Wintershall Noordzee Turns Data into Self-service Insights for Operational Excellence

Wintershall Noordzee

Wintershall Noordzee B.V. (Rijswijk, Netherlands), a joint venture of Wintershall Dea GmbH (Europe's leading independent oil and gas company) and Gazprom EP International B.V., is one of the larger producers of natural gas in the Dutch sector of the Southern North Sea. It operates 17 production platforms and four subsea installations on the continental shelves of the Netherlands, UK, Germany, and Denmark.

Wintershall Noordzee was drowning in data and using outdated methods to manage and analyze it: spreadsheets and physical reports to predict the best location to drill for oil and gas. As a mid-sized operation, it needed a way to compete with big oil companies like Shell that have thousands more personnel and heftier budgets for locating prime drilling locations.

"We don't have big budgets and huge staff. So, we need to be smarter with less. It forces the company to give me room to innovate," said Dejan Zamurović, data engineer.

The company needed a solution that could bring all of its data sources together in a central data exploration portal and make it more searchable, flexible, and dynamic, so geologists could more easily and quickly analyze dozens of variables. What started as a couple of data tables, "Crossfire," built on TIBCO Spotfire software, became a fully functional data platform that everyone can easily access and explore.

Now, because there is so much easy-to-consume data available, more time can be spent analyzing rather than wrangling it, and more discoveries can be made. In fact, time spent gathering requested data has been reduced from eight hours to nearly real time, and scientists and engineers can find it themselves—a huge savings and win for the company.

Making sense of hundreds of data points in real time

Wintershall Noordzee is constantly exploring for oil and gas. "This is basically the job of the exploration geologist, to interpret all the different variables to make sense geologically and say, 'Okay, this shows the highest chance that we might find a gas field, let's drill an exploration well to see if there is something there,' and if we're lucky, we can go into development and then production," said Zamurović.

Now, with the help of TIBCO software, end users can work through their workflows much faster while significantly reducing uncertainty. "They don't have to wait for me to spend eight hours on SQL and transformations and aggregations in four or five other tools to get to the needed insight," says Zamurović.

The self-service element of Crossfire helps users find all the data they need themselves, keep a train of thought, stay on the analysis, and come to better conclusions much faster.
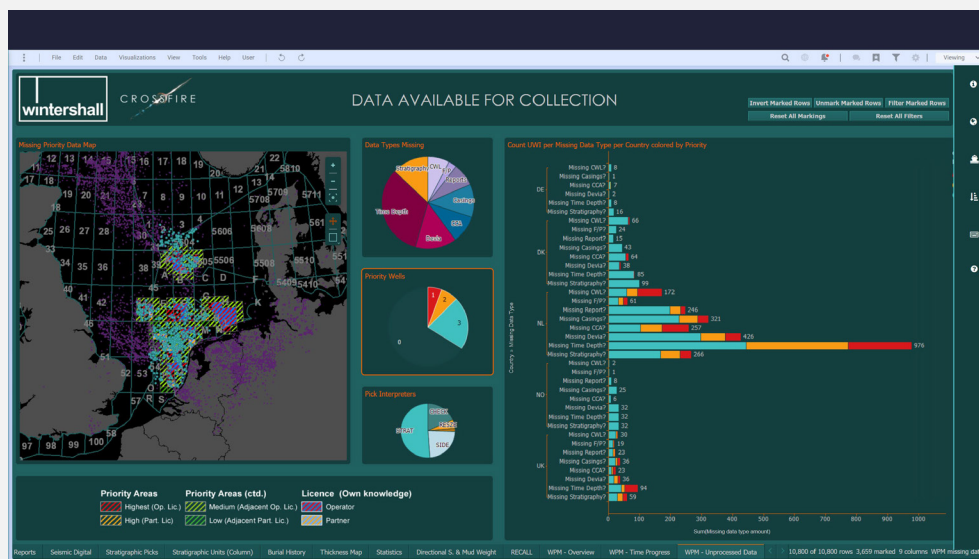
CrossFire: A self-service portal built with TIBCO Spotfire for well data browsing, analysis, and management.

Wrangling, managing, and analyzing with one tool, not five+

The exploration department, including geology, geophysics, petrophysics, and other disciplines, has logging, seismic, well, and depth curve data stored in relational databases and network drives. Users access it from various platforms such as OpenWorks, ArcGIS, Recall, Oracle archive database, SQL, and Petrel. All the data sources, data types, and access points had led to data silos.

"Before TIBCO Spotfire analytics, when a user had a question, I would have to plot the data on a map after using five different tools to get the desired information from our data. Now, they can do it themselves, and they're just one click away from considering other variables (such as the rock unit, or borehole geometry), which previously would cost me hours of extra work. Crossfire is a huge time saver with a lot of transparency and new insights."

Gaining unprecedented insight from new information

There is a large amount of public data available on the North Sea. Depending on the country, operators must release their data three or five years after it is gathered. To gain an edge, before release of its data, Wintershall Noordzee needs to analyze it, cross-referenced with any other public data.

Crossfire helps the company develop new insights from information that it couldn't access before, so teams can fill in gaps. "I can now more transparently show users what we have in our database and automatically generate alerts for data that we are missing, but that's in the public record," said Zamurović. "We know what we do not know."

Analyzing even more data with machine learning

"We've already spent about two decades, two full-time equivalents per year, inserting public data into the archive, and we're not even halfway. And, as data is getting recorded more easily, more volume and variety is coming in. The data management team cannot handle this," said Zamurović.

Wintershall Noordzee is looking into using machine learning and natural language processing to help conceptualize an automated document ingestion and data enrichment platform, its Automated Multidisciplinary Information Extraction (AMIE) project, which uses TIBCO Data Virtualization software.

Moving from portal to platform

What started as a couple of data tables has become a fully functional data platform with more data and better analyses and plots. Wintershall Noordzee has enriched Crossfire with higher data volumes and varieties. Using analytics tools, it overcame previously restricting data silos to create a self-service data portal that lets users across the company browse, analyze, and manage their data. It has saved the company massive amounts of time and provided greater transparency and new insights. Now Wintershall Noordzee is empowered to turn its portal into a platform and use data virtualization to take its analytics journey to the next level.

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