

Greater than the sum: How collaboration drives innovation

By Mark A. McCollum

President and Chief Executive Officer, Weatherford International



The oil and gas industry has emerged from the downturn. All of us – operators, contractors, and service companies – must face a new reality as we make decisions that shape the future. Over the last few years, each company had to assess its strategy to properly position itself in the new-oil price environment. We should especially be looking for more efficient and cost-effective ways to do things so that we can thrive.

To some, efficiency means consolidation. Every time the industry is on a downward trend, we see a rush of mergers and joint ventures. Although these can be great tools when the conditions are right for both parties, there are also more subtle ways to collaborate across company lines in a way that benefits everyone. Working together, whether it be with professionals inside or outside our industry, will help us to work smarter and leaner in this new market.

Within our industry, modern oilfield service companies like Weatherford can sit alongside operators as partners, and come up with solutions together. They can also deliver end-to-end solutions – not just one component used in the process – but the entire package. Outside our industry, we can look to strategies that have worked in other disciplines. In fact, key trends such as standardisation, automation, integration, and digitisation have become a necessity.

Changing the game with digitalisation

In this new era, the industry needs to look beyond what worked before. We need to challenge ourselves to explore new models, in some cases from different sectors. Automation and digitalisation – including principles such as the Internet of Things, Big Data, and Machine Learning – have transformed many other industries, and they are already starting to make an impact on the oil field.

Digital advancements offer a way to remove many personnel from high-risk areas and improve training for the remaining onboard personnel, which reduces the risks and costs associated with health, safety, and environmental incidents. In addition, digitisation can help to increase efficiency. The industry is increasingly adopting remote monitoring of production facilities and remote operating centers for offshore activities.

Digitisation also increases predictability. By identifying the points of failure before they happen, we can reduce nonproductive time during the well construction process and increase uptime during production. Once we pinpoint exactly which digital practices work best in specific situations, we can employ the same protocols time and again. Better data leads to

better processes, which means better results for all involved.

Weatherford has advanced oilfield digitalisation with specialised production software, which combine data analytics capabilities to create an advanced and secure production environment. One package helps operators to identify and prioritise production optimisation opportunities across wells, reservoirs, and surface facilities, and easily integrates with other Weatherford software, which collects, manages, and distributes large volumes of operational information generated by field devices and business systems.

Through a recent collaboration with Google Cloud we enable operators to easily access and deploy these software programs to drive improved production performance while maximising uptime per dollar spent. Installed in a matter of hours and reliably hosted, these end-to-end production optimisation solutions effectively place a virtual network of IT professionals and computing power right at our customers' fingertips. A simple user interface displays data to anticipate failures, reduce downtime, identify optimisation opportunities, and maximise asset-wide production.

Integrating with a shared goal

Years ago, a service company sales representative would come out to the field with a catalog of widgets. Operators would pick the necessary tools to finish the job and move on. Today, the job of a service company is not to sell a tool or a service at an hourly rate. It is to solve a customers' problems in the best way possible. By making this a first priority, services companies and operators can open up a whole new way of thinking about how we do business.

Integration is one way that service companies can reduce cost and minimise risk profiles for our new normal. During the tendering process, operators can gain cost advantages by working with a single company for multiple services. The service company can then explore ways to crosstrain personnel to reduce the economic footprint, and in some cases also integrate related technologies to further reduce personnel on board.

Operators may not have the time, inclination, or expertise to solve a problem alone, and they shouldn't have to. At Weatherford, we perform the heavy lifting for operators by leveraging our wide-ranging portfolio as well as complementary products and services from third-party providers. This coordination saves them time and enables us to execute our work more efficiently with little-to-no nonproductive downtime.

For example, in Mexico, we integrated services, from drilling



to completions, for shallow-water development wells. In each field, we efficiently executed and reduced drilling times well below previous field records set by competitors. In a project in Oman, we incorporated drilling, completions, and artificial-lift services over the life cycle of multiple onshore wells. When drilling, the integrated services used best practices from other regions to create repeat performance wins. In fact, we achieved the two fastest drilling times for the operator in that field, with the last well drilled in the shortest time of 14 days.

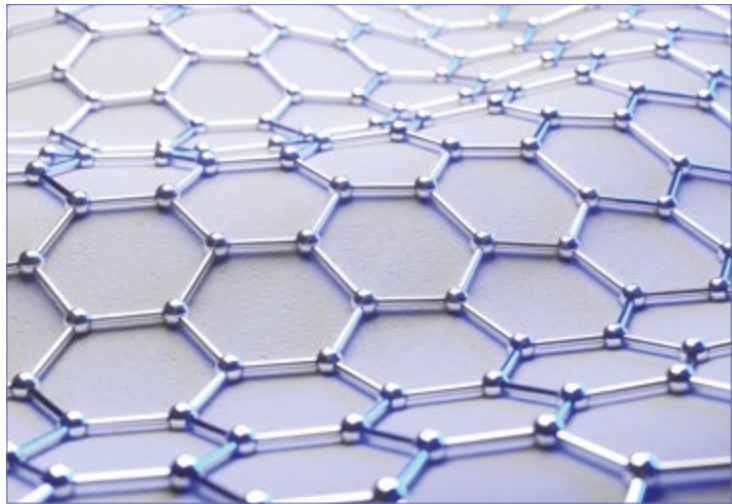
Collaborating for greater success

Collaboration is at the heart of today's advancements. Without it, we would not be digitising the oil field and we would not be customising integrated solutions. No single company can do these things alone. We've found that when geologists, drilling and completions engineers, and field technicians from multiple companies work together from the planning stage through production start-up, they can anticipate problems and adjust for them ahead of time, which avoids flat time and generally increases efficiency.

Standardisation is another positive product of collaboration. By aligning the requirements for similar wells and fields across all operators, drilling contractors, service companies, and manufacturers, we can simplify the supply chain and bring down costs. We can also create more modular solutions that we can install more efficiently. Finally, we can help personnel achieve flawless execution as they focus on operating a few number of systems exceedingly well. By standardising common tasks, we can start seeing exponentially greater operational consistency and predictability.

Some of the most tangible examples of collaboration across the industry result from joint development projects. We are seeing more collaboration during the technology development stage as R&D departments have moved away from projects that innovate for the sake of innovating — no one has the budget for that these days. Instead, many of today's best technologies come about when different parties come together to solve a problem. When operators and service companies collaborate, their different perspectives combine to reveal a more elegant solution than they could have arrived at independently.

Weatherford is increasingly partnering with customers to jointly develop technologies that solve specific field challenges. Working with our partners at Chevron Thailand Exploration and Production, we jointly designed a service specifically for



Interlinked technologies provide strength

the Gulf of Thailand, where temperatures can exceed 392°F (200°C) and operators must make additional trips to cool the bottomhole assembly during drilling. This unique technology is the first to reliably acquire real-time and recorded logging-while-drilling data – including gamma ray, resistivity, neutron porosity, bore and annular pressure, and density data – in hostile environments with minimal or zero nonproductive time. The technology eliminates extra trips and temperature mitigation, and it provides an alternative to running wireline.

From start to finish, we were able to develop this service in less than two years. We could not have achieved that without a strong collaborative relationship. And now, a short time later, this service is commercially available to all operators and changing how operators look at the development of ultra-high-temperature fields around the world.

Thriving through the energy of teamwork

When you look at what the oil and gas industry has gone through over the past few years, it is clear that this is a time for renewed strength. The cornerstone of the industry's future is collaboration.

We share a common goal of meeting the world's energy needs safely and sustainably. Going forward, we must seek cooperative opportunities to best meet our challenges. Solutions that leverage automation, digitisation, and integration will improve profitability and ultimately increase the amount of recoverable reserves to fulfill the growing demand for energy. ●