Hunt Oil stays ahead of the curve with smart IoT drilling

18–24
hours to spot patterns in new data

SECONDS
speed to insight, which previously took days

WEEKS
development time, decreased from months

Challenge

Hunt Oil suffered from out-of-date insights; inflexible, vendor-supplied applications; and lack of agility. It needed a faster solution for extracting information from applications to gain applicable insights.

Solution

With the help of the TIBCO Drilling Accelerator, Hunt's Smart IoT Drilling System uses TIBCO Spotfire X, TIBCO Spotfire Data Streams, TIBCO Streaming, and TIBCO Messaging solutions to provide a single, real-time view of analyses.

> **We are combining sets of data in ways we were never able to do in the past, leveraging data from our reporting and engineering databases. With TIBCO, we take data from the server and turn it into an asset that is going to make a difference.**
>
> —Brian Alleman, Senior Drilling Engineer

A private oil & gas exploration and production company headquartered in Dallas, Texas, Hunt Oil Co. operates around the world, but mainly in the United States, Canada, and Yemen.

Benefits

Time- and money-saving query-the-future insights

"Using TIBCO solutions, I streamlined the process to batch-analyze wells," said Alleman. "Process optimization helped attack some of our immediate challenges." The sooner the company can get the data it needs, the faster it can react, saving time and money.

According to Senior Data Scientist Alex Molinar, data—its volume and type—has transformed the way Hunt Oil does business. Downhole, bit assembly, hydraulic, and pump data can now be analyzed, with Spotfire Data Streams software used to "query the future" for conditions that could lead to failure. The team can then evaluate and act before it's too late because its edge-to-core streaming model sparks immediate insights, as opposed to up to six days as before.

"The TIBCO Drilling Accelerator gave us the foundation and the framework to build the smart IoT drilling system so we didn't have to start from scratch."

An example of a future query: "Based on the knowledge and location of the geological formation and the drill plan, tell me, in real-time, when conditions allow striking the surface with the drill bit, and the right force and RPM combination," said Alleman. For this query, the streaming engine combines real-time data from the rig and downhole telemetry, with the historical information and data science of the drill plan. The best RPM rate is determined through engineering algorithms that adjust the plan based on actual conditions.

A smart, highly agile IoT drilling system

In less than six weeks, the TIBCO Drilling Accelerator enabled the engineering team to go from idea to testing of its smart IoT drilling system—a platform that rapidly deploys analytics models on real-time data.

Algorithms defined in Python, .NET, PMML, or other language, are injected directly into the TIBCO Streaming engine for evaluation. Because TIBCO Streaming code is visual and more understandable to engineers, the team can develop models they are confident will work and can respond quickly to fix them if they don't. Results are continuously pushed to Spotfire X software for visualization and analysis, and evolved as conditions change.

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