

AI Improves Profitability at Paraguay Bank

Visión Banco saves time and increases accuracy of its models using AI and machine learning, leading to increased revenue

Based in Asunción, Paraguay, Visión Banco provides financial services to small and micro-sized companies in its home country. The bank offers credit card services, remittances, utility and tax collection services, pension plan contribution plans, and payment transfer services.



Data scientists at Visión Banco were performing business intelligence using traditional techniques, such as dimensional modelling and moving data to a warehouse using extract, transform, and load (ETL). The team knew it needed to expand its services and offers to customers, easily determine credit risks, and do so with accuracy and speed. It also wanted to enhance its practices by implementing predictive analytics, such as to

predict customer payment default or churn, but could not do so at scale without a new tool or plan.

The data science team first hired an external consultant who developed a model using IBM SPSS Software, a process that took a year. Then the team started using open source tools R, H2O, and Openscoring.io, which allowed the data scientists to deploy models in Predictive Model Markup Language (PMML) format—an industry standard for data models. Yet predictive analytics were still taking considerable time and effort.

Engaging with H2O

It was then that Ruben Díaz, Data Scientist at Visión Banco, joined a beta test of H2O Driverless AI. At first, he was simply testing Driverless AI to see how it might perform in building models for the bank. Díaz entered a contest to start a proof of concept for Driverless AI. For the contest, he used the beta software to build models to assess churn prediction—and he ended up placing in the top 10. “Through this process, I really saw the potential of the tool,” says Díaz.

Automatic Machine Learning Capabilities of H2O Driverless AI

H2O Driverless AI automates complex modeling tasks, including:

- Feature engineering
- Model tuning and stacking
- Machine learning interpretability reports and scoring pipelines

Challenge

A South American bank needed to expand its credit services to customers and easily determine credit risks—with speed, accuracy, and scale.

Solution

The bank deployed H2O Driverless AI software on IBM Power Systems.

Results

- Cut time to build models from 6 months to less than a week
- Doubled customer propensity to buy rate

The process of data science is heavily reliant on building models—which takes time and expertise to perfect. Better models can ultimately lead to real business improvements, like enhanced projections.

Quick deployment was also a factor for Visión Banco. “The deployment part for data scientists is sometimes forgotten,” explains Diaz, “but it’s very important. It’s the way the model comes to life.” The ease of H2O deployment impressed Diaz and Visión Banco.

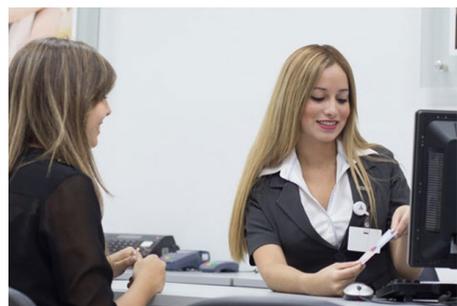
Solution specifics

Specifically, Visión Banco implemented H2O Driverless AI, H2O.ai’s automatic machine learning platform. H2O Driverless AI empowers data scientists and data engineers to work on projects faster and more efficiently by using automation and state-of-the-art computing power to accomplish tasks that otherwise can take months. Deployment can potentially be reduced to hours or minutes by delivering automatic feature engineering, model validation, model tuning, model selection and deployment, machine learning interpretability, time-series, natural language processing (NLP), and automatic pipeline generation for model scoring. At Visión Banco, the H2O software runs on IBM Power System AC922.

“When we switched to H2O we changed the way of deploying models too,” explains Diaz. Visión Banco switched from PMML format to H2O’s MOJO format.

Results: Saving time, improving accuracy, and doubling customer propensity to buy

Since deploying H2O.ai’s software on IBM Power Systems, Visión Banco’s data scientists have saved time and increased revenue by building and deploying models that improved the accuracy of the credit risk model and have



doubled the number of customers who’ve bought a credit product.

Using H2O, the bank doubled its customer propensity to buy rate. “This outcome was a surprise for us,” says Diaz. With better targeting, the number of customers accepting offers doubled as compared with traditional modeling.



H2O Driverless AI

H2O Driverless AI employs the techniques of expert data scientists in an easy-to-use application that helps scale your data science efforts. It empowers data scientists to work on projects faster using automation and accomplish tasks in minutes rather than months.

Features:

- Automatic feature engineering
- Automated modeling tuning and optimization
- Automatically generated scoring pipelines
- Accurate time series capabilities
- Automatically generated visualizations and data plots

“With Driverless AI, we gain more time because we accelerate the process of building predictive models—and with better accuracy. In the past, you could average 6 months or more just for the process of building the models. Now it is less than a week!”

Ruben Diaz

Data Scientist at Visión Banco

By the numbers, Visión Banco saw:

- **Time savings:** “In the past, you could average 6 months or more just for the process of building the models,” says Diaz. “Now it is less than a week!”
- **Accuracy improvements:** With tighter models, the bank estimates it can realize millions in additional revenue by being better able to target offers.
- **Doubled results:** The bank doubled its customer propensity to buy rate using H2O Driverless AI.

Looking ahead to building more models

Today, Visión Banco is performing additional testing in preparation to migrate or convert all of its models to Driverless AI. It’s starting by evaluating historical data and soon will move fresher data in to verify the results.

“We started using H2O Driverless AI for critical use cases: propensity to buy, default prediction, and credit risk scoring,” says Diaz. “We plan to use the platform for more use cases in the future.”



ABOUT H2O

H2O.ai is the creator of the leading open source machine learning and artificial intelligence platform trusted by hundreds of thousands of data scientists in over 18,000 enterprises globally. Our vision is to democratize intelligence for everyone with our automated machine learning Driverless AI platform. For more information and to learn more about how H2O.ai is transforming businesses with AI, visit www.H2O.ai.