

Digital transformation starts with connected workers



Call for change

Refining the energy industry through digital transformation

In the UK Continental Shelf—a mature basin that includes part of the North Sea—oil and gas operators are looking to maximize economic recovery by focusing on efficiency, optimization and cost reduction. The average uptime of mature assets in the North Sea has been in the range of 70-75%¹. Under its traditional ways of working, Petrofac often exceeded this measure, but felt it could do even better.

Petrofac has recognized the power of digital transformation to improve its ways of working and digital technologies as critical enablers of its transformational vision—driving improvements in

every aspect of its operations, from worker safety and productivity to plant and construction site performance. Its journey started with the question, “How might we enable our workforce to have the digital tools they need such that they can execute their work more efficiently?”

As part of an engineering, construction and operations, the team embarked on the implementation of a connected worker solution—with the aim of achieving a digitally enabled workforce. Once combined with work scheduling, data analytics and real-time support, a connected worker solution would be able to significantly improve task effectiveness and overall efficiency.



When tech meets human ingenuity

Building a better connection

A team from Accenture worked closely with Petrofac in an 8-week engagement to develop one of the energy industry's first connected worker solutions. This solution—intended to improve workforce safety, productivity, site performance and profitability—augments Petrofac's engineers with Realwear wearable headsets, allowing digitized instructions to be viewed and executed completely hands free.

By enabling workers at offshore sites to request over-the-shoulder subject matter expert (SME) support from onshore personnel, a solution with this capability can become vital when a piece of equipment, critical to production, shows

signs of fault or breaks down. In such a scenario, it is not uncommon to witness hours, possibility days, of downtime. Many hours can be wasted on diagnostics and issue resolution due to the need to collect photographic evidence, send emails and organize conference calls between offshore engineers and SMEs. The majority of this unproductive time can be eliminated with a Connected Worker solution. Engineers can instantly utilize the intrinsically safe Realwear device to call the SME. The experts can have visual access to the issue, identify the fault and suggest resolutions in real time. This has the potential to save millions in what would have been lost production.

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The solution also allows workers to execute inspections digitally. All reporting is autonomously documented, with the footage captured on the headset and instantly available onshore for diagnostics.

More valuably, over-the-shoulder SME support can be provided during routine maintenance, inspections or live repairs. Signoffs following inspections or equipment rebuilds can now be completed in real time by onshore SMEs. This not only saves time, but also allows inspectors to be instantly guided by experienced personnel to perform additional checks or tests. Such tests may not have been included as standard procedure but based on expert knowledge and intuition, with the intention of preventing critical future issues or breakdowns.

Traditionally, these additional steps for added reassurance were rarely executed. However, with a Wearable Connected Worker solution, these procedures not only become feasible, but quick and effortless. Worksite safety is also enhanced by allowing workers to have both hands free at all times. This combination of high-tech and human touch allows workers to be more efficient and effective.





A valuable difference

Better connections, better results

Petrofac's implementation of a connected worker solution is driving increased efficiency and safety. By enabling better coordination of onshore and offshore assets and improving knowledge transfer and upskilling, the solution is reducing the time needed to make decisions, ultimately speeding up operations while keeping workers secure. The solution is also helping to save crucial time by enabling inspections where data is captured handsfree, documented seamlessly and saved autonomously. This data is automatically transferred onshore for diagnostics where experts can provide remote assistance through picture-in-picture video calls to assist with repair and reassembly, significantly reducing the time to get to a resolution as well as possible down time.

For SMEs, the ability to troubleshoot incidents and scope essential repairs has become much easier. Through interactive remote assistance, especially video calls that enable handsfree document sharing

and live annotation, onshore SMEs can much more effectively guide offshore engineers through equipment repair and replacement. This collaboration saves the engineers time and effort in obtaining the information they need and allows them to run further real-time checks on equipment to prevent future failures.

Finally, the ability to execute procedures through digital work instructions and to capture and record vital readings directly to the platform through external sensors allows supervisors to record, save and upload evidence of equipment prior to leaving the platform. This saves a significant amount of time during the handover process for the next supervisor. All of these improvements, made possible through the connected worker platform, have led to an increase in worker efficiency and effectiveness. All of this is placing Petrofac on a more secure platform, where it is becoming digitally enabled, forward-looking, and able to thrive in a competitive energy industry.

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