

5 WAYS

Digital Technology Can Help Oil And Gas Companies



Information Solutions, LLC



Introduction

Of the industries that have developed since the Industrial Revolution, it is the oil and gas industry that has most contributed to the economic growth of the world.

For decades, oil has been the world's major source of commercial energy and has been responsible for history's most significant economic innovations beginning in the 20th century.

As progressive and influential as the oil and gas industry has been in the transformation of the global economy, in many ways it has failed to capitalize on the process that single-handedly drives innovation: **Digital Technology**.



Technology is the by-product of man's need to make life easier. We are motivated by efficiency to introduce innovations that can reduce costs and improve productivity.

In view of the uncertainties clouding the oil and gas industry – unstable prices, sluggish demand, and unpredictable political conditions – it only makes sense for these businesses to adopt digital technology to restore efficiency, order, and to open new markets of opportunity.

Here are **5 ways** in which Digital Technology can help the oil and gas industry overcome the challenges in the sector and become more profitable:



CREATE SYNERGY BETWEEN SYSTEMS AND PROCESSES

The first step in the process of digitization lies with businesses making the firm commitment to invest in digital technology.

Instead of viewing the additional cash outlay as an expense, oil and gas companies should regard digital technology as a lever for transforming the landscape; a strategy that can help them achieve long-term growth and sustainable success.

Digital Technology can build networks that can bridge or create synergy among its systems and processes.

For example, automating various processes in the oil and gas industry will improve the performance and efficiency in the different areas of operation.

An example would be the drilling operations, which account for a sizeable portion of the operations budget. Drilling requires oil and gas companies to hire highly-skilled workers that will increase expenses for salaries and benefits.

By using digital technology, certain portions of the drilling process such as pressure drilling and pipe handling can be automated effectively reducing the safety risks to workers while improving the speed and efficiency of the drilling process.

With automation, you can measure the pressure and flow of oil directly from the field. This can be done by installing smart sensors to centralized monitoring software. As such, there will be no need to station on-site crew to report changes in readings.

2

KEEP TRACK OF CHANGES IN GOVERNMENT REGULATIONS

In the United States, all of the businesses operating in the oil and gas industry are private entities and thus, are subject to regulations at the federal and state levels.

These regulations can change at any time. For example, a company must secure the proper permits for drilling and development before launching an oil and gas exploration project. Otherwise, the company will be charged with fines and penalties.

Digital technology can introduce proprietary systems that will help the company keep track of the regulations and all the permits required by the federal and state agencies.

Data management is made easier and more convenient with cloud technology. Files and key documents related to government regulation can be uploaded on a secure cloud-based platform.

Teams can collaborate and communicate from these cloud-based platforms to make sure everyone is informed and that the company's records are updated. With the advances in mobile technology, these files can be accessed and updated by the company's authorized personnel wherever they may be.



3

EXPAND THEIR VALUE PROPOSITION

Digital technology can help the oil and gas industry develop new streams of revenue at a time when the prices of petroleum are stagnant and profit margins are constricted.

Oil and gas companies should consider increasing their budget for Research & Development to uncover new forms of innovation. R&D could develop projects that can take on jobs previously assigned to skilled workers.

As mentioned earlier, one of the problems facing the oil and gas industry is a shortage of skilled workers. For example, submersibles and underwater drones can be used to track and monitor the progress of repairs.

Investments in weather monitoring systems and sensors that can detect seismic activity will help oil and gas companies plan and undertake exploration activities more safely.

Shifting to automation and digital-driven strategies will not only reduce costs but it will standardize the quality of the final output, speed up production, and ensure the prompt delivery of products and services.



4

IMPROVE CUSTOMER EXPERIENCE

Digital technology has shifted the balance of power away from business and toward consumers. With the continued influence of the Internet and the evolution of mobile technology, consumers have greater access to information and services.

Customers are taking advantage of the benefits of digital technology. They prefer personalized services and a user experience that is convenient and seamless.

Other industries have realigned resources toward improving customer service by using digital technology. The oil and gas industry should follow this lead and invest in digital-driven innovations that can improve customer experience across the entire value chain.

There are signs that the oil and gas industry has indeed acknowledged the importance of investing in digital technology at least for the purpose of improving customer service.

Presently, the industry has been investing in the design and development of Machine Learning (ML) virtual agents and Robotic Process Automation (RPA) processes which can improve efficiency, address downtime issues, and inadvertent shutdowns.

With digital technology, operators and key managers no longer have to wait for employees to compile and reconcile data. They can access data on their own.

Artificial Intelligence (AI) has slowly made inroads in providing customer support services to clients in other industries. As AI continues to evolve, it will learn to adapt to and develop a better understanding of human emotion.

5

INTRODUCE MORE EFFICIENT BUSINESS MODELS

Oil and gas companies can greatly alleviate the problem of declining profit margins by changing their current business model. With the demand for petroleum products being unstable, the industry should turn its focus on business models that streamline costs.

The oil and gas industry is not alone in its struggle to remain profitable. Other industries are dealing with the same problem but have continued to thrive by implementing more cost-efficient business models.

These cost-efficient business models could include outsourcing essential functions, maintaining only the most profitable assets, and incorporating digital-driven processes such as automation, data analytics, and ML.



Conclusion

CHALLENGES INHIBITING THE DIGITIZATION OF THE OIL AND GAS INDUSTRY

A joint study conducted by Accenture and the World Economic Forum revealed that the oil and gas industry, in fact, was an early proponent of real-time analytics and monitoring equipment, automation, and the use of sensors.

The oil and gas industry has not been able to take advantage of the opportunities created by digital technology because the industry is facing a number of challenges that are inhibiting the power of digitization such as:

- Unstable/weaker oil prices
- Sluggish global demand for petroleum products
- Delayed capital investment
- Implementation of cost-cutting strategies to maintain profitability and shareholder value

- Shift toward strategies designed to address the concerns for climate change

Digital technology companies or disrupters can use technological innovations to uncover opportunities and introduce cutting-edge business models particularly in the new market for cleaner sources of fuel.

The bottom line is digital technology presents the best solution for the oil and gas industry to improve efficiency, reduce costs, maintain profitable operations, enhance worker safety, and add value to customer services.

At a time where the business environment is dealing with greater volatility and turmoil, rigid business models become unproductive. Oil and gas companies need to invest in digital-based solutions to prepare for the uncertainties of the future.