

Manpower Constraints Threaten To Stymie Industry's Energy Objectives

The oil and gas industry is currently experiencing a period of high product prices along with increased competition for quality opportunities, resources and people. You would think that in times of \$60 oil prices that we would all be sitting back and taking it easy, but that is not the case.

The world's political and economic climate is changing and there is an increased awareness of the physical vulnerability of our planet. This, combined with the maturity of our established oil and gas producing basins, has increased pressure on the oil supply/ demand balance. These factors together have resulted in higher oil prices which in turn has created record levels of exploration drilling and field and project development across the region.

It has made us refocus on the technical side of our business in the way we find, develop and produce hydrocarbons as well as in the way we use these resources for now and the future.

Up to now most companies around the world have been living on the fruits of the large scale 'legacy fields' generally Palaeozoic/ Mesozoic fields discovered in the 50s, 60s and 70s. The more recent fields tend to be smaller with faster decline rates.

This scenario is providing enhanced opportunities for utilising more advanced and innovative exploration and development technologies as we try to exploit more complex, deeper plays in more remote and difficult geographic situations. It has also opened the door for more pragmatic approaches for developing those fields that were previously considered uneconomic.

The environment is also allowing us to start to gain real value from the gas resources as the LNG industry moves towards an international market place and GTL technologies begin to show promise in commercialising geographically stranded gas deposits.

In taking a long term perspective I see gas as the key energy source as we transition from the age of oil to find other environmentally acceptable and economically viable energy sources such as clean coal. Unfortunately nothing in this world is straightforward. These new opportunities that we can see in front of us have opened up new constraints.

Firstly the industry hasn't planned for the increased activity well. The industry retrenched approximately two million people in the 80s and 90s. The average age of our geo professional workforce is around 50, many of whom will be retiring within the next 5 to 10 years. That has



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resulted in a huge knowledge and infrastructure gap that we are now trying desperately to fill. What an opportunity for our young scientists and engineers.

We already have a huge shortage in trained and experienced professionals as well as increased levels of staff movement between companies which makes the building of knowledge, teamwork and capability increasingly difficult. Top class leadership is a must.

If activity continues at today's levels, and we go about our business the same way, our professional manpower force will be a major constraint to companies and countries achieving their energy objectives. The challenge for our industry is how we go about rectifying this knowledge and process gap.

It is also important to note that many of the step change technology breakthroughs in our industry happened in the 1980s in the research and development centres of the majors. Today many of these centres have closed or been scaled back and it is now time for the industry to find practical ways to gain critical mass in this technology area, which is now dominated by the service companies.

In our region of South East Asia, we have another interesting challenge and that is that we have a mix of 'peak' markets. Australia is an example of a nation where the labour force has peaked. Since 1993 we have been in a position where

there are less people coming into the workforce than leaving on an annual basis. This is in contrast with growing labour markets in other South East Asian countries. The technology and labour shortages are converging at a time when more people are needed to continue to fuel the region's economy.

The second constraint concerns the impact increased activity levels has had on the availability and cost of oil field equipment and services. While the costs of doing business have gone up, the hydrocarbon pool size hasn't. It is essential that we find innovative ways to reverse these trends to create value.

As you know the oil industry has been here before in previous oil price step changes. While it is hard to know whether we are in a 'brave new world' in which the current high prices will prevail or whether we are just part of another price cycle, it is always instructive to try to apply what we have learnt from the past.

Good projects must be underpinned by robust technical evaluation, flawless execution and safety standards. While the high oil price changes economic thresholds, fundamental geoscientific and engineering and operational principals in finding, developing and producing oil and gas are all still required. We need to remain objective and balanced.

A high oil price environment can result in eroding technical excellence. Resist the pressure to cut corners for short term gain. There is no substitute for thorough geotechnical work and the focus must always be on value based decisions based on rigorous technical work. This approach is often very difficult to maintain under the short-term pressures of the marketplace.

Use the high oil price environment to continue to advance new and improved technologies and innovative development and production approaches. This is a time where we should see major technological advances and develop new talent in the industry. So make the most of it. Paradoxically, history tells us that the biggest technology breakthroughs occur when the oil price is low and we need to be pragmatic to make things work – let's make it different this time.

Clearly, we are living in volatile times which promise to provide plenty of opportunities and challenges to all of us as our careers progress over the next few years.

* Edited article from speech given to the Asia Pacific Oil and Gas Conference and Exhibition held in Adelaide, September 11-13. ■