



UNCONVENTIONALS

FUELING THE NEXT SHALE REVOLUTION

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Digital Disruption is changing everything. Think about the taxi industry.

Compare the old way to the new way, and consider the future, such as the move to autonomous vehicles.

What if Exploration & Production underwent a similar digital revolution as the taxi industry?

What if you could connect all of your operations through a flexible, digital architecture that aggregates data from all systems, equipment and sensors into an AI engine that transforms the well into the customer?

In a digitally enabled world, the AI engine becomes a real-time hub of operations. Leveraging advanced algorithms to continuously optimize production and detect and predict problems before they occur. The engine prescribes solutions to prevent the issue or minimize impact. Thus, downtime is drastically reduced, decline curves shifted upward and costs fully optimized.

As the AI engine detects real-time a potential failure such as a tank leak, it calls upon an adaptive workforce of multi-skilled technicians (either internal or external resources) to help. Technician selection is based on factors such as capability, rating, and proximity to failure. These factors determine who is dispatched. The AI engine then optimizes work plans across all field activities balancing the need to maximize daily production and ensure safe, reliable operations.

When the technician arrives at the well site to confirm the issue, he is able to inspect the equipment using smart devices and review the list of tasks that needs to be actioned.

Realizing he needs a replacement part, the technician uses his smart device to place an order.

The AI engine then selects the optimal supplier based on factors such as speed of delivery, equipment reliability and general performance.

The supplier dispatches a drone to deliver the part from its nearest warehouse.

With the part in hand, the technician fixes the issue and logs any lessons learned into the AI engine, which then uses its machine learning algorithms to improve asset reliability. For example, the facilities team may be informed to change a pad design based on learnings from this failure.

With the job complete, the well rates the technician based on the job requirements. The AI engine's supplier database maintains an accurate view of which technicians have the best skills needed to quickly bring a well back online.

Across the field, smart equipment, like drones or intelligent artificial lift systems, are replacing some traditional manual or human-driven activities; such as visiting well sites to detect leaks or manually adjust artificial lift settings.

Dynamic analytics, provide deeper insights and the proactive actions needed to assure performance.

All of this connected data, coupled with smart devices and an adaptive workforce of multi-skilled technicians, enables operators to diagnose and spot issues before they occur; helps adapt and improve designs to eliminate future equipment failures and helps the operation run much more efficiently. Thus, maximizing the well economics.

A digital world is possible across the entire lifecycle. Continuously linking decisions, actions and results.

This future may seem far off but this reality is closer than you think.