



## **Chapter XIV**

# **Smart Integrated eOperations for High-Risk and Technologically Complex Assets: Operational Networks and Collaborative Partnerships in the Digital Environment**

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## **Abstract**

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*As the oil and gas (O&G) production business on the Norwegian Continental Shelf (NCS) stepped into a new development path termed the “3<sup>rd</sup> efficiency leap” since the year 2003, Smart Integrated eOperations is widely acknowledged as the way forward to deal with this inevitable change. Smart Integrated eOperations appears to be re-engineering the industry*

*structure. Within the next few years, new policies and practices will establish operational networks and collaborative partnerships between O&G producers and the service-support-supply market through active integration for effective and efficient management of offshore production assets. Adaptation of Smart Integrated eOperations is largely stimulated by rapid development in application technology, large-scale information and communication (ICT) platforms, and the foreseen substantial commercial benefits of well-integrated collaborative industry infrastructure. This is a very novel macro-scale program, and the Norwegian O&G Industry has already launched major initiatives in this regard to realize its fully functional status by the year 2010. The sophisticated information and communication platform called Secure Oil Information Link (SOIL) and Onshore support centres (e.g., ODC and OOC of ConocoPhillips, Norway) represents major icons of this digital era. However, as per the existing circumstances on NCS, this long-range development scenario presents itself with a multitude of challenges, particularly those relating to human and organizational interfaces, which have to be overcome to ensure long-term sustained benefits.*

## **Introduction and Background**

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In general, the global business environment today is becoming more and more complex, very dynamic, and highly uncertain. Both short-term and long-term commercial success in this environment call for the adoption of new thinking and innovative solutions to reduce risk and to add value (refer to various insights from Faulkner & Rond, 2001; Hosni & Khalil, 2004; Keen, 1997; Lindgren & Bandhold, 2003; Neef, 2003; Tidd, 2001). In the new era, complexity has defined some unique dimensions for competition, and interconnectivity has already become an imperative (Barabasi, 2003; Lewin, 2001).

North Sea O&G production environment, in particular, has been encountering significant challenges over the last few years particularly from the beginning of year 2000, and subsequently the O&G business activity in Norway is currently undergoing some strategic changes. The major part of the Norwegian O&G production portfolio is gradually approaching the tail-end phase in its production life cycle. An interesting observation is also that many small O&G companies are moving into the Continental shelf with interests on gaining commercial success by improving overall supply levels through development of marginal fields. Major concerns under the existing circumstances mainly relate to cost of ownership and operational efficiency. While technological advancements have been quite catalytic for a range of developments in this respect, the Norwegian O&G

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