H2O Powers Intelligent Product Recommendation Engine at Transamerica Case Study
Summary

For a financial services firm like Transamerica, sales and marketing efforts can be complex and challenging, with many product and customer variables that have to be taken into account. To gain the insights needed to more intelligently manage these efforts, the organization established a big data environment on Hadoop—and then they turned to H2O. With H2O, Transamerica could quickly establish the machine learning models that enabled the organization to gain maximum insights from its big data investments.

The Challenge

Transamerica is a full-service financial services institution, providing offerings in such areas as insurance, mutual funds, annuities, and retirement. Today, Transamerica serves more than 27 million customers. In serving this massive customer base, the organization had accumulated massive volumes of customer data. The organization’s leadership understood that there was a significant opportunity to be realized by more fully leveraging its data.

In order to realize its key objectives—including enhancing customer service, improving customer satisfaction, and better exploiting cross sell and up sell opportunities—the organization’s staff and agents needed to better understand and anticipate the needs of its customers. However, given the complex, multi-faceted nature of the products Transamerica offers, it can be very difficult for advisors and customers to determine which is the right product. This is particularly true in areas such as life insurance, investing, and retirement planning, where there are a lot of dynamic and interrelated variables. This complexity also made it difficult for marketing and sales teams to tailor campaigns and sales programs effectively to the unique needs of customers and prospects.

USE CASE

Product Recommendation

INDUSTRY

Financial Services

CHALLENGES

• Factoring in multiple product and customer variables to help provide optimal product recommendations.
• Quickly leveraging massive data sets in order to improve marketing and sales efforts.

SOLUTION

• Established big data stack in Hadoop environment, aggregating data from many disparate data sets.
• Employed H2O running in Hadoop cluster.
• Enabled analysts to work with R, while leveraging complete data sets in the big data stack.

RESULTS

• Built and demonstrated product recommendation prototype within a couple weeks.
• Gained insights that can fuel improved product recommendations, fostering improved services and revenues.
• Enabled multiple teams of analysts to leverage same tools and datasets, helping spur future innovation across the organization.
The Solution

The team at Transamerica had spent a year in building a big data environment, aggregating a massive amount of data into their Hadoop platform. The goal was to establish a unified marketing and analytics platform.

The organization’s big data hub incorporated a broad range of data sets, including customer data, Web analytics, CRM data, and enrichment sources purchased from third parties. After ingesting data, the team profiled the data, and then they profiled it again after had been transformed and cleansed. During these processes, they leveraged tools to ensure proper mapping of identities, so, for example, if a name was misspelled or an address was incorrect in one data source, the information would still be correctly mapped to the proper individual. In addition, to address the organization’s security and compliance objectives, they employed data masking and deletion to remove any personally identifiable information.
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- Vishal Bamba, VP Innovation & Architecture Transamerica

“Through this process we created a set of managed views that enable us to leverage data that is cleansed and ready for consumption,” said Vishal Bamba, Vice President Innovation & Architecture, Transamerica.

The team then set out to employ machine learning to start harnessing the managed views they’d created within their big data implementation. For this, they chose H2O, an open source predictive analytics platform. Unlike traditional analytics tools, H2O offers a combination of sophisticated math, high performance parallel processing, and unrivaled ease of use. For the team at Transamerica, the features of H2O translated to exceptionally fast delivery.

“By working with the H2O team, we were able to get operational very quickly, and have a few teams of data scientists using the cluster running on Hadoop,” Bamba revealed.

H2O can be deployed and run virtually anywhere, including on end user machines and within the big data environment. Bamba and his team elected to implement H2O directly on the Hadoop cluster.

Bamba explained, “While many users opt to run H2O locally on their machines, running the solution on the cluster itself worked well for us. We were using R. With H2O, we could continue to work with our existing R environments, but now we could access all the data sitting in the cluster. This made it easy to harness a wealth of information, while leveraging our existing skills and investments.”

With H2O, Transamerica analysts and data scientists could easily experiment with different algorithms. They ultimately found GBM worked best for their regression testing.
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The Results

With H2O, the team at Transamerica could gain the intelligence that has the potential to enable better campaigns to customers and prospects, more effective cross- and up-selling, improved customer service, and increased revenues. Now for example, an agent selling insurance can more intelligently map product variables, such as term and face value, to the specific needs of a customer. Perhaps most important was the speed with which these insights could be realized.

“The power of H2O is in how quickly we could turn this around,” Bamba revealed. “H2O enabled us to harness our investment in our big data stack, and to quickly build a machine learning model to do intelligent product recommendations. We started with a sample data set and literally had a working prototype in a couple of weeks. The real beauty of this is in how simple it was. This simplicity speaks to quality of H2O and how fast you can get started once you have the data.”

With H2O, Transamerica will be poised to accelerate innovation.

“Ultimately, my team is responsible for innovation,” Bamba explained. “With H2O, we can quickly mock up innovative ideas and showcase them to other teams. Plus, across our organization, we have a lot of software engineers, data scientists, and business analysts. By giving all these individuals access to the same data and the same toolset, we believe we can foster more innovation across the business.”
About H2O.ai

H2O is the #1 open source machine learning platform for smarter applications. H2O.ai is the silicon valley software company supporting and developing H2O. Leading insurance, healthcare and financial services companies are using H2O to make smarter predictions about churn, pricing, fraud and more. H2O.ai is fostering a grassroots movement of systems engineers, data scientists, data developers and predictive analysts to move machine learning forward. A rapidly growing community of H2O users is now active in more than 5,000 organizations worldwide. H2O.ai is a Gartner Cool Vendor in Data Science for 2015.