

NEWS ARTICLE

May 2009



Establishing and growing a reservoir monitoring business

Martin Bett, CEO of Stingray Geophysical, describes how recruiting and maintaining a world-class team of skilled specialists has enabled the company to achieve its commercialisation goals and be poised to enter its next phase of growth.

This article, written by Stingray Geophysical Ltd, was first published in the EAGE Recruitment Special 2009 distributed with the May 2009 issue of First Break magazine.

One of the challenges faced by companies on the road to success is the availability of the right specialist skills at the right time to meet varying and increasingly diverse demands on their resources. Establishing a business becomes even more complex when it involves a pioneering technology in a cyclical industry such as oil and gas. Further challenges are presented for a dynamic new company like Stingray by the need to attract individuals from established industry players with the extended skillset required to swiftly meld a team from diverse backgrounds into a cohesive unit far greater than the sum of its parts.

Stingray has met those challenges head-on by devising a leveraged business model based on recruiting and maintaining a world-class core team with key skills not just in their specialist domains such as new product development, geophysics, optical sensing, manufacturing and operations, but in establishing and managing relationships with key partners in all of these areas. This has given the company the ability to start with a team of more than 30 from day 2 and progress rapidly with the development of reliable and cost-effective permanent reservoir monitoring (PRM) solutions for its customers.

Seismic reservoir monitoring

Monitoring using repeat seismic surveys can identify changes in reservoir pressure and fluid content, helping to optimize hydrocarbon recovery schemes, including the placement of injection and production wells. It can also identify flow barriers and untapped reserves. The technique, known as "4D" or "time-lapse" seismic, involves acquiring several 3D seismic surveys at different times, ideally beginning before production has started and at intervals thereafter, typically one of more years apart. Differences in the seismic response between surveys can indicate changes in

the reservoir. These differences can be extremely subtle, and are easily masked by differences between surveys caused by other factors.

Conventional towed streamer surveys are likely to exhibit differences between surveys due to several factors, including different weather conditions, sea swell and receiver positions. Deploying receivers permanently on the seabed avoids many of these differences. In addition, seabed receivers are immune from swell and other near-surface noise. A further major advantage is that seabed receiver systems can record the full multi-component seismic wavefield, which can reveal considerably more about a reservoir than conventional towed streamer systems, which record only pressure (P) waves.

Focus on fibre optics

Seabed seismic systems that rely on electrical components are prone to high failure rates, leading to unreliability and high maintenance costs. Passive fibre-optic systems are much more reliable.

Stingray Geophysical was established in 2006 to commercialise a unique, passive fibre-optic sensing technology, originally developed for submarine applications by UK defence research laboratories, for oil and gas applications. The Stingray Fosar® system delivers full-wave seismic imaging data for detailed reservoir characterisation and monitoring, enabling increased production, greater reserves and lower operating costs and risk through improved reservoir management strategies. The high sensor count per fibre facilitates easy deployment of large seabed sensor arrays in up to 3000m of water, requiring minimal connections to surface recording equipment.



Inherently more reliable than conventional electrical alternatives, Stingray's unique passive fibre-optic solution enables cost-effective and highly repeatable time-lapse or 4D seismic.

Leveraging capability

PRM is Stingray's sole business focus. By outsourcing non-core functions, such as finance, IT and marketing support services from the beginning, the Stingray team—a blend of new business development experience with industry know-how and world leading fibre-optic expertise—has been able to concentrate on the successful delivery of its core Fosar system development programme without the time consuming distractions normally encountered in a growing business. With a wide range of complementary skills, inter-disciplinary team members work in a fast-paced, open plan environment where ideas and information are shared freely between geophysicists, optical scientists and engineers, sub-sea engineers, sales and marketing. The small team is bound by a focus on achieving common objectives, a willingness to challenge convention in quick pursuit of its goals, as well as a flexibility of approach and to load sharing.

Critical to Stingray's achievements to date is the agility afforded by the active participation of its key partners. Intelligent relationship management has enabled Stingray to address various

challenges during the milestone-based Fosar programme by leveraging the expert capabilities of partners such as Atlas Elektronik, Bergen Oilfield Services (BOS), QinetiQ, Sagentia, Sensoptics and University of Southampton, as well as individual consultants, to support the system's technical development, design and manufacture, installation and seismic operations.

A growing business

Stingray is now poised to enter the next phase of growth, having in 2008 successfully concluded offshore sea trials and a qualification testing programme which demonstrated the high quality, reliable geophysical response characteristics, operability and scalability of the Fosar system. To support the commercial sale and manufacture of the Fosar system and to accelerate its existing development programme for a range of value-added customer solutions based on the proven core technology, Stingray is expanding its sales and marketing, optical sensing systems and integrated solution operations capabilities.

Stingray has achieved a lot since the company was founded 3 years ago. As well as securing additional funding from an energy venture capital consortium and UK and Norwegian government research grants, the company has achieved customer engagement through a Joint Industry Project (JIP) involving 4 major oil companies. Twice finalists in recognised industry innovation awards, Stingray is registered to ISO 9001, ISO 14001 and OHSAS 18001, and has protected its intellectual property through 14 patents granted and 37 further applications submitted.

At the heart of its success is the entrepreneurial spirit, technical skills and hands-on approach of the Stingray team which, combined with the commitment of its partners, is key to enabling the reservoir monitoring needs of its customers. Leading US businessman and author, Robert Townsend, once said that "big companies are small companies that succeeded" and, with the Fosar system now commercially available, Stingray's focus has shifted towards emulating that success and building a substantial business.

For further information please contact the Marketing team

Stingray Geophysical Limited Surrey Technology Centre 40 Occam Road Guildford Surrey GU2 7YG UK
t: +44 1483 685401 f: +44 1483 688106 e: info@stingraygeo.com w: www.stingraygeo.com