**INNOVATION IN RIG SERVICES**

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## Overview

## Despite high oil prices, oil companies struggle to develop new projects. This is due to rising costs, chief of which are drilling costs. The paper analyses new approaches by oil companies to curb drilling costs. In an effort to reduce rig rates, the oil companies are investigating whether new ways of organising the relationship between themselves and the rig contractors – including changes to risk-sharing and ownership – can increase the supply of units at acceptable cost. The scarcity of rigs, combined with a considerable lengthening in contract durations, has led to a number of interesting examples of innovation in contractual and organisational patterns for drilling. These include new types of incentives in drilling contracts, small oil companies joining forces to establish a rig consortium, and vertical integration where oil companies own rigs.

## Methods

## The paper builds on general economic incentive and contract theory, and on more specific research in the drilling field, such as Corts (2000) and Osmundsen et al (2006, 2008). See the list of references. In addition, I have had a series of meetings and conversations with specialists closely involved with decisions related to rig procurement, including technical and organisational conditions, legal aspects and taxation. I have also had access to rig contracts used on the NCS.

## Examples and cases presented in the paper are taken from the Norwegian Continental Shelf (NCS). Since all petroleum provinces have experienced rising rig rates, since major players in both among oil companies, rig companies and oil services are present on the NCS, and since the contracts for rig hire mostly follow an international standard, the findings in the paper are likely to have global relevance.

## Results

Innovation has occurred along several dimensions. One is technical innovation, with the development of new and more specialised rig types. The idea is that units should be more cost-effective and productive when they are purpose-designed for more specialist tasks. New rig categories have encountered short-term resistance from contractors, but will probably play a key role in a future Norwegian rig market. It will be easier to establish specialised rigs when the market is less tight. Much innovation has also occurred with contracts and organisation. Examples include changes to risk-sharing in contracts and vertical integration.

Some of these changes might be determined to a certain extent by economic conditions. One example could be oil companies owning rigs. Other innovations will represent lasting adjustments to collaborative relations between oil companies and contractors. New oil companies are less keen than the established players to build up large internal staffs to supervise drilling operations. This will mean a trend towards contractors taking on more functions than has been usual on the NCS. A greater use of turnkey contracts and integration of services can be seen. That makes big demands on the breadth of contractor knowledge, and calls for greater willingness and ability to bear risk. This is likely to create a number of challenges in a transitional phase.

## Conclusions

Substantial elements of innovation have been observable during recent years in rig supply and organisation on the NCS. This trend has been driven partly by the fact that rising costs over many years have put profitability under pressure, and partly by the entry of new oil companies on the NCS with different needs from the large established players.

On the basis of theory and available empirical insights, the paper outlines the conditions where specific organisational and contractual solutions are best suited. Optimum rig procurement will depend in part on whether the oil companies have time-critical drilling targets, the ability and willingness of the parties to bear risk and the purchaser’s competence and capacity to manage and follow up procurement.

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