



INDUSTRY

Manufacturing

PROFILE

A cornerstone of the automobile supply chain, this major regional vehicle distributor serves a critical multi-state network of over 150 dealerships across the United States.

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Operational excellence in automotive distribution requires real-time visibility without the latency of traditional data movement. The Denodo Platform on AWS has empowered us to achieve real-time data access through a single, unified semantic layer for the entire data estate.”

— Senior Manager, Information Management

Major Automobile Distributor Drives Operational Excellence with Denodo

Over decades of growth, this large-scale regional vehicle-and-parts distributor has evolved into a logistical powerhouse, processing hundreds of thousands of vehicles annually through its extensive vehicle processing centers and parts distribution hubs.

Driven by a core mission to deliver exceptional customer experiences, the organization has shifted toward a “data-first” mobility strategy. The company is focused on leveraging advanced analytics and AI to optimize supply chain resilience and personalize the vehicle ownership journey.

This leading vehicle distributor has built a solid “data-first” mobility strategy with AWS, Databricks, and Denodo.

Business Need

Picture a diverse and siloed data ecosystem. Layer it with a 30-year-old mainframe and legacy reporting environment. Add to it the complexity of strict security and regulatory requirements. That was the data landscape at this distributor, back in the day. More specifically, the company was fraught with the following challenges:



Legacy system constraints: This distributor was crippled by a 30-year-old mainframe and legacy software that needed to be transitioned to a modern SAP ecosystem. Upon transition, the initial issues with standard SAP MDX / BAPI methods for high-volume data established the need for an efficient data management approach. In addition, the SAP BW environment was not well-suited for non-SAP data. Further, information was trapped in many different data sources that resulted in poor data access and delivery.



Data silos and fragmentation: Information was stored in multiple sources, and the lack of a single, overarching data access layer resulted in fragmentation and slow information delivery to downstream applications.



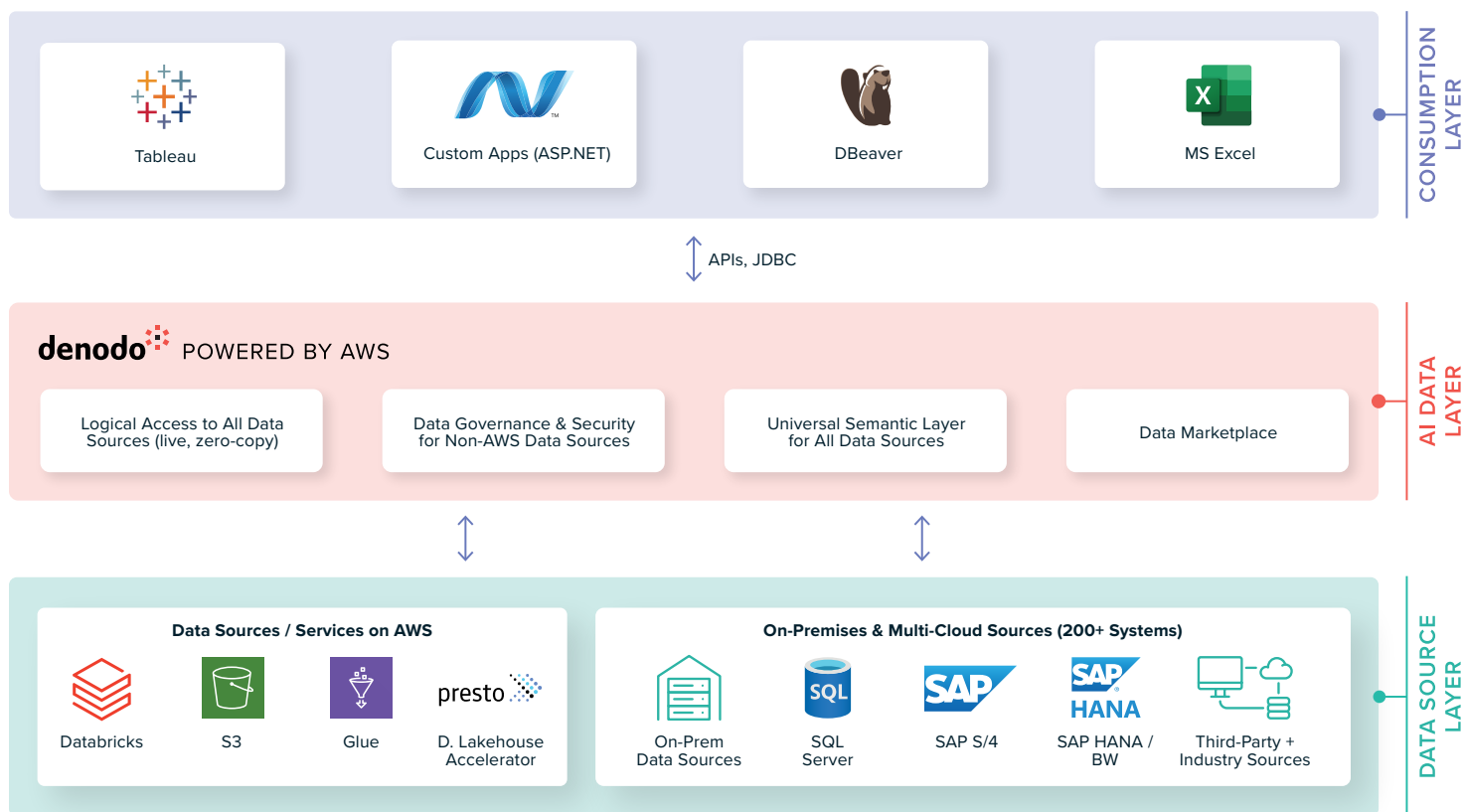
Complex security and regulatory compliance: The company had a dire need to differentiate security protocols between internal associates (AD / LDAP) and external dealers (Okta) across various business applications. There were also data governance gaps that began to emerge in terms of maintaining consistent lineage, policies, and metadata across multiple source systems.

The company needed an AI data layer with access to live, uniform, governed data across on-premises, cloud, and hybrid environments.

The Solution

To address the limitations posed by legacy constraints, data fragmentation, and compliance, this distributor moved to the AWS cloud infrastructure with a high-performance **AI data layer** from Denodo to provide universal connectivity and governed access.

According to the company's data and analytics team: "Denodo's AI data layer acts as the centralized data access and delivery platform and the main execution engine for all reporting and analytics."



In the reference architecture diagram above, the bottom layer is composed of data sources and services on AWS and other on-premises and multi-cloud sources spanning over 200 systems.

Databricks serves as a platform for big data engineering and large-scale data processing. Other services and sources on AWS include S3, the scalable simple storage service from Amazon, Glue, the managed ETL service, and Presto, which Denodo uses to accelerate data lakehouse and distributed SQL query performance.

On the bottom right, the on-premises data sources includes local data repositories and systems hosted within the company's own physical data centers. The SQL server acts as a foundational relational database management system for storing structured, transactional business data. SAP S/4 serves as the ERP system managing core, day-to-day business processes while SAP HANA / BW provides high-speed, in-memory database and business warehouse capabilities to support real-time operational analytics.

In the middle sits the AI data layer/infrastructure layer, powered by the **Denodo Platform on AWS**. It is a governed, unified, real-time access layer 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. The **Denodo Data Marketplace** is extensively used by analysts to manage daily manufacturing operations.

The data consumption layer includes tools like Tableau for business intelligence and visualization, Custom Apps for consuming unified data via APIs to power business workflows, DBeaver for enabling developers and data analysts to directly query and explore unified data models, and MS Excel for ad-hoc data analysis and reporting.

Benefits

With a modern data architecture in place, this leading automobile distributor can now access, integrate, and deliver real-time, trustworthy data with agility and confidence. It has established a logical data architecture that integrates legacy systems, modern ERPs, and local databases without custom ETL pipelines. The company gained the following key benefits:



New revenue stream: The distributor achieved end-to-end visibility, all the way from vehicle procurement, to accessory processing, to final service. A newly enabled three-month forecasting capability for aftermarket parts and labor enables the business to maximize retail revenue without disrupting the manufacturing throughput.



Accelerated time-to-insight: The company has been able to drastically reduce IT development cycles by delivering global reporting datasets through Denodo's unified semantic layer. Complex ERP terminology is now translated into a user-friendly catalog, empowering data stewards and analysts to perform self-service, ad-hoc analytics at scale.



Mission critical, real-time data delivery: With the Denodo Platform on AWS, this distributor transformed daily operations by provisioning real-time parts and vehicle inventory data via APIs to over hundreds of regional dealerships. It has been able to unify previously siloed financial and logistics data sources to provide a single, real-time view of vehicle pipelines, supply chain health, and dealer financial liabilities.

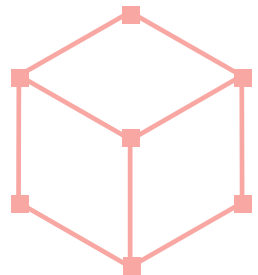
As the organization scales its artificial intelligence initiatives, it is actively considering the Denodo AI SDK and MCP server to power their next generation of AI use cases.

This major automobile distributor has been able to log significant operational efficiencies, reduce IT overhead, and close the governance gap. By seamlessly integrating real-time labor metrics with enterprise systems, the distributor has been able to correlate labor hour metrics with actual production, manufacturing workflows and supporting highly reliable, hourly operational reporting.

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With the Denodo Platform on AWS, our team can now seamlessly analyze SAP ERP inventory alongside demand forecasts in a single Tableau dashboard, accelerating our time-to-insight while significantly reducing supply chain friction.”

— Senior Manager, Information Management



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