CASE STUDY

INDUSTRY
Manufacturing

PROFILE
One of the leading global providers of equipment, systems, digital solutions, and value-added services. Paving the way in creating a more sustainable freight and passenger transportation network, the US-based company operates in more than 50 countries, employs more than 30k employees, and reported a revenue of more than $10 billion in 2025.

"Deploying Denodo on the AWS infrastructure has allowed us to build an intelligent finance agent. By providing simple feedback, we're continuously training the model to quickly learn our unique business rules, traverse multiple tables, and deliver accurate answers."

— **Sr. Finance Director, Signaling & Systems**

Global Industrial Powerhouse Doubles Down on AI, Accelerating How the World Moves

Drawing on its 150+ years of experience, this manufacturer is leading the way in safety, efficiency, reliability, and productivity – with innovation at its core. It is one of the few organizations in the manufacturing vertical that is already leveraging AI to create superlative outcomes for its customers.

After a successful implementation that turned multi-hour data extraction bottlenecks into near-instantaneous, secure conversational insights in the finance domain, it is going enterprise-wide. It is embedding natural-language-to-SQL capabilities directly into business workflows by pairing Denodo with AWS infrastructure.

From hours to minutes: The heavy industrial manufacturer reported a 98% reduction in reporting latency with Denodo.

Business Need

As the company grew its operations, it faced a slew of challenges in scaling data access and leveraging generative AI securely across the enterprise. The main hurdles included:

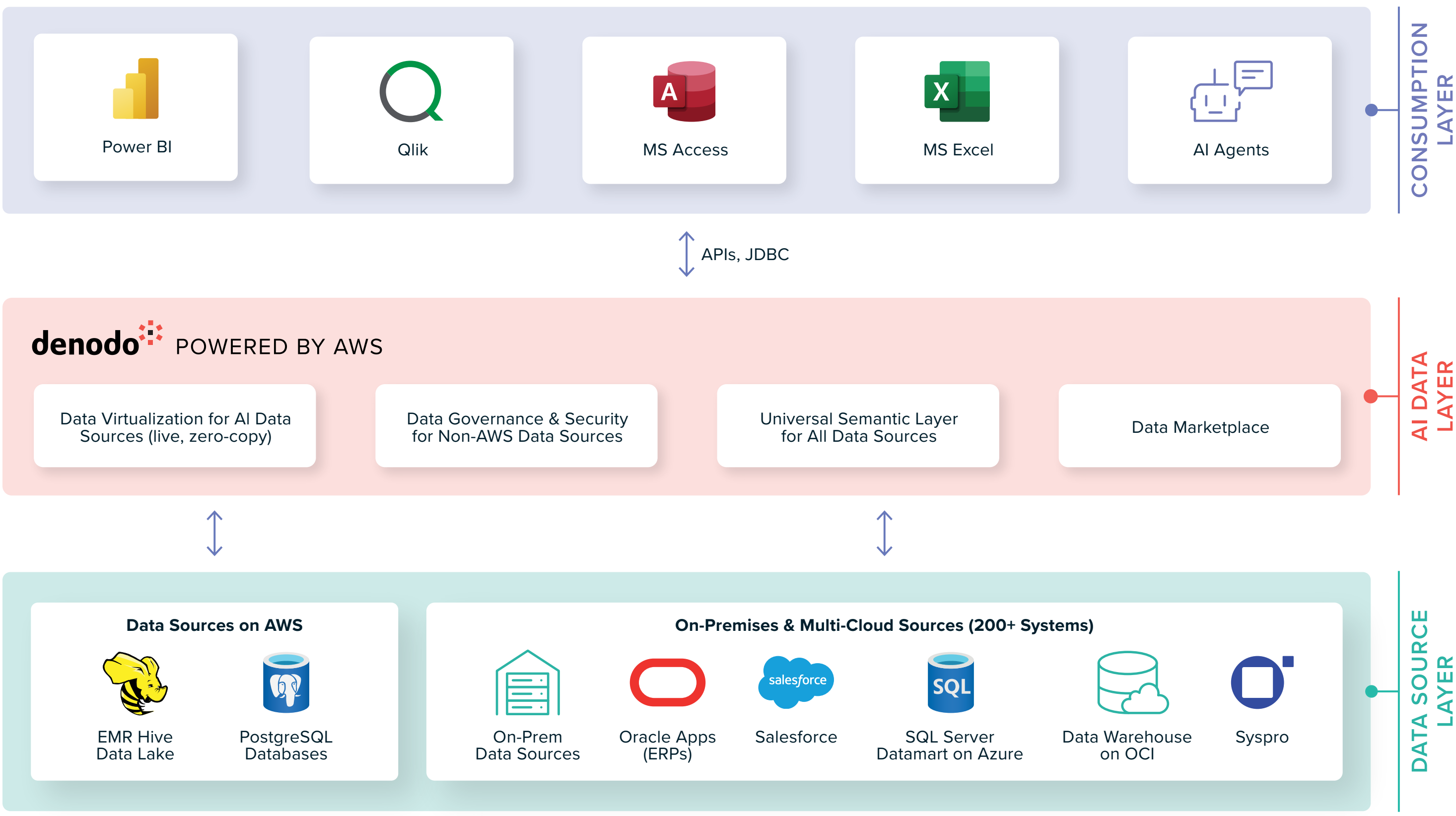
- **Extensive reporting latency**: The traditional retrieval of complex general ledger (GL) and accounts receivable (AR) data required heavy technical intervention and took upwards of four hours, hindering agile financial decision-making.
- **Technical barriers and operational challenges**: Non-technical business users were highly dependent on the data engineering team, and initial infrastructure deployments hit severe bottlenecks – the standard API Gateway 29-second timeouts triggered frequent "504 Timeout" errors on complex queries.
- **Security and governance risks**: Early project iterations relied on shared administrative service accounts, posing severe governance risks. To achieve production readiness, the manufacturer needed to transition to a secure architecture.

The company needed a modern, scalable data platform that could provide greater autonomy to business teams and facilitate strict regulatory compliance, while leveraging AI for productivity gains.

The Solution

To address these limitations, this industrial giant started leveraging the AWS cloud infrastructure with a high-performance AI data layer from Denodo on top of it. The Signaling & Systems team built an intelligent finance agent using this layer, which performs “conversational dashboarding,” enabling users to ask questions in natural language about topics like last month’s revenue or top-performing salespeople. Soon after deploying the agent in production, the team added 50 views, and the agent is being continuously trained via feedback loops.

The team uses the Denodo AI SDK, converting natural language questions into optimized SQL/VQL queries and Model Context Protocol (MCP) to expose tool calls natively to front-end LLM applications. To handle deep, long-running queries, the Denodo Platform maps endpoints through an AWS application load balancer (ALB), safely accommodating extended processing windows.



In the simplified version of the solution architecture above, the bottom layer represents the data source layer. It currently has EMR Hive Data Lake and PostgreSQL running on AWS and more than 200 other data sources running on-premises and in other cloud-based systems.

Among other data sources, it has Syspro, an ERP specifically tailored to manage inventory, production, and operational workflows for the manufacturing vertical. It also maintains a cloud data warehouse hosted on Oracle Cloud, a SQL Server Data Mart, which is a cloud-based relational database optimized for serving structured, domain-specific data to BI tools; Salesforce and Oracle Apps; and a comprehensive suite of ERP systems used to manage core business operations.

In the middle is the AI data layer or the infrastructure layer, powered by Denodo on AWS. It is a governed, unified, real-time access layer that sits between an enterprise’s distributed data systems and the AI and analytics systems that need to consume that data. Based on the principles of universal connectivity and zero copy delivery, this layer makes data semantically coherent for both human analysts and AI agents.

Up top is the data-consumption layer, with tools like Microsoft Access, Excel, Power BI, Qlik, and AI agents.

Benefits

After the initial success of the finance agent mapping to complex accounting data, the team is continuously training the model on business logic to navigate multiple tables and deliver with even greater precision. It is also looking to add more agents in other functional areas.

With Denodo on AWS, the company has logged some significant results like faster query performance, time saved, risk mitigation, and the elimination of unnecessary latency for its end users. It cited the following notable benefits:

Query precision: The team was able to achieve a 95% accuracy in natural-language-to-SQL mapping as opposed to vastly inconsistent results before. Earlier, due to the absence of an enterprise-wide tool, the precision greatly varied by the expertise level of analysts.

Time savings: It reported a 98% reduction in time-to-insight with Denodo. With the finance agent, the reporting time on GL and AR came down from upwards of four hours to under five minutes. Further, the team is able to extract and process large datasets much more quickly than it would using traditional tools, while significantly reducing refresh cycles.

Cost control for IT: The Denodo Platform, with its processing engine, pushes down and delegates queries to minimize how much data moves and how much compute is used, so IT controls cloud spend instead of chasing it. In this way, the AI data layer pays for itself.

Data security and risk mitigation: With Denodo on AWS, the manufacturer was able to minimize enterprise governance risks. It was able to transition from legacy shared admin accounts to 100% dynamic user identity pass-through via header authentication.

As per the company's senior manager for data & AI democratization, "Denodo has transformed how our teams discover and analyze data." Instead of relying on IT teams to move data, business users can now self-serve across multiple ERP systems and cloud sources in a single login.

With AI innovation, notable productivity gains, and measurable business impact, this global industrial powerhouse is powering how the world moves.

"We achieved a 98% reduction in reporting latency for our finance agent by leveraging Denodo on AWS. Plus, we unified all our data sources, including the AWS-hosted data lake and PostgreSQL databases, into a single logical layer. It gives our 1,500 users a secure, agile way to discover and query data without needing to move it across environments."

— **Sr. Manager, Data & AI Democratization**