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The Partnership Between Solution Providers and Oil Companies

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Abstract

The DEMO 2000 program provides field testing of new technology from innovative solution providers in Norway developing new equipment, systems or processes for more cost effective field development and increased recovery. Piloting at actual operating conditions is key to obtaining "field proven" status and bridge the gap from R&D to commercial success. The cost and risk of piloting is shared by a 3-way partnership between the supplier, oil companies and the government.

Recent examples include deepwater satellite development using seabed processing, water management, boosting and long multiphase tiebacks; subsea-to-beach with largescale subsea gas compression; and new technology for permanent in-well or seafloor seismic instrumentation offering high definition monitoring of reservoir performance.

Our ambition is to further step up the program by utilizing field trial opportunities on Norwegian offshore installations as well as other continental shelves with similar technology demands, notably Gulf of Mexico, Brazil and West Africa which are important export markets for Norwegian industry. The paper will highlight some cases of collaboration with DeepStar (GoM) and Petrobras' PROCAP 3000 deepwater technology program.

Introduction

Boosting production and replacing reserves while controlling production costs are key objectives of the E&P industry. The quest for oil and gas drives the operators towards ever more demanding challenges – ultra deep offshore developments, "zero footprint" on

environment, extremely long tiebacks, getting more value out of the ground.

Although technological research and development is key in enabling these challenges to be solved, operators direct their main attention and capital towards their own core business – exploration, field development and production. Equipment suppliers and service industry are left with the task of developing the required solutions and have it field proven and ready for market in time.

Field trials and pilot projects require large resources – offshore deployment and operation in addition to the prototype development of the equipment – and access to host facilities. This final stage of the R&D chain is by far the most costly part of development towards market acceptance and deserves the term "the bleeding edge" well.

Although significant technology step changes have taken place to transform our industry, it is a fact that innovation takes longer time in our business – 30 years from idea to market penetration compared to less than 10 years in other industries. Thus there is a large potential for improvement in accelerating technology innovation in order to maximize the value of oil and gas. This aspect was the motivation for setting up the DEMO 2000 program as collaboration between stakeholders – oil companies/operators, supply and service industry, and the Norwegian government.

As oil exploration and production move from harvesting in prolific reservoirs to "squeezing the lemon" in less accessible waters and more marginal fields, the industry itself becomes more and more knowledge and technology based. However, the shift of responsibility from operators to suppliers to develop the new technology has left a funding gap.

The industry has for some time seen the need for stronger co-operation between programs in order to join forces towards common challenges. The benefits are quite clear. First of all it would enable the leveraging of industry efforts on the grand scale which is probably needed in order to achieve substantial acceleration in areas like e.g. seabed processing (estimated by some to require a US 2 Billion technology program over a 6-7 year period). Secondly it would provide an arena for