

VANA FINANCIAL SERVICES

Predict Loan Default Risk



THE CHALLENGE

Vana Overseas Corporation (VANA), a Central American lending company, suffers from a very high default rate (over 20%) despite using their own sophisticated financial assessment tools. While they recognized that many defaults resulted from real financial difficulties; they suspected that many other defaults resulted from borrower' behavioral characteristics, such as high-risk takers, poor planning skills, impulsiveness, low integrity, or bad repayment habits—habits not identified by Vana's approval process which is completely financial, i.e. credit score, payment history, repayment capacity, financial strength.

Vana wished to explore the possibility of assessing applicant's behavior characteristics during the lending approval process. The ability to predict high risk borrowers would reduce their default rate.

But Vana was aware that applicants would not voluntarily expose high-risk traits during an approval process.

THE SOLUTION

Vana chose Voicesense to evaluate the potential for Behavior Prediction Vocal Analysis technology to assess high-risk personalities. Voicesense used their Loan Default Predictor tool to create risk classification scores for applicants based on their voice.

Initially Vana wanted to evaluate the

accuracy of Voicesense's predictive tools. A validation study consisting of 4706 phone interaction recordings of real customers that received loans was used to test the system. Voicesense ran call recordings from actual loan approval conversations through their vocal analysis technology. These recordings were from customers whose loan period had already ended, thereby enabling Voicesense to use their Machine Learning to calibrate a predictive tool based upon knowledge of the default outcome (yes/no) for the approved loans.

The model was then applied to a blind testing sample. VANA was then able to compare the predictive classifications from Voicesense to the actual default outcome.

THE RESULTS

Voicesense classified customers into three categories based upon default risk predictions: High, Neutral and Low Risk. About 20% of the borrowers were classified as High Risk, 60% as Neutral Risk and 20% as Low Risk.

The results demonstrated a default rate among the High-Risk

borrowers of 33.2%--Twice as high as the default rate among the borrowers classified as Low Risk.

The assessment proved to be highly significant statistically and more importantly for VANA, very meaningful commercially. Based on the successful assessment, VANA chose to use the Voicesense Loan Default Predictor early in their loan approval process, and with the use of acoustic speech analysis has reduced their default rate by 5%.

"Hello, my name is Sebastian Ibarguen, I'm the CEO of Vana, a provider of micro loans in South America.

Our experience working with Voicesense was excellent. We found it as most effective as an AI predictive loan default tool, and more importantly from a business perspective.

We apply our own AI analytics, yet our data science research team showed that Voicesense's behavioral voice analysis improved our predictions significantly. It actually reduced our default rate by about 5%"