Seismic boom-time

WesternGeco, along with a whole range of other seismic companies, is taking advantage of a dynamic marketplace. We have talked to Dalton Boutte, president of WesternGeco, about current and future trends in the geophysical industry.

Photo: WesternGeco

Dalton Boutte is the president of WesternGeco, the world's largest geophysical services company. He is also an executive vice president of Schlumberger Oilfield Services. Boutte has held many positions within Schlumberger, including president of Wireline and president of Europe, the Soviet Union and Africa.

First of all, can you give us some key numbers for WesternGeco, in terms of size and world-wide presence?

WesternGeco provides comprehensive reservoir imaging, monitoring, and development services, through our 8 geographical regions that span the globe. WesternGeco has 8,400 employees, 14 3D seismic vessels, 26 land crews, 31 data processing centers, 1 Q-Seabed crew, and several electromagnetic crews. We are part of the Schlumberger family, which consists of more than 76,000 people of over 140 nationalities who work in approximately 80 countries. In 2006, Schlumberger operating revenue was USD 19.23 billion.

Some years ago WesternGeco introduced Q-Technology. In what way has this affected the company?

WesternGeco developed the Q-Technology platform to deliver a "geophysical continuum" that spans the life of a reservoir, from providing the best exploration images to delivering quantitative rock and fluid properties for development and production. The key to unlocking this potential lies in making fundamentally better measurements and in the ability to integrate seismic data with other geophysical measurements and wellbore readings.

Today, we are inventing new ways to apply Q-Technology to address the many complex challenges that our customers face. These solutions include Over/Under, Rich-, Wide-, and Full-Azimuth surveys in complex environments, such as in subsalt and sub-basalt reservoirs, and the Q-Land approach for large exploration surveys.

Several new seismic companies have been established lately, and in the next few years many vessels will be entering the market. Are we once again facing a surplus in capacity?

It is a dynamic marketplace for geophysical services and the resurgence in exploration spending has fueled the rapid growth. Demand has continued to exceed existing supply for marine seismic services in general. We feel that demand will continue to exceed supply in the foreseeable future as indicated by the increasing demand for high capacity vessels. This is the underlying thought behind our acquisition of Eastern Echo.

For the last 20 years or so we have seen several breakthroughs in seismic acquisition, from 2D to 3D, 4D and multicomponent seismic (4C), as well as a number of incremental advances. Which do you consider the most rewarding for the oil companies?

E&P companies are committed to reducing their exploration and development risk. The transition from 2D to 3D seismic provided a step-change in risk reduction by enabling our customers to visualize entire reservoir geometries rather than just 2D slices. Today, 3D seismic is a mainstream application applied universally. However, 4D and multicomponent seismic remain niche markets as confidence in these technology applications grows with increased usage and exposure. These breakthroughs in acquisition technology are also made possible due to rapid advancements in data processing technology. As exploration turns to more complex environments, further technologies and applications will be needed.

EM methods are carving a huge niche in the marine geophysical market. How do you foresee the future of this technology?

The marine geophysical market consists of CSEM to map thin resistive bodies, and marine magnetotellurics (MMT) to outline large basin features. Magnetotellurics will provide an additional measurement of important features that create huge uncertainties in seismic data, such as the base of salt and basalt bodies. The impact of this has already being seen in the Gulf of Mexico, as we integrate magnetotelluric data with wide-azimuth data in order to greatly improve the complex sub-salt images.

Do you think EM will reduce the need for seismic?

Electromagnetic measurements are non-distinctive, while seismic measurements are unique. Hence CSEM and MMT are extremely complementary with seismic, and the key to extracting the value is the integration of these complementary measurements. The markets for these integrated measurements will grow together.

Finally, in which direction is the seismic industry moving? What will be the next leap forward in technology?

Our clients continue to struggle with replacing reserves and increasing production as reservoirs become smaller and more complex. The seismic industry is quickly moving towards delivering geophysical solutions that integrate electromagnetic, gravity and seismic measurements to further reduce risk. Schlumberger and WesternGeco are now uniquely positioned in the oilfield services industry to take geophysics further into the entire lifecycle. Uncertainty is reduced by using high fidelity geophysical measurements that are constantly calibrated with all other well bore measurements. It all begins with fundamentally better measurements, but the seamless integration of the best measurements to provide solutions is essential for the future.

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