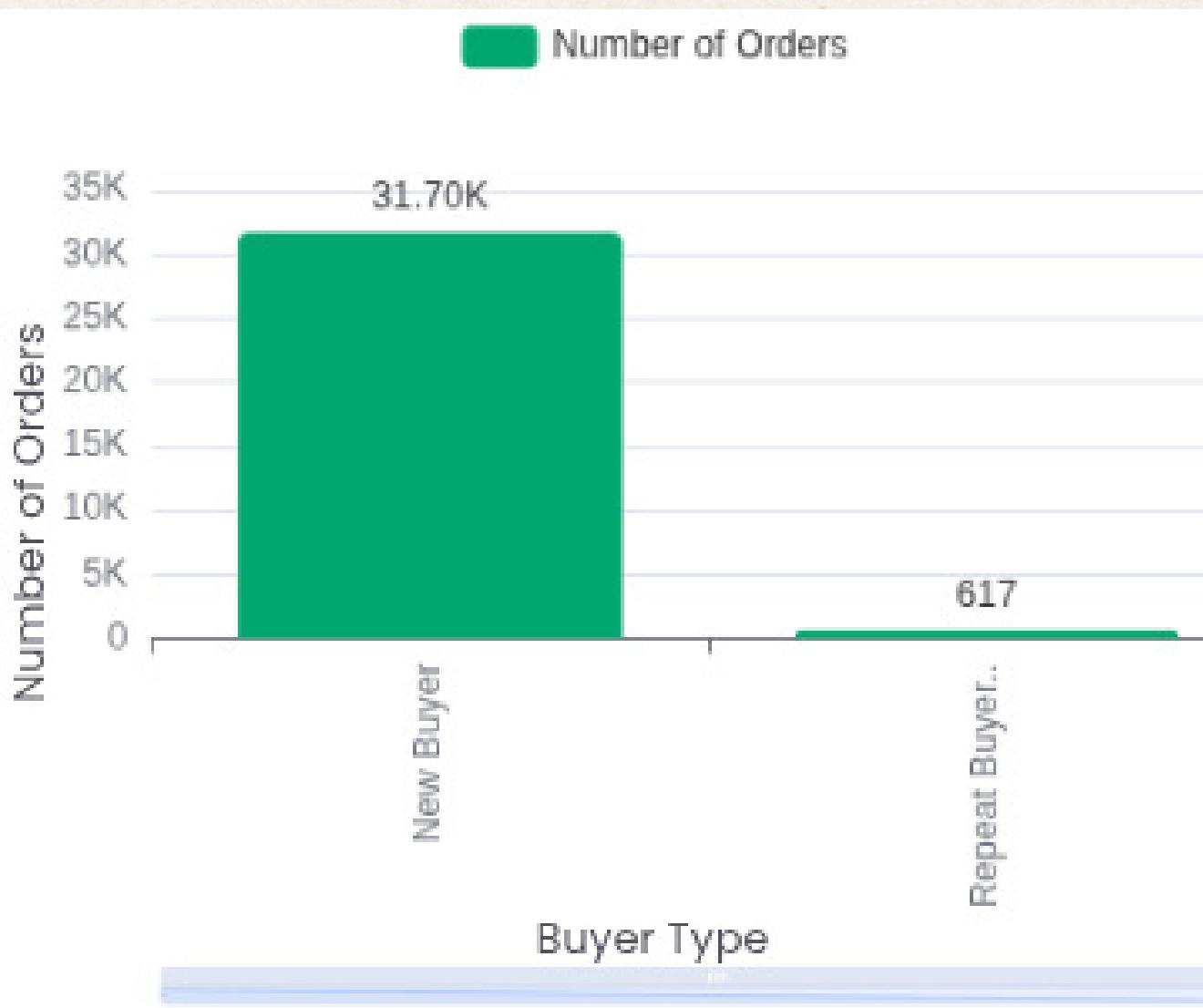


Top Performers:

- The **Original Mr. Fuzzy** leads with highest Total Revenue of **\$1,419,767.82**, highest Gross Profit of **\$879,952.00** and highest total refund amount at **\$61,837.63**, indicating significant customer dissatisfaction or product issues.
- The **Hudson River Mini bear** has the highest Profit Margin, indicating efficient cost management relative to revenue and the lowest total refund amount at **\$1,919.36**, indicating it may have fewer issues compared to other products, and the lowest refunds rate at **1.28%**, serving as a benchmark for lower refund incidences.
- The **Birthday Sugar Panda** has the highest refunds rate at **6.04%**, indicating a significant issue that needs immediate attention.

Customer and Orders Behavior

06/10

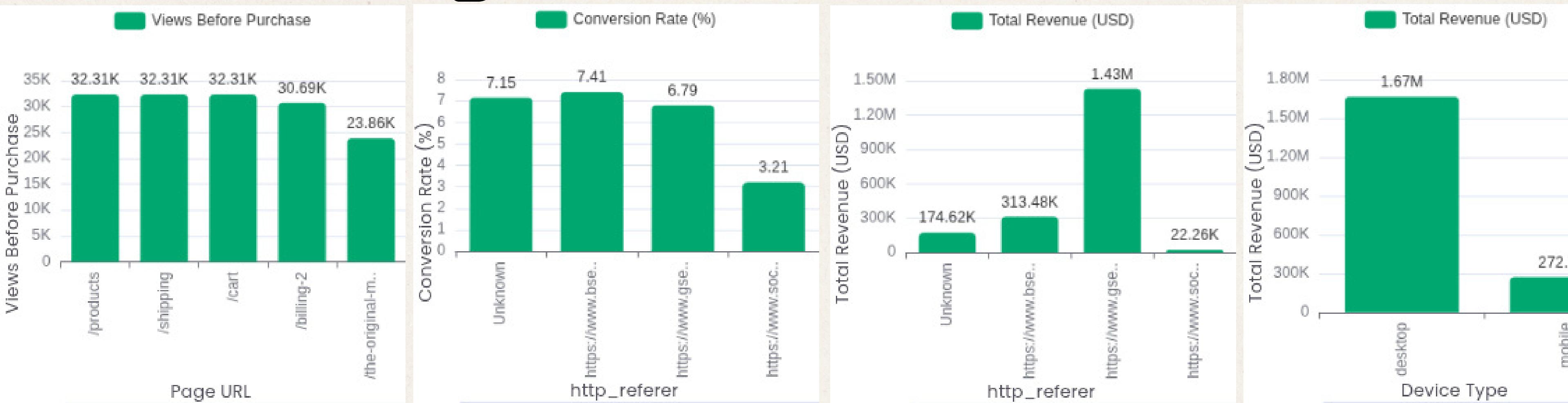


Top Performers:

- **New buyers** account for **98%** of total orders.
- **Repeat buyers** represent only **2%** of total orders.
- The dramatic increase in **2013** and peak in **2014** suggest effective marketing or product launches.
- The sharp decline in **2015** warrants investigation into potential market saturation, competition, or changes in customer preferences.
- Average orders per year stand at **8,078.25**, indicating a volatile but potentially high-reward market.

Marketing and Traffic

07/10

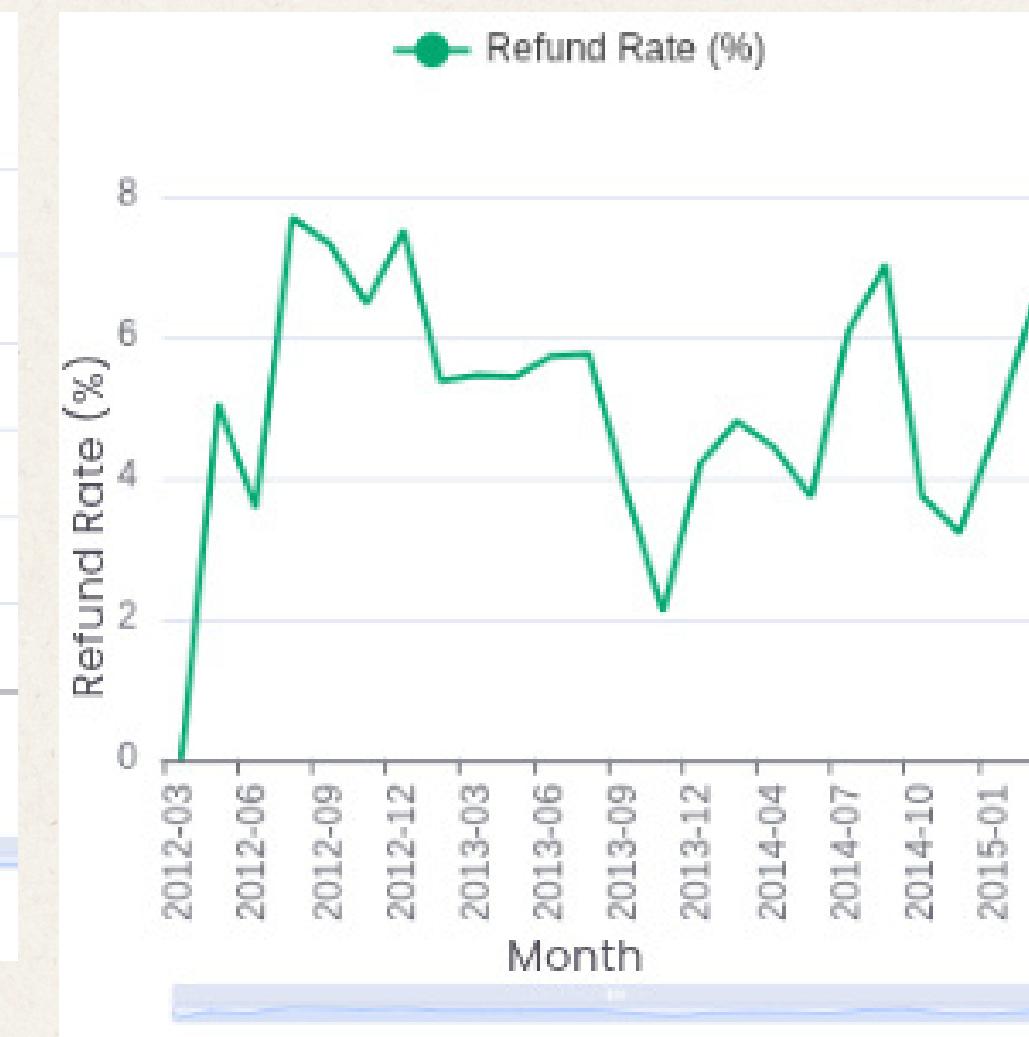
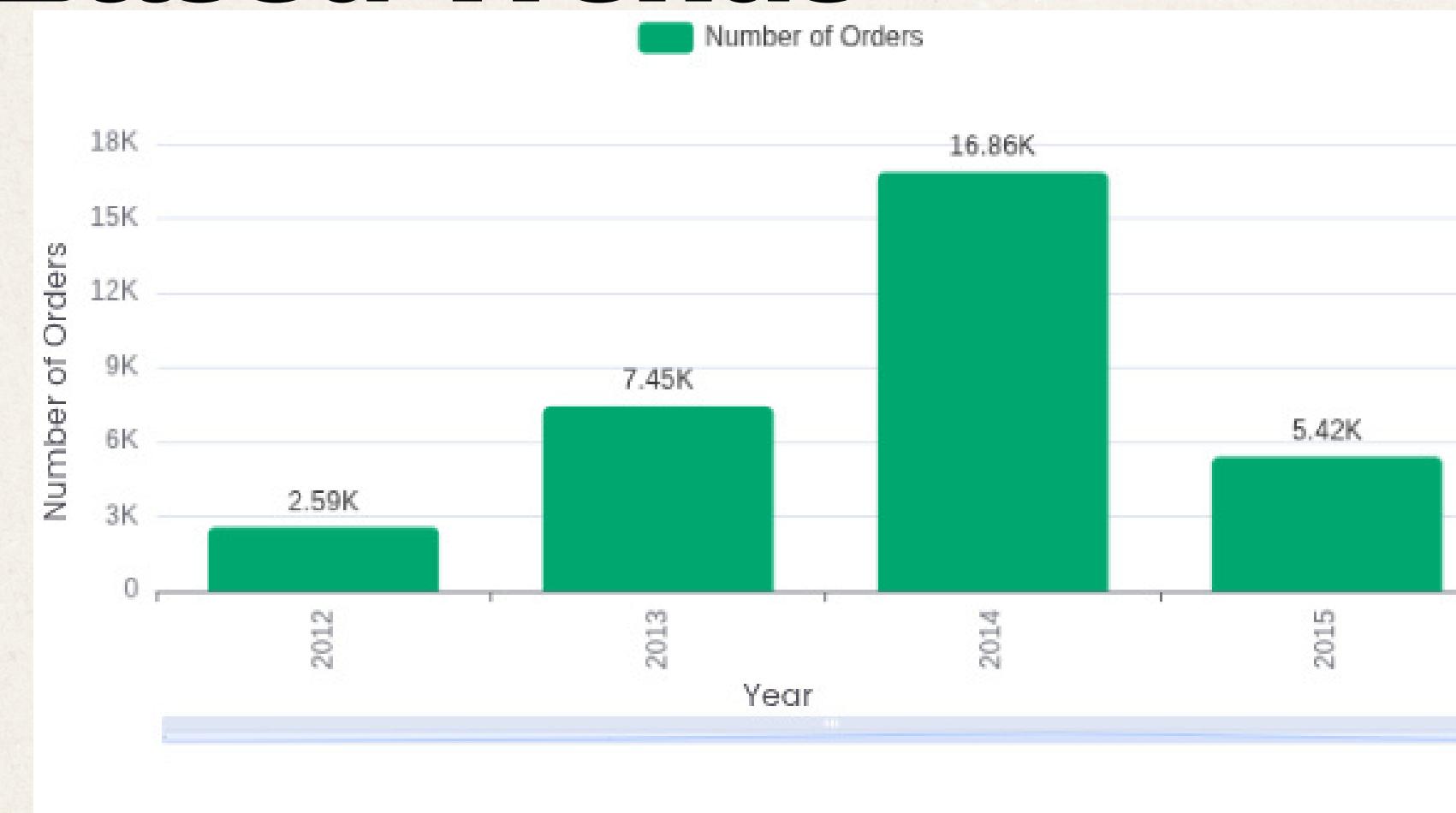
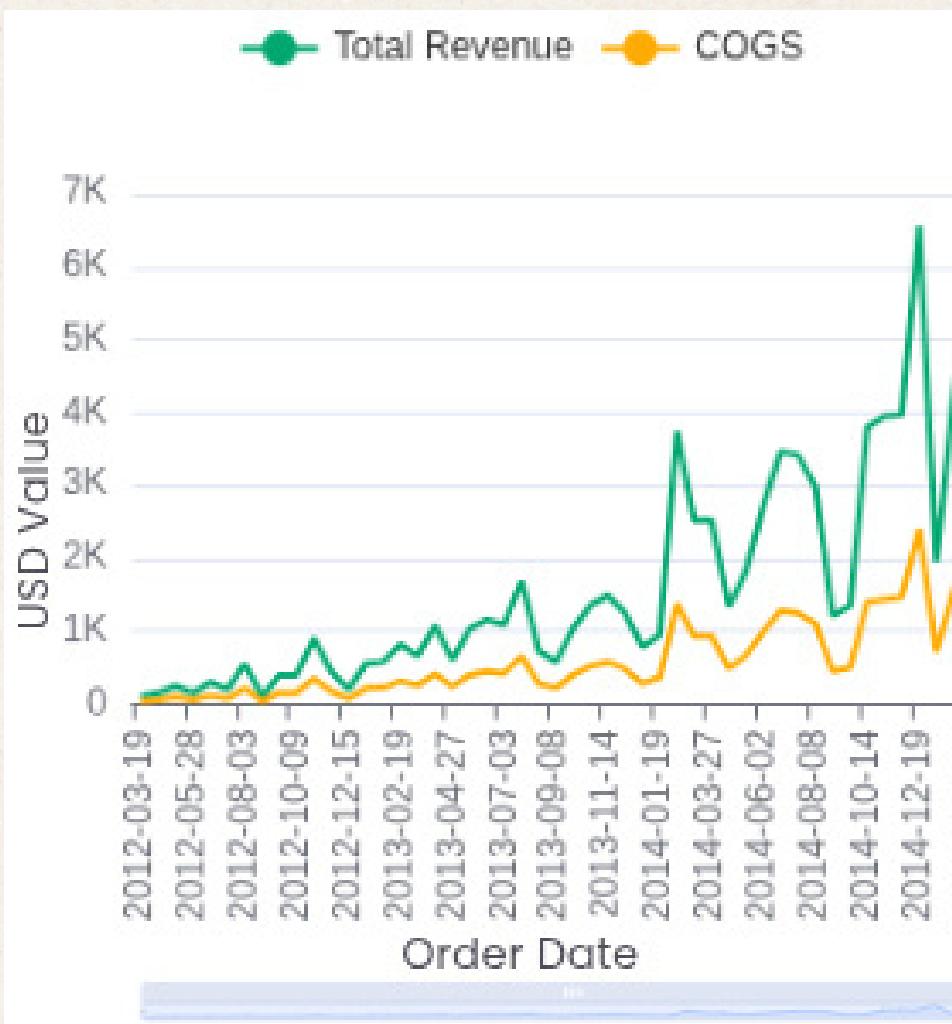


Top Performers:

- **/products, /shipping, and /cart** are viewed **32,313** times each, indicating these are essential stages customers go through before purchase.
- **/the-original-mr-fuzzy** has the fewest views at **23,861**, less influential in the purchasing decision compared to other pages.
- **Highest Conversion Rate:** Traffic from **https://www.bsearch.com** shows the highest conversion rate at **7.41%**.
- **Lowest Conversion Rate:** Traffic from **https://www.socialbook.com** has the lowest conversion rate at **3.21%**.
- **Highest Revenue Source:** **https://www.gsearch.com** generates the most revenue at **\$1,428,149.36**.
- **Lowest Revenue Source:** **https://www.socialbook.com** generates the least revenue at **\$22,259.33**.
- Desktop revenue is **nearly six times** higher than mobile.
- This suggests a strong preference or higher conversion rates on desktop.

Time Based Trends

08/10



Top Performers:

- Revenue consistently exceeds COGS, indicating a healthy gross profit margin. Average daily metrics show stable daily operations with revenue roughly **2.7 times** COGS.
- The stable revenue to COGS ratio suggests efficient cost management. Periods with higher revenue spikes may correlate with marketing campaigns or seasonal demand, worth investigating further.
- The dramatic increase in **2013** and peak in **2014** suggest effective marketing or product launches. The sharp decline in **2015** warrants investigation into potential market saturation, competition, or changes in customer preferences.
- The **average refund rate** of 5.31% indicates a consistent, though not insignificant, level of customer returns. The **maximum refund rate of 16.5%** in September 2014 suggests a period of heightened customer dissatisfaction or product issues. The **minimum refund rate of 0.0%** in March 2012 points to a period of exceptional customer satisfaction or fewer product issues.

Recommendations

Product Recommendations

- **Investigate high-refund products:** *The Original Mr. Fuzzy* and Birthday Sugar Panda show high refund amounts/rates. Conduct quality checks, review customer feedback, and address potential defects or expectation mismatches.
- **Leverage high-margin products:** *Hudson River Mini Bear* shows high profitability and low refunds; consider increasing inventory, promoting as a “low-risk” product, and using it as a benchmark for other product lines.
- **Optimize product portfolio:** Focus on products with consistent revenue and low refunds. Consider discontinuing or redesigning items with high refund rates to reduce losses.

Customer and Loyalty Strategies

- **Encourage repeat purchases:** Only **2%** of orders come from repeat buyers. Implement loyalty programs, targeted email campaigns, and personalized offers to convert new buyers into repeat customers.
- **Monitor new buyer trends:** Since **98%** of orders are from new buyers, ensure onboarding and post-purchase support are optimized to maximize conversion and satisfaction.

Recommendations

Marketing and Traffic Optimization

- **Invest in high-performing channels:** Traffic from <https://www.bsearch.com> and <https://www.gsearch.com> shows high conversion rates and revenue. Increase ad spend and campaigns targeting these sources.
- **Reevaluate low-performing channels:** Traffic from <https://www.socialbook.com> generates minimal revenue and low conversions; consider optimizing or reallocating marketing budget from under-performing sources.
- **Seasonal and campaign planning:** Revenue spikes in **2013-2014** and declines in **2015** indicate sensitivity to marketing and product launches. Plan campaigns around historically strong periods and investigate causes of declines.

Website and User Experience

- **Optimize key pages:** */products*, */shipping*, and */cart* have high views; ensure these pages are fully optimized for speed, usability, and conversion.
- **Improve product-specific pages:** */the-original-mr-fuzzy* has low views; consider enhancing content, images, or calls-to-action to increase engagement and purchases.
- **Device optimization:** Desktop drives six times more revenue than mobile; prioritize desktop UX but also improve mobile experience to capture more conversions.

Thank you

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