RESERVOIR DEVELOPMENT TECHNOLOGIES

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The past decade has seen successful and ongoing large scale investment exploring for turbidite plays in deepwater frontier basins mainly dominated by salt and base of slope thrust tectonics. Exceptions to these tectonic styles include deepwater oil and gas plays offshore Norway and the United Kingdom. All require development of existing and new technologies to sustain exploration success and optimize appraisal, development and production targets and costs.

New technologies offer the keys to risk and cost reduction as well as success in the exploration phase. The current dramatic improvements in cost reduction and turn around time of 3D acquisition and processing achieved by the seismic contracting industry will continue into the future. Enhancements in 2D fluid modeling techniques will enable definition of migration and petroleum phase and assessment of seal capacity. Advanced improvements in processing and computing power will facilitate pre-stack 3D depth migration allowing better trap definition and fluid prediction capability, both subsalt and extrosalt. 4 component marine seismic will further enhance fluid prediction in the future. Visualization displays of 3D seismic continue to improve reservoir delineation increasing confidence in the targeting of exploration wells and in innovative siting of early development wells to allow fast early production. 4D seismic technologies will offer a direct means of monitoring production optimizing the displacement process to access unswept oil and gas.