



Drilling through data DCAT helps improve well development performance and lower costs

Abstract

An independent oil and gas company was faced with increasing pressure — due to lower natural gas prices — to have a more detailed view of its well-development cost structure and operations. Deloitte was engaged to use data analytics to help the company to explore its data in new and more informative ways. Using the Drilling and Completions Analytics Toolset (DCAT), Deloitte was able to help the client in extrapolating new insights in well development costs and performance, better understand relative performance against their peers, and identify underlying issues relative to well development performance and cost.

Challenge — Improving drilling operations while managing costs

Due to the current low-commodity price environment for natural gas and escalating well development expenses, oil and gas companies are under increased pressure to manage costs and improve performance. The industry is looking to find new and innovative ways to use technology to drive down costs and to identify operational improvement opportunities.

An independent exploration and production company, with operations in many shale gas areas, was interested in finding a way to generate a more detailed view of its well development cost structure to identify opportunities for improvement. Deloitte was engaged to use its newly developed Drilling and Completions Analytics Tool (DCAT) to quickly benchmark how the company's costs and performance compared to industry peers and amongst their individual wells.

Solution — Applying analytics to help improve well performance and lower costs

To address the company's challenge, Deloitte used DCAT to help decision-makers create the opportunity to manipulate and explore their data in innovative ways. Through the use of DCAT's visualization capabilities, the company was able

to quantify critical differences in drilling performance and costs, as well as identify potential drivers. The analytics endeavor included helping the client in its efforts to:

- Perform analysis on various key performance indicators (KPIs) by applying advanced analytics to help identify trends, outliers, and relationships amongst wells, and normalizing data to reveal hidden trends and insights that might not otherwise be apparent
- Discover variances in specific cost categories on a set of similar wells and perform a thorough investigation of the five categories with the most significant variances, then differentiating these variances at an operational level to identify the levers that had highly profound positive or negative impacts on costs
- Examine performance variables, such as number of days to drill, drilling depths, and other operational metrics, using the DCAT advanced visualization capabilities and interactive dashboards to help the company better understand performance and define improvement strategies

Bottom-line benefits — Differing data views of cost reduction and improved performance

Using the DCAT, Deloitte helped this oil and gas company derive a solution to seamlessly navigate its data and thus help users to extract new insights about the relationship between cost and performance and to perform on-the-fly comparisons to its competitors. The company with the help of DCAT developed a better understanding of its well performance and gained insight into enhancing performance and managing costs based on the various cuts of data provided by DCAT.

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