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New Service Providers Enter Oil Field

By Del Torkelson

As the upstream industry continues to experience revitalization and expansion, a number of new oil and gas service providers are setting up shop to provide a variety of new services and solutions to exploration, drilling and production companies.

As in the producing sector, some of the growth in the service and supply business can be attributed to strong commodity prices. However, much of the ingenuity behind technologies that allow operators to locate oil tens of thousands of feet below the earth's surface in 10,000 feet of water or to extract natural gas from high-pressure, high-temperature reservoirs resides in the service and supply sector. So it is no surprise that the birth of many new oil field service companies corresponds directly to the introduction of advanced technologies ranging from global positioning satellite systems, to high-density 3-D seismic, to new gas lift and plunger lift designs, to next-generation well testing equipment.

Examples of these new entrepreneurs venturing into the oil and gas service and supply business in recent years include S3GPS, Global Geophysical Services, EnergyNet Inc., Earth Core Pipe Systems, International Lift Systems and PowerWell Services. As these companies tap their ingenuity to stretch the boundaries of technology, the ultimate result looks to be more oil and gas production.

Back To School

When Richard Degner ponders the formation of Global Geophysical Services Inc., the company's president and chief executive officer takes a historical perspective.

He points out that, excluding the Soviet Union and China, the world had

1,200-1,500 seismic field crews in the late 1970s and early 1980s. "Today, exploration demand is typically in the 120-150 crew range, so there has been 90 percent attrition," he says.

Degner says that attrition suggests to him that the competitive landscape is more favorable than it has been during his 21 years in the industry. Furthermore, he predicts, the demand for geophysical data will likely ascend alongside oil demand. "There is not an excess capacity of readily available oil," he observes. "We are going to need more geophysics to do secondary, tertiary and quaternary recoveries. We need more geophysics to find oil at these higher costs."

Global Geophysical Services incorporated in June 2003 through Degner, who had previously worked in senior management positions for Western Geophysical and Petroleum Geo Services, and what he calls "a couple dozen like-minded people," many of whom he says were also former Western Geophysical managers and professionals.

As the company's point man, Degner says he was confident in his geophysical and management skills, but wanted to

round out his business acumen. Despite the fact that he had last attended college in 1983, when he graduated from the Colorado School of Mines with geological and geophysical engineering degrees, Degner enrolled and later graduated from Rice University's masters of business administration program. "It provided me with the language and better understanding of finance," he recounts. "I also hired somebody while I was there. Global Geophysical's chief financial officer was the valedictorian of my class."

Degner explains that the group initially planned to buy an existing geophysical company, but could not find the right fit. "So with good support from vendors, clients and some individuals, we built a private firm with small capitalization," he recalls. "We have the people and vision to grow and become an 8-10 percent market share participant in three-five years."

Incentives play a key part in the company's aggressive growth plan, Degner comments, noting that every Global Geophysical employee is granted stock ownership to advance an owner-manager mentality throughout the company. "It is

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Richard Degner
President & CEO
Global Geophysical Services Inc.





one for all and all for one,” he says. “In our business that is enormous. Seismic data acquisition, especially onshore and transition zone, is an execution play. It is all about operational performance and project management, so the productivity improvement in an organization that is highly charged and focused can mean a two- or three-fold difference by incentivizing employees with ownership.”

The company is rigging its first two crews, as well as building an air gun source boat to acquire data in the shallow water for the Gulf of Mexico’s deep Shelf gas play. “Our source vessel is unique in that it has a lot of source energy, backed by a lot of compressor, all packaged on a very shallow draft catamaran-style vessel,” he says.

Another Look

Although onshore U.S. fields are generally considered well-explored territory, Degner says today’s equipment makes another look worthwhile. “Domestically, there has been an acceleration toward higher-density geophysical data volumes,” he observes. “Tighter spatial samplings and longer offsets and fuller aperture data sets—here at Global we call it “reservoir-grade” 3-D—are commercially viable today at only a slight marginal cost increase over the courser 3-D data of the past.”

He forecasts that a lot of existing U.S. data sets will be reshot with higher-density, reservoir-grade products. Some explorers have expressed such satisfaction with the results of 10,000-12,000 channel seismic crews, that they have no intention of reverting to 2,000-3,000 channels, Degner adds.

“Technology has brought the cost per channel down significantly,” he points out. “The miniaturization of electronics, the decreased power consumption and

weight, improved packaging, good cabling and connectors have enabled us to put together crews of that size. Even in extreme environments like the Arctic, they are capable of operating efficiently. I think that continuum will progress, and there will be 20,000-channel crews operating in two years.”

Degner says the great success of the deep water Gulf of Mexico turbidite plays has spawned a search for these same plays in shallow water depth but much deeper in the earth. “It may be that ancient turbidites were simply covered by the progression of the Gulf of Mexico sediments as the delta grew and extended south,” he suggests. “Now companies are starting to drill and envision gas in the shallow water and onshore regions of the Gulf of Mexico that could be 25,000-30,000 feet deep. They need very high-resolution, long-offset data, and larger source energy so that signal-to-noise ratios and wave reflections at those great depths are still adequate to provide quality seismic interpretations of the reservoirs.

“A few years ago, people operated and held leases down to 15,000 feet,” he continues. “Now they are looking at obtaining leases down to 30,000 feet. That is a whole potential revitalization of the shallow water Gulf of Mexico area.”

Degner predicts that multicomponent seismic technology—combined P wave compression data and S wave shear data—will prove to be the subsequent evolutionary step in the next decade. “It is not fully understood what effect that new digital accelerometer (micro electro-mechanical system, or MEMS) chips are going to play in our business,” he adds. “They are envisioned to replace geophones and are already being used on a small percent of the crews working today. Eventually all of our crews will be

recording P and S wave data; it will likely be another 10 years however before it is done consistently on all field crews. However for the next five years, higher and higher density ‘reservoir grade’ conventional P wave data sets will be the mainstay of the industry. There remains a lot more oil to be found with full aperture, long offset, and tight spatial resolution P wave data.”

As for Global Geophysics’ future, Degner indicates that the first word of the company’s name is key to understanding its strategy. “Over the past couple decades, we have seen how important it is to be represented in numerous areas around the world, rather than one specific region,” he reasons. “We have a group of people that have worked for major geophysical contractors in basins all over the world. We have the international relationships, local understandings and client support that provides a nice diversification and risk mitigation from a business perspective.”

He adds that Global Geophysical Services wants to avoid growing too large, looking to maintain its private ownership structure while it sends 10-12 seismic crews out during the next few years. “We want to create a sustainable model where the wealth the company generates goes to both our private equity investors and to the people working in it,” he maintains. “People are the most important ingredient in successful geophysical operations and there are two kinds: people that have made mistakes and learned from them, and people that are going to make mistakes. Harnessing the people that have worked the complicated projects across the globe and learned from their experiences and mistakes in this logistically intensive business is an important part of the success formula.”