

Aerodynamic E-Commerce Funnel Analysis

Capstone 3 Final Report

Project Proposal

Along with my mentor I decided to preform a customer funnel analysis for an e-commerce platform Aerodynamic. The analysis followed customers through each step from first interaction with the website until purchase.

1. Home Page
2. Internal Search Page
3. Purchase Page
4. Purchase Confirmation

Important considerations included the conversion rates between each step, the overall conversion rate, and any notable features of the users the affect those outcomes. Additionally, I decided timeline analysis to see if these features are consistent over time, or if they differ depending on the date and time the users interact with the site (time of day, day of the week, quarter, etc).

The projects final product was a dashboard using Tableau Public distilling this information to the relevant stakeholders.

Problem Identification

Assist the management team of Aerodynamic in understanding their customer funnel from first interaction to purchase over a four month period that included a considerable loss in users.

Data Wrangling

I began with 5 separate datasets, one for each of the stages of the funnel with associated user id and date time and one containing each user's demographic and device information. I first set out to do basic validation between the datasets (matching dates, user id's, checking for null, unreferenced, or missing entries). I then removed the entries that fell outside of the window of analysis, and began merging the datasets together. This process resulted in a single dataset the tracked each user through the four stages of the customer funnel under consideration.

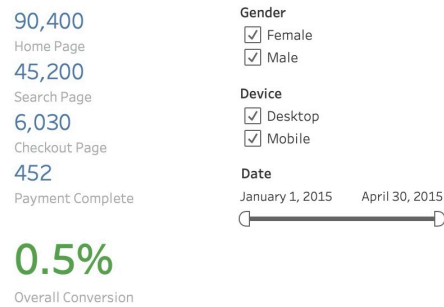
Exploratory Data Analysis

In exploratory data analysis, I focused primarily on whether any strong trends existed between user demographic or datetime information and their conversion rate through each step of the funnel. I then plotted the conversion rates and user numbers over time to see if I could gain any insights on time related trends. Finally, I reformatted the dataset so that it could be easily visualized in both timeline and funnel form.

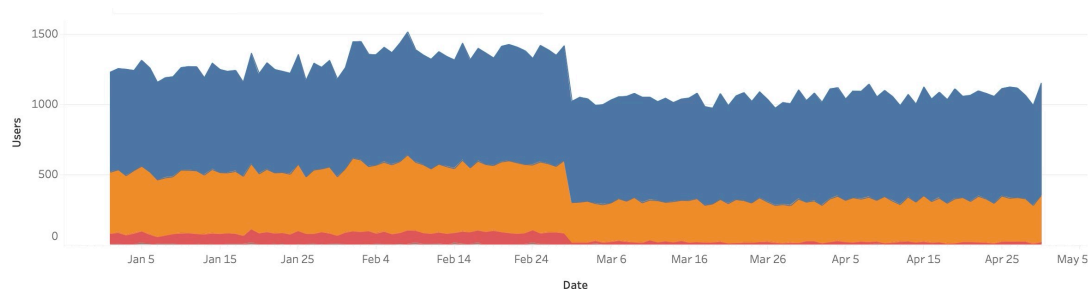
Modeling and Visualization

The Tableau visualization and analysis consisted primarily of piecing the information together in a visually comprehensible and accessible way. Each figure was designed to distill as much relevant information as possible without overwhelming non-technical stakeholders.

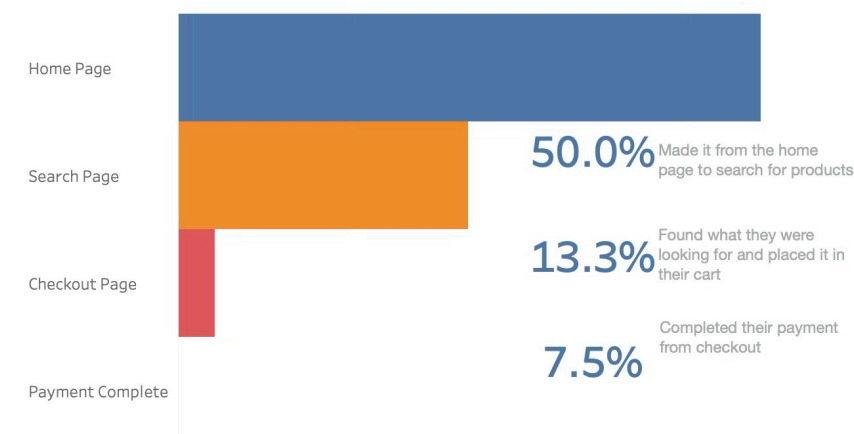
Dashboard Figures



On the user's left I placed all of the demographic and time filter controls, as well as a simple numerical readout of the number of users in each stage of the funnel and the overall conversion rate through the funnel.



On the bottom of the dashboard, I used the entire width of the page to give users the ability to visualize the trends in funnel behavior over time



Finally, on the right I placed the overall customer funnel, the conversion rate from each stage to the next.

Work To Be Done

Ultimately this project aimed to give the management team at Aerodynamic an accessible way to understand the overall shape of their customer acquisition funnel and how that funnel had changed over the four months analyzed. Further work to be done could include, but is not limited to: modeling user interactions over this time period and seeing if it is a good predictor of future user behavior, a more in depth analysis of the large drop of users at the end of February, and (with additional data inputs) a model that predicts the biggest impacts on user behavior to recommend beneficial future actions by Aerodynamic.