# PREDICT PAYMENT DEFAULT USING MACHINE LEARNING



## BUY NOW, PAY LATER!

Lending is one of the main activities of banks across the world and all lendings can be broken down into secured and unsecured loans. Unlike secured loans (car loan/mortgage), unsecured loans (credit card or student loan) are not protected by collateral/security i.e. if the borrower defaults on loan, the bank can't reclaim any collateral.

According to 2018 "Global Financial Stability Report" by International Monetary Fund (IMF), global debt stands at $237 trillion. And for Banks, giving credit is their principal business.

So, with profitability on one hand and risk of default on the other, traditional statistical methods of risk management do not provide accurate predictions. This is where Artificial Intelligence (AI) and Machine Learning (ML) models provide superior capabilities.

Below are few specific applications of AI and ML in the lending industry.

## Building Credit Scores

AI powered underwriting solution helps companies assess borrowers who have a little or no credit history. The custom scoring model utilizes alternative scores, based on psychometrics, social scores, etc. that traditional underwriting systems cannot. This helps lenders accurately predict risk and reduce losses by more than 25%.

## Viable Underwriting Platform

Traditional models of underwriting focus on handful of credit attributes. But, applications of advanced algorithms and technologies can analyze thousands of data points from credit bureau sources to predict credit risk for any consumer accurately. By implementing such solutions, payment default rate has reduced from 32.8% to 6.5%.

## Predicting Loan Defaulters

Predictive models analyze large volumes of historical payments data and then accurately determine which customers are unlikely to make their next payment. This valuable information can be used to prioritize bank staff to focus on high-risk customers, prepare the bank for upcoming defaults and as an early-indicator for identifying potential issues with the underwriting process.

## Automate the Credit Evaluation

The process of gathering and analyzing borrower information in order to assign a delinquency score is still done manually that can take days or even weeks. Quadratyx Cognitive Document Analyzer, Scanalityx, streamlines the credit assessment process to less than 10 minutes and thereby increases loan application processing volumes.

Lets take a look at how Quadratyx Predictive Delinquency Model helped a commercial bank detect loan defaults at early stage.

A publicly held top financial and banking services company wanted to identify and deploy new model that could detect and predict default behaviors of their credit card customers in the next 12 months and create clusters based on the level of delinquency.

## Solution

The bank approached Quadratyx to design, build and deploy a predictive delinquency model that would combine the bank's past statistics model-based credit scores with Machine Learning based algorithms.

The scope involved exploring the potential AI technology, by leveraging the bank's historical credit card data, to evaluate the risk of credit card delinquency based on the client's personal characteristics and their spending behavior.

The solution involved improving existing Logistic Regression based models and applying new Machine Learning (ML) algorithms to better predict risks.

## Benefits

➤ Quadratyx solution increased hit-rate by 8 base points, creating a deterrent for delinquent behavior.

➤ Provided banking executives the power to generate personalized customer insights from data.

➤ Quadratyx team ensured that the model was seamlessly installed without the need to overhaul the existing IT systems.

➤ Eliminate manual activity, which saved valuable time and money.

## For more information on AI & ML solutions within risk management space

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