

What Defines a True Mobile Oilfield Management Solution?

Detection Technologies' Fieldlink™ for Mobile Oilfield Management provides the oil and gas industry with flexibility, standardization and innovation. Through digital transformation, both operational and capital efficiencies are increasing.

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What Are the Challenges?

- In today's COVID-19 world, having a field management system that addresses Time-to-Value is crucial in balancing a customer's specific requirements with rapid deployment and lower implementation costs.
- Oil and gas companies are in the process of modernizing their OT and IT infrastructure to manage and reduce Lease Operating Costs LOE. However, need the deep domain experience and technical expertise to implement across their organization.
- Small to medium size Independents need Digital Oilfield Managed solutions that allow them to maximize asset performance and value throughout the production life cycle by integrating technology, information, processes and people.
- With attrition and downsizing occurring across the industry, maintaining scalable, repeatable and predictable, standards-based components and solutions are critical to successfully implementing a digital oilfield managed solution.

What Are Digital Oilfields?



Like oil, data is an extremely valuable resource that creates immense opportunities for growth and increased profitability. For oil and gas companies, the challenge is to efficiently collect, analyze, and visualize masses of data from SCADA systems, terminals, disposal facilities and safety systems. This data, in turn, supports operational insight and business value—all while improving return on investment.

The digital oilfield provides a promising solution to this abundance of information that can help operators integrate, interpret, and act on production-related information in real time to optimize their field operations. But to realize that potential, companies need to invest in the right combination of digital technologies, software and equipment to support every phase of the asset life cycle—exploration, development and production.

Most oilfields use hundreds of technologies, systems and measurements. The difference with smart digital oilfields results in connecting all the data and processes related to asset operations. This includes fast-loop processes for equipment monitoring and leak detection, medium-loop processes for lift optimization and slow-loop processes for reservoir optimization. Integrative solutions require devices with built-in, interconnected intelligence, as well as a supporting network and cloud infrastructure that provides maximum control, flexibility and visibility.

According to [Industry Week](#), "Transitioning to a digital oilfield is paramount for O&G companies to help realize and establish an effective connected enterprise, and continue to drive innovation both offshore and onshore."

Let's walk through how each facet of an oilfield's enterprise is improved by digitization.

What Solutions Are Offered by Industrial IoT?



The Industrial Internet of Things (IIoT) brings automation to stranded assets by closing the communication gaps caused by piecemeal systems and software. Monitoring operating systems by exception is possible when you know immediately which systems need attention now (or will soon). There is no need to sort through properly running assets to find the problems, and bad actors can get heavier monitoring to prevent problems from escalating.

With access to digital data that was previously captured on paper forms or in their vendor's system, operators can now make more timely business decisions. Imagine, equipped with a headset and tablet, a technician can access live operational data and monitor production as they travel from site to site. They can check the live-stream data received from the equipment's software and sensors to ensure the digital adjustments they are making are being recorded, improving decision-making and efficiency. Adjustments that might have taken several days to make if they couldn't get in touch with the right engineer, now may take only a few hours. If they come across a problem, a video conference with specialists in any part of the world can solve issues quickly without the need to wait until someone is flown in to address the situation. Both money and time are saved, the equipment remains optimized and production boosted.

When all systems are part of the network, automating lease operators and pumping activities can lower LOE while HSE and compliance alerts can be reported immediately, and all functional areas, from construction to production and haul-offs can be monitored. With seamless and real-time feedback from the field, gaps between engineers and managers are bridged. Field personnel and contractors have critical data to guide optimization and flow assurance, and wellhead chemical dosing can be monitored and controlled.

Reporting actions are fully automated with all site visit and haul-off activities time- and geo-stamped, any loading and unloading events become documented and reported, and duplicate inspections are eliminated by paperless reports that are quick, accurate and synchronized.

Benefits for Oil & Gas Services Companies



An IIoT solution provides oil and gas service companies with real-time invoicing of tickets, decreasing DSOs while also ensuring more visibility into their operations resource management, inventory management, etc. Customer satisfaction is increased through better tracking for customers and ability to share data with them. Work management ability is improved when, for instance, an operator may be in the field for a specific reason but identifies additional issues. The issue is logged and a work order is generated, ensuring the item is not lost. The software can immediately update when parts are consumed, allowing for better parts inventory management and resource optimization.

Ultimately, service experience is enhanced when technicians are enabled to be more effective. For example, when technicians are empowered with real-time guidance to improve resolution time and results, they are only dispatched when needed and when issues are proactively detected, troubleshot and resolved.

The solutions offered by a digitized oilfield and IIoT is not exclusively for the benefit of the field and operations. Executives and managers need tools that allow for the orchestration of processes that align with their organizational goals and deliver on that strategy. Their concern is the ability to make decisions that align with those strategies while simultaneously delivering customer value and saving time and resources. Strategy acceleration and execution are crucial and dependent upon the assessment of digital, visual data that shows real-time business performance. The context of how it will affect an organization's processes and goals allows managers the ability to take action and solve issues before they become problems. (ogj.com)

Benefits of Fieldlink's Mobile Oilfield Management Solution



At Detection Technologies, we understand the benefits and needs of a high-performing Mobile Oilfield Management Solution in oil and gas, but we also understand the strategy, challenges and hurdles. Due to the many critical components required of a core digital solution, Detection's goal was to design a system consisting of essential pillars. The resulting mobility platform, FieldLink, enables cloud-based data collection and communication while serving two critical functions: it supports information gathering in a central location while facilitating access from anywhere.

Already part of an established platform with oil and gas industry specialization, we offer solutions designed to make implementations simpler and more effective. These configurable out-of-the-box reference implementations for everyday oilfield activities aim to capture crucial data and ultimately provide your "Single Source of Truth."

The platform can operate on any smart device: phone, tablet or computer and offers local data caching in remote locations. Additionally, this mobile system:

- Offers immediate ROI and quick turnaround for deployment
- Supports QR and barcode scanning for inventory
- Creates flexible forms as templates, not source code
- Uses geo-fencing to match users to assets
- Can model activities at all phases of the well lifecycle
- Utilizes user-based pricing rather than cost per workflow
- Provides integration API for connecting to other EAM, ERP, etc. systems

In an interview with [Hart Energy](#), Chevron control systems engineer Todd Ansligner, gave a candid real-world example of the advantages gained by digitization, "With wireless devices, you can check process or equipment status every hour. For instance, when CO₂ and water are injected into wells, you can see the downhole pressure more frequently and make better decisions." Detection fulfills this specific oilfield workflow task, and many others by being the

only Mobile Oilfield Management solution vendor that can combine its own Oil and Gas mobility platform and IIoT product which:

- Expands Transparency
- Enables and Facilitates Smarter Decisions
- Fulfills Management by Exception best practice standards

05

Activate Your Mobile Digital Oilfields – Case Studies



Work Management: Managing EAM Work Orders in Mobile Case Study

Our client was [producing work orders](#) through their EAM system, and the person completing the work would write down what was done and any specifics about the work completed. This information was then handed off to someone who would log in to the EAM client from the truck or office and record work information directly in the system. Real time information was not communicated, and details were missed or incorrect.

Fieldlink gave our client a mobile front end to allow for integrated work orders to come down from the EAM system, allow for work to be completed and documented, and integrated back to the EAM. Technicians can document work, manage and order parts/materials and add labor specific items. Work orders can also be created from a mobile app and sent back to the EAM system for observations and issues the technician is seeing in the field. Fieldlink also allows for prioritization of work orders based on urgency and higher producing wells, so technicians can route their days accordingly.

Our client now has full visibility into work orders dispatched to the field in real time, so they know when work is completed, parts need to be ordered or work is still in process. As part of our client's efforts to become more mobile in the field, Fieldlink reduced headcount in the field by 30% due to efficiencies gained.

Water and Chemical Management Case Studies



Paper Burden with Water Tickets

Our client was [managing their water hauling](#) operations on paper, calling, texting or emailing third party vendors when they needed water hauled from their locations. This resulted in missed loads, too many trucks dispatched and not knowing what was occurring until they heard back from the vendor. Invoicing was also a time-consuming item, as data came in multiple formats from each vendor, and had to be manually put together for review and approval.

With Fieldlink, our client saw a way to streamline their water hauling process and do away with paper just a few months after implementing. Loads are now dispatched electronically through Fieldlink to each vendor, allowing them to accept or reject the load. Drivers then complete the tickets through Fieldlink on sites, and tickets are submitted to our client for approval. Everything is paperless and completed the same day the work has occurred.

The result? The operator has now been on Fieldlink for over three years and has reduced time to invoice significantly (2 weeks down to 1 day) while also reducing the process management team headcount (from 6 to 3 FTE).

Third Party Chemical Management

Operators had very little visibility into activity which prevented them from validating the activities and chemical consumption they were being invoiced for. Working with multiple chemical vendors meant dealing with different processes, different paperwork and data formats. The Operators also could not verify if vendors were even visiting the sites.

Fieldlink provides these Operators (and their third-party chemical companies) with a mobile platform to implement consistent chemical management processes for batch treatments (scheduled or ad hoc) and deliveries to continuous tanks. Since all data is entered in Fieldlink in a consistent format, Operators did away with processes to manage multiple formats of this data coming in. Better decisions can now be made on dosing amounts and there is confidence that the chemical is being administered consistently and on schedule.

With data now coming in electronically in real time, Operators have been able to reduce headcount that dealt with invoicing. Additionally, "milk runs" by vendors have been eliminated resulting in significant chemical cost savings. One Operator reduced annual chemical spend from \$30 million to \$25 million with Fieldlink being a part of that reduction.

Predictive Maintenance: Tracking and Closing Issues Identified in the Field Case Study

Our client was having difficulty following up on issues found in the field by [3rd party technicians](#) working at their sites. Emails, texts, paper and phone calls were the means to identify and track an issue found to resolution. Issues once found were dropped off, fixed at the wrong site, forgotten or even addressed without anyone knowing.



Based on a checklist of items to look for, a field tech can add a task or follow up on an item in Fieldlink that is emailed and tracked as a work order. The order is assigned to a group of people (like a third-party vendor) or to someone individually. Our client now has visibility into all issues created, with status and other details to ensure the issue is being addressed and completed appropriately and accurately.

If you are ready to take on the complexity of managing internal and external service components with a new tool that will give you immediate impact on ROI, contact a member of our team or view a sample of our UX/UI library [here](#).