Chapter 13
Baker Hughes IO and BEACON with a Focus on Downsizing Personnel Requirements at Rig–Site

Joanna Karin Grov Fraser
Baker Hughes, Norway

Jan Ove Dagestad
Baker Hughes, Norway

Barry L. Jones
Baker Hughes, Norway

ABSTRACT
For more than a decade, Baker Hughes has developed a number of IO applications and WellLink technologies building its BEACON (Baker Expert Advisory Centre Operation Network) platform for the digital oilfield. The scope of BEACON is remote access of real-time rig data, drilling data and wireline data, production and pump monitoring, and static file management. These technologies have enabled the company’s collaboration centers around the world primarily to monitor, support, and optimize operations without having to be physically present at rig site. This development has been a foundation for a successful roll-out of remote collaboration and re-manning of operations, where Baker Hughes has reduced the number of personnel needed at rig site by 25-50%. Monitoring and remote supervision of real-time information 24/7 to optimize overall performance and paperwork (logging, petrophysical analyses) are now all done by people in the office using information communications technology to connect to the rig site. Larger-scale re-manning can also be done with services such as reservoir navigation, drilling optimization, pump management, liner hanger down hole technical support, et cetera. On the Norwegian shelf, where re-manning has been done at higher levels than in many other regions, nearly 50% of Baker Hughes’ staff who would traditionally have been offshore can be re-manned during operational peaks – this means they are either in an office onshore, or their responsibilities have been changed. Baker Hughes’ cross-training of personnel facilitates this flexibility, allowing for efficient and HSE-compliant re-manning.

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INTRODUCTION

To achieve re-manning, a multitude of tasks has to be mapped out, defining roles to identify duplication and to best determine which could be shared, which could be moved to an office and which are not needed anymore for a specific project. Remanning has also allowed the company to use the same head count for more jobs and with a larger global footprint, driving personnel efficiency to operations. For example in the Middle East there was no expert available in country to support the deployment of new technology at the time, but instead of turning the job down or to proceed at a high risk, a call went to our collaboration centers in Europe, where engineers were available to run the service remotely from the UK.

In 2006, the company kicked off 24/7 operational technical support for the Drilling & Evaluation services in Norway. Since then, this service has been expanded across Europe, Russia, Latin America and the Caspian region and is now being launched for Asia Pacific and the Middle East. “In traditional organizations, we often rely on our social network for support and technical support. It’s only as good as the buddy that you know to ‘call’. The 24/7 tech support centers formalize that network so everyone knows there is someone somewhere they can call for help at any time of the day, a step change in lowering the overall risk exposure and potential NPT.

The E&P industry has been and still can be a lucrative business environment, but has been exposed to increasing risks, such as harder-to-reach reserves, high HSE exposure, Non-Productive Time (NPT) & drilling operation costs and scarcity of expertise, all driving costs upwards.

Figure 1 highlights key sources driving Non-Productive Time ref - 2009 report from a Welling & Company survey of 259 key decision-makers within oil and gas operating companies around the world engaged in drilling wells and utilizing drilling equipment and services.

There has been established a common understanding and belief that Integrated Operations will be an efficient enabler reducing overall risk exposure as well as to promote efficiency to operations.

Rapid development in IT capabilities have supported this understanding and been a significant contributor in the process promoting IO, providing data standards, more efficient data aggregation and integration solutions, applications developed utilizing standards and rapid growth in data volumes.

Figure 1. Sources driving non-productive time (NPT)
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