INDUSTRY
Manufacturing

PROFILE
The consulting arm of a Kansas-based global manufacturing conglomerate operates as an internal engine to create a long-term, sustainable competitive advantage for the rest of the enterprise. The company employs over 120,000 people globally, with more than 60,000 employees across 50 U.S. states, offering a wide spectrum of products, technologies, and services.

> *By deploying the Denodo Platform on AWS EC2 instances, we've established a highly agile and secure logical data layer that takes full advantage of AWS native capabilities. This enabled our team to rapidly blend data across diverse environments, achieving complex integration use cases within the very first month."*
>
> — **Senior Technical Architect**

The Consulting Arm of a Manufacturing Conglomerate Accelerates its M&A Initiatives with a Modern Data Architecture

With a mission of building centers of excellence, driving enterprise transformation, and enabling core businesses, the consulting division of this manufacturing conglomerate serves as the infrastructure powerhouse for the rest of the enterprise. It leverages a modern data architecture, powered by the Denodo Platform on AWS, to create immense value for its many customers by reducing technical debt, enhancing security, and accelerating M&A data integration.

The subsidiary built a thriving data mesh with the Denodo Platform on AWS.

Business Need

The company was struggling with complex, inefficient, and expensive legacy systems that could not facilitate the development and delivery of scalable, trustworthy data products for its internal customers. It needed a way to access live, uniform, governed data across on-prem, cloud, and hybrid environments.

The subsidiary faced the following challenges:

The lack of real-time data: Legacy software and traditional extract, transform, and load (ETL) processes made it both difficult and expensive to access data snapshots in near real time. Users were creating multiple copies outside of source systems, and this data replication resulted in serious data quality issues.

Data silos, fragmentation, and latency: Information was trapped in multiple sources, and the lack of a single, overarching data access layer resulted in fragmentation and slow information delivery. The creation of "unintended" data hubs in systems, such as one for Virtual Directory Services, one for ServiceNow, and another for Facilities, further added to the complexity.

Also, due to an application-centric environment and a slew of acquisitions, the team could not easily manage the consolidation of data sets, such as blending new company data with global HR systems.

Escalating project and governance costs: The company lacked an easy way to build strong data products and present them to internal consumers. Data integration using legacy systems demanded significant developer upskilling (up to six months), resulting in higher operational costs. The lack of a modern data architecture led to M&A delays; custom-built solutions and technical debt led to high data governance costs.

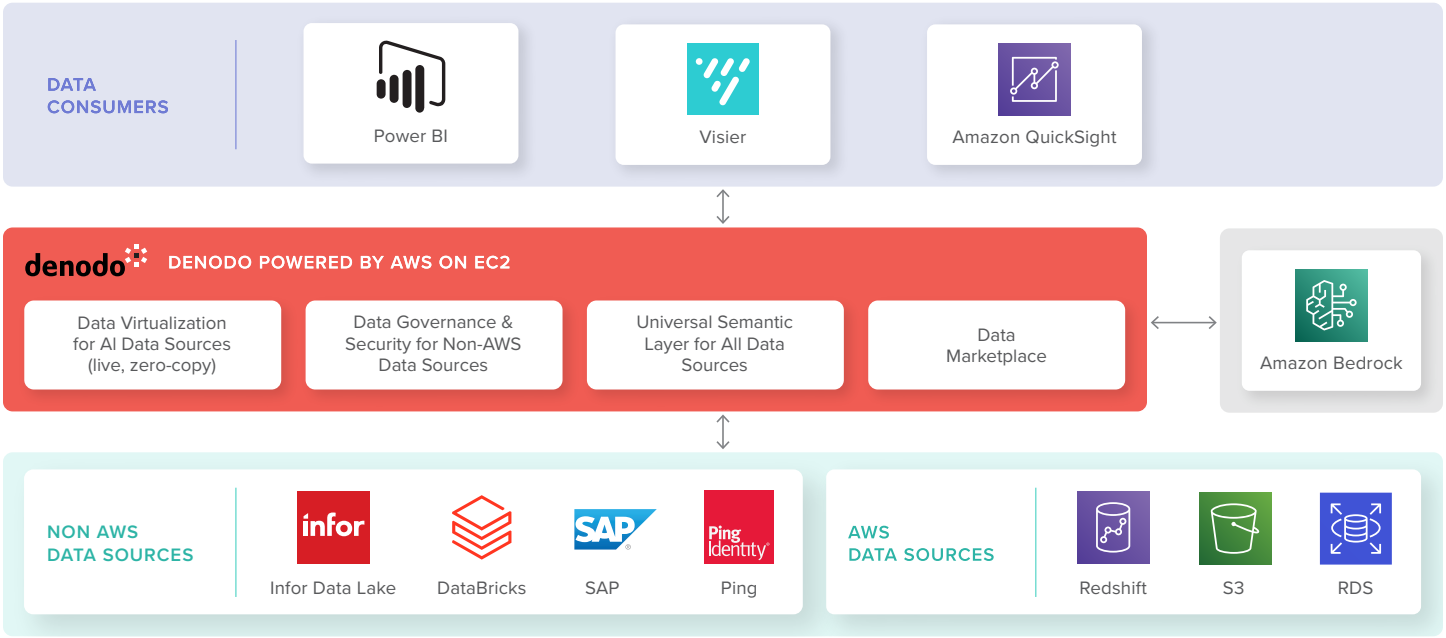
To address the data access, integration, and governance challenges, and gain the ability to efficiently create, manage, and deliver data products, the team recognized the need for a new data infrastructure. The company needed a platform that would present a consolidated view of the data, connecting the company's data sources to the consumption layer for easy access by business users.

The Solution

The company leveraged AWS for its secure and scalable infrastructure and while AWS provided flexible compute and native security, the team still faced challenges in unifying data from disparate source systems, which led to the deployment of the Denodo Platform on AWS.

The company implemented a data mesh architecture – enabling original data owners to retain ownership, through data domains, to create a unified service. As a result, the subsidiary was able to move towards a business-centric data model and API-driven consumption.

> *"To overcome the limitations posed by legacy, application-centric data models, the consultancy utilized Denodo on AWS to transition toward a decentralized data mesh architecture."*
>
> — **Data and Integrations Manager**



As reflected in the diagram above, the architecture has three layers:

The bottom layer is the data source layer, which includes the Infor Data Lake, Databricks (a lakehouse running on AWS), SAP Payroll, Ping (identity provider), and Amazon data sources including Redshift, S3, and RDS for PostgreSQL. The team uses Denodo's security capabilities across all data sources.

The middleware, or the integration layer, is composed of the Denodo Platform on AWS. This is a logical layer that runs on EC2 instances, enabling the team to leverage native AWS features like IAM, Secrets Manager, and Lambda. IAM manages access permissions, Secrets Manager securely stores sensitive data like passwords, and Lambda runs code without the need for managing servers. Additionally, the subsidiary treats AWS Bedrock, also running on EC2s, as part of the same layer.

Data is consumed via APIs and JDBC, and the consumption layer sits at the top with business intelligence tools Power BI, Visier, and Amazon QuickSight.

This architecture, powered by Denodo on AWS, minimized data transformation at the source systems, shifting transformation responsibilities to the consuming systems to improve speed and accuracy. This scaled the company's M&A initiatives, driving business growth.

Benefits

The data mesh paradigm enabled individual business units to retain ownership of their data while leveraging Denodo's logical data management layer to build standardized, business-centric data products. As a result of leveraging Denodo on AWS, the team has realized a number of tangible benefits:

Data Democratization: With the Denodo Data Marketplace and AWS QuickSight, the subsidiary was able to fulfill data requests in 10 mins compared to the 5–10 hours of manual developer effort that this required before. With Denodo, the company established a centralized data catalog, enabling customers to self-discover data, view definitions, and interact directly with compliance teams, effectively removing IT as a bottleneck.

Cost and Time Savings: By decommissioning legacy integration software, the team realized direct cost savings of more than $40,000 per year in licensing costs alone. The company also reduced expenses by replacing restrictive per-use billing for a flat CPU-based licensing model.

The consulting arm logged massive time savings by faster onboarding (this went from six months down to six weeks) and reduced development effort. Denodo's SQL-based configuration dramatically reduced the time required for upskilling developers, and the data integration time went down by at least 25%. Two specific self-service use cases alone saved the company a couple thousand dollars in developer time by enabling users to export their own data.

Data Security and Governance: The company was able to centralize security and governance, providing the ability to control data access using tags in a highly sensitive HR data environment. Also, running Denodo on the EC2 instances enabled them to take advantage of AWS native security by implementing role-based access control (RBAC) using managed identities (via IAM / PingFederate) and Denodo's automated PII tagging capability.

The team is currently building towards an AI-ready future. The company is using both OpenAI as well as Anthropic's Claude 3.5 Sonnet for natural language processing within the Denodo Marketplace. Moving forward, the company plans to utilize Amazon Bedrock to further support AI capabilities, and plans to implement Denodo's AI SDK with support for MCP, in the near future as of 2026.

By implementing Denodo on AWS, the consulting arm of this massive global conglomerate was able to reduce its technical debt, democratize data, effectively deliver trustworthy data products, enhance security, and accelerate its M&A data integration efforts at scale.

"Operating Denodo within the AWS ecosystem provides the team with exceptional operational resiliency, enabling them to restart servers in under 30 seconds and perform complete system restorations in just five minutes."

— **Data and Integrations Manager**