



Recommendations on Digital Marketing in Google Merchandise Store

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Executive Summary



Situation

The Google Merchandise Store is interested in acquiring new customers through digital advertising.



Key Issue

In order to maximize the effectiveness of digital advertising, the Google Merchandise Team has to identify new customers with high long-term value.



Project Objective

Develop a model to predict the long-term value of first time purchasers.

Provide recommendations to the Google Merchandise Team.



Recommendations

Focus more on ChromeOS users.

Allocate more budget to display channel and direct channel grouping.

Data Processing

CO Adding / Dropping Variables

By using Google Colaboratory, we applied correlation regression method to receive high correlation variables to insert into the initial model.

Exploratory Data Analysis

Channel - Direct



74%

'Direct Search' generates 74% higher average future revenue compared to other channels

Browser - Chrome



42%

'Chrome' browser contributed to 42% higher average future revenue than other browsers.

Conversion - Apparel



37%

'Apparel' has the highest proportion of new visit customer completing purchase



Point-of-Time



17%

of traffic is on **Friday**

10%

of traffic is between **5-7PM**

Model Training



MAE



Average Error

1

LightGBM

Faster training speed and higher accuracy
Lower memory usage

2

Hyperparameters

Tuning makes a huge difference to MAE

3

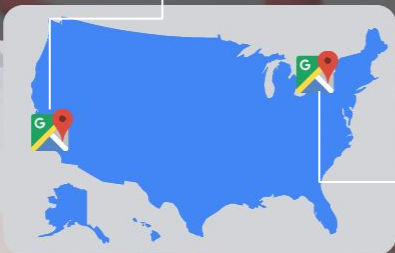
Variables

Added new variables help the model better predict future revenue

Main Takeaways And Recommendations

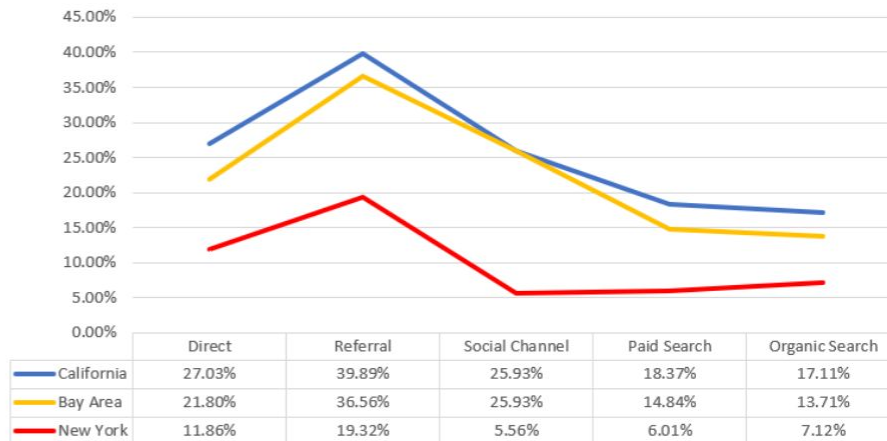
United States
40.36%
903652 Visitors

California
30%
\$19.9 millions



New York
14%
\$28 millions

Channel Usage by Location



Most Effective Channel Overall



Referral



Direct

Low Performance Channel

Paid Searches
California

Social Channels
New York

Organic Search
Bay Area

Main Takeaways And Recommendations

Mobile Users

10%

Non Mobile Users

90%

Chrome OS

8%

\$69 millions

Future Revenue by Product Categories



Apparel

44%

\$15.7 Million



Electronic

1%

\$98.8 Million

Main Takeaways And Recommendations



Strengthen partnership with influential bloggers or third-party merchandise, increase banner ads and image ads on their websites



Increase advertising spend on mass media in metro area (especially after work hours) to maximize the public impression (as direct search still contributes the highest average future revenue)



Focus on ChromeOS users as they are more likely to purchase Google products and services, and develop better relationships with loyal customers

A collection of Google-branded merchandise is displayed on a light gray surface against a yellow and white background. The items include three spiral-bound notebooks in blue, red, and teal, each with the word "Google" printed on the cover. A white spiral-bound notebook with the multi-colored Google logo is also present. Several pens and markers in various colors (red, green, blue, yellow) are scattered around, some with the Google logo. An orange lanyard with a silver clasp and the Google logo is laid out. A stack of colorful sticky notes and a small stack of blue notecards are also visible. The text "Thank You!" is overlaid in the center in a large, white, sans-serif font.

Thank You!