Helping Global Food Retailer Increase Purchasing Baskets 23 Percent

"Big data is becoming the basis for a better understanding and assessment of the market and consumers. Our Cloudera solution with this global retailer illustrates how getting an edge over the competition is as easy as analyzing existing data."

— Aleksander Fafula, Manager, Data Science, PwC Poland

Overview

PricewaterhouseCoopers (PwC) is a leading professional services firm offering audit and consulting services to clients from all sectors in 157 countries around the world. PwC Central and Eastern Europe (CEE) is made up of 8,500 employees across 29 countries. PwC CEE is helping a global food retailer implement a customized big data analytics platform based on Cloudera's modern data platform and Apache Hadoop to drive revenue and lower warehouse costs.

The Cloudera solution makes it possible to analyze customer behavior and advertising effectiveness for the global food retailer. Previously, this food retailer did not have this visibility. Now they can now coordinate their advertising campaigns and shelf placement strategies perfectly to meet customer needs. The results are higher revenues, lower warehouse costs, and more intensive customer communication.

Impact

In the past, department heads at this global food retailer had to rely on their instinct and experience to plan their advertising use. With the new platform, they can now include a variety of factors, such as budget, seasonality, price fluctuations, and specific targets, in their considerations for making better and more comprehensive decisions. For example, they can now determine the most promising time to advertise a specific product.

Using the PwC-delivered Cloudera platform, the food giant has achieved rapid results. The average end-consumer purchasing volume, in key product groups, rose by up to 23 percent within six months. During the same period, warehousing costs sank by 15 percent. Response rates from end consumers to marketing actions jumped impressively by as much as 150 percent.

"The analysis involves minimal effort for the client," said Aleksander Fafula, manager, Data Science at PwC Poland, who implemented the Cloudera solution for the global food retailer with his team. "The only data that needs to be processed is already stored in the IT systems in the form of electronic receipts, where the format, quantity, and scope are irrelevant."

Dashboards enable department managers to distill this data and easily view who bought what items, when, where, at what price, and under what conditions. "Asking questions is really easy and reports are generated so fast that the managers now use the dashboard every day," said Fafula. "They can also access these dashboard on their mobile devices."

This speed and flexibility enables the retailer to test consumer behavior, such as whether a customer's purchase of a brand of chocolate increases overall sales and the impact on the sales of the chain's own brand. This insight positively influences negotiations with manufacturers and future advertising campaigns.

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Key Highlights

Industries
- Business Services/Professional Services

Location
- Headquarters: Poland (New York, NY HQ of Parent Company PwC)

Business Applications Supported
- Business Intelligence

Impact
- Up to 23 percent increase within six months of average end-consumer purchasing volume
- 15 percent decrease in warehouse costs
- Up to 150 percent increase in response rates from end consumers to marketing actions
- Approximately 20 percent increase in both customer satisfaction and sales orders

Data Sources
- Receipts in a digital form

Solution
- Components: Apache Flume, Apache Hive, Apache Impala (incubating), Apache Spark, Apache Sqoop

Big Data Scale
- 30 TB computationally expensive time series

By matching product advertising and the in-store assortment to the purchasing behavior of the consumer, the retailer can now address customer needs more efficiently. Customer satisfaction and sales orders have both increased by about 20 percent.

Business Drivers

Large quantities of data need to be analyzed before a department head can make informed decisions about the composition of their product range and the advertising campaign budgets. PwC found that its conventional database platforms could not provide this analytics power at a reasonable speed or cost.

"Cloudera's Modern Data platform based on Apache Hadoop is the first framework that allows us to analyze existing client information quickly and inexpensively," explained Fafula. "The whole project is hosted on PwC CEE premises, but can also be migrated to the cloud at any time if need be. For the client, this means the cost-effective provision of big data analysis, and, for us, a model for future installations."

Solution

PwC CEE selected Cloudera as a foundation for their solution based on its market maturity and performance. Thanks to the Cloudera open architecture, it is now easy for PWC CEE to create their own powerful software solution and products. "Cloudera offers the best Hadoop platform around and works seamlessly with tools like Impala, Spark, and Flume. Its ease of use and multiple interfaces also set it apart," explained Fafula.

The customer supplies PwC CEE with receipts for analysis. Data from sales and marketing actions are added to analysis to gain a full understanding of customer behavior and advertising effectiveness. "A year's receipts in CSV format corresponds to to a few billion rows per country," stated Fafula. "However, the real explosion in data is in building different scenarios. Thanks to Cloudera and Impala, however, we can analyze quantities of data of this magnitude in fractions of a second."

Based on the results, the heads of each department can quickly see what customers searched for, and what products they bought together on what day, at what time of day or year. They can also compare the impact certain campaigns had on other related products outside of their own assortment. This information then allows them to optimize timing and location of in-store product placement, as well as the promotional activities that go with it.

Why Cloudera

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About Cloudera

Cloudera delivers the modern platform for data management and analytics. The world's leading organizations trust Cloudera to help solve their most challenging business problems with Cloudera Enterprise, the fastest, easiest, and most secure data platform built on Apache Hadoop. Our customers can efficiently capture, store, process, and analyze vast amounts of data, empowering them to use advanced analytics to drive business decisions quickly, flexibly, and at lower cost than has been possible before. To ensure our customers are successful, we offer comprehensive support, training, and professional services. Learn more at cloudera.com.

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