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Using Integrated Subsurface Geomodels for Commercial Success in Smaller Oil & Gas Corporations

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Abstract

The advent of3D-Geomodelling in the Oil and Gas industry over the past 10-15 years has changed the work process from one of 2D mapping of structural data and reservoir properties to one of constructing integrated 3D subsurface geocellular models, but do we really always understand why we do modelling at all?

Intrinsically, we [geomodellers] know it makes sense to represent our data in 3D, and for large corporations operating multi-billion dollar projects such as in the Athabasca Oil Sands, it makes huge sense, simply because the density of data, often akin to a large mine development project, means that spatial “geostatistical” mine planning methods are applicable, and can be efficiently used to fill model space with geologically consistent, probabilistic projections that engender a high predictability of commercial outcome. But what of smaller corporations? Particularly those operating Greenfield/Brownfield projects in both domestic and international environments. Almost all international projects these days are farmed out with some sort of a 3D model, integrating both seismic and well data, as part of the data package. Domestic projects less so, but the 3D model is becoming more common, and for a few “select” corporations it is driving commercial success in spectacular manner!

The smaller corporation is often unable to properly evaluate a project in a 3D format without bringing in a costly consultant expert, and at end of project that expertise walks out of the door. There is also a mindset amongst some senior managers (sometimes coming from large independents) that the old paper and pencil methods are better, and that mindset ridicules, or is ignorant of the benefits of geomodelling. .... "Yeah, we tried that geostats stuff once and it didn't work". What are the reasons for such perceptions? Why have there been bad experiences?

This talk will attempt to explain why there have been bad experiences, which have often been induced by “poor practice” and to focus on the commercial value and successes that we have witnessed over the last 15 years using examples that have added real commercial value and made money for the companies using them.