Chapter 1
What is a Capability Platform Approach to Integrated Operations? An Introduction to Key Concepts

John Henderson
Boston University, USA

Vidar Hepsø
Norwegian University of Science and Technology (NTNU), Norway

Øyvind Mydland
Stepchange, Norway

ABSTRACT
The concept of a capability platform can be used to argue how firms engage networked relationships to embed learning/performance into distinctive practices rather than focusing only on technology. In fact the capability language allows us to unpack the role of technology by emphasizing its interaction with people, process, and governance issues. The authors address the importance of a capability approach for Integrated Operations and how it can improve understanding of how people, process, technology, and governance issues are connected and managed to create scalable and sustainable practices. The chapter describes the development of capabilities as something that is happening within an ecology. Using ecology as a metaphor acknowledges that there is a limit to how far it is possible to go to understand organizations and the development of capabilities in the oil and gas industry as traditional hierarchies and stable markets. The new challenge that has emerged with integrated operations is the need for virtual, increasingly global, and network based models of work. The authors couple the ecology approach with a capability platform approach.

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INTRODUCTION: THE MOVEMENT TO CAPABILITIES IN INTEGRATED OPERATIONS

The concept of a capability platform includes elements such as technology, process, people and governance issues and includes enabling core capabilities such as collaboration and leadership. One key characteristic of the platform concept is that innovation and change often occurs from outside to inside. That is, the ecosystem actors are often the source of independent innovations that are then absorbed into core operations. By coupling the notion of ecologies and platforms, we allow for an emerging model of integrated operations that recognizes the critical need of collaboration across traditional boundaries. In practice the technology solutions form the base of the platform with the more people, process and organisational dominant elements making up the top layers of the platform stack. We describe the content of such a capability platform in relation to integrated operations and present how it can be developed to create sustainable and scalable practices.

Over the last ten years integrated operations have gone from initiatives started by enthusiasts, through pilot testing and broad implementation of new IO practices. Some efforts of implementation of IO have been scalable and sustainable; others have never been able to pass the general adoption threshold or chasm (Hepsø et al 2010) of piloting and good intentions. Some of the early work on IO was technology biased and was treating human and organizational issues as a remaining factor (Hepsø 2006) or heralded that integrated operations was all about people and processes and nothing about technology. One key notion of the IO model is that work is highly distributed; across geography, disciplines and cultures. Integrated Operations is thus a strategy to achieve effective collaboration among many companies and work sites. Following the lessons learnt (i.e., Edwards, et.al 2010) over the years we see that there is a need to address the human, process, governance and technology issues of integrated operations through an integrated approach. The capability platform concept is one such approach. It can be used to understand how firms engage in networked relationships to impact learning / performance and develop distinctive practices rather than focusing only on technology. In fact the capability language allows us to unpack the role of technology resources by emphasizing its interaction with people, process and governance resources. Given that the organization exists in a networked setting with heterogeneous resources, the challenge is how to configure the firm’s resources into scalable and sustainable capabilities that achieve desired actions and outcomes.

When most major oil companies and globally operating service companies address their future way of doing business as oil exploration and operation enabled by information and communication technology there is a certain logic behind this vision (OLF 2005); a bundling of the company resources to configure sustainable capabilities: integration of people across geographical, organizational and disciplinary boundaries, integration of processes in terms of business integration and vendor collaboration and finally; integration in relation to technology: data, sensors, protocols, fibre optics, standardization and others. This vision of integration of resources into capabilities is seen in a typical definition of an e-field; an instrumented and automated oil and gas field that utilize people and technology to remotely monitor, model and control processes in a safe and environmentally friendly way in order to maximize the life value of the field, see Figure 1. Over the last decade, the ability to enable people and teams to work in different ways has been influenced by many drivers (Edwards, et al 2010). New oil discoveries tend to be in places far away from the key skill centers. There a key skill shortage brought about by an increasingly aging workforce. Further, new
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