denodo

INDUSTRY

Agricultural Technology

PROFILE

This leading, science-based agricultural technology company helps millions of farmers around the world to grow safe, nutritious food while taking care of the planet. The company has over 30,000 employees and a presence in more than 90 countries around the world. The company substantially invests in R&D, collaborating with growers, academia, non-governmental organizations (NGOs), businesses, and governments to better address the needs of nature, farmers, and consumers.

Leading Agricultural Technology Company Leverages the Denodo Platform to Improve Data-Driven Decision Making

This leading agricultural technology company develops geographically specialized, seasonal agrichemical products that help farmers get the best results from their crops while also improving the soil. Recently, the company engaged in an enterprise-wide initiative to accelerate its decision science and decision-making capabilities, beginning with its division that focuses on seeds.

Business Need

The company's seed division performs research across the entire seed lifecycle – from early genomic research to commercial distribution – and relies on large amounts of granular data. The division runs over 100,000 field trials around the world, equating to millions of data points, and its labs generate over a billion data points a year.

The division needs to be highly responsive to seasonal deadlines. "For the big row crops in the northern hemisphere, we need to get new data during the harvest," says the company's head of Architecture, Technology, and Data Operations, "And this is a very narrow window." Increasingly, the company's seed division has also incorporated streaming data from farms, in the form of drone imagery and machine output from harvesters and planters.

Data was being collected by over 200 monolithic applications, each with its own web server, application server, and database. It took considerable time for the company's data scientists to integrate the data between these silos and have it ready for analysis, and they just could not access the data quickly enough for predictive analysis. In some cases, stakeholders could not even find the data they needed. Also, with so many different data sources, each with its own point of access, data security was not deemed strong enough to protect the division's reports, which constituted valuable intellectual property. Finally, this infrastructure often resulted in out-of-synch data copies, which diminished trust in the data while further complicating data discovery.

The company wanted to replace the application set with a modern, layered environment in which a common data repository supported an independent application layer, but this would take considerable time and disrupt daily operations. The company needed a way to accelerate this transformation while maintaining access to the old systems.
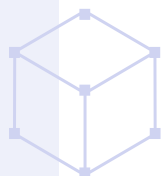
The Solution

The company turned to the Denodo Platform, deployed on Amazon Web Services (AWS). With its data virtualization capabilities, The Denodo Platform enabled the company to implement a logical data access layer above the disparate data sources in its seed division. To access any data, scientists and applications now simply access the logical data access layer, which obtains views of the data, in real time, even if it is stored in a geographically remote region, and even if the data is in the process of being moved or migrated.

For a new central repository to replace the original application set's data sources, the company had tried Hadoop and Amazon S3, but had finally settled on a Snowflake cloud data warehouse on AWS. Snowflake offered improved query performance than the other cloud storage solutions, especially on the company's larger genomics databases, and enabled fast, reliable access through the Denodo Platform. AWS was a good fit for company, for both Snowflake and the Denodo Platform; the company had recently implemented an SAP migration to AWS and reduced costs by more than 20% while accelerating response time by an average of 20%.

By abstracting access to the underlying data sources, the Denodo Platform enabled the company to experiment with each of these cloud storage solutions without users knowing that changes were happening under the hood. "Each time there was a change, the only thing they knew was that it was faster," said the company's head of Architecture, Technology, and Data Operations.

The Denodo Platform also enabled the company to create logical business views on top of the underlying data sources in its seed division, without affecting the underlying data. These views can be easily shared, and the Denodo Platform tracks all of the related metadata, such as the origin and lineage of all datasets.
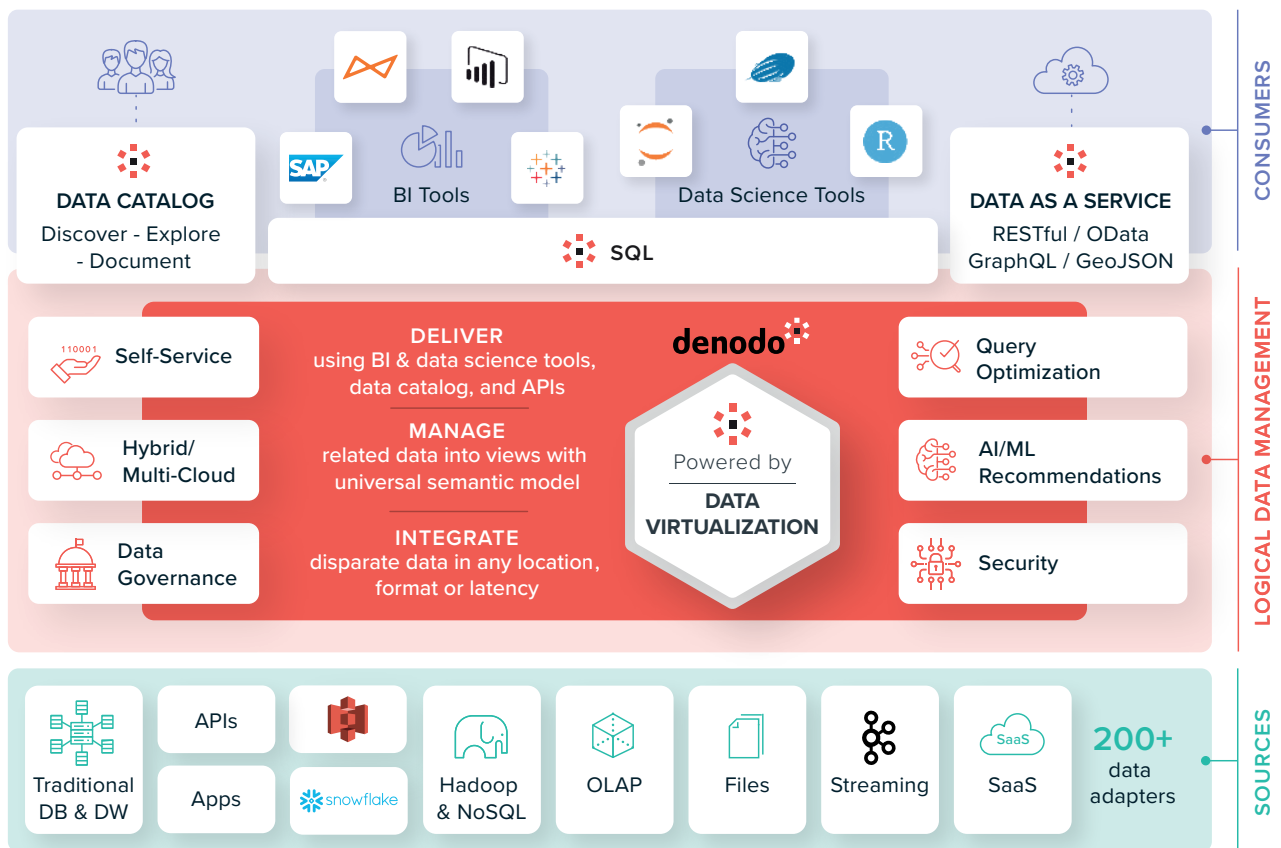
Benefits

The Denodo Platform not only enabled an accelerated, zero-downtime migration to Snowflake, it also simplified data discovery and dramatically accelerated data access in support of decision-making, enabling advanced analytics such as predictive analytics. Because it provided a single data-access point above the disparate data sources, it also enabled much stronger data security.

"We brought in the Denodo Platform to build a self-service data platform on AWS for our data consumers," said the company's head of Architecture, Technology, and Data Operations. "With data spread across different geographical boundaries,

data privacy and security are extremely important to us. Leveraging the Denodo Platform's data virtualization capabilities, we quickly connected multiple disparate sources at least 4x faster than with traditional data integration technologies and also gained centralized data authorization and protection. Across the enterprise, we have seen a 35x jump in the number of users accessing the data platform, leading to wide adoption of data-driven decision-making."

With the Denodo Platform, the company was able to:

- Accelerate a migration to a modernized data platform while maintaining access to the old systems
- Provide self-service data access to data scientists and other data-driven stakeholders, supported by faster data access and improved data protection
- Rapidly increase the number of data scientists from 4 to over 350
- Seamlessly create over 500 data views, leading to wider adoption of data-driven decision making
- Quickly get data into the new platform; when data scientists arrive with new datasets, the company can quickly virtualize them and immediately start using the data, even before they decide where to store it.
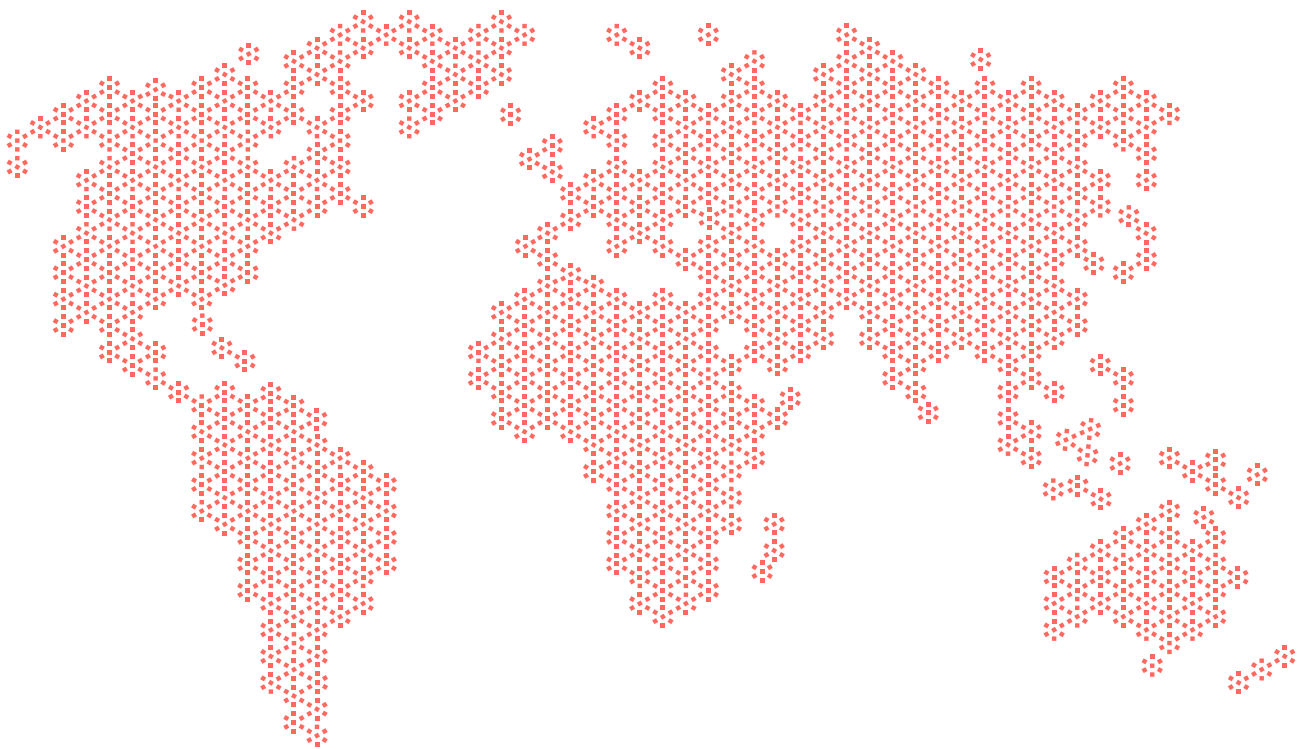
Denodo is a leader in data management. The award-winning Denodo Platform is the leading data integration, management, and delivery platform using a logical approach to enable self-service BI, data science, hybrid/multi-cloud data integration, and enterprise data services. Realizing more than 400% ROI and millions of dollars in benefits, Denodo's customers across large enterprises and mid-market companies in 30+ industries have received payback in less than 6 months.

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