



Advancing to the Next Level of Operational Excellence

Production Optimization Improvements of \$76M

ENERGY

Business Challenge

A growing independent oil and gas producer with assets around the world enjoyed significant growth and wanted to progress to the next level of performance.

A key strategic operation was their UK business, which contributed in excess of 60% of the organization's total production output. The UK operation is one of the largest in the UK North Sea and includes a flagship facility producing more than 70,000 boe per day.

With this growth came added complexity and the obvious challenges of capacity management. It was felt by the leadership team that the business would benefit from a reduced level of reactivity and the introduction of an Operational Excellence program to ensure that industry-leading processes and systems were in place.

The client had previously launched a number of internal initiatives for change that had failed to gain traction due to its personnel's day-to-day operational schedule. Key individuals had huge amounts of pressure on them

"Hitachi Consulting delivered what they said they would. In my experience, very few consultants actually do this."

and were left with limited time to focus on longer-term issues or root cause analysis, which was not a sustainable position for the organization going forward.

To position itself as an industry leader and successfully absorb additional assets, the company decided that the most appropriate way forward was to launch an Operational Excellence program, tailored to suit its particular needs. The client chose to partner with Hitachi Consulting based on its proven support in performance improvement programs and a 20-year track record working in the North Sea helping asset teams deliver improvements in this challenging environment.

Hitachi Consulting worked closely with the client to put a framework in place to successfully execute and sustain improvements by adding capabilities, upskilling the organization's own personnel and finding a way to address capacity issues to help key personnel focus on business-critical priorities. The two companies worked together over an 18-month period to achieve an offshore-focused program that was lean, flexible and highly engaging, as the client believed this was the key to mobilizing the organization and delivering sustainable value for the business.

Customer Challenge

The client, a leading independent oil and gas producer, was growing rapidly and wanted to position itself for further expansion by engaging a program of Operational Excellence.

Location

North Sea, United Kingdom

Sector

Energy

Service Lines

Operational transformation, change management, organizational effectiveness, performance improvement

Functions

Production, maintenance, logistics, engineering, contract management, planning

Capabilities

Process Excellence (Lean Six Sigma), Asset Management, Production Loss Management, Materials Management, Management System (MCRS®), HSE and Assurance, Integrated Asset Planning (IAP)



Approach

Hitachi Consulting started with a nine-week diagnostic phase to examine different aspects of operations both onshore and offshore to understand key issues and set a baseline which could be used to track and measure improvements. This involved working in close contact with key stakeholders, including the onshore functional teams and the offshore leadership and technician teams who experience many of the challenges first-hand and have crucial input into the development of better working practices.

Following this in-depth diagnostic, a project team was set up consisting of both Hitachi Consultants and 10 members of the client personnel from various functional disciplines. The team developed a project delivery framework which managed the plans, deliverables, milestones, tracking mechanisms and resources required to successfully deliver the identified business benefits, which included improvements in production efficiency and reductions in both CAPEX and OPEX spend levels.

This close collaborative approach, known as Closework®, was a key part of the project's success, as it allowed Hitachi Consulting's experts to immerse themselves in the organization, working side-by-side with client staff. Closework® also ensured that knowledge was transferred to the client's staff, enabling

them to learn new skills to sustain improvements beyond the project itself. Closework® delivers lasting behavior change resulting in sustainable value.

The joint program team created and implemented organizational, process and working practice enhancements across seven key workstreams:

1. Program Management Office (PMO)

A PMO was put in place to create a vehicle to manage the high levels of anticipated activity. Setting program governance, the PMO ensured there was a filter in place covering all initiatives to allow the correct sequencing of activity. It also acted as a hub to deal with complex tactics, evaluate progress and ensure effective communications across the business.

2. Leadership and Management (MCRS®)

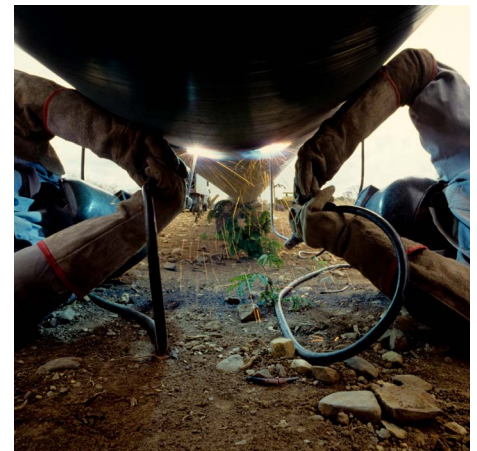
Hitachi Consulting implemented a dedicated Management System to support timely, fact-based decision making and action review across the organization. The client used the MCRS® to identify, monitor and measure a number of leading Key Performance Indicators (KPIs) across several processes to allow greater focus on ownership and accountability, as well as provide a framework to reflect the annual budget cycle of the business.

3. Reliability and Maintenance

Hitachi Consulting put a strong focus on reliability and maintenance. This included a review of KPIs within maintenance and data sources to make any required updates. The members of this workstream also held sessions with key personnel to review equipment backlogs and strip out unnecessary work to allow resources to concentrate on safety and integrity-critical activities.

This phase also included a systematic analysis of equipment reliability utilizing asset performance data such as mean time to failure intervals and Failure Mode Effect Analysis (FMEA) techniques.

A heavy emphasis was given to coaching both the maintenance and operations teams towards putting the skills in place to perform ongoing root cause analysis and continuous improvement.



"I liked the flexibility shown by Hitachi Consulting. They were prepared to develop their approach to meet the unique and often demanding needs of our company."

4. Integrated Asset Planning (IAP)

To tie together all the operational activity and provide an overview schedule for delivering the objectives, the program team developed a number of upgrades and enhancements to the existing planning process. This effectively shifted the plan from a short-term focus to a fully integrated one with longer planning horizons. The enhanced planning process created best practices and defined an end-to-end process, planning rules such as lead times and constraints as well as supporting the organization to manage conflicts. The need for such improvements went far beyond better organization, as it was very difficult to drive improvements in other areas such as technician wrench time without having a stable, well-defined plan in place.

5. Human Performance

To effectively identify and align responsibilities across the organization, the program team mapped role descriptions using a RACI (responsibility assignment) format to process workstream outputs.

Behavior change templates were also developed and implemented across the central offshore office to set clear expectations for a way of working which meant some significant changes in legacy working practices.

Through its human performance activity, the program team identified organizational capacity bottlenecks and capability gaps and worked to address these through activity realignment and individual upskilling.

6. Production Optimization

Hitachi Consulting created a process of production optimization, which not only helped supervisors monitor asset performance but also assisted in pre-empting threats that could cause interruptions to production. This included designing and installing short interval control reporting systems for key production parameters together with a set of response actions if KPIs showed a deviation from accepted tolerances. The data from this control process was actively shared across the different offshore rotations and helped to increase the levels of standardization.

7. Offshore Implementation

Backed by a 25-year history of successful consulting projects, many working with offshore assets, Hitachi Consulting was all too aware of the capacity challenges in implementing change in this demanding environment. Initiative overload reached the point where offshore leaders struggled to balance their day job of

overseeing safe and reliable operations with the demands of the onshore organization.

Hitachi Consulting used its experience to create a customized approach for the client, beginning with the creation of a PMO to ensure process improvements were optimally sequenced. Acting as a central hub and buffer between onshore and offshore personnel, the PMO ensured that the offshore organization successfully absorbed the changes being made.

This need for operational change was particularly acute as the asset worked a complex rota system for staff, which meant that sufficient time needed to be allocated to ensure that everybody was moving at the same pace and understood what was expected of them.





Results

- Production Optimization – total agreed improvements across producing assets equivalent to \$76 million at an average oil price of \$102/barrel
- Increase in wrench time productivity of technician resources from a baseline of 46% of “hands on tool time” to 58%
- Improved well testing productivity realizing \$2.4 million in cost savings
- Production Efficiency (PE) improved from baseline of 69.5% to 86.9% (exceeding AOP target of 85%)
- Reduction in start-up duration following critical equipment reliability trips of 13% equating to over \$7 million in production value
- Increase in maintenance plan attainment from 55% to 82%
- Reduction in safety critical backlogs of 24%

“I especially liked the emphasis on measurable results. The activities had a clear link back to the benefit case and kept everyone aligned to the overall plan.

This helped to drive the changes in behaviour that we were looking for, as it made the whole organization more performance focused.”

Production Director

“This program was business-critical for the company, it wasn’t a ‘nice to have’ or ‘flavor of the month,’ but was all about long-term survival and realizing our potential.”

General Manager

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Hitachi Consulting is a leading global professional services company and business integrator for the IoT era. We engage with clients to solve complex business challenges with innovative and integrated solutions across industries in the spirit of our parent, Hitachi, Ltd., a global leader in technology and social innovation.

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