

Testing the Limits

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One of the themes resonating from this year's SPE/IADC Drilling Conference and Exhibition was that times for the drilling industry are indeed good, but the sector is not without its major challenges. The sustained health of oil prices since 2004—driven by demand rather than events that ushered in many past booms—has been almost unprecedented and shows little sign of relenting. The drilling sector faces a future of seemingly insatiable global demand for hydrocarbons, more complex operations, and strains on equipment as well as personnel.

That could put particular pressure on safety, an area in which the drilling industry has made tremendous strides in the past 2 decades. The safety of the workforce and the protection of the environment remain at the forefront of the sector's attention, speakers at the conference emphasized, despite the reduction of incidents and lost-time injuries in the recent past. For one thing, data suggest that the decrease in safety incidents has begun to flatten out. Some see a "perfect storm" brewing for the industry, with the huge ramp-up in drilling activity, scores of new rigs coming on line with few being retired, and more complicated operations being developed that require highly trained personnel. All of that may add to the temptation to cut corners where safety is concerned.

At least a partial solution to some of these challenges, such as capacity strains on the workforce and safety issues, may lie in drilling automation and rig mechanization. Automation would reduce worker exposure to the most hazardous operations and increase efficiency. But automation requires skilled and well-trained personnel, a commodity in shorter and shorter supply. And its benefits are not certain: some new technologies that were supposed to reduce rig manpower hours in the past have actually increased them. This month's Technology Update describes two new promising developments in automation and their potential benefits.

High prices have given the industry an opportunity to retool and plow some money back into technology development and R&D. In addition, the entire industry—from manufacturers to service providers to operators—is reaping profits that should support sustained future growth. The danger, of course, is that prices deemed too high would encourage government intervention, a rush to alternative fuels, and even a global recession, which would dampen energy demand.

But the drilling sector likely won't get a breather in the short term. The entire oil and gas industry—international and national oil companies as well as service companies—is focused on increasing net recoveries. Hydrocarbon demand from developing countries is booming. Output from existing reservoirs is falling and, except for a few areas such as the Gulf of Mexico, there have been no discoveries of significant size in the past decade. The drilling sector's customers are moving into deeper water, to 10,000 ft and more, bumping up against the limits of existing technologies. And IOCs, their access to reserves contracting, are pushing forward into the difficulties of producing unconventional hydrocarbons. **JPT**

JPT is always eager to hear from its readers. If you have any comments or suggestions, please contact me at jdonnelly@spe.org or by phone at +1.713.779.9595 ext. 616.

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