INDUSTRY INFOSHEET:
Oil & Gas

REDUCE COST OF EXPLORATION, **IMPROVE** WELL PERFORMANCE & **REDUCE** PROCESS FAILURES

Discover the opportunities with world-leading data **analysis tools**

- Reduce impact on nature with environmental monitoring >
- Detect and prevent out-of-control situations during production >
- Allocate individual wells contribution to the production >

CAMO
Bring data to life

IMPROVE PERFORMANCE AND REDUCE COST

Oil & Gas is an industry with constant challenges, including fluctuating product demands, technological innovations and environmental impact issues. It has become ever more important to be in the front seat of the evolution of the industry and to constantly think smarter when it comes to locating new reserves and utilizing these reserves, minimizing dry wells and keep the cost as low as possible. To remain competitive in this complex environment, companies need to explore new set of ideas and techniques to achieve ever more demanding expectations from the Board of Directors, shareholders and consumers, while at the same time always consider the environmental impact.

Multivariate analysis (MVA) is becoming more and more used in the oil and gas sector for performance prediction, outlier identification, understanding complex processes, planning maintenance and forecasting.

CAMO Software has over 25 years experience and has worked with a number of oil and gas companies, helping them analyze and monitor large parts of the value chain, from exploration to well contribution. Our advanced multivariate data analysis software provides deeper insights from available data to drive business improvements and build a competitive advantage.

REAL BUSINESS BENEFITS

Multivariate data analysis can be used in all stages, from geological analysis of age and formations to well allocation and analysis of finished product.

Environmental monitoring

- Monitor environmental impact from production and the use of energy
- Monitor the environment in real-time using multiple sensors and sensor fusion methods
- Analyze data before and after startup of production by multivariate methods

Early event detection

- Detect out-of-control situations through real-time monitoring of production processes
- Minimize the need to discard faulty end-product, reduce waste/scrap and avoid costly process delays
- Automatically detect out-of-limit variables in a multivariate context, overcoming the problems with individual control charts

Process and production monitoring

- Ensure the extraction of raw materials with a specified quality and purity
- Better understand the variation in energy demand for optimized production
- Increased process understanding can reduce the time to market for new products, and enable fast tech transfer, site-to-site transfer and scale up

Reservoir and Upstream applications

- Classify geological formations based on biomarkers and other available variables, and predict rock ages using our advanced models
- Monitor production volumes, temperature, pressure and their interactions in real-time and detect out-of-limit variables, thereby detecting unexpected events at an early stage
- Apply instrumental data to predict the composition of oil samples for allocating the individual well's contribution in commingled oil

EXAMPLE APPLICATIONS
OF MULTIVARIATE ANALYSIS

Real-time process monitoring for early event detection

Working with one of the world's largest refineries, we were able to help identify impurity build up in a product stream and correct for it based on advanced graphical outputs and diagnostics. This was achieved by integrating our multivariate analysis and prediction tools into the clients existing hardware and software platforms, giving them the ability to detect events before they caused problems. This reduced the risk of serious process damage, minimized environmental emissions and saved the company millions of dollars in lost time and production.

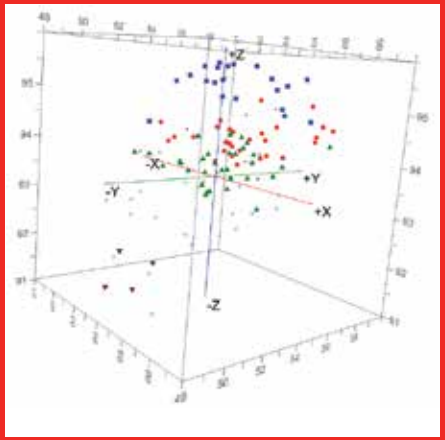
Detecting out-of-control situations during production

Our process monitoring software Unscrambler® X Process Pulse can be used in real-time to monitor production processes and detect out-of-limit variables, giving users the possibility to remedy potential failures before they occur. The software includes advanced quality predictions and drilldown plots to investigate the variables contributing to deviations, and will help improve process monitoring, understanding and control. Process Pulse enables powerful multivariate models developed with The Unscrambler® X software package to be used to monitor at-line, on-line and in-line processes.

Environmental monitoring

CAMO Software has developed a real-time solution for monitoring the environment with multiple sensors. This solution has been applied to the seabed off the coast of Northern Norway where sensors such as temperature, turbidity and current conditions are collected every minute. The system immediately shows which of many sensors have changed in a multivariate context. Using multivariate methods ensures that the fallacy of investigating multiple individual control charts is overcome.

IS YOUR CURRENT ANALYSIS SOFTWARE SHOWING YOU THE FULL PICTURE?



Multivariate analysis techniques are often superior to traditional (univariate) statistical approaches as they help identify and explain the complex relationships and patterns that can lead to process faults, which are often undetected by univariate methods.

Multivariate methods point directly to the cause of a problem, providing deeper insights into how to adjust a process to bring it back into a normal state of operation, thus avoiding unnecessary "tweaking" and more importantly, forced shutdown.

Our solutions bring the data from several different control charts/measurement systems into a single view of the process that operators and engineers can easily interpret to make the right decisions in a timely manner. This gives you a powerful tool for better equipment usage and allows the implementation of well informed corrective and preventative action (CAPA) programs.

DOWNLOAD FREE GUIDE:
What is Multivariate Data Analysis?

CAMO SOFTWARE
PRODUCTS & SERVICES

Get deeper insights from your data with our range of powerful, yet easy to use mining and predictive analysis solutions.

The Unscrambler® X
Leading multivariate analysis software used by thousands of data analysts around the world every day. Includes powerful regression, classification and exploratory data analysis tools.
TRIAL VERSION | READ MORE

Unscrambler® X Process Pulse II
Real-time process monitoring software that lets you predict, identify and correct deviations in a process before they become problems. Easy to set up and use.
TRIAL VERSION | READ MORE

Unscrambler® X Prediction Engine & Classification Engine
Software integrated directly into analytical or scientific instruments for real-time predictions and classifications directly from the instruments using multivariate models from The Unscrambler® X.
TRIAL VERSION | READ MORE

Training
Our experienced, professional trainers can help your team use multivariate analysis to get more value from your data. Classroom, online or tailored in-house training courses from beginner to expert levels available.
READ MORE | CONTACT US

Our Partners
CAMO Software works with a wide range of instrument vendors and data formats used in the petrochemical refining industry. For more information please contact your regional CAMO Software office or visit
www.camo.com/partners

Consultancy and Data Analysis Services
Do you have a lot of data and information but don't have resources in house or time to analyze it? Our consultants offer world-leading data analysis combined with hands-on industry expertise.
READ MORE | CONTACT US

Find out more >

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