

BETTER EXPERIENCES AT THE WORKPLACE CAN RELIEVE OIL AND GAS LABOR SHORTAGES

INTELLIGENT OPERATIONS EMPOWERS EMPLOYEES

The US is facing a labor crunch. For oil and gas companies, this has been an <u>ongoing challenge</u> exacerbated by the pandemic and fluctuating demand for oil and gas globally. The industry is also losing some workers to other sectors like renewable energy or to the higher paying industries like technology or manufacturing.

Professionals in the oil and gas sector solve some of the most complex problems in the world and, with an aging workforce, it is imperative for the industry to attract the right talent. The next wave of digital natives will expect a different experience at work and demand the same technology they enjoy in their everyday lives. Employees need to connect in every part of their job. Creating a more connected worker enhances safety and empowers employees to make more informed decisions. But it is more than just that: it is about creating an employee experience that keeps them engaged.

Finding a starting point

Any connected-worker solution needs to focus on the employee. Solutions must be user-friendly, ergonomically sound, and have the IT infrastructure to support the technology. While a company might have an ambitious connected-worker plan, the reality is current IT infrastructures and ecosystems may not be able to keep pace. For example, decisions have to be made on data governance, security, and operating environments, such on on-premises or cloud.

Oil and gas companies need to assess their current state and develop a plan to achieve intended outcomes and define a roadmap and an implementation strategy to deliver real tools employees can use. Without laying this groundwork, it is unlikely to produce a plan that is focused on employees, is sustainable, and which delivers value to the business.

User-first approach

Enabling connected workers is all about merging digital technology, IoT, and human experience to create a more efficient and foolproof way of working. A paramount consideration is that implementations must help employees, not make it more cumbersome to complete tasks.

A connected-worker solution needs to consider the environment, task, regulatory compliance issues, and any physical limitations. Workers will quickly disapprove of a new technology or process that is clumsy, and if this happens it reduces their confidence in future implementations. There is unprecedented pressure on oil and gas companies to improve investor returns and maintain a healthy free-cash flow, and industrial IoT can make a real difference in unlocking better ways of working within the organization. Fast data transmission opens a world of tool possibilities.



Applications for **oil and gas**

Mobile devices, sensors, and other technologies can easily gather data in real-time that then makes life easier and more efficient for employees. Some potential use cases include the following.

- **Safety monitoring:** monitor the safety and well-being of workers in remote and hazardous environments. For example, wearable devices can track movements and alert managers if a worker falls or becomes trapped, or prevent workers from entering these areas.
- Asset management: track location and health of assets. This can help companies ensure that assets are used efficiently, prevent equipment failure and downtime, and make data-driven decisions.
- **Training and compliance:** deliver training and compliance information to workers in the field. For example, workers can use mobile devices to access safety procedures, training videos, and other resources to ensure they are following the correct procedures, while capturing worker progress for career growth.
- **Remote monitoring:** monitor and control operations remotely, with an overlay of data to make cost-saving real-time decisions. For example, workers can use mobile devices to access real-time data from drilling to production operations, and to make adjustments to those operations as needed.

Beyond safety and efficiency improvements, managers and operators have better visibility into the business. Even incremental improvements can have major impacts on a large operation.

Exploring **new applications**

As more companies explore the possibilities, there is a drive to develop new use cases and applications, and there are new technologies driving these. Wearable technology such as smart glasses and smart watches can provide real-time information and alerts to workers in the field. Biometric sensors can be used to monitor workers' vital signs, such as heart rate and body temperature, to provide early warning of fatigue or illness.

Automation and robotics can perform tasks that are dangerous or difficult for workers, such as inspecting pipelines and drilling boreholes. They can also handle tedious tasks like scheduling, data analysis, and decision-making with support from artificial intelligence. Drones and robotic assistants can be used for monitoring, inspecting, maintenance, and delivering materials.

Another promising technology is augmented or virtual reality. These have both training and field applications, as employees can get better insight into a facility and requirements in the field. AR headsets, for example, can overlay real-time information in their field of view, allowing them to access data and communicate with other workers without looking away from their tasks.

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Delivering **employee experience**

Connected worker technology has the potential to improve safety, efficiency, and productivity in the oil and gas industry. By providing workers with real-time information and resources, oil and gas companies can create a more engaging and safe employee experience. The industry is seeing a new generation of digital natives who want to use technology in their workplaces, and companies need to keep up.

Capgemini's Intelligent Operations offerings center around equipment, process, and people. Even with the drive to Industry 4.0, people will always be the heart of the oil and gas industry, and at Capgemini we believe that connected workers are all about creating a safe, efficient, and empowered worker.

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