

The oil and gas industry deals in big numbers—high costs for high profits. But while this paradigm works well when the market is booming, the industry is also characterized by an unpredictable boom-and-bust cycle that can dramatically shrink revenue. The truth is that many, if not most, oil and gas operators are still incurring unnecessary costs in unscheduled downtime and inefficient operations. Addressing these issues can provide dramatic benefits to a company's profit margins—enough to thrive through the good times and bad.

PREDICTIVE MAINTENANCE

Unplanned downtime is one of the most significant sources of lost revenue and a major driver of extra costs. A critical asset failure on an offshore production platform can cost a company \$3M in a single day. However, too many companies still rely on outdated maintenance methods, leaving them spending more money than necessary on maintenance paradigms that leave their operations vulnerable to unexpected failures. AI-powered predictive maintenance is the best way to keep your assets up, running, and producing. In this approach, machine learning algorithms ingest sensor data from critical assets and analyze it, uncovering patterns that point to assets trending toward failure. This technology can then flag an impending asset failure days or even weeks in advance, giving operators the insights they need to plan accordingly.

Predictive maintenance is also surprisingly cost-effective. Research from the Electric Power Research Institute compared the annual price tag for scheduled maintenance, reactive maintenance, and predictive maintenance, and the results were clear. Scheduled maintenance costs an average of \$24 per horsepower each year, while reactive maintenance costs \$17 per horsepower annually, though this latter figure ignores the additional costs that may be incurred by letting an asset run to failure. On the other hand, predictive maintenance costs an average of just \$9 per horsepower each year without any hidden extra costs.

OPERATIONAL EFFICIENCY

Another way for oil and gas operators to cut back on costs is by better optimizing their operations. Research by McKinsey & Company has found that offshore platforms only realize an average of 77% of their full production potential. Each year, the industry loses as much as \$200B to operational inefficiencies. This is in large part due to the sheer quantity of variables and data involved in oil and gas production. Proactively detecting inefficiencies requires analyzing and understanding these immense volumes of data, a challenge far beyond what any human analyst can handle. Here, again, AI can change the game.

Artificial intelligence is specifically designed for analyzing large amounts of data and complex variable interactions. In this case, machine learning models can be used to forecast production rates based on both historical and real-time data. More powerfully still, machine learning is able to evaluate control variables in drilling operations, identify the parameters driving performance, and use

this knowledge to build recommendations for operators, indicating which variables they should tweak to optimize production.

None of these are theoretical applications—many leaders in the oil and gas space are already leveraging AI capabilities and seeing tangible results. By making smart, thoughtful investments, oil and gas companies can future-proof their operations enabling them to remain efficient and profitable through whatever might come next.

LOW-PRICE ENVIRONMENTS EXPOSE OPERATIONAL INEFFICIENCIES IN OIL AND GAS

Inefficient operations result in:

- Operational whiplash when markets turn
- Material waste from "run to failure" strategy
- High labor costs due to low operational visibility

Efficient operations provide:

- Insulation from unexpected market shocks
- Profitability at lower, sustained oil prices
- Competitive advantage during recovery

AI DELIVERS TANGIBLE BUSINESS VALUE



Prevent unique
catastrophic events
(15-30X ROI)



Improve efficiency
and operations
(5-10X ROI)



Optimize scheduling
and action
(10X ROI)

Avathon Industrial AI platform enables predictive to prescriptive workflows, automated data integration and model-building, planning and visualization, and more—to learn from all varieties of structured and unstructured data types, unlocking unprecedented business value. Schedule a demonstration to learn how Industrial AI platform can optimize your oil and gas operations.

ABOUT AVATHON

Avathon, a leader in Industrial AI, extends the life of critical infrastructure while advancing the journey toward full autonomy. Avathon's Industrial AI platform empowers commercial and government customers with scalable, secure, and value-driven solutions that enhance efficiency and resilience across heavy industry.