Optimizing Bank Marketing Strategies through Predictive Analytics and Customer Segmentation

Presentation By
Venkata Ram
Pranith Garlapati

TARGETED PROBLEM

- The targeted problem is the inefficient allocation of resources in bank marketing campaigns, resulting in low customer conversion rates for term deposit subscriptions.

- Many campaigns reach a broad audience, but only a small percentage convert into customers.

- The goal is to improve customer targeting by predicting which clients are most likely to subscribe to the bank's term deposit products.

- This will enhance campaign effectiveness, reduce costs, and increase customer engagement.

RESEARCH QUESTIONS

1. Based on historical data, which customers are most likely to subscribe to a term deposit product?

2. Which are the most influencing factors on the customer's conversion rate?

3. Can we find some sort of trends in customer behavior that could give us insights to use for our future marketing strategies?

4. Based on the value of a customer, what would be an optimum way to segment customers for targeted marketing efforts?

5. Which customer demographics or methods of contact are most effective at driving conversions?

DATASET

Source: Moro, S., Rita, P., & Cortez, P. (2014). *Bank Marketing [Dataset].* UCI Machine Learning Repository. https://doi.org/10.24432/C5K306.

Size: The dataset includes 41,188 observations (rows) and 21 variables (columns).

Description: The dataset contains customer information, such as age, job, marital status, and education level, as well as details about previous marketing campaigns, including contact methods, campaign outcomes, and economic factors. The target variable is whether the client subscribed to a term deposit product (yes or no).

TECHNICAL AND PERSONAL MOTIVATION:

From a technical point of view, this enables me to apply all the variants of machine learning models, such as logistic regression, decision trees, and random forests, to classification problems. It also allows ample opportunity for extended EDA and interesting insights into customer behaviors.

What personally drives me in this project is the potential consequence it can have on business decision-making by improving it, and helping make a better, more focused, and thus efficient marketing strategy.

MOTIVATION

The motivation for this project would be to enable the banks to draw data-driven decisions from the marketing strategy. By predicting customer behavior, banks can more effectively allocate resources to drive superior conversion rates in their campaigns. This is also a great opportunity to apply Machine Learning techniques to the solving of real-world problems in the financial industry.