Churn Prediction – Predictive Analytics - Automation

CONTEXT

Henner wanted to accurately identify which of their customers were at risk of cancelling their coverage plans. They had a lot of historical customer information - their coverage plans and which customers churned in the past. Henner wanted to set up a predictive analytics system to estimate the likelihood of future churn based on the patterns hidden in their historical data.

Getting their hands on this knowledge on a timely basis would mean not missing the warning signs, quickly reaching out and provide the personalized attention needed to relieve possible concerns and retain these customers.

CHALLENGE

Henner starting by using Microsoft Excel ® spreadsheets, then added predictive algorithms and scripts. They encountered several production, performance and maintenance. The process was manual, painful and error prone, and didn't have the right alerting mechanism. They were consequently, ungracefully and tardily trying to determine which customers would potentially cancel their plans. It took days to find potential churns, resulting in possible cancellations often not dealt with on a timely matter.

They envisioned instead, a predictive analytics application, which would be fully automated, with excellent data management and robust modeling capabilities. The application would need to deal with source data scattered across disparate systems, with different formats and dissimilar update rules. The data scientists wanted to be able to try different predictive models, and easily compare results, before sending out the final outputs to the business teams.

Henner wanted a simple solution that was easy to learn, with an application interface that non-technical users could understand and access from anywhere. They wanted an application that could easily scale, with guaranteed up-time, and which require no hardware investments and maintenance. This application would need to be totally secure and keep all the data confidential, to protect their customers' personal information.

Given their requirements, Henner determined early on that the application should be Cloud-Native. But, they didn't have the resource nor the time to build such a sophisticated application in-house. After doing a build vs. buy analysis they decided to use an existing platform to set-up and deploy their application, instead of building it from scratch.

The Henner Group is the largest international healthcare benefits company in France, providing employee coverage plans for organizations and NGOs across the globe. It provides group medical insurance coverage, claims processing, and offers a large network of medical providers - over 49,000 in 166 countries.

In the United States, Henner's proposes access to some of the largest national networks such as Aetna and United Health Care, and Dentemax for dental care.

With 1,550 employees and 200.5 million euros in revenue, Henner protects the health of 2.1 million people.

KEY OBJECTIVES

Reduce customer churn

Improve customer relations

Increase competitiveness

KEY RESULTS

Automated, daily predictions

Integration of a CRM and a corporate system SQL data source

First delivery: 3 weeks

Total staff needed: 4 engineers

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SOLUTION

Henner considered multiple options, including building the application using Azure or Google services. They decided that is would be much quicker and cost effective to use the Cloud-Native ForePaaS Platform (on top on Azure). It was the only solution that checked all their requirement boxes.

Henner hired a consulting firm, which dedicated 4 engineers to work on the data models, fine-tune the system and set-up the application. The first Data Pipeline <https://www.forepaas.com/en/blog/data-pipelines-ai-pipelines-1/> and proof-of-concept was built very quickly: in just 3 weeks. The data engineers easily established a variety of data source connectors and data cleansing steps. The data sources included SQL servers with client records, and their corporate CRM system with email campaigns.

The ForePaaS Platform's collaborative environment allowed the data scientists to work with the data engineers to set up different predictive models. They quickly were able to score the models, calculate the risks of contract modification and make accurate recommendations. The application also analyzes if health costs of individuals are rising or lowering.

Data security is paramount, especially when dealing with personal health information. The ForePaaS Platform was set up not to reveal the identity of the individual customers. The engineers just see random identification numbers and all personal information such as first and last names, family member names, Social Security Numbers, addresses and phone numbers are suppressed from dataset before processing. Reconciliation of the predictions with the individual customers is done only in the transactional IT system, for contacting purposes.

Today the system runs every night and outputs predictions every morning. The dataset reached terabytes, with more than 150 million lines, and it is still growing.

Using behavioral patterns, the ForePaaS Platform is giving Henner more advanced insights, as individuals' lives evolve over time, than they previously had. The dynamism and automation of the platform, offers significant gains in efficiency. Henner quickly identifies customers who may be unhappy with their coverage plans, and acts in accordance with the churn risk. If the churn is deemed high risk, or the value of the client high, the Henner call-center will contact the clients directly. Customers that are low risk will be reached by personal email or through email campaigns. Henner has been able to not only retain customers, but also increase customer satisfaction.

Going forward, ForePaaS could play a bigger role within the company, as other use cases are envisioned to get Henner AI-powered. For example, the ForePaaS Platform is being considered for yield management risk prediction for highly volatile insurance product. Gaining actionable insights into all aspects of their businesses, will save Henner time, and money, and give them a definite stronger competitive advantage.