

# Using Teradata Business Analytics Solutions to Optimize Assets



TERADATA.

Most businesses struggle to unlock significant value from all of their assets. This limits their ability to fully leverage sensor data, equipment, intellectual property, employee talent, and other assets, causing performance and productivity to suffer. Optimizing assets, both tangible and intangible, is increasingly important for today's businesses. It provides a wealth of benefits, including reducing capital expenditures, improving total cost of ownership, and extending the useful life of assets.

Teradata works with many integrated oil companies that provide upstream, midstream, and downstream operations, which means they engage in all aspects of the oil and gas business, from discovering, obtaining, producing, refining, and distributing oil and gas.



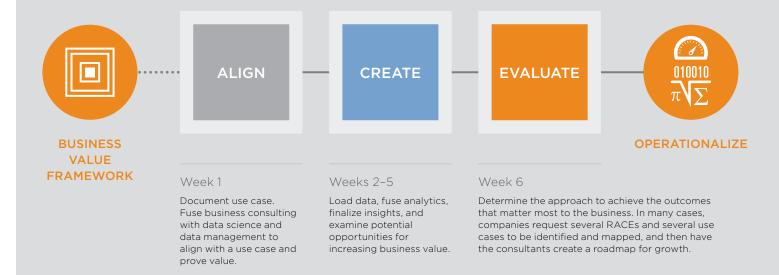
These companies seek to gain full value from their assets to make operations more efficient and therefore more profitable. A better understanding of how to manage, care for, and leverage assets also allows the companies to improve their oil reservoir management.

Oil companies engage Teradata to work with their upstream as well as research and development (R&D) teams to better utilize assets. In these engagements, Teradata consultants follow a proprietary business outcomes approach using existing data and applied analytic methodologies to determine if fresh insights can be uncovered.

## The RACE to Improve Utilization Rates

The upstream business includes oil reservoir monitoring, and safely and efficiently extracting oil from the ground. Sometimes that extraction happens under the sea or ocean floor. This requires significant investments in seismic array equipment and ships. Teradata consultants and data scientists typically work with the companies' scientists and geophysicists in upstream and R&D to identify areas where data and analytics can improve processes and enable better business outcomes.

#### RACE: Rapid Analytic Consulting Engagement





The companies usually have knowledgeable professionals on staff who are already leveraging data, but have reached their limit on the value they are getting. Teradata consultants find ways to gain new insights. For example, they use advanced analytics solutions on data collected from GPS sensors on ships that is integrated with data from tidal models, weather records, sensors, and other sources to gain insights into underwater oil reservoirs.

Leveraging the Teradata Business Analytics Solutions approach to delivering high-impact outcomes, Teradata consultants can identify assets not being fully utilized, such as a company's fleet of ships or seismic equipment. The Teradata Rapid Consulting Engagement<sup>™</sup> (RACE<sup>™</sup>), which accelerates time to value by aligning key stakeholders around specific high-value analytic use cases that support a company's strategic business imperatives, crunches large data sets to deliver effective insights. Those insights can identify ways to improve asset utilization.

## Inform Decision Making and Understand Profitability

Reservoir management uses seismic equipment to produce detailed images of the earth's crust to determine the location and size of oil reservoirs. Seismic surveys, often conducted every six months, also identify changes in the crust that inform decision making.

Repeat seismic imaging is becoming a major industry tool for companies that manage complex reservoirs and need to access them as effectively as possible. The ability to see, from one survey to the next, the behavior of fluids in a reservoir gives companies a much better understanding of the reservoirs and what they should be planning for field development over the next few years.

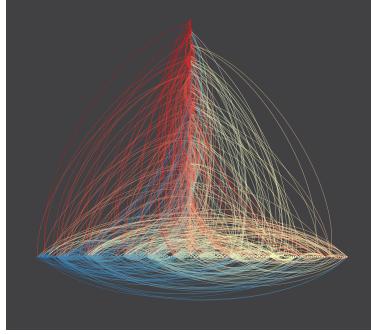
When working with these companies, Teradata consultants use operational sensor data, analytics, and performance metrics to better understand the profitability of using seismic equipment. The information enables assets to be monitored, controlled, and treated in more useful ways. Plus, the insights can be integrated with financial and economic data to provide even more context into asset optimization.

#### "The Sailor" Visualizes Data Analytics Through Art

Seismic surveys tell a story of how undersea oil reservoirs change every six months, which is critical information for companies that manage those reservoirs. The companies also need to know if a seismic survey was successful or not because of the high value they represent to the business. The solution? A picture.

"The Sailor" is a visualization of GPS sensor data taken from an array pulled behind a ship. The three "limbs" in the picture, which represent clusters of data, were formed using Teradata Aster Analytics to show seismic image similarity based on how much the array was moving from one survey to the next.

The right hand limb refers to images made when a seismic-source ship had a tailwind. The left hand limb represents a ship with a headwind, while the upper limb shows calm conditions. The red dots and lines reflect high repeatability. White shows moderate repeatability, while blue shows poor. The insights lead to better reservoir management and better business outcomes.









# Similar Benefits Can Span Other Businesses and Industries

Using data science to gain a better understanding of how to manage and extend the life of assets creates new business value that has bottom line results. The work Teradata consultants perform on the utilization of seismic equipment and ships is an example of the Teradata Business Analytics Solutions driving business outcomes through data and analytics.

This consultative approach leveraging expertise and technology-enabled solutions like advanced analytics can help businesses in any industry, including integrated oil. Companies can improve their ability to innovate, gain more value from their data, realize a higher ROI on their analytics, and optimize their assets.

#### Connect with Teradata

Watch our video series, The Art of Analytics, featuring The Sailor for more details on ways Teradata analytics consultants enabled asset optimization for an energy company. To find out more about how Teradata Business Analytics Solutions can deliver high-impact business outcomes, visit Teradata.com.

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