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**INDUSTRY**  
Energy & Utilities

**PROFILE**

VTTI is a global leader in independent energy storage, and the company develops critical energy infrastructure the world needs to move towards a carbon neutral future. Fueled by its purpose, “Energy to Move Tomorrow,” VTTI safely provides and expands access to energy, including fuels, chemicals, gasses, and other energy-derived products so that customers and partners can accelerate the transition to sustainable sources.

“As a rapidly growing organization in an uncertain geopolitical environment, laying a strong data foundation was critical for us to become data-driven. The Denodo Platform has helped us in simplifying and standardizing our data infrastructure, while boosting our business resilience.”

— Hans Geurts, chief information officer, VTTI

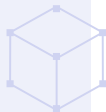
## VTTI Leverages the Denodo Platform to Empower Analytics and Data Science for the World of New Energy

As a global company focused on the future, VTTI is continuously thinking ahead and developing new ways to store and distribute energy, chemicals, and alternatives from holding terminals. With over nine million cubic meters of storage globally, VTTI loads around 11,000 vessels, trucks, and trains every year. Through the scale of its activities, VTTI acts as a critical link in a complex energy chain, making it more than just a storage company, with unique insight into energy trading and product flows.

### Business Need

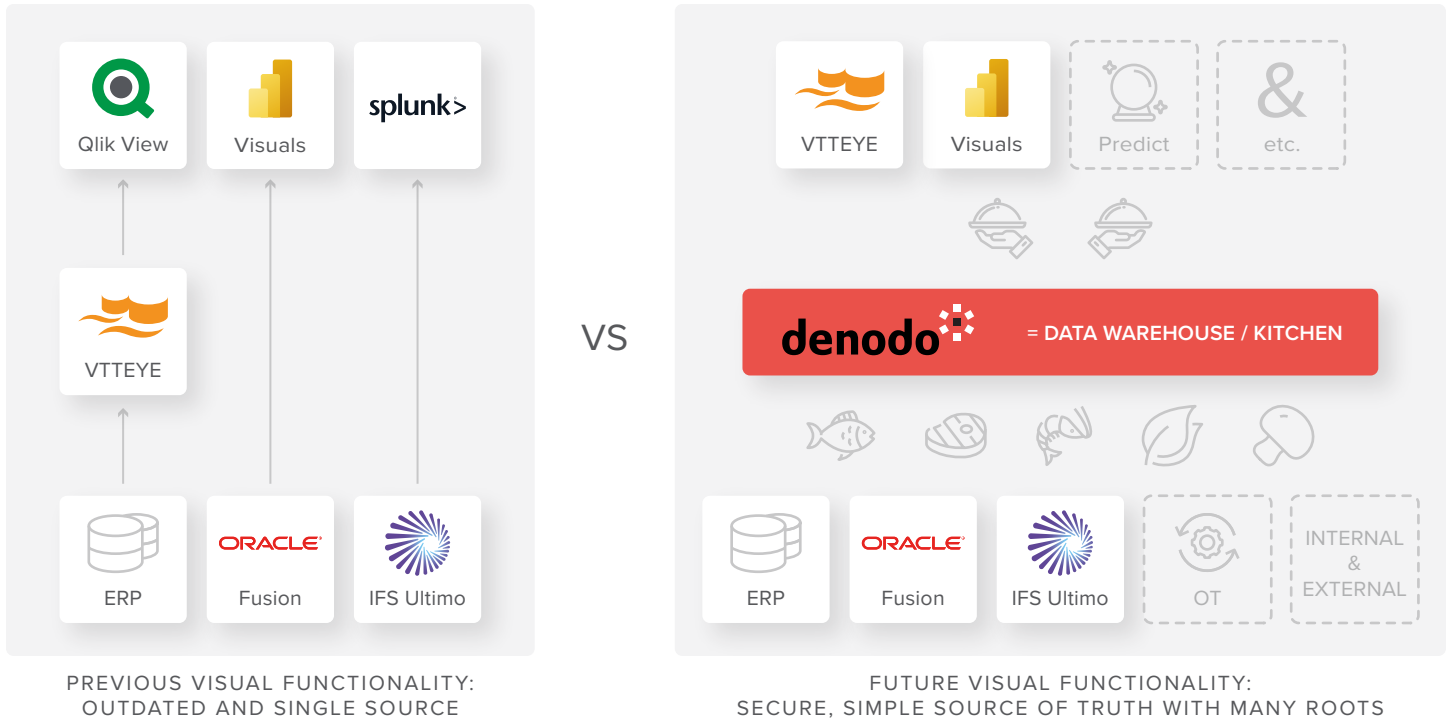
All of the critical activities that VTTI performed across the value chain generated massive amounts of data (structured, unstructured, and semi-structured) from people, processes, and IoT devices that needed to be exploited to generate insights for business users and other stakeholders. VTTI needed to leverage data for a variety of predictive maintenance and other complex operational activities, such as monitoring the infrastructure for vibrations on pumps to see whether it is going to fail, deciphering frequencies to determine whether the issue was a pump lining issue or friction issue, or predicting how long it could take for the next vessel or barge to arrive. To more effectively manage customer expectations, VTTI needed to find the right variables to perform the right analysis, all of which required seamless access to the most relevant internal and external data, continually updated in real time.

VTTI was also focused on reducing its carbon footprint (particularly Scope 3 emissions), making data more important for optimizing inventory, managing transportation, and reporting on sustainability key performance indicators (KPIs). The right forecasts, built on sound data, could help in the precise planning and execution of large-scale business operations and production efficiency and also help in saving costs across their operations, enabling VTTI to pass on competitive prices to customers. Additionally, predictive analytics could replace many of the potentially dangerous manual procedures that risk the safety and security of workers and their environment. Keeping all the above concerns in mind, VTTI wanted to build a solid data analytical foundation and a data culture that could serve the company’s desired use cases, enabling VTTI to more effectively manage customer expectations in concert with the rest of the value chain.



# Journey Towards our Insight Driven Company

2021 & 2022: leveraging our new Data Architecture



## The Solution

In the evaluation phase for next-generation technologies, VTTI did a competitive analysis of data management tools. The company evaluated three platforms to send jetty information, such as data about vessel arrivals and departures, to the company’s Power BI dashboard. Due to the ease of use of the Denodo platform, combined with the guidance of the implementation partner, Axians, it took just two weeks to create and publish a data model to Power BI with the Denodo Platform, compared to two months with the competing platforms. The Denodo Platform, with its core data virtualization technology, made it much faster and easier to integrate the jetty data with other VTTI systems.

VTTI leverages the Denodo Platform as the single layer with which to access all underlying data sources, enabling VTTI to provide a steady source of reliable data to data-consuming applications. The Denodo Platform integrates operational data that spans a variety of functions, such as finance, maintenance, and human resources. The Denodo Platform is also connecting to data from external data sources available from municipalities, port management, and meteorological organizations. The Denodo Platform combines data from six different data sources, including two different versions of an ERP system and data from 16 geographically distributed oil and chemical terminals. VTTI is also working on developing more data and analytics use cases in predictive maintenance and carbon footprint reduction (See the diagram entitled “Journey towards Our Insight Driven Company”). The company began by implementing the following use-cases and plans to also leverage the Denodo Platform for predictive maintenance and data science:

**Operational Insights and Commercial Intelligence:** The Denodo Platform acts as VTTI’s single source of truth for ERP data. The company leverages it to synthesize, combine, and analyze operational insights to improve ways of working and address inefficiencies in the operational micro-steps at the company’s terminals. It also helps VTTI to visualize and understand product trade flows through the terminals and various modes of transport, thereby helping VTTI’s commercial teams to serve customers better.

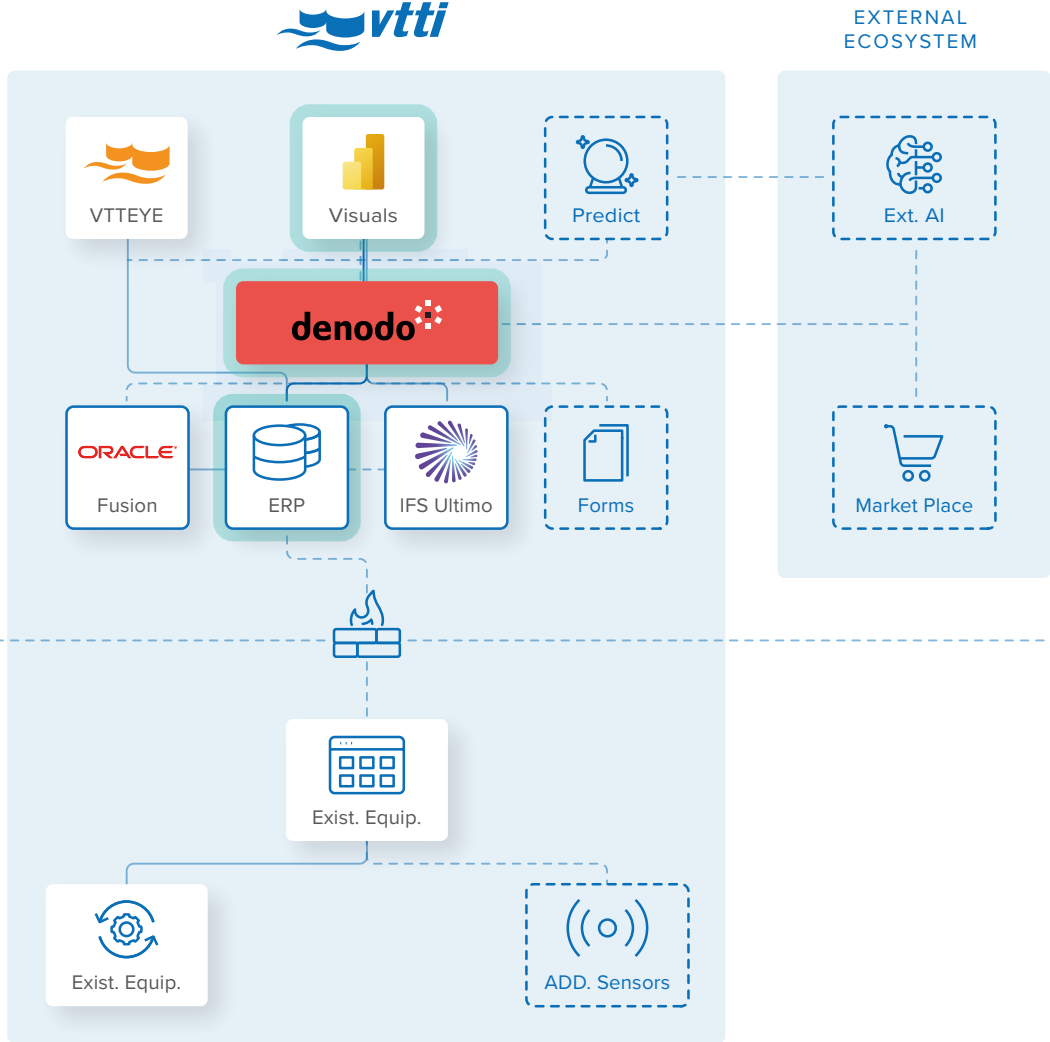
**Customer Service and Excellence:** Data from VTTI’s customer surveys is routed through the Denodo Platform and transformed to analyze service performance across the company’s business units.





IT  
INFORMATION  
TECHNOLOGY

OT  
OPERATIONAL  
TECHNOLOGY

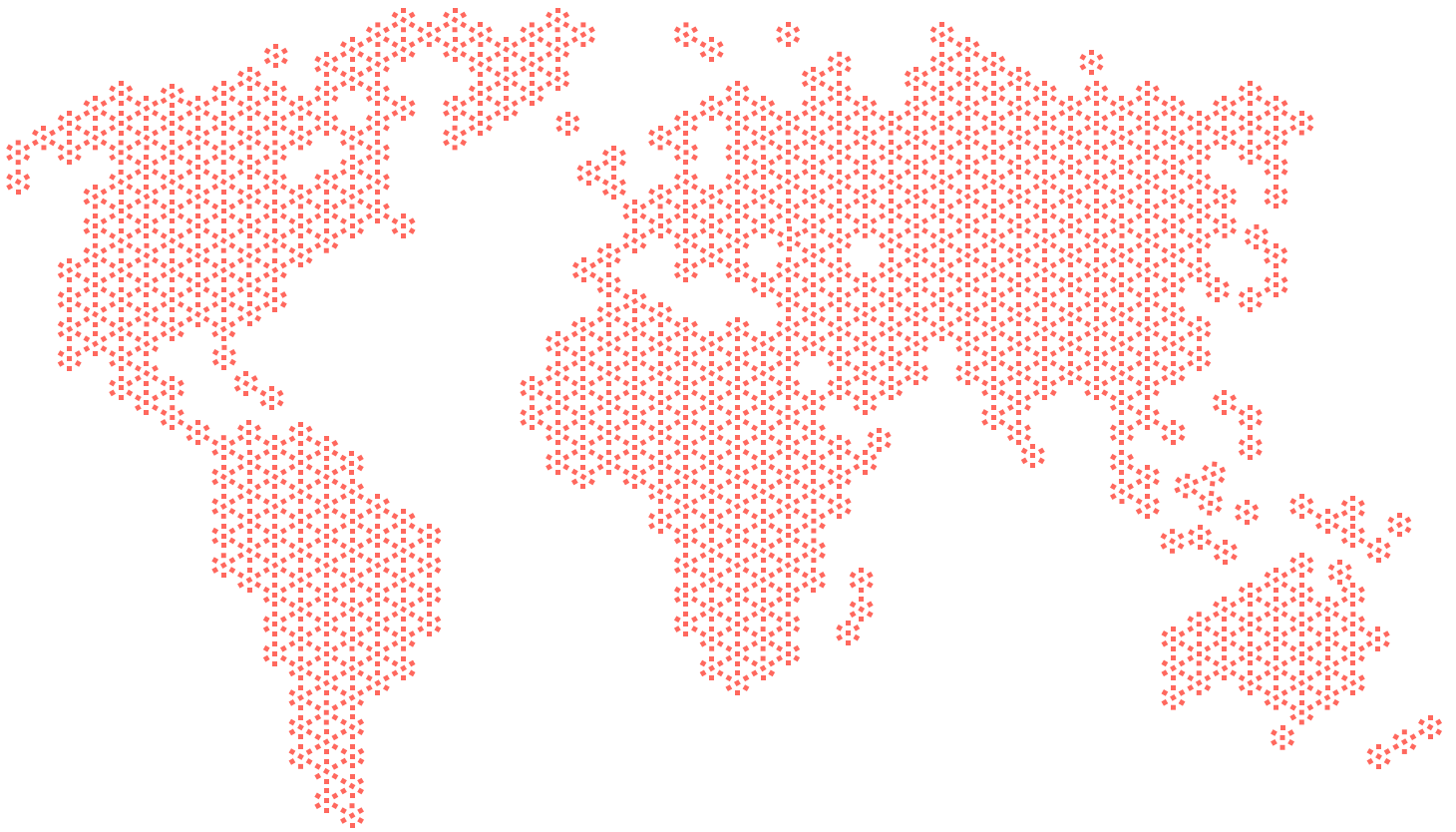


## Benefits

Supported by the Denodo Platform, VTTI was able to gain:

- **Increased Productivity** - Developers reduced their reporting cycles, and business users can now respond better to customer feedback. Business units saved significant time with the insights derived from the Denodo Platform and Power BI to run quarterly progress and management reports.
- **Improved Data Quality** - With improved operational data consistency and data integrity across different data sources, Customer Services saw 3.6% fewer faulty orders on a monthly basis. Data quality dashboards easily detect process deviations that serve as input for improving processes.
- **Streamlined Data Governance** - By providing a single data access layer, the Denodo Platform makes it possible to centralize data governance policies to control who sees what. The Denodo Platform simplified VTTI's data landscape and helped the company to standardize data sources and consuming systems.
- **Enhanced Customer Satisfaction** - Operational insights from the data viewed through the Denodo Platform can now substantiate performance; VTTI has leveraged these KPIs to extend customer contracts, some yielding thousands of dollars in additional revenue.
- **Greater Operational Efficiency** - The Denodo Platform enabled VTTI to link operational data with maintenance data and financial data so the organization can perform preventive maintenance on terminals and pumps, compare best-in-class and worst-in-class equipment, and identify outliers. VTTI can now track the 10 highest risks per quarter and trigger automatic failure modes to prevent complete equipment failure.





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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