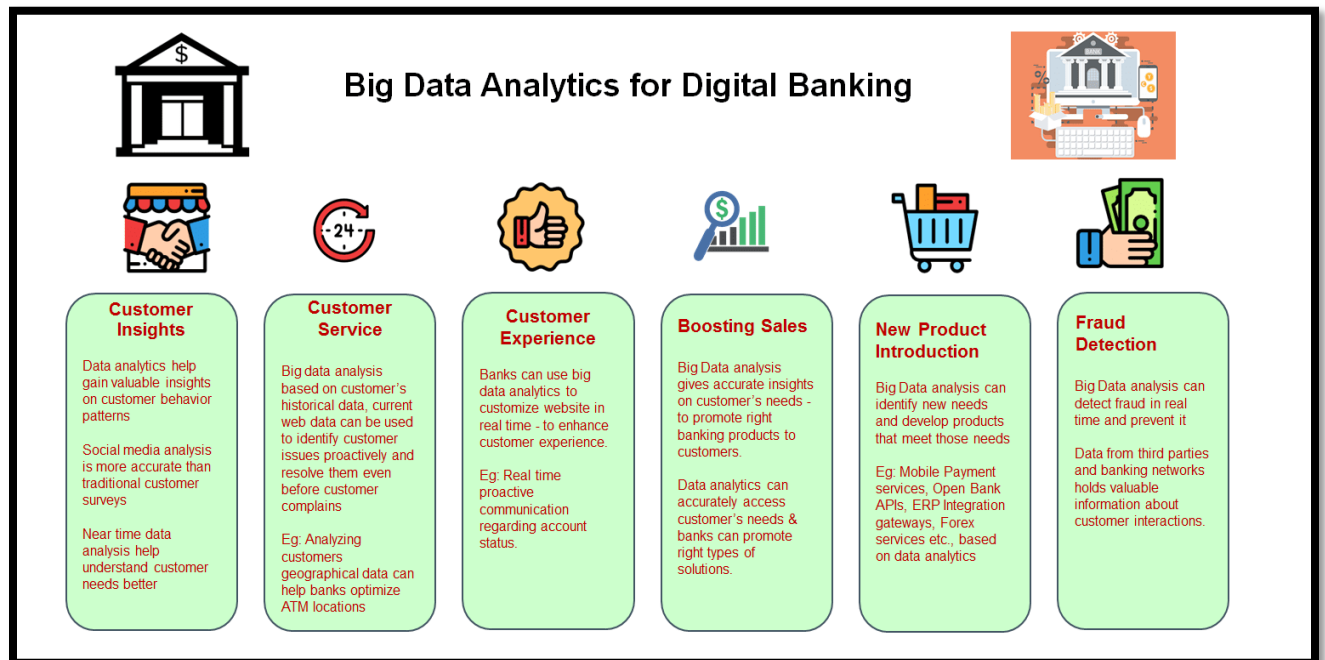


Personal Loan Prediction

Big Data and AI are quickly pushing their way to the top of the banking industry's list of priorities for digital transformation. This is not very unexpected given that by 2023, banks may save an estimated \$447 billion in total costs thanks to AI applications (Business Insider).

Customer insight and personalized campaigns that are made specifically for each individual by leveraging the vast amount of information available in terms of both structured and unstructured data that constitute a customer's digital footprint are two of the main ways artificial intelligence and machine learning have enhanced the BFSI Industry.

The figure demonstrates the different benefits that Big Data Analytics enabled by AI provide for digital banking.



Digital Banking Personalized Campaigns

Banks can understand current client requirements and foresee future ones by analyzing personal and transaction data. The capacity to convey such information to customers contextually is added through personalization. The most apparent use of these methods is to improve sales targeting and efficacy following a business strategy.

A high current account balance may indicate interest in a fixed deposit, a low balance with upcoming bills may indicate the need for a personal overdraft, frequent visits to the mortgage

loan information page may indicate plans to buy a home. Frequent travelers may be interested in travel insurance, a fan of fine dining may value discounts at a well-known restaurant, etc.

Numerous options exist to use personalized cross-selling or merchant-based promotions in conjunction with customer-centric data analytics.

In this research, we make an effort to forecast the likelihood that a personal loan offer to a potential client for a Bank would be successful.

Context

The management of a fictional bank in this example is looking at ways to turn its liability clients into personal loan customers (while retaining them as depositors). A successful conversion rate of over 9% was seen in a campaign the bank executed for liability clients last year. Because of this, the retail marketing division has been inspired to design campaigns with better target marketing to boost success rates with little investment.

Description of Data

Data on 5000 clients may be found in the file Bank_Personal_Loan_Modelling.csv. The information includes the customer's age, income, and other demographics; the customer's connection with the bank; and reaction to the most recent personal loan campaign (Personal Loan). Only 480 (or 9.6%) of these 5000 clients accepted the personal loan presented to them during the previous campaign.

Attribute Information

- ID: Customer ID
- Age: Customer's age in completed years
- Experience: No. of years of professional experience
- Income: Annual income of the customer (\$ 000)
- ZIP Code: Home Address Zip Code
- Family: Family size of the customer
- CCAvg : Avg. Spending on Credit Card per Month (\$ 000)
- Education: Education Level. 1: Undergrad; 2: Graduate; 3: Advanced / Professional
- Mortgage: Value of house mortgage if any. (\$000)
- Personal Loan: Did this customer accept the personal loan offered in the last campaign?
- Securities Account: Does the customer have a securities account with the bank?
- CD Account: Does the customer have a certificate of deposit (CD) account with the bank?

- Online: Does the customer use internet banking facilities?
- Credit card: Does the customer use a credit card issued by this Bank?

Objectives

- Analyzing Exploratory Data
- preparing the data for a model's training
- Using a classification model to train and forecast
- Model assessment