

TIBCO Spotfire in Upstream Oil and Gas

CHALLENGES IN UPSTREAM OIL AND GAS

Bringing resources to market can be challenging even in favorable conditions. However, volatile prices, complex technologies, geopolitical unrest, unconventional reservoirs, and difficult new environments all contribute to making repeatable process improvements and sustainable production gains difficult. The situation demands creative thinking and breakthrough ideas, but also requires a pragmatic understanding of operational tradeoffs at multiple levels. Technical professionals and managers alike must be deeply aware of the underlying drivers for success and failure before they can make changes to improve the business. Morning reports and dashboards can alert you to a problem, but unfortunately they won't fix it.

Synthesizing information across a dizzying array of difficult to use technical and business applications and their data sources has become one of the biggest barriers to fast and decisive action. TIBCO Spotfire® provides an enterprise analytic platform for operations professionals to perform lightning fast data analysis for pure ad-hoc analytics on huge amounts of production, technical, and expense data. The visual, interactive capabilities of Spotfire allow every investigator to become an innovator—to ask and answer their own questions on demand, so they can chart the best course of action.

WHY SPOTFIRE?

There are literally hundreds of analytic use cases and thousands of Spotfire users within the global upstream oil & gas industry who are constantly finding new methods of exploring and exploiting their data to deliver value to their organizations. Below are some example use cases:

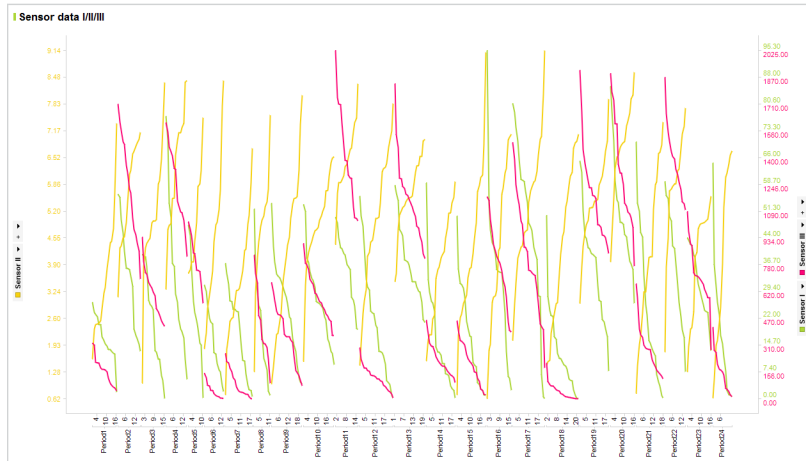
BUSINESS PLANNING AND MONITORING

From portfolio analysis and capital planning to budgeting and forecasting, companies incorporate Spotfire analysis throughout their processes to evaluate the best use of capital and operating funds. Spotfire makes it possible to analyze multiple strategies and projects and interactively assess tradeoffs between performance measures and resource constraints to identify the best investment options. Companies can analyze ongoing performance of their chosen investments to measure expected versus actual performance. They can drill down into details to identify causal relationships or events that can be leveraged or disregarded given their positive or negative impact. In business planning, Spotfire enables companies to analyze and answer questions such as:

- What are the best exploration prospects?
- Which properties should we acquire or divest?
- What is the current value of each property? What is its potential value?
- What is the best use of funds for improving our existing assets?

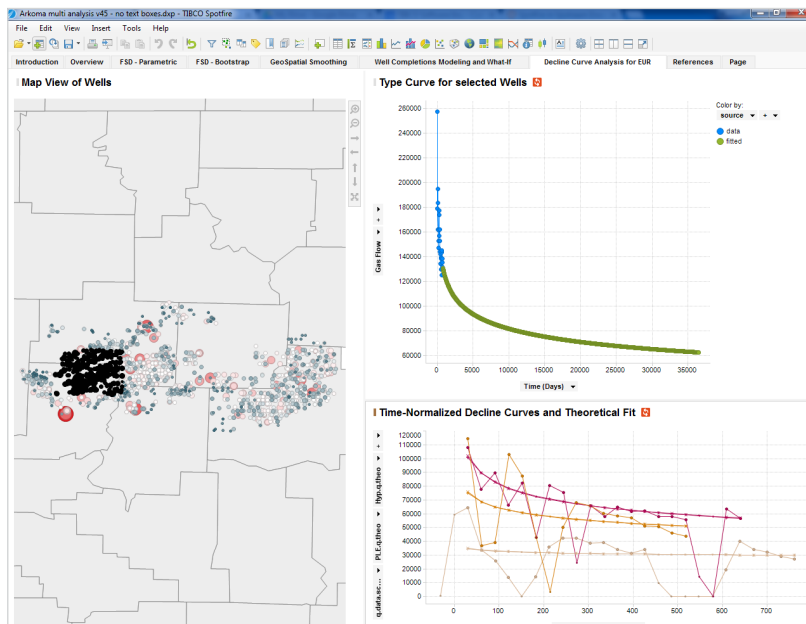
ASSET RELIABILITY AND MAINTENANCE

With Spotfire, users can mashup data from multiple internal and external data sources. These often include historical and operating data to identify trends and anomalies that provide insight into the root causes of asset failures and operational variances. Using this information, companies can monitor and intervene in failure situations as well as devise proactive, preventative maintenance programs to avoid future failures.



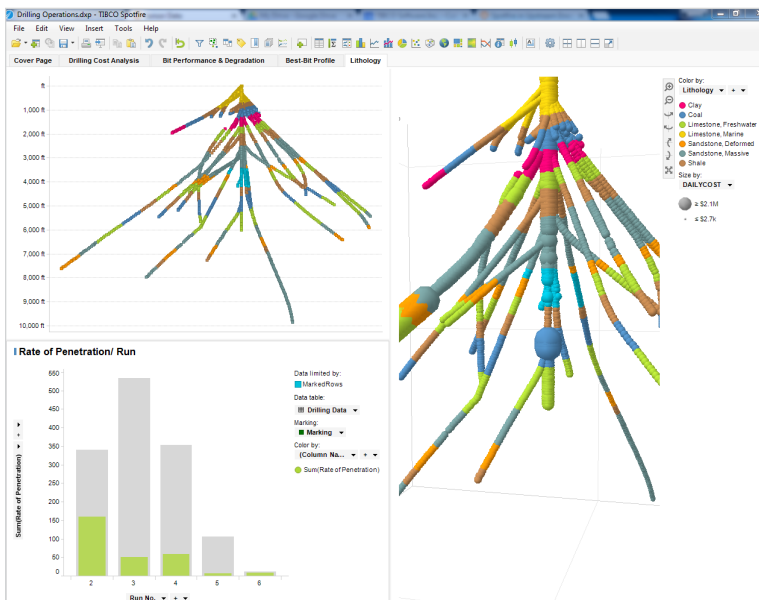
PRODUCTION ANALYSIS

Reservoir and production engineers and technicians can use Spotfire to quickly survey production performance for thousands of wells. This capability helps them more easily isolate performance issues and identify workover or secondary production candidates. Spotfire is also used for monitoring field injection and production volumes and pressure trends over time for optimal oil recovery. For example, Spotfire has been used to identify low-pressure, under-injected areas by graphically displaying needed operational changes. The resulting injection modifications flattened the decline rate for marked improved recovery in oil and natural gas.



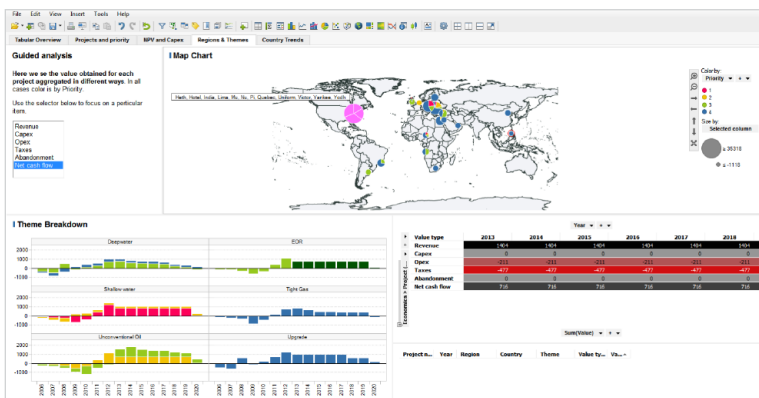
DRILLING ANALYSIS

Drilling and completion engineers use Spotfire to analyze equipment types, ratings, and specifications, as well as completion techniques, to identify correlations between well performance and production results. It is used to evaluate drill bit performance across wells to identify the most efficient bit given geologic conditions. The results of these analyses are reduced downtime, increased performance, and improved production results.



LEASE EXPENSE ANALYSIS

Spotfire provides users the freedom to analyze operating expenditures across a region or asset by crew or equipment, with drill down to invoice-level detail. Users can identify trends and anomalies in direct operating costs, repairs and maintenance, and workover costs. This discovery provides companies with a comprehensive understanding of the where, why, and when behind expenditures. For example, Spotfire can be used to find and compare what various groups are paying for similar work. It gives you the opportunity to better see cost control opportunities, such as how contracts could be leveraged across an asset for the best possible price.



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 02/17/15