TIBCO Spotfire in Downstream Energy

In all areas of the energy industry—upstream exploration, drilling, production, trading, midstream, and refining, oil field services companies as well as cross functional areas like HR, Finance, and Health Safety and the Environment—thousands of TIBCO Spotfire® users consistently find new and illuminating methods of exploring and exploiting their vast stores of data.

Business and technical users in the industry have added significant value to their organizations by using Spotfire to combine data from multiple sources and perform ad-hoc analytics, driven on-the-fly by their own motivation to discover trends, outliers, threats, and opportunities.

CHALLENGES IN DOWNSTREAM ENERGY

Petroleum refining is a capital intensive and complex manufacturing environment faced with a wide range of challenges that must be navigated to maintain a company's competitiveness and maximize its profitability. Since market pricing governs both crude oil feedstocks and refined product outputs, the key to a company's success is maximizing its operational efficiencies to improve margins, optimize asset performance, reduce costs, and increase the value of product produced from the refining process—all while operating safely and within the boundaries of a strict and transparent regulatory environment.

To do this effectively, companies must be able to:

- Understand, anticipate, and respond to changes in global, regional, and local demand of refined products despite limitations in crude oil supplies, refinery capacity, complexity, and access to markets.

- Respond to price volatility of both crude oil inputs and refined products by taking advantage of alternatives in crude oil grades, supply location, and transportation methods, such as rail.

- Maximize productivity by reducing unplanned downtime of plant and equipment and develop optimal maintenance programs to achieve the right balance of scheduled maintenance, investment, and return.

- Increase their understanding of the nuances in profitability between products, customers, contracts, and regional influences to improve return.

WHY SPOTFIRE

TIBCO Spotfire enables end users in downstream energy companies to analyze data they want in the time frame they require. Spotfire does this by letting users interactively query, visualize, aggregate, filter, and drill into datasets of virtually any size. They are free to analyze their data guided by their own knowledge, intuition, and desire to answer the next question. They can develop insight faster and bring clarity to business issues or opportunities and easily share that knowledge with the rest of the organization. Spotfire also supports predictive and event-driven analytics, all from the same enterprise-ready platform, enabling users to perform what-if forecasting and see trends in real-time streaming data. Companies use TIBCO Spotfire to:

- Analyze the economics of various transportation mechanisms, crude oil supplies, storage fees, etc. as they relate to the overall challenge of supplying refineries with the most efficient crude at the right time and responding to changing market demands.

- Understand their assets and develop optimal maintenance programs by analyzing historical operating data to perform root cause failure analysis, identify trends, and understand operational variances. Users can also leverage this knowledge to develop predictive models, set variance thresholds, monitor sensor data, and generate proactive alerts to impending issues—allowing them to intervene and take remedial action.
- Combine data from multiple sources and drill down to analyze profitability across products, regions, customers, contracts, etc. to shift their focus to more profitable products, regions, and/or customers.
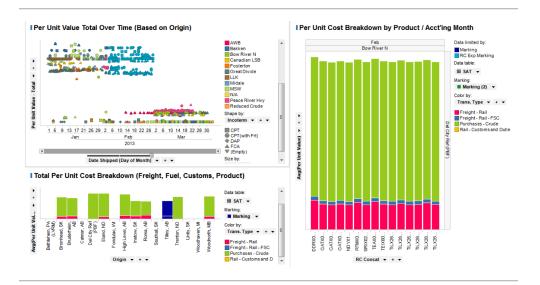

Figure 1: Unit Cost – High Level and Drill Down to understand the Netback Analysis for landed cost of crude.

BEYOND DOWNSTREAM ENERGY

Spotfire is used extensively across the energy industry, from exploration and production of oil and gas reserves to energy trading, transportation and logistics, netback analysis, and health, safety, and the environment. TIBCO Spotfire helps users of all kinds improve decision-making and use analytics to uncover and share critical business insight.