Rethinking collaboration

The pace of new scientific discovery and innovation increases as the speed of our ability to share knowledge and information across boundaries expands. The technology that enables operators and service providers to share knowledge and information is in place today; however, the oil and gas industry has traditionally shied away from this level of collaboration due to the perception that sharing data and information is akin to giving away valuable knowledge. Rather, in this new age of accelerated innovation, we must shift our mindset to view collaboration and knowledge sharing as an opportunity to adapt to rapid change, enabling us to identify new exploration opportunities, access reserves more efficiently and increase cash flow from producing assets.

The collaboration journey started more than a decade ago with combining and integrating the technical disciplines across the E&P enterprise. The lifecycle of a hydrocarbon field has traditionally followed a linear, stage-gated approach from discovery, through development and production, to abandonment. In the past, the multiple domain experts required to squeeze the resources out of the rock worked independently in silos, preventing them from taking a wider view of the system.

One of the initial steps in overcoming this siloed way of working was to increase collaboration among the disciplines. For example, combing geophysics, geology and reservoir engineering provided subsurface teams a holistic way to approach their domain. The result was cross-discipline workflows, that now delivered a much-needed integration, and which laid the ground work for seamless interoperability within teams.

However, collaboration among the disciplines was not enough. There was still a disconnect between the planning and operations side—a costly disconnect that reduced efficiency and increased HSE risks. The next step was to bridge this gap, providing a means for the two sides to collaborate. For example, enabling drilling engineers and drillers or geoscientists and field operators to exchange relevant information, so subsurface characterization could extend into drilling and production operations. A continuous learning loop between planning and operations had to be established across the entire E&P life cycle to ensure efficiency and optimal execution.

When all collaborators are united via a holistic environment, plans and models become evergreen, giving a single version of the truth which consumes the most recent field measurements and applies the latest physics engines. The need for lengthy cycles between disciplines is reduced and teams are empowered to make more rapid, informed decisions that boost performance.

At the core of uniting planning and operations, we have created the DELFI cognitive E&P environment. The environment amplifies the individual capabilities and expertise of people, defining a new standard in collaboration. More than individuals collaborating, the DELFI environment is everything working together continuously: teams, systems, software, legacy data and live inputs—all feeding into a unified environment that grows to become greater than the sum of its parts.

Our commitment to creating value for our customers centers around providing access to data, integration of technology and systems and the ability to create, share and apply innovations. We want to empower customers to make the DELFI environment their own. One way to achieve this is through open source collaboration.

Over several years, open source has been the principal component of innovation in the software industry, and this success is transferable to E&P. Together with key partners and customers, we will build an open source data ecosystem based on core components of the DELFI environment infrastructure. Open sourcing these components will enable the collection, management and discovery of upstream oil and gas data to which customers, vendors and academia across and beyond the E&P industry will contribute. This openness will drive the pace of innovation for data and workflow integration developed for the industry in an optimal infrastructure that uses best-in-class technology.

While openness brings many new opportunities, it must be done in a way that enables clients to retain complete control and autonomy over how their data is accessed, exchanged, analyzed, managed and consumed. The DELFI environment provides the framework to structure access to any data type, anywhere, in a secure and compliant manner. From the big picture down to the most specific details, freeing data securely from multiple sources enables relationships to be identified and explored, realizing even greater value. It provides the flexibility to overcome the restrictions of conventional linear workflows.

Paradigm shift. We stand at a crossroads in our collaboration journey: along one path we walk alone and continue the traditional ways of working in silos, duplicating solutions for the same tasks, standing by when we see opportunities for progressive partnerships. Along the other path we walk together, embracing openness by sharing our knowledge and expertise, pooling resources and talent, reducing risks and creating efficiencies in a more collaborative future where each solution is tailored to the exact needs of its many users. Only through trust will our industry be persuaded to share expertise in open collaboration and gain the potential to fully realize the promises and opportunities of the future. **WO**

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