Marketing campaign analysis

# Targeting your ads - problem statement

Targeting ads is an essential part of a successful advertising campaign. You may have designed the perfect ad, but you'll need to show it to the right people at the right time to better reach your goal. Google Ads offers different ways of targeting your ads.

## Audience targeting

* **Demographics:** Target your ads based on how well your products and services trend with users in certain **locations, ages, genders, and device types**.
* **Affinity:** Advertisers with TV campaigns can extend a campaign online and reach an audience using Google Search or the Display Network.
* **In-market:** Show ads to users who have been searching for products and services like yours. These users may be looking to make a purchase, or have previously made a purchase and could still be interested enough to interact with your ads.
* **Custom intent:** Choose words or phrases related to the people that are most likely to engage with your site and make purchases by using "custom intent audiences." In addition to keywords, custom intent audiences lets you add URLs for websites, apps, or YouTube content related to your audience's interests.
* **Similar audiences:** Expand your audience by targeting users with interests related to the users in your remarketing lists. These users aren't searching for your products or services directly, but their related interests may lead them to interacting with your ads.
* Remarketing: Target users that have already interacted with your ads, website, or app so that they'll see your ads more often. These users can be in any stage of conversion, as long as they've visited your site or clicked on your ad before. These users may even return to complete a purchase.

## Content targeting

* **Topics:** Target one ad to multiple pages about certain topics at once. Topic targeting lets you reach a broad range of pages on the Display Network. Google Ads analyzes web content and considers factors such as text, language, link structure, and page structure. It then determines the central themes of each webpage and targets ads based on your topic selections.
* **Placement:** Target websites on the Display Network that your customers visit. If you select this type of targeting, we'll only look at your chosen sites ([**managed placements**](https://support.google.com/google-ads/answer/answer.py?answer=99502)) when searching for relevant sites. Unlike contextual targeting ([**automatic placements**](https://support.google.com/google-ads/answer/answer.py?answer=99463)), placement targeting doesn't require keywords. A placement might be an entire website or a subset of a site.
* **Content keywords:** Choose words that are relevant to your product or service to target users making searches using those same terms. You can tailor a set of keywords to manually reach certain demographics or meet specific goals. For instance, you can change your keywords to reflect seasonal interests or make the most of a sale.
* **Display expansion for search:** Let Google Ads find users for you with a combination of automated bidding and smart targeting. Display expansion works for both Search and Display campaigns, targeting high-performance moments for the best results.

# Analytics approach

A number of advanced analytics techniques can be applied to optimize ROI by using historical product purchases (and the results of previous campaigns if available) and demographics data of the existing customers.

### EDA

1. Data pre-processing
   1. Outliers
   2. Missing values
2. Visualization
   1. Histograms
   2. Correlation
3. *Feel free to try something new*

### Unsupervised learning

Using demographic data and behavioral data, we can segment customers into equal-weighted clusters using a clustering approach. Clusters will describe the common characteristics of similar users that could be paired with product purchases.

Steps:

1. EDA
2. Normalization (MinMax or (x-mean(x))/std(x))
3. KMeans, GMM, DBScan
4. # clusters calculation
5. Business interpretation of the clusters

### Supervised learning

Steps:

1. EDA
2. Normalization
3. Logistic regression, Support vector machine, XGBoost, Neural networks (Perceptron only)
4. Explainability techniques

### Hybrid approach

Association rules mining and hybrid approach

<https://www.kaggle.com/raphael2711/customer-personnas-with-apriori-algorithm>

## Expected output

The output of the analytics approach should be used as input for targeting purposes, therefore the idea is to have it as a list of important features. By features we are covering either raw attributes or derived features (for example age\_19\_30).

## Data and links

<https://support.google.com/google-ads/answer/1704368?hl=en> <https://www.facebook.com/business/ads/ad-targeting>

<https://www.kaggle.com/raphael2711/customer-segmentation-with-gmm-clustering> <https://www.kaggle.com/raphael2711/customer-personnas-with-apriori-algorithm> <https://www.kaggle.com/medyasun/who-are-the-term-deposit-customers-85-accuracy>, <https://www.kaggle.com/erykwalczak/eda-and-model-race-in-r-xgboost-etc> , <https://www.kaggle.com/antonias/bank-campaign-prediction>