

# Analytics Explorer

Helping exploration and production companies create business value through dynamic data science and analytics



## Overview

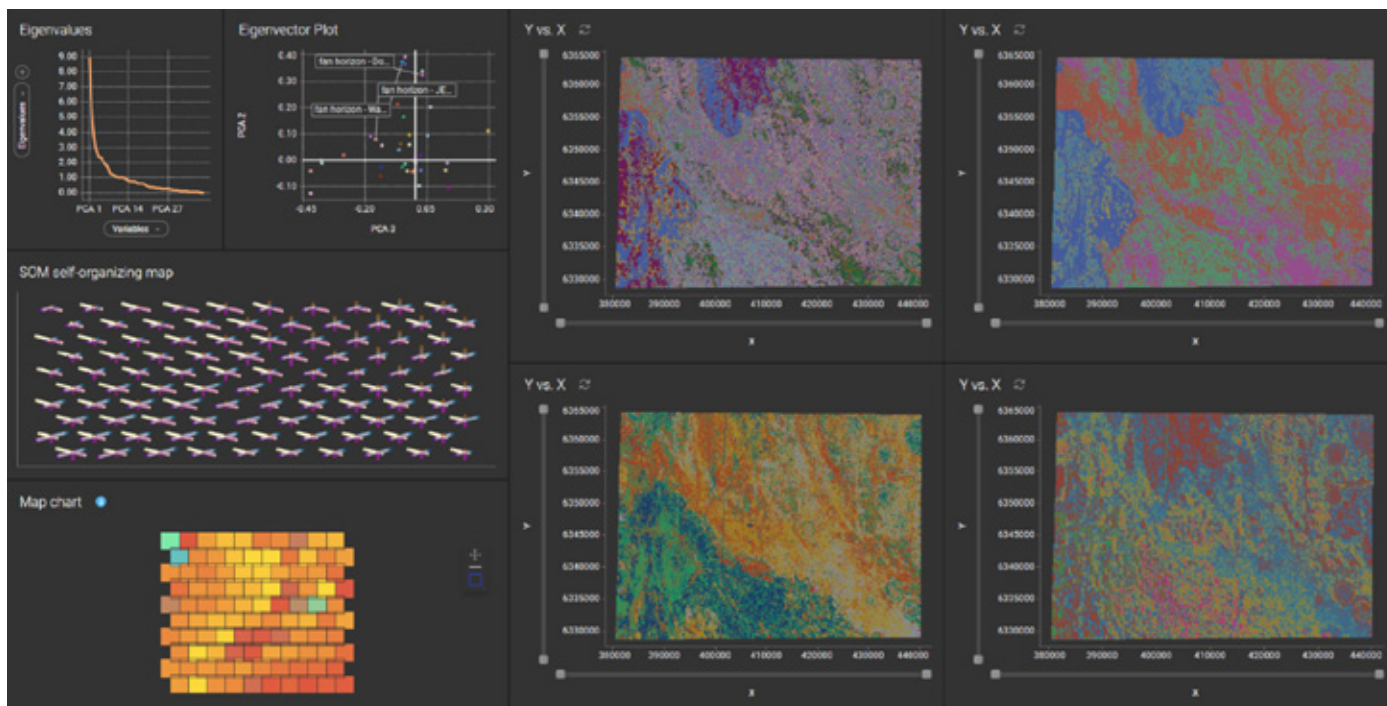
With recent market disruptions impacting oil prices and accelerating long-term trends like Energy Transition and Digital Transformation, exploration and production (E&P) companies require new technologies to keep pace with this changing environment and mitigate uncertainty and risk. Data science and analytics has an important role to play in helping E&P companies drive their digital strategies and enhance their competitive advantage, achieve return on investment (ROI), and increase operational efficiencies. When paired with domain expertise, data science technology can help E&P companies evolve their operations to become more agile and data-driven while reducing bias and risk for successful decision-making.



## Analytics Explorer

Analytics Explorer by S&P Global Commodity Insights is designed to help companies involved in exploration, development, and production activities leverage data science and analytics to help drive their business strategies and make investment decisions based on predictive outcomes and probabilities. It is well-suited for organizations managing a large portfolio of wells, assets, and reservoirs who are actively investing in digital transformation initiatives and have a strong desire to get the most out of their data investment to improve operational efficiency. Exploration decisions can be improved by integrating seismic attributes, geological maps and digital log data to identify new prospect areas using advanced predictive and clustering algorithms.

E&P companies actively seeking data science solutions to automate processes and optimize asset team workflows will benefit greatly from the many workflows incorporated in Analytics Explorer. These intuitive, guided workflows have been rigorously tested and validated to ensure maximum results that are immediately insightful and actionable.



**Figure 1.** Analytics Explorer dashboard, powered by TIBCO Spotfire®, visualization results from Principal Component Analysis and Self-Organizing Map techniques applied to seismic attributes workflows for facies delineation, resulting in more accurate interpretations.

## Benefits

Achieve next level collaboration with a cross disciplinary dataset allowing for reduced uncertainty and risk. The foundation of good data science is excellent data quality. Utilizing Analytics Explorer, teams can quickly discover and comingle disparate datasets, and can then run advanced data mining and quality control workflows to easily visualize data and identify missing or incorrect data. This helps protect against decision-making based on low quality or sparse data, and ensures data bias, orphaned or bypassed data doesn't skew visualization results. By understanding the quality and quantity of data available, asset teams can better assess the associated risk and probability of a successful outcome.

## Immediate Access to Data Science

Training predictive models and tuning up machine learning algorithms takes considerable time and resources, both of which are in short supply in today's volatile E&P market. For more than three years, we have invested in the development of a state-of-the-art data science platform that has been validated by customers and our strategic partners, TIBCO® and The University of Texas. We have simplified the access to advanced data science tools to geoscientists and engineers by incorporating multiple guided workflows to help asset teams gain immediate value from their data investment.

## Compatibility

Analytics Explorer works not only with Commodity Insights Upstream Solutions but as a standalone application overlaid on your proprietary data housed in any SQL or Postgre SQL database. This allows your team to integrate data to derive insights and understanding. Analytics Explorer has built-in connections with the following Commodity Insights Upstream Solutions products, services, and databases:

- **Kingdom™ Geoscience Software**
- **Harmony Enterprise™ Reservoir & Production Software**
- **Energy Studio: Impact**
- **EDIN**
- **Enterprise Data Management (EDM) for Energy**
- SQL/Postgre SQL databases



## Reduces Interpretation Bias

Analytics Explorer allows geoscientists great flexibility with the ability to utilize more attributes in their interpretation workflows like never before due to the various multi-variate algorithms embedded within the application. The results provide guidance by revealing which attributes geoscientists should focus on for more reliable and unbiased interpretations. For example, many geoscientists rely on smaller subsets of data or perhaps only utilize their favorite, well-understood attributes to make drilling recommendations. By improving the access to a large quantity of high-quality data, your team can statistically reduce risk and create new value through repetition.

In addition, the algorithms and workflows incorporated in Analytics Explorer can be adjusted or improved based on your proprietary knowledge of the basin, reservoir, well, etc. You can quickly understand how the algorithm produced the result and will be able to rapidly interrogate anomalies and visualize trends.

## Visualization & Data Analytics

After you've evaluated data completeness, accuracy and volume, and you've run a workflow utilizing one of our templates or one of your own, you'll get the results in both table and visual display formats. Through a dynamic connection between TIBCO Spotfire and Analytics Explorer, you'll easily be able to toggle on and off attributes or datasets and understand their impact visually through dashboards, charts, graphs and displays. You can utilize our out-of-the-box results or customize your displays to better align with your organization.

## Featured Workflows

The following analytics workflows are standard with Analytics Explorer:

**Production performance predictive maps:** Understand key drivers in well performance, normalize engineering variables and include geological data to generate production predictive maps to identify sweet spots.

**Completion optimization:** Isolate the impact that every engineering and completion variable may have on production performance in modeling scenarios that include geological and physical constraints to get to the right completion strategy.

**Geological and geophysical facies classification:** Apply clustering algorithms on select variables from digital logs, geological grids, and seismic data to identify facies that are linked to highly producing reservoirs.

**Automated well spacing calculations:** Analyze wells from either a select area of interest or for an entire basin automatically, with resulting statistics visualized in plots in Spotfire indicating the ideal well spacing.

**Data imputation for missing geological data:** Impute missing geological data such as digital logs to reliably increase the amount of data for your interpretation project to help you make better decisions with lower risk.

**Enhance geological workflows:** Use with Kingdom™, by Commodity Insights to augment geological cross-sections by integrating multiple data (chronostratigraphic, biostratigraphic, geochemistry, geomechanical, etc.) that is synchronized with your Kingdom geological tops. Additionally, you can combine multiple property grids to create quality index maps, play fairway maps, and risk maps.

### To Learn More...

If you'd like to find out more about Analytics Explorer, you can request a demo now or visit our website at [spglobal.com/analytics-explorer](https://spglobal.com/analytics-explorer).

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## **S&P Global** Commodity Insights

### **S&P Global Commodity Insights**

At S&P Global Commodity Insights, our complete view of global energy and commodities markets enables our customers to make decisions with conviction and create long-term, sustainable value.

We're a trusted connector that brings together thought leaders, market participants, governments, and regulators to co-create solutions that lead to progress. Vital to navigating Energy Transition, S&P Global Commodity Insights' coverage includes oil and gas, power, chemicals, metals, agriculture and shipping.

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