



Walgreens Boots Alliance finds the sweet spot for reaching customers with Azure Machine Learning service

Customer

Walgreens Boots Alliance

Products and Services

Azure
Azure Machine Learning
Azure SQL Database

Industry

Pharmaceuticals

Organization Size

Corporate (10,000+ employees)

Country

United Kingdom

Walgreens Boots Alliance (WBA) is one of the largest retail pharmacies across the United States and Europe, with more than 18,500 stores in 11 countries. As a leading health and wellbeing enterprise, WBA has built and fostered relationships with hundreds of brand partners to offer unique benefits and incentives to improve the customer experience and strengthen brand affinity. Programs like the Boots Advantage Card are key to WBA's ability to break through in an increasingly competitive retail landscape.

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—Daniel Humble: Chief Data and Analytics Officer
Walgreens Boots Alliance

Data rich, resource challenged

Over the 20-plus years since Boots launched the Advantage Card, its loyalty rewards and promotions have helped grow membership to a base of nearly 18 million active customers. The Advantage Card provides Boots with valuable customer behavior and purchase data that can be used to build propensity models for understanding customer preferences.

The vast amount of data collected presented Boots with an opportunity to increase revenue from its Advantage Card scheme, deliver a better customer experience, and offer greater ROI for brand partners. However, the amount of data also presented a challenge—Boots needed a powerful remedy to process and translate the data from the millions of daily point-of-sale transactions into propensity models to optimize promotions. Boots' existing automated machine learning solution was resource-intensive and lacked the compute power required to efficiently produce the number of models needed to target its Advantage Card promotions.

Bringing it together with Azure Machine Learning

Boots chose Microsoft Azure Machine Learning service (<https://azure.microsoft.com/en-us/services/machine-learning-service/>) to efficiently model the Advantage Card data for the purpose of the proof of concept. The IT and data science teams at Boots used Azure Machine Learning Compute to build automated machine learning propensity models, Azure SQL Database (<https://azure.microsoft.com/en-us/services/sql-database/>) to handle downstream analysis, and Azure Machine Learning pipelines to pull it all together. “Microsoft wants to be our partner and help us on this journey, which has been very differentiating,” says Daniel Humble, Chief Data and Analytics Officer at Walgreens Boots Alliance.

Azure Azure Machine Learning service is an open-source platform that provided Boots with access to feature-rich applications and tools that are easy to add and test—and can be switched on and off on the fly. The company could use Azure Machine Learning service to scale compute power to handle large fluctuations in model requests by accessing CPU and high-performance GPU-enabled virtual machine workstations with the click of a button. The Azure tools and compute power had an immediate impact on productivity, helping the IT and data science teams reduce the time it took to provision resources and train models.

“Now that we're on the cloud, workloads that we were struggling to run efficiently on-premises can be spun up in Azure quickly and at a lower cost,” says Dean Riddlesden, Senior Data Scientist at Walgreens Boots Alliance. “If I have 200 models to train—I can just do this all at once. It can be farmed out to a huge compute cluster, and it can be done in minutes. So I'm not waiting for days or setting experiments to run over the weekend anymore.”

A win-win-win for Boots, partners, and customers

Boots substantially increased the speed and scalability of its existing machine learning platform with Azure. Its IT and data science teams are now better equipped to scale out modeling for corporate campaigns, in addition to those of its participating brand partners.

The previous Machine Learning models that Boots' Data Science team had developed for the Advantage Card loyalty program had delivered a significant increase in promotion performance rates, incremental sales and also increased the profitability of its campaigns. However, with Azure Machine Learning service, the team is now well placed to extend the application of this modeling, enabling Boots to increase promotion revenues even further, help grow its brand partners' businesses, and enhance the customer experience by only offering incentives and promotions that are meaningful to them.

“The reason we see the uplift in sales is the customers are getting content that really connects with them, and they're getting offers for things that are truly relevant and relevant at that moment in time,” says Humble.

Creating differentiated experiences through technology

Based on its success with Boots, WBA is working to expand the use of Azure tools to support other areas of its business, such as logistics for warehouse systems that support Boots.com, customer survey data, and customer support centers. “Teams from Walgreens Boots Alliance and from Microsoft are already starting to innovate,” says Riddlesden. “I think it's going to be a bit of a game changer.”

WBA sees the potential in using Azure Machine Learning service to help fulfill its objective to use data to help people across the world navigate complex healthcare systems and ultimately lead healthier lives.