GA4 Ecommerce Analytics Case Study

❖ Project Overview

This project demonstrates hands-on experience with Google Analytics 4 (GA4) using the Google Merchandise Store demo account. The objective was to understand user behavior, traffic acquisition, funnel analysis, and device-based insights, as in real-world ecommerce environments.

Tools Used

- Google Analytics 4 (GA4)
- Google Merchandise Store Demo Account
- GitHub for project documentation

Objectives

- Analyze traffic acquisition channels
- Build and understand e-commerce funnels
- Evaluate device and geographic user behavior
- Extract actionable business insights

❖ Funnel Exploration

A closed funnel exploration was created using standard GA4 ecommerce events, including page_view, view_item, add_to_cart, begin_checkout, and purchase. The funnel helps identify user drop-off points and optimization opportunities across the purchase journey.
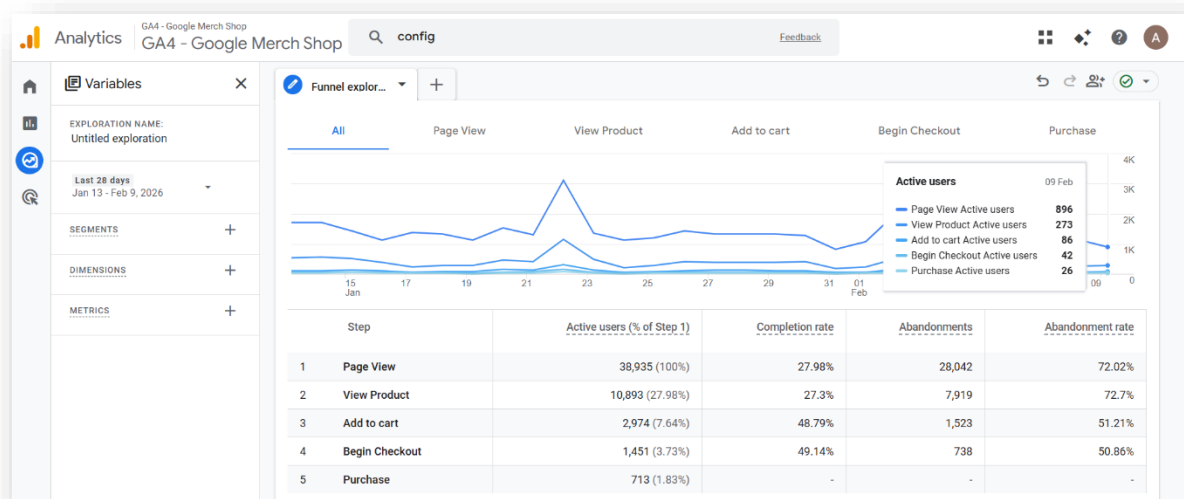
- **Analysis Performed**
  A closed funnel exploration was created using standard GA4 ecommerce events to track the user journey from product view to purchase.
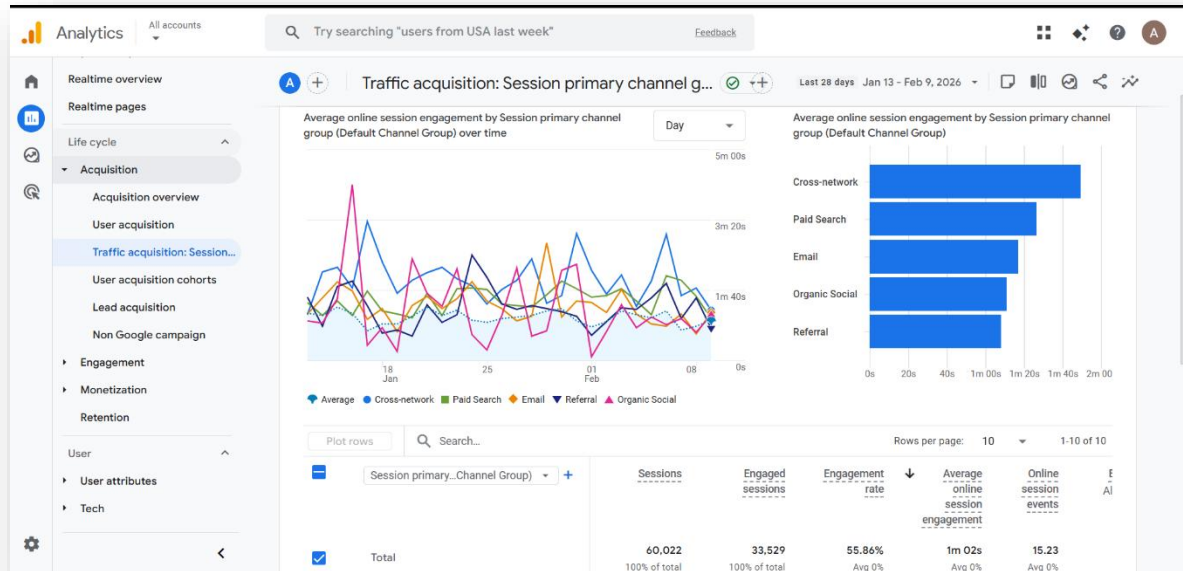- **Key Observations**
  A noticeable drop-off is observed between the add-to-cart and checkout stages, indicating friction during the purchase process.
- **Business Insight**
  Improving checkout usability, reducing form complexity, and increasing trust signals could help improve conversion rates.

❖ Traffic Acquisition Analysis

Traffic acquisition analysis was performed to understand how users reach the website. Channels such as Organic Search, Paid Search, Direct, and Referral were evaluated based on users, engagement, and conversion intent.

- **Analysis Performed**
  The Traffic Acquisition report was analyzed to understand how users arrive at the website across different marketing channels.
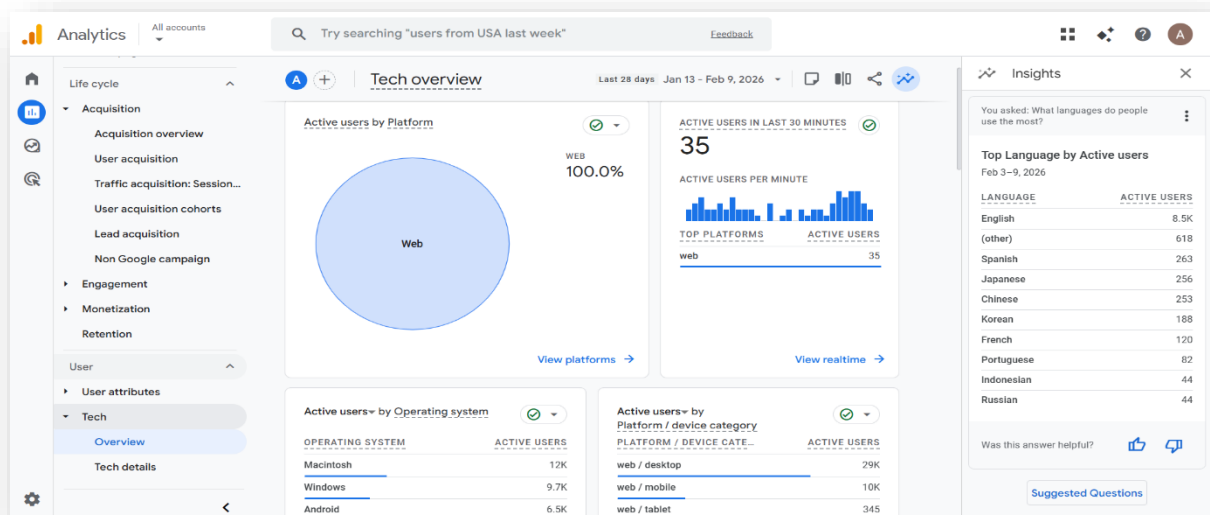- **Key Observations**
  Organic Search contributes the highest number of users, indicating strong SEO performance. Paid Search brings comparatively lower engagement, suggesting potential landing page or keyword alignment issues.
- **Business Insight**
  Investment in organic content and SEO should be continued, while paid campaigns require optimization to improve engagement and conversion efficiency.

❖ Device & User Analysis

Device category analysis compared user behavior across Desktop, Mobile, and Tablet users. Geographic analysis was conducted to identify top-performing countries and engagement trends.

- **Analysis Performed**
  User behavior was analyzed across different device categories to understand engagement and conversion differences.
- **Key Observations**
  Mobile devices drive a higher volume of traffic, while desktop users show stronger engagement and conversion performance.
- **Business Insight**
  Mobile UX optimization should be prioritized to reduce friction and improve conversions from high-volume mobile users.

❖ Geographic Analysis

- **Analysis Performed**
  Geographic data was reviewed to identify top-performing countries based on user engagement and conversion behavior.
- **Key Observations**
  The majority of users originate from a limited number of countries, with some regions showing higher engagement despite lower traffic.
- **Business Insight**
  Targeted localization strategies and region-specific marketing campaigns could unlock additional growth opportunities.

❖ Events & Conversion Understanding

- **Analysis Performed**
  GA4 event structure was reviewed to understand key user interactions and conversion tracking methodology.
- **Key Observations**
  Standard ecommerce events such as page_view, view_item, add_to_cart, and purchase form the foundation of conversion measurement in GA4.
- **Business Insight**
  Proper event implementation ensures accurate funnel tracking and reliable performance measurement across marketing channels.

❖ Challenges & Learnings

- **Challenges Faced**
  The GA4 demo account has restricted configuration capabilities, particularly within Explore reports.
- **Learnings & Approach**
  To overcome these limitations, a separate GA4 property was created to practice full configuration workflows, reflecting a realistic enterprise analytics environment.

❖ Conclusion

This case study demonstrates hands-on GA4 skills, including traffic analysis, funnel exploration, device segmentation, and business insight generation. The approach mirrors real-world analytics practices and supports data-driven decision-making.