CASE STUDY

Data Analytics in Energy Sector Helped an Oil and Gas Company Improve Asset Investment Returns by 89%

Engagement Summary

Oil and gas companies operate within complex global and national frameworks. As the world continues to be dependent on organic sources of energy, there are many micro and macro challenges the global oil and gas industry faces, such as lack of visibility into their complex operational and supply chain processes, equipment life cycle management, logistics complexity, meeting stringent environmental regulations, and highly volatile prices. Many of these problems can be solved using actionable, data-driven insights, which would enable the energy sector to more profitable and efficient. Data analytics in energy sector assist in streamlining major operations, such as exploration, drilling, filtration, and delivery. Big data in energy and energy analytics can help in identifying areas that require significant improvement.

About the Client

Founded in the 1920s, the client is a transnational corporation with American origins and is one of the largest oil and gas companies in the world. The product lines of this client include oil, fuel, vehicle services, exploration, production, and refining of petroleum and gas.

Business Challenge

The financial outcome of companies in the energy sector largely depends on the performance of their complex set of assets. But in most cases, it has been noted that most of the oil and gas companies do not have the tools and capabilities that are required to operate their assets. The client collaborated with Quantzig for leveraging their data analytics expertise and made use of specially curated solutions for the energy sector.

Problem Statement 1

Unlock complete production potential – The client was dealing with complex machineries and assets which are the core to their business. They were not able to utilize the complete potential of their assets, which kept them from attaining the ultimate production potential.

Problem Statement 2

Improve Asset Investment returns – The client has several exploration and drilling sites which were yet to reach the ultimate level of production. As a result, they were facing challenges with decreasing asset investment returns. They approached Quantzig to leverage big data analytics in energy sector to unlock their production potential and enhance their asset investment returns.

Problem Statement 3

Risk Reduction – Geographically, the layers of rocks and soil vary across regions even though they might appear structurally similar. Lessons learnt in one region might not be applicable to the other region. This leads to increased time for exploration and increased risk at work. The client earlier had data stored in different databases which required huge effort and time. Data analytics in energy sector can easily reduce risk and lessen the time of exploration by helping with increasing accuracy in decision-making and reducing risk at work.

Problem Statement 4

Increasing cost of data maintenance – Data volume in the energy sector is growing rapidly. Oil and gas companies are now facing a rising cost of data maintenance. Since huge costs can impact the financial performance of the organization, the client wanted to deploy data analytics in energy sector to improve their data management process.

Solution Offered

Data analytics in energy is just like crude oil – it is valuable only when it is refined. The popularity of big data in energy has recently peaked.

Our data analytics experts started with a complete analysis of the data available with this oil and gas company. Changes in supply and demand for oil and gas have been resulting in fluctuations in price and the client was facing a slight decrease in profit margins. The slowing down of these supply chains was often resulting in lowering efficiency and increasing delay. Not meeting the expectations of their customers was hampering their brand identity in the global market space. On analyzing the data sets, our energy analytics experts identified the blind spots on the oil and gas supply chain that were the main reasons for a decrease in their profit margins. Quantzig's experts in energy analytics further deployed data analytics in energy to improve the efficiency of the oil and gas supply chain.

Business Outcome

Big data in energy helped the client reduce risk by learning more about each subsystem of operations and supply chain networks, thereby increasing the accuracy in their decision-making process.

With the help of data analytics, the client was able to –

1. Improve their decision-making process
2. Improve accuracy of exploration and drilling activities
3. Ensure optimum use of assets
4. Improve Asset Investment returns by 89 percent
5. Ensure complete production potential