

Leveraging customer information for strategic campaign in the banking industry

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1. Introduction

Capitalizing customer information is essential for the success of marketing campaigns in most businesses. In particular the banking industry spends large amounts of money and resources for marketing campaigns. Therefore, it is essential for banks to develop optimized marketing campaigns to reduce costs while maximizing effectiveness. One way to achieve this is to understand customer needs based on the available customer information. A list of important customer attributes (customer information) that are essential to strategic marketing campaigns are given in the dataset section below. The

2. Business problem

Our client is a Portuguese banking institution. They have brought us a dataset directly related to their marketing campaigns conducted through phone calls. The dataset is a CSV file named **bank-full.csv** and is publicly available in the [UCI Machine Learning Repository, which can be retrieved from here](#). The campaign was conducted over the period of time extending from May 2008 to November 2010 and collected data consist of:

- Demographics (age, job, education, marital status),
- Financial data (credit, housing loan, personal loan),
- Contact details (method of contact, month client was contacted, day client was last contacted, duration of last contact in seconds, **campaign** -- number of contacts performed during this campaign and for this client)
- Previous campaign data (**pdays**: number of days that passed by after the client was last contacted from a previous campaign, **previous**: number of contacts performed before this campaign and for this client, **poutcome**: outcome of the previous marketing campaign)
- Campaign outcome (**y** - has the client subscribed a term deposit?)

The data is at the client account level; in other words, there is one row for each client account where rows are labeled by whether the client has subscribed to a term deposit or not for a sample of 42511 clients contacted during the campaign.

3. Objective

In this project, our goal is to develop a predictive model for whether a client will subscribe to a term deposit or not. A term deposit is a fixed-term investment that includes the deposit of money into an account at a financial institution. Term deposit investments usually carry short-term maturities ranging from one month to a few years and will have varying levels of required minimum deposits.

The developed model will help the bank:

- Understand its customers and cluster them into meaningful groups based on their demographic and transaction information
- Predict customer response to its telemarketing campaigns
- Identify target customer groups for its future tele-marketing campaigns.

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4. Key data source

The dataset is a CSV file named [bank-full.csv](#)

The dataset is about the direct phone call marketing campaigns, which aim to promote term deposits among existing customers, by a Portuguese banking institution from May 2008 to November 2010. It is publicly available in the [UCI Machine Learning Repository, which can be retrieved from here.](#)