denodo

Case Study

Leading Construction Equipment Manufacturer Improves Service Delivery and Revenue Using Data Virtualization

Industry

Manufacturing

Profile

The world's largest construction equipment manufacturer, "The Company" engages in the manufacture of construction and mining equipment, diesel and natural gas engines, industrial gas turbines, and diesel-electric locomotives. It provides technology for construction, transportation, mining, energy, logistics, and electric power generation. The Company distributes its products and services through a dealer network consisting of 172 dealers that serve 190 countries. The Company has over 95,000 employees and recorded $38.5B revenue in 2016.

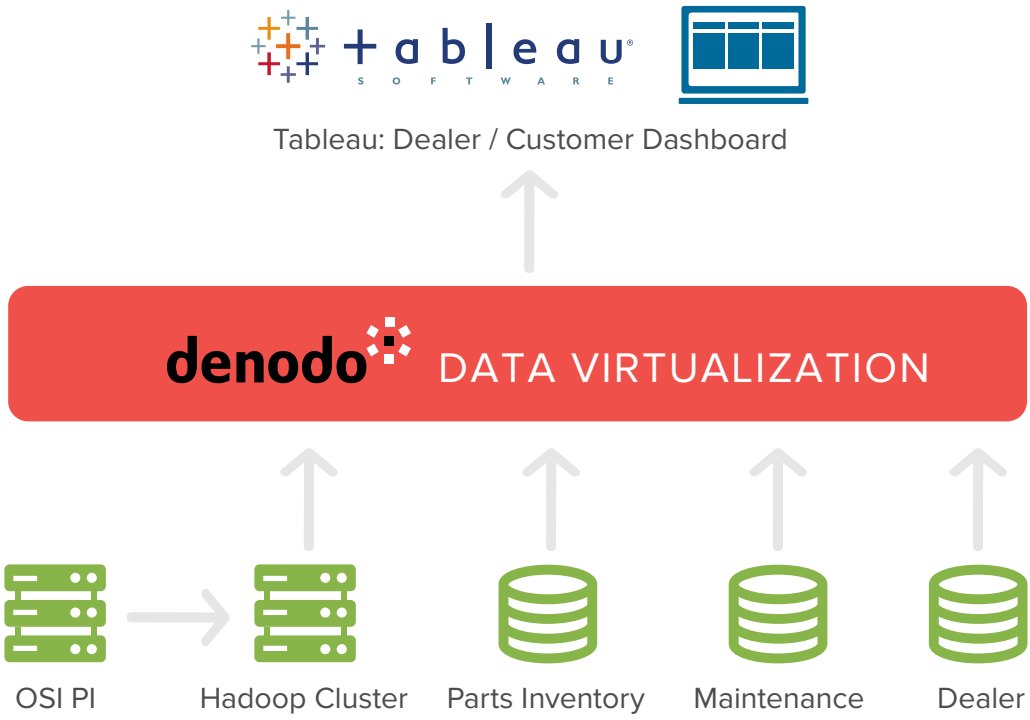
While the heavy equipment manufacturing market has the potential to reach $500B by 2020, many of the manufacturers have been hit by sluggish sales, much of which can be attributed to low-cost alternatives as well as global macroeconomic factors. Long known for its manufacturing prowess, The Company boasts high quality equipment and strove to thwart competition by providing the highest quality field maintenance and machinery servicing. As hundreds of thousands of The Company's machines hit the ground in mining or construction every day, breakdowns and the low utilization of machines and parts is a very common issue. As The Company's customers want their investments to produce high returns with minimum downtime and maintenance, The Company considered it critical to optimize asset performance. The Company wanted to stay ahead of the competition in this Internet of Things (IoT) era, and wanted to proactively reduce, if not eliminate, machinery part breakdown in the field.

Challenges

To engage in proactive field maintenance and service delivery, The Company heavily invested in modern tools and technologies for telematics and predictive analytics. In addition, since The Company depends heavily on part data from the field for predictive analytics, it invested in field sensors and big data technology. Every machine's sub-system, such as the engine, transmission, hydraulic arm, bucket, wheels, etc., can collect data using sensors. All this data, captured several times an hour, is then streamed or transferred into a data lake. The field equipment data needs to be analyzed constantly in real time against the backdrop of service life records, warranty data, and other information. The company needed an agile data integration and access layer, one that can easily integrate big data with other sources of enterprise or cloud data in real time. Traditional data integration methods fell short, as batch processing data transfer is both slow and expensive. In addition, to make meaningful recommendations to dealers and customers on equipment servicing and related tasks, The Company needed to be able to access additional contextual data. As a result, The Company needed to combine big data analytics with operational data. The Company's business partners also requested that current monthly spend data be available in the same reports that provide spend analytics on historical data. With all of these requirements in mind, The Company needed an agile, transformative data access layer.

The Solution

The Company's search process ended as soon as it learned about the Denodo Platform for data virtualization, and The Company uses data virtualization for multiple enterprise-wide projects. The data virtualization layer combines the streaming data with operational data to deliver meaningful information to business users through interactive dashboards and reporting tools that sit on top of the data access layer. In addition, while the purchasing department's historical spend data is built on top of the purchasing data marts, and updated on a monthly basis using ETL processes, the data virtualization layer combines real-time analytical data and buyer information, streamlining global purchase business partners' monthly spend and order information. The data virtualization layer is also the foundation for creating The Company's telematics data service, which can be sold to The Company's customers and distributors in a Data-as-a-Service (DaaS) model.



Benefits

- The data virtualization layer has been instrumental in optimizing customers' asset performance.
- The Company gets a twofold boost in revenue – through selling more parts and services and through selling telematics in a DaaS model.
- The Company has been able to improve its margin and increase long-term revenue.
- With enhanced insight into part failure rates, The Company has been able to optimize pricing and the blend of parts and services.
- The Company's distributors and customers were able to reduce warranty costs for parts failure.