

Capitalizing on Technology Development – Utilizing Domestic Applications to Effectively Overcome Exploration Data Challenges

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ABSTRACT

With the increasing complexity of Exploration & Production (E&P) data, exploration activities have been under scrutiny to produce with the data constraints. Furthermore, the array of commercial software available lacked the flexibility, integrity, and customization of being harbored to Kuwait Oil Company's (KOC) practices. As such, the severity of these challenges has been extrapolated and transformed into functional applications that swiftly dealt with the intricate algorithms. These homegrown applications provide a window of opportunity for handling sub-surface potential. This presentation/poster describes the process that was conducted by KOC's Information Solutions (E&P) and KOC's Exploration Group in order to provide a harmonious workflow that transitioned an exploration challenge into a functional developed software. The process required the ability to create applications that would handle big data provided from seismic and logging sources. Such practice, combined with the algorithms provided by domain experts, were to be used in order to create an integrated solution across the following domains with the assistance of software such as MATLAB. This presentation/poster will provide the resulting applications created and developed in-house that tackle the following domains and their purpose of enhancement: • Scaled Fluid Factor Calculation (Efficiency, Quality, Innovation) • Batch Sonic Log Creation (Efficiency, Quality, Innovation) • Psuedo-Log Extraction From SEG Y Volume (Efficiency, Quality) • Surfer Time-Depth Conversion for a Single Horizon (Efficiency, Quality) • Multi-Attribute Seismic Analysis (Efficiency, Quality, Innovation) • Seismic Data Scaling (Efficiency, Quality) Each application will be exemplified by its purpose (ie, Efficiency, Quality, et al) and the fundamental requirement. As such, roles have been defined in terms of usability, development, and knowledge transfer to retain the expertise in these fields and to bridge the gap found between domain experts and software development. This presentation/poster exemplifies the application of Data-Driven and Domain-Driven strategies in order to innovate the standards of operation for the Exploration Group. As such, appropriate decisions are to be taken with all applicable data and analyses at hand. Furthermore, creates an ideal environment to eliminate discrepancies and errors whilst promoting optimization of resources.