Marketing Campaign Customer Selection

1. Problem Specification

Marketing campaign through phone calls is one of the most widely used strategies to reach out to potential customers and attract business across many industries. These phone-call based marketing campaigns are done by making phone calls to a pool of potential customers to promote certain products. Unfortunately, often it is necessary to contact the same client more than once. The biggest problem of this strategy is that while it takes a lot of time and energy to attract a new customer, more often people will feel uncomfortable about the repetitive phone calls and may even jeopardize the campaigning company's reputation.

The important question here is how to choose the pool of potential customer to increase success rate? If we can increase success rate of phone call marketing campaigns, less resource is required to attract each new customer and it is less likely to put the reputation of the company at risk.

Our approach to the problem is to analyze market campaign data with information about the background of customers and try to determine the specific profile of customers who will be more likely to subscribe. More specifically, our project is to propose a data mining approach to select the best set of clients that are more likely to subscribe a product through telemarketing calls. The classification goal is to predict if the client will subscribe a term deposit (variable y).

2. Description of Dataset

We selected the Bank Marketing dataset[1] from UCI machine learning repository. The data is related with direct marketing campaigns of a Portuguese banking institution. The marketing campaigns were based on phone calls. Often, more than one contact to the same client was required, in order to access if the product (bank term deposit) would be ('yes') or not ('no') subscribed.

It is a multivariate dataset with 17 attributes and 45211 instances. Attributes are:
Age; job; marital; education; default; balance; housing; loan; contact; day; month; duration; campaign; pdays; previous; poutcome; y

[1] http://archive.ics.uci.edu/ml/datasets/Bank+Marketing