QUALCO

Predictive Analytics Use Cases

How to Prevent Fraud, Increase Subscriptions & Optimise Campaigns

USE CASES

Contents

Introduction

As financial portfolios grow increasingly complex, financial institutions face mounting challenges in managing and optimising their assets and liabilities. This complexity demands innovative and precise strategies. Thanks to technological advancements, particularly in predictive analytics, powerful tools are now available to tackle these challenges head-on.

In this report, we dive into three compelling use cases demonstrating the transformative power of QUALCO Data-Driven Decision Engine Each case offers a clear example of how this advanced analytics platform and AutoML can help financial institutions to effectively exploit data-driven insights to:

Detect the Probability of Fraud

Leveraging predictive analytics, QUALCO Data-Driven Decision Engine enhances the ability to detect and prevent fraudulent activities among new applicants.

Assess the Likelihood of Subscription

QUALCO Data–Driven Decision Engine employs machine learning to identify customers likely to subscribe to a term deposit, facilitating targeted marketing efforts.

Forecast Campaign Click-Through Rate (CTR)

Our solution comprehensively analyses marketing campaign parameters to forecast potential click-through rates (CTR), thereby improving campaign effectiveness.

USE CASE **01**

Detecting the Probability of Fraud

Financial institutions often face the challenge of identifying fraudulent account openings, which can lead to regulatory compliance issues, resource misallocation and significant financial losses. By leveraging predictive analytics, institutions can enhance their ability to detect and prevent fraudulent activities among applicants.

Our Approach

A financial institution aimed to assess the likelihood of fraudulent activity in new account openings using the QUALCO Data-Driven Decision Engine (D3E). The platform automatically identified critical segmentation parameters, including:

- **Applicant's current residential status**
- **Duration of stay at the current address**

QUALCO D3E IN ACTION

Step 1 Model Development

We developed a robust machine-learning model to determine the likelihood of an account supporting fraudulent activity. Key predictors selected by QUALCO D3E included:

- **Applicant's annual income**
- **Duration of the previous account**
- **Number of months at the current address**
- **Application velocity (Average number of applications per hour in the last four weeks)**
- **Possession of other cards from the same banking company**
- **Validity of the provided home phone number**
- **Applicant's proposed card limit**

Step 2 Assess Fraud Probability

Based on the identified predictors, the model effectively detected applicants with a high probability of opening fraudulent accounts. To further understand the patterns associated with fraudulent activities, we analysed various applicant characteristics and their correlation with fraud. The insights gained are summarised as follows:

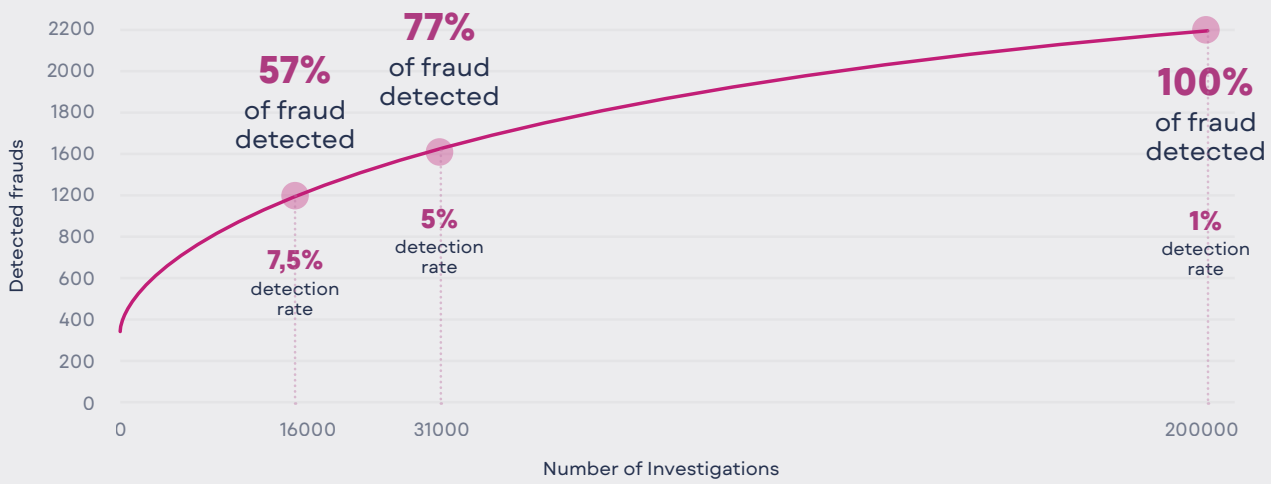
- **Higher-income applicants** were 96% more frequent compared to the general population
- Fraud was 141% more frequent in **applications with higher proposed credit limits**
- An **invalid home phone number** was 21% more frequent
- **Applicants without other cards from the same bank** were 18% more frequent
- An **internal risk score over 200** was 139% more frequent
- Fraudulent applicants often exhibited **multiple high-risk characteristics simultaneously**

One in four applicants exhibiting these characteristics simultaneously is likely to commit fraud

Step 3 Risk Prioritisation & Audit Strategy

The model's predictions enabled the client to prioritise audits based on application risk, focusing on the most high-risk cases first. Validation against applications with confirmed fraudulent or lawful activity allowed the client to adjust the intensity of investigations according to their capacity, business and regulatory constraints:

Fraud detection based on resource allocation across 200K applications with 2,500 confirmed cases



Results

Identified 70% of frauds by auditing just 15% of the portfolio through targeted outreach.

Saved $0.47 million (31%) in costs associated with investigating fraudulent activities.

Improved resource allocation, focusing resources where they are most needed.

Increased customer satisfaction and loyalty through targeted audting.

USE CASE **02**

Assessing the Likelihood of Subscription

Banks often face challenges in identifying which customers will likely subscribe to a term deposit. By harnessing predictive analytics, they can pinpoint these customers and apply targeted marketing efforts effectively.

Our Approach

Using QUALCO Data-Driven Decision Engine (D3E), a bank predicted the probability of its customers subscribing to a new service, enabling precise targeting and efficient allocation of marketing resources. The most prevalent segmentation parameters that lead to segments with homogeneous behaviour, driven by the same factors, are:

- **Number of days since the last contact from a previous campaign**
- **Communication channel**

QUALCO D3E IN ACTION

Step 1 Model Development

We built a robust machine-learning model to determine the likelihood of a customer subscribing to a financial service. Key predictors selected by QUALCO D3E included:

- **Customer's age**
- **Number of contacts performed during the current campaign**
- **Number of days since the last contact from the previous campaign**
- **Consumer confidence index**
- **Previous marketing campaign outcome**
- **Communication channel**

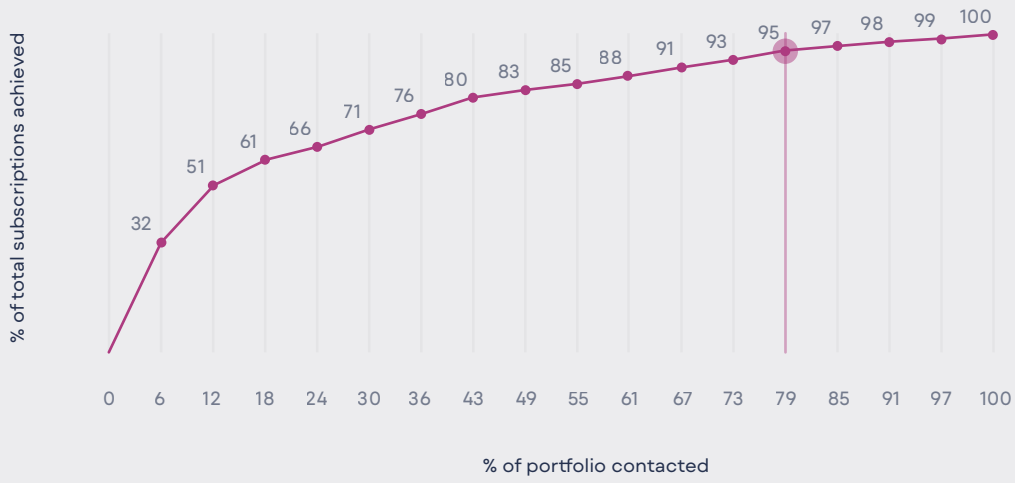
Step 2 Assess Subscription Probability

The model identified which customers were likely to subscribe to a service or product after being contacted. It also discovered the driving factors that outline the characteristics distinguishing responsive customers from the general population. For instance, subscriptions were:

- **90% higher** among those contacted in the previous campaign
- **15% higher** among those who were contacted only once during the campaign
- **19% higher** among single people
- **44% higher** among those contacted via cell phone

Step 3 Risk Prioritisation & Marketing Strategy

Validations against past contact attempts with known outcomes allowed the client to quantify the expected number of subscriptions and adjust the size of the target group according to his budget and capacity.



95% of subscriptions were achieved with just **79%** of the effort

A significant proportion of subscriptions can be secured with minimal effort by targeting the right customers

Results

Secured 95% new subscriptions by targeting only 79% of the portfolio.

Minimised expenses by eliminating non-targeted marketing campaigns.

Reduced agents' efforts by 21% by applying targeted contacts.

Improved customer satisfaction and loyalty.

USE CASE **03**

Forecasting Campaign Click-Through Rate (CTR)

Financial institutions often struggle to assess marketing campaigns' effectiveness and return on investment. Ineffective campaigns lead to wasted resources and missed opportunities. Predictive analytics can forecast a campaign's potential click-through rate (CTR) and improve its effectiveness.

Our Approach

Using QUALCO Data-Driven Decision Engine (D3E), a bank forecasted a campaign's click-through rate. The most prevalent segmentation parameters that lead to segments with homogeneous behaviour, driven by the same factors, are:

- **Campaign's product**
- **Length of the subject line**
- **The number of Call to Actions (CTAs), quotes, and images used**

QUALCO D3E IN ACTION

Step 1 Model Development

By identifying customer segments with similar behavioural characteristics, QUALCO D3E's machine learning capabilities enabled the platform to produce accurate predictions regarding the effectiveness of marketing campaigns. Integrating additional predictors significantly enhanced the quality of these predictions in some instances. Notably, the performance of several campaigns was also affected by predictors related to:

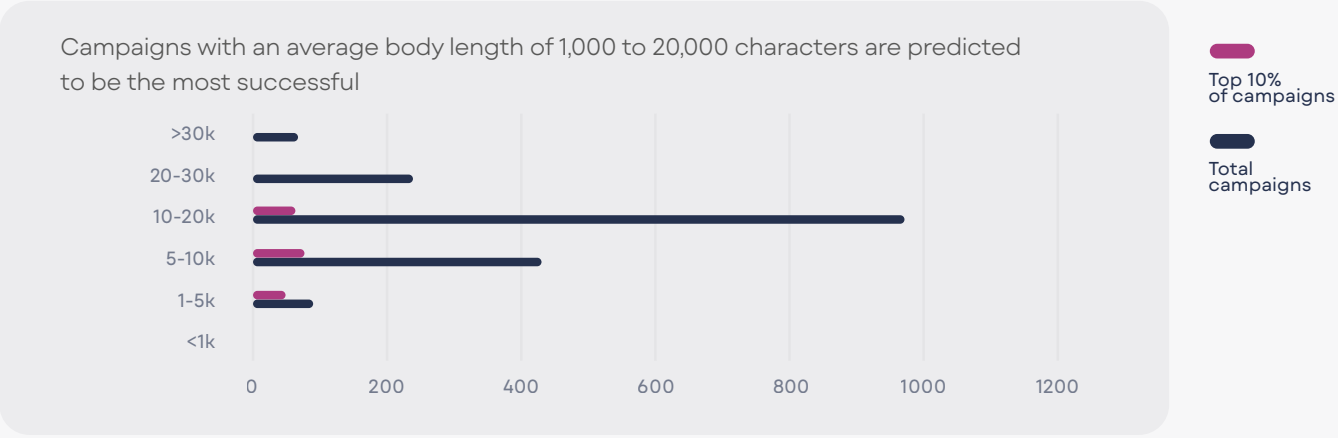
Weekend launch

Number of quotes

Step 2 Campaign Ranking

The model ranked the campaigns based on click rates and identified the most successful ones. It found that the most successful campaigns had:

- **An average body length of 1k-20k characters. Notably, campaigns with an average body length of up to 5k were more likely to be successful.**



- **None or just one Call to action (CTA)**

Step 3 Campaign Redesign

The model identified several factors that can lead to improved marketing campaign success rates by up to:

- **68% when scheduling campaigns for weekends**
- **82% when sending campaigns in the morning**
- **37% when omitting the use of quotes**
- **12% when avoiding the use of emojis**
- **15% when keeping CTAs between 10-30 words**

Results

Improved customer loyalty and returns through effective campaigns.

Applied a strategic approach to sales and marketing using predictive insights.

Enhanced customer acquisition by improving campaign effectiveness.

About
QUALCO Data-Driven Decisions Engine

QUALCO Data-Driven Decision Engine is an integrated decision-making platform that automates every stage of the credit portfolio and collections analytics workflow. It empowers:

- → **Data Organisation** to keep track of one's portfolio's changes easily
- → **Data Processing** to transform and sequence data for analytical insights
- → **Machine Learning capabilities** to understand customer behaviours and segments
- → **Tailored Treatments** to customise actions for various customer groups, enhancing performance
- → **Strategic Insights** to shape treatment strategies and estimate their impact on profitability
- → **Regulatory Compliance** by generating compliance reports based on analysis results

Designed for any business that manages credit, QUALCO Data-Driven Decision Engine equips financial institutions and servicers with the tools to transform raw data into actionable insights. By leveraging advanced analytics and machine learning algorithms, organisations can unlock untapped potential, drive operational efficiency, and deliver exceptional customer value.

Ready to unlock sustainable growth with QUALCO?

Contact us

www.qualco.eu