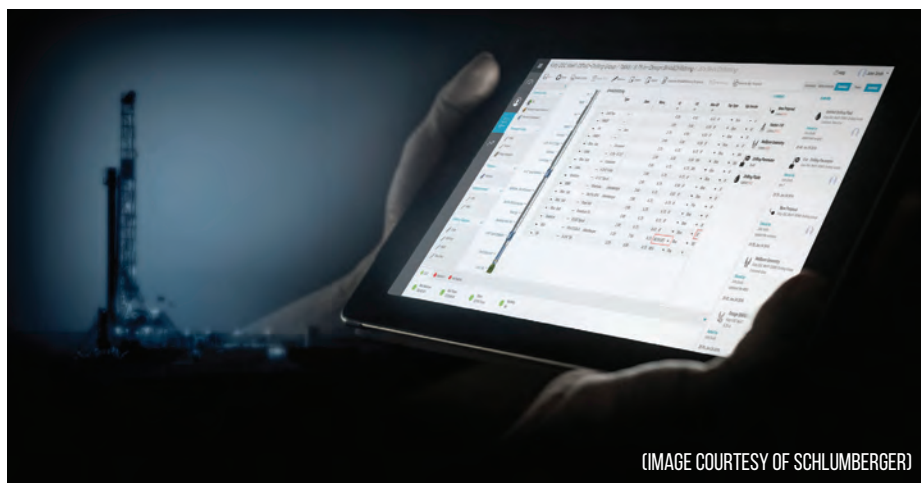


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DIGITAL ENABLEMENT BREAKS DOWN SILOS
TO ESTABLISH A NEW WAY OF WORKING

BY: SCHLUMBERGER



(IMAGE COURTESY OF SCHLUMBERGER)

THE DRILLPLAN SOLUTION DELIVERS QUICKER AND BETTER-QUALITY DRILLING PROGRAMS THROUGH THE AUTOMATION OF REPETITIVE TASKS AND VALIDATION OF END-TO-END WORKFLOWS TO ENSURE THE ENTIRE PLAN IS COHERENT.

The current medium-for-longer oil price environment demands a new approach for the E&P industry. This new approach requires a system-level view to fully optimise the finding, development, and production of new oil and gas resources as well as the operation of existing oil and gas fields. Innovation around a single element of the E&P development chain cannot maximise efficiency if done in isolation.

The new approach also involves a complete understanding of what each element contributes to the entire chain. Achieving this necessitates a profound change in the way the industry operates and interacts—changing the way we work and yet also changing the very nature of that work. This entails a new collaborative mind-set, end-to-end systems knowledge, and redesigned business models that firmly establish and support new way of working based on innovative technology and domain expertise.

Changing the way the industry works begins with a critical assessment of how the data is used across reservoir characterisation, well construction and field production. During the development process as it is practiced today, different types of data exist in silos, making

holistic analysis impossible. Without a system approach, precious information and time are lost because the lack of interface among different systems makes it difficult to share localised knowledge.

System-Level Optimisation

The DELFI cognitive E&P environment was developed to enable the new way of working. This secure, cloud-based environment harnesses data, scientific knowledge, and domain expertise to fundamentally change the industry's way of operating by making applications and workflows accessible to every user. In the new environment, every stakeholder can build common workspaces for data, models, and interpretations while respecting proprietary information boundaries.

The DELFI environment delivers an accurate representation of the surface and subsurface, including existing wells and facilities, plus those that are planned. The outcome is shared insight among all users and stakeholders to eliminate the silos of today. Performance is boosted as time cycles are compressed across the business, uncertainty in planning is reduced through greater understanding, and new opportunities are created to extend domain science into drilling and production operations.

By leveraging data analytics, machine learning, high performance computing, and the Internet of things, the new environment enables all of its elements working together to maximise operational efficiency and deliver optimised production at the lowest cost per barrel. Barriers to effective communication are eliminated, improving efficiency during the process so domain experts can spend more time on high-level solutions to the unique challenges every reservoir presents.

Enhancing Collaboration Between Drilling Teams

The DrillPlan digital well construction planning solution is the first cloud-native application launched in the DELFI environment, bringing together the drilling technology portfolio with a suite of optimisation workflows to create a step change in operational performance. Developed with a focus on improving collaboration among multidisciplinary teams, the solution provides users with access to all the data and science needed in a single, common system. This creates a circular workflow in which plans are improved as new data is added, enabling future drilling programs to benefit from prior experience. With the new solution, better-quality drilling programs are produced rapidly with automated tasks, including trajectory design, torque and drag, anticollision scanning, and validation workflows.

Field tested in North America, seven oil operators evaluated the solution, tailoring it to their well construction process. The results highlighted the solution's ability to deliver well planning programs in days rather than weeks. In fact, Petro-Hunt trialed the use of the software on wells in the Williston Basin and consequently decreased their well development time by more than half.

Schlumberger has partnered with BP to further develop the solution, and the operator is currently piloting the solution during the development of the Khazzan field in Oman.