Big data boosts business for beverage company

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Lizeth Refugio Salas, Revenue Growth Management Chief, Arca Continental

Contemplate, if you will, the multiple choices available every time you want something to drink. Water? Juice? Soft drink? Do you want a single-serve can or a six-pack? Or maybe you just grab a liter bottle. The fact is, we as consumers expect a lot of options and the global US$867.4 billion non-alcoholic beverage industry delivers. Arca Continental, a leading beverage manufacturer and distributor based in Mexico, knows that translating data and information into intelligence and "decision-making" understanding is one of the keys to boosting profitable growth in a highly competitive market with an increasing SKU portfolio.

Why does this drink sell well at this location? Why do sales of six-packs spike the third week of the month? Why do water sales increase during the summer? Understanding the answers to questions like these is critical to business success for Arca Continental, which is the second-largest Coca-Cola bottler in Latin America and delivers its products to more than 900,000 customers across Mexico and South America.

Arca Continental already had robust business intelligence (BI) in place to answer most of these questions. With incredibly diverse populations—different economies, product preferences, and market drivers—the company was well aware that its sales data combined with external data could deliver better insights about product performance, which would help refine its portfolio and marketing strategies, and increase profits. But the company, which focuses on continually improving its service, wanted to explore what state-of-the-art tools it could use to get new insights that would complement the information it already had. Specifically, it wanted to focus on incorporating external correlations through advanced statistical analysis.

As part of the process, the company started taking a good, hard look at how best-in-class industries use and transform big data it into competitive advantage. "We presented our findings to our chief operating officer, and he became our internal sponsor," says Ruben Dario Torres Martinez, IT Manager for Arca Continental. "We had tons of excellent internal data, but we challenged ourselves to understand it better, so we could really determine what external data could actually add value to our business."

Starting point for Project Why

The big question for Arca Continental was how to take advantage of its current SAP data to discover new patterns. "When we started with this project, we were searching for new and improved ways to serve our clients and consumers while boosting profitability," says Lizeth Refugio Salas, Revenue Growth Management Chief for Arca Continental. "We needed to better use the data we already had and gain a more comprehensive understanding of sales variations and correlations between multiple variables."

To this end, Arca Continental invited several technology vendors to create a proof of concept called "Project Why." Among the various solutions it received, the winning bid came from Neal Analytics, a Microsoft partner. The big difference? Drawing on its expertise in data science, Neal Analytics presented a solution that could drive business insight not just by analyzing the company's three years of sales information, but by creating regression models that mapped this data against multiple other variables. And the solution was made in a fairly easy way using the power of Microsoft Azure Machine Learning (Azure ML).

Applying data science

Basically, Neal Analytics created a simple solution to surface data that relies heavily on data science using Azure ML. SAP data services connect to a virtual machine in Azure, which feeds Azure SQL. Then Azure ML reads this data and runs it through more than 200 regression models that contain approximately 20,000 coefficients—things like demographic information, weather, employment, sports events, competitor

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pricing, and holidays. The results are transferred into blob storage as CSV files. Finally, a lightweight and email-friendly Excel workbook that pulls data in using Microsoft Power Query for Excel is delivered to the users.

The new system, called Big Data and Analytics is extremely simple for users. They get a simple Excel workbook that they can use to interactively analyze the company's internal data together with external data and display all that information within a single view.

From data to insight

Seeing actual sales figures mapped against multiple variables brings new insights and immediate impact. For instance, the company's Sales Waterfall Chart combines sales information and the effect of other variables to answer the question of why the sales increase or decrease over specific periods of time, such as days, weeks, months, or even years. This automated model actually finds the reasons why sales have changed. Now, instead of spending enormous amounts of time coming up with these answers, revenue growth managers can now slice and dice the effects of multiple variables, practically in real time. And that means they have more time to focus on business strategies, instead of analysis.

Another example is that people can easily view a graph of the market DNA, which explains how each different market responds to each variable.

The beauty of Big Data and Analytics (BD&A) is that it can be easily expanded and customized over time, simply by adding regression models and data sources to Azure ML. Today, it is being used for marketing and sales in Mexico. The company plans to not only add more variables to the model for more targeted data, but also expand BD&A to all the countries it serves.

The applications of BD&A are almost endless. "This first project was about marketing," says Torres Martinez. "But there are other areas we want to pursue, like production, logistics, and warehousing. We can use Azure ML to generate answers for each individual area and get combined answers for the entire company."

In addition, the company now has an improved way to measure the success of these marketing efforts. The company often features promotions and discounts, along with new product launches. "We have all that information in our databases, and with BD&A we can create the right regression models to see the isolated effect of each of these initiatives," explains Refugio Salas.

Driving business transformation

BD&A brings together the robust data that Arca Continental already had with the powerful regression models enabled by Azure ML, and both Refugio and Torres agree that the effects are going to be far-ranging. This first initiative has provided enough information to prove that it can be used effectively across the company and meet a far larger need. "Learning how to incorporate data science through Azure ML into the operation of the entire business is one of the impacts of implementing BD&A," says Refugio Salas.

For instance, the company has started another project that identifies new external data than can be harvested for its models. As part of this effort, Arca Continental is analyzing how it captures and manages this data. As Torres Martinez says, "Over time, this advanced analytics solution with its statistical approach to big data will transform the way we take business decisions through all business processes, from manufacturing, warehousing and logistics up to sales and promotions."

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Software

- Microsoft Azure ML
- Microsoft Azure SQL
- Microsoft Excel
- Microsoft Power Query for Excel

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