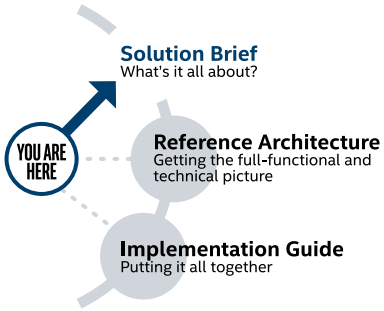
SOLUTION BRIEF

Energy—Oil and Gas
Mobility and Collaboration

Mobile Workforce Transformation in Oil and Gas

Provide field workers with better access to information to maintain and improve quality, consistency, and safety



Executive Summary

Oil and gas companies are currently under extreme price pressures, and many have been compelled to make workforce reductions. However, the workload in the field often remains undiminished. Companies face additional challenges as the current generation of field operators approaches retirement age. Companies could lose the vital information and expertise these workers have accumulated throughout their careers—especially if early retirement is used to help manage reductions. Oil and gas companies are looking for tools that can help improve field operator efficiency and preserve knowledge while maintaining high industry safety standards.

These challenges can be partially mitigated through a mobile workforce transformation. By making information available to field operators through mobile devices, oil and gas companies can better capture, retain, and share critical operating knowledge. Incorporating those mobile devices into enterprise environments that capitalize on cloud technologies and analytics solutions enables oil and gas companies to generate valuable business insights that can deliver new levels of efficiency and business agility.

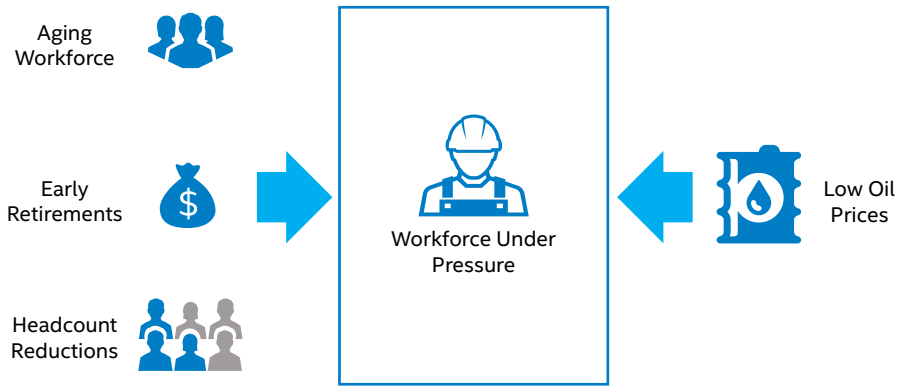


Figure 1. Fluctuating oil prices, layoffs, attrition, and an aging workforce are creating challenges in the oil and gas industry, some of which may be addressed by mobile workforce transformation

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Ruggedized, Class 1 Division 1/ATEX Zone 1 and Class 1 Division 2/ATEX Zone 2 tablets powered by Intel® processors can play a key role in the mobile workforce transformation. These tablets empower field workers by providing them with near-real-time information to better execute their job functions. Oil and gas companies can help ensure quality, consistency, and safety while also more easily capturing and analyzing information that can lead to new intelligence.

Enable Field Worker Access to Information

Field operators must flawlessly perform a variety of tasks, often in stressful situations. They follow and sign off on standard, special, and emergency procedures; conduct job safety reviews; perform lockout/tag out; and conduct a variety of additional routine and non-routine duties every day. Training operators to effectively and proficiently perform these activities is a continual, time- and resource-intensive process.

Devoting these resources is even more challenging given the economic climate and the number of retirements expected. The American Fuel & Petrochemical Manufacturers (AFPM) organization reports that 800,000 refinery/petrochemical workers are expected to retire in the U.S. by 2017[1]—approximately 40 percent of the total workforce. Turnover will stretch the traditional on-the-job training model, and many companies may lose critical information as their experienced personnel retire.

With the current low oil prices, many positions may not be filled as workers retire (Figure 1). However, the same amount of work still needs to be done.

Undertaking a mobile workforce transformation can help address the need for greater field operator efficiency while helping to mitigate the knowledge drain caused by retirements. If oil and gas companies can make operating and maintenance information available to field workers through mobile devices, they can more quickly train new operators. At the same time, they can improve the efficiency of their current workforce by making standard operating procedures, work orders, and other critical information readily available to the field.

Achieve a Mobile Workforce Transformation with Ruggedized Tablets

Deploying ruggedized tablets to field workers is essential in achieving a mobile workforce transformation. By using tablets that can withstand the rigorous environment of the field and are hazardous location classified, oil and gas companies can safely give field workers instant access to key information that includes:

- Standard maintenance procedures
- Standard operating procedures
- Safety checklists
- Plant automation/SCADA information
- Historical data
- Work order details

If wireless connectivity is available, workers can also use tablets to capture field information digitally and immediately interact with back-end systems. In addition, they can reduce or eliminate the need to re-enter data manually into back-office systems.

The right tablet can also facilitate remote management. If IT departments can patch, manage, and maintain systems from a centralized location, they can support a dispersed workforce while helping to ensure the continuous—and uninterrupted—flow of information between headquarters and the field (Figure 2).

Mobile Data Flow Solution Architecture

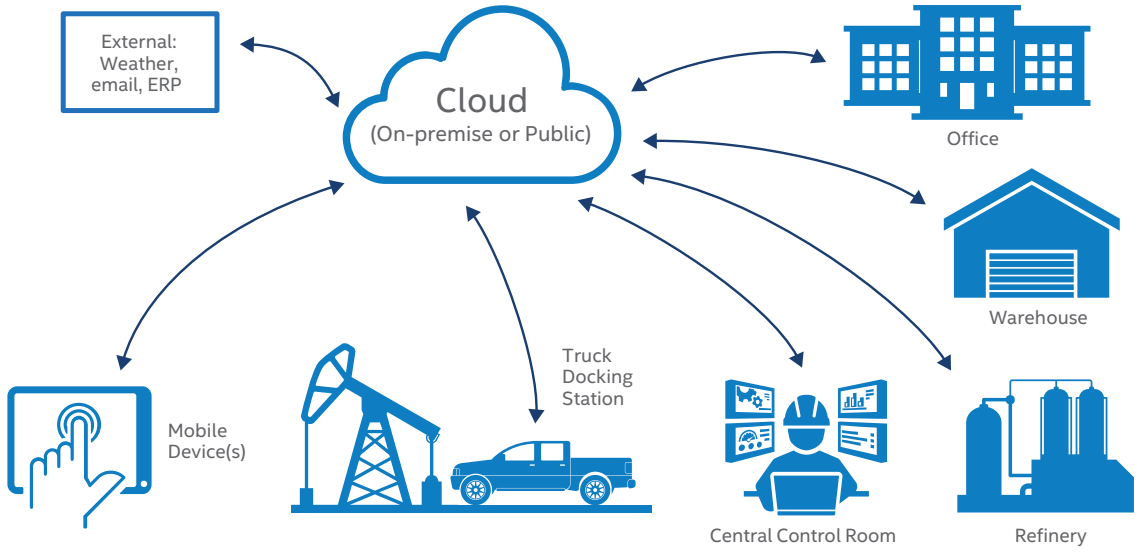

Figure 2. Incorporating mobile devices into environments that capitalize on cloud technologies and analytics enables companies to generate valuable insights

Deliver Data Where It Does the Most Good

Field operators make dozens of decisions every day. They are the closest to day-to-day operations for oil and gas companies. They should have the best access to information so they can be as successful as possible in their jobs. Even more importantly, they should have ways to turn information into insight, while quickly and easily sharing data in near-real time.

Providing field workers with better access to information can help oil and gas companies maintain quality, consistency, and safety. With ruggedized, hazardous location classified tablets, field operators can access operations and maintenance data while at the plant or in the field. They can view existing work order requests and notifications, create new ones, and view plant automation data and operating procedures.

With the right software, they can also record and review data from non-instrumented equipment, fill out safety and reliability checklists while doing their routine duties, and add detailed notes on existing standard operating procedures. This unprecedented access to information improves consistency of field worker actions; facilitates accurate decision-making; and captures valuable compliance, asset integrity information, and best practices efficiently and easily.

Remote device management capabilities can maximize device uptime and help ensure field workers can consistently carry out their tasks. If IT groups can patch systems, deploy software updates, wipe hard drives (if the tablet is lost or stolen), and repair operating systems—even if the operating system is inoperable—they can reduce their company's liability and eliminate many of the issues that could cause downtime. They can also avoid the time and resources needed to send in tablets or complete in-person repairs.

Empower Field Workers with Ruggedized Tablets

A ruggedized tablet powered by Intel® Core™ vPro™ processors can help oil and gas companies provide their field workers with fast access to information. Intel processors have the performance to support multiple applications, including a full range of enterprise applications running in a Microsoft Windows* operating system. Oil and gas companies can choose from different ruggedized models that are rated for Class 1 Division 2/ATEX Zone 2 from several manufacturers, including Xplor, Bartec, Panasonic, and GammaTech. Aegex offers a ruggedized Class 1 Division 1/ATEX Zone 1 tablet.

The Intel® vPro™ technology built into the processors offers robust remote management capabilities. IT administrators can remotely patch and update systems, diagnose software issues, and more, whether or not the device is powered on or the operating system is functioning.

Recommended Tablets

Devices are Class1 Div1 or Class 1 Div2, MIL-STD-810G Certified

Bartec AgileX

- Extremely slim-line, rugged, and highly flexible industrial tablet PC for rough environments
- Intel® Core™ M processor

Panasonic Toughpad® FZ-G1

- Lightweight, fully rugged Windows* 8 tablet with 10.1" next-generation outdoor WUXGA display
- Intel® Core™ i5 vPro™ processor

Aegex™ 10 Intrinsically Safe Tablet AEG-MDS-005

- Purpose-built, enterprise-class mobility solution for hazardous location environments
- Quad-core Intel® Atom™ processor

Xplore® iX104C5 DMSR

- Dual-mode, sunlight-readable, ultra-rugged tablet PC
- Intel® Core™ i7 vPro™ processor

Xplore® XC6 DMSR

- Dual-mode, sunlight-readable, ultra-rugged tablet PC
- Intel® Core™ i5 vPro™ processor

Conclusion

By streamlining information delivery to field operators, oil and gas companies can improve workforce efficiency, provide new business insights, and help reduce the knowledge gap created by retiring experts. Deploying tablets equipped with Intel Core vPro processors can help companies reliably deliver critical information to field operators and enable more efficient capture of operational data. Intel vPro technology remote management capabilities help IT administrators at oil and gas companies proactively manage devices at lower cost while safeguarding corporate information and business data.

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Solution Provided By:

[1] American Fuel & Petrochemical Manufacturers, "Help Wanted—New AFPM Website to Inform Military Veterans, All Job Seekers About Opportunities in the Fuel and Petrochemical Industries," September 16, 2014, https://www.afpm.org/news-release.aspx?id=4546

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