

ADS-505 Team Project Form & Business Brief Templates Team Project Form

Fill out this form and business brief and submit it by the end of Module 3 in Blackboard (2 pages max for each). Reference the file, “Final Project Business Brief Requirements.doc.”

Team Number: Team Number 3

Team Leader/Representative: Halle Davis

Full Names of Team Members:

1. Halle Davis
2. Zachariah Andrew Freitas
3. Mackenzie Carter

Title of Your Project: Predicting Customer Churn: Bank Customers

Short Description of Your Project and Objectives: Our project is to predict customer churn for a multinational bank. Our objective is to identify which customers are predicted to churn such that the bank can target them to maintain their relationship.

Name of Your Selected Dataset and Programming Language:

Data: Bank Customer Churn Prediction.csv

Data Source: <https://www.kaggle.com/datasets/gauravtopre/bank-customer-churn-dataset>

Programing Language: Python

Description of Your Selected Dataset (source, number of variables, size of the dataset, etc.):

Our dataset comes from Kaggle. The Kaggle description states that the data is from ABC Multistate. Bank, and while it isn't explicitly stated, it's possible that it is dummy data. It has 10 thousand rows and 19 variables. Nine of the variables have no missing values. The other nine features have little to a lot of missing values that will need to be handled.

Provide your team GitHub link here:

https://github.com/ADS-505-F22-Applied-Data-Sci-for-Biz/Final_Team_Project

How many times have your team members met so far? Two times in Zoom and multiple times over Slack.

What was the agreed-upon method of communication? Are you using any teamwork project management software, such as [Deepnote](#), [Trello](#), or [Asana](#)? If not, explain why?
agreed to use Zoom to have weekly meetings and check-ins. We also agreed to use Slack for our informal communication. We've also agreed to use GitHub to help us manage tasks and our code.

Comments/ Roadblocks: No roadblocks at this time – we are currently in the data cleaning/pre-processing and EDA phase. That has been going smoothly both in terms of teamwork and code.

Team Project Business Brief

Purpose:

In business, it is always more expensive to acquire new customers than to maintain current customers, meaning that maintain your current customer base and avoiding customer churn is of utmost importance to maintain revenue efficiently. The purpose of this project is to identify which bank customers are predicted to churn such that the bank can target the customers with relevant offers and relationship maintenance communication to avoid that churn, therefore retraining that profit stream. Our recommendation is to use machine learning or other data science models to identify the customers who are predicted to churn based on historical data about who churned and information such as gender, age, tenure, balance, and more.

Background:

As a smaller bank, ABC Multistate bank understands that maintaining a customer is estimated to be 5-25 times cheaper than acquiring a new customer. In fact, increasing customer retention by 5% can increase profits from 25-95% (The economics of E-loyalty). As a result, ABC Multistate Bank has always had a vested interest in maintaining its current customer base, nearly spending as much on maintaining customers as it does on advertisements for new customers, through special offers and relationship maintenance communication.

Current Situation:

Historically, to avoid churn ABC Multistate Bank has simply given special offers and sent relationship maintenance communication to all customers. However, they have found that they are losing valuable profit by sending special offers to all customers, including those who are not likely to churn. As a result, the CEO of ABC Multistate Bank wants to strike a balance between maintaining customers and losing money on offers. As a result, it is our recommendation that we use machine learning to identify the people who are likely to leave and only give special offers to that subset of the customer population.

Conclusion:

In conclusion, it is our recommendation to use machine learning or other data science models to identify the customers who are predicted to churn based on historical data about who churned and information such as gender, age, tenure, balance, and more. Once identified, this particular subset of the worker population will be targeted with special offers and relationship maintenance communication. By doing this, ABC Multistate Bank will strike a balance between maintaining customers and not losing money on special offers.

Sources:

The economics of E-loyalty. HBS Working Knowledge. (n.d.). Retrieved September 24, 2022, from <https://hbswk.hbs.edu/archive/the-economics-of-e-loyalty>