Creating a Data-Driven Customer Analysis and Recommendation Tool for Onlineshops

Customer analysis and marketing tools are essential for businesses seeking to understand their customers and enhance their marketing strategies. Recognising the importance of these tools, POWDIENCE is planning to create a customer analysis application designed for the Shopify App Store. This project investigates the challenges businesses encounter and proposes a new application designed to enhance marketing effectiveness and deepen customer insights.

Introduction and Objectives

Customer analysis and marketing applications are critical for SMEs with online sales to refine their marketing strategies through data-driven insights. These tools help identify key target groups, highlight profitable products, and optimise marketing efforts. However, many existing applications necessitate advanced marketing knowledge, are expensive, or fail to provide clear recommendations. Addressing these challenges, this project aimed to develop a prototype for an accessible and affordable application for SMEs, offering clear, actionable recommendations based on data-driven analyses.

Research Design

To understand the marketing and customer analysis challenges SMEs face, six semi-structured interviews were conducted. These interviews revealed significant pain points and problems. Based on these insights, a set of application requirements was established, leading to the creation of an initial mock-up. This mock-up was subsequently validated and refined through feedback from SMEs. Leveraging these insights, a Python application was developed to process Shopify data, delivering various visualisations and key performance indicators and providing actionable recommendations for optimising marketing strategies.

Results

The developed prototype integrates Shopify's API to access relevant data, making it suitable for distribution through the Shopify App Store. The application retrieves data, stores it in a database, and offers 11 different time-based analyses, including customer lifetime value, target groups, and potential product bundling opportunities. It provides actionable recommendations based on insights from POWDIENCE, enabling businesses to conduct data-driven analyses and make informed marketing adjustments.

Implications and Recommendations

This thesis details the development of a prototype that incorporates essential features for customer analysis and marketing. By leveraging Shopify and machine learning technologies, the prototype delivers insightful analyses and recommendations, reducing the time and expertise required for effective marketing. The prototype's usability improves with increased customer interactions and product purchases on Shopify. However, the scope and accuracy of analyses could be enhanced by integrating supplementary data sources, such as social media. Implementing artificial intelligence could offer more personalised, customer-specific recommendations.
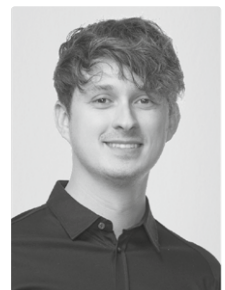
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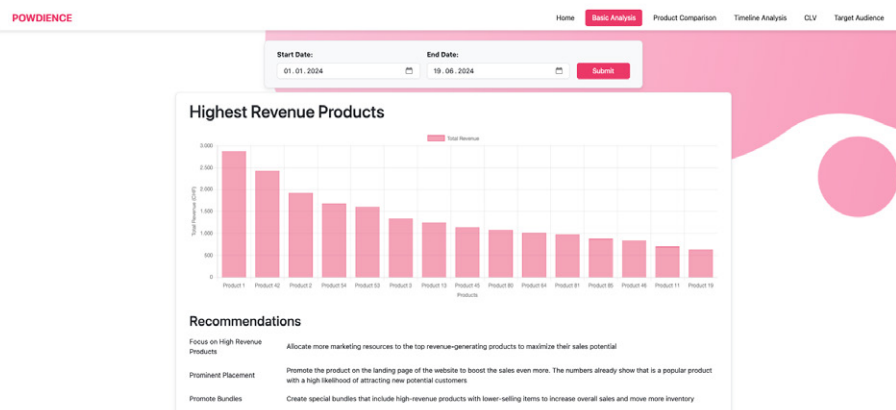Business Engineering
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Figure 1: Graphical User Interface of Customer Analysis Application