Using Data To Create Foresight And Create Value From Volume

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SPE Western Regional Meeting, 23-26 May, Anchorage, Alaska, USA

SPE-180407-MS

Abstract

With the recent downturn in oil price, more of the fields in the arctic seem less financially viable and many projects have been postponed, or altogether abandoned. In an industry where companies are unable to change the market price and cost becomes the main differentiator, projects in the arctic have added worries because of an inhospitable climate, lack of infrastructure and severe environmental concerns. This means that companies have to plan better, but also plan differently in the arctic in order to stay competitive.

All planning should be data driven with a focus on learning from past experiences and projects, but how one handles data determines how much value can be extracted from volume, and how much insight and foresight one can expect. We have found that there are four main obstacles to using data effectively. Firstly, it can be hard to find the correct data, but even more importantly, it can be hard to determine what data is missing. By some estimates, geologists use 60% of their time looking for data and less than 20% looking for oil. Secondly, even though a lot of data is sometimes available, the data might not be accessible, and a lot of time is lost in planning from converting esoteric formats, different units of measure and a plethora of curve values. The third obstacle to use data is that the context for the data might be missing, which is even more important in the arctic, because it might be hard to determine if experiences obtained in one area can be transferred to arctic projects. Finally, data is often aggregated before the planning stage it might hard because of time constraints to investigate whether anomalies in the data is caused by error in the data or outliers that can add risk or cost to the project.

We will show how efficient use of Big Data techniques and statistical analysis can mediate the effects mentioned above, and how normalization and standardization of data can allow users to spend their time interpreting data. Although the use of data does not eliminate risk, it can help manage it by identifying which risks should be focused on, but also identify where the project moves into uncharted territory in terms of equipment, location, rig or other factors.