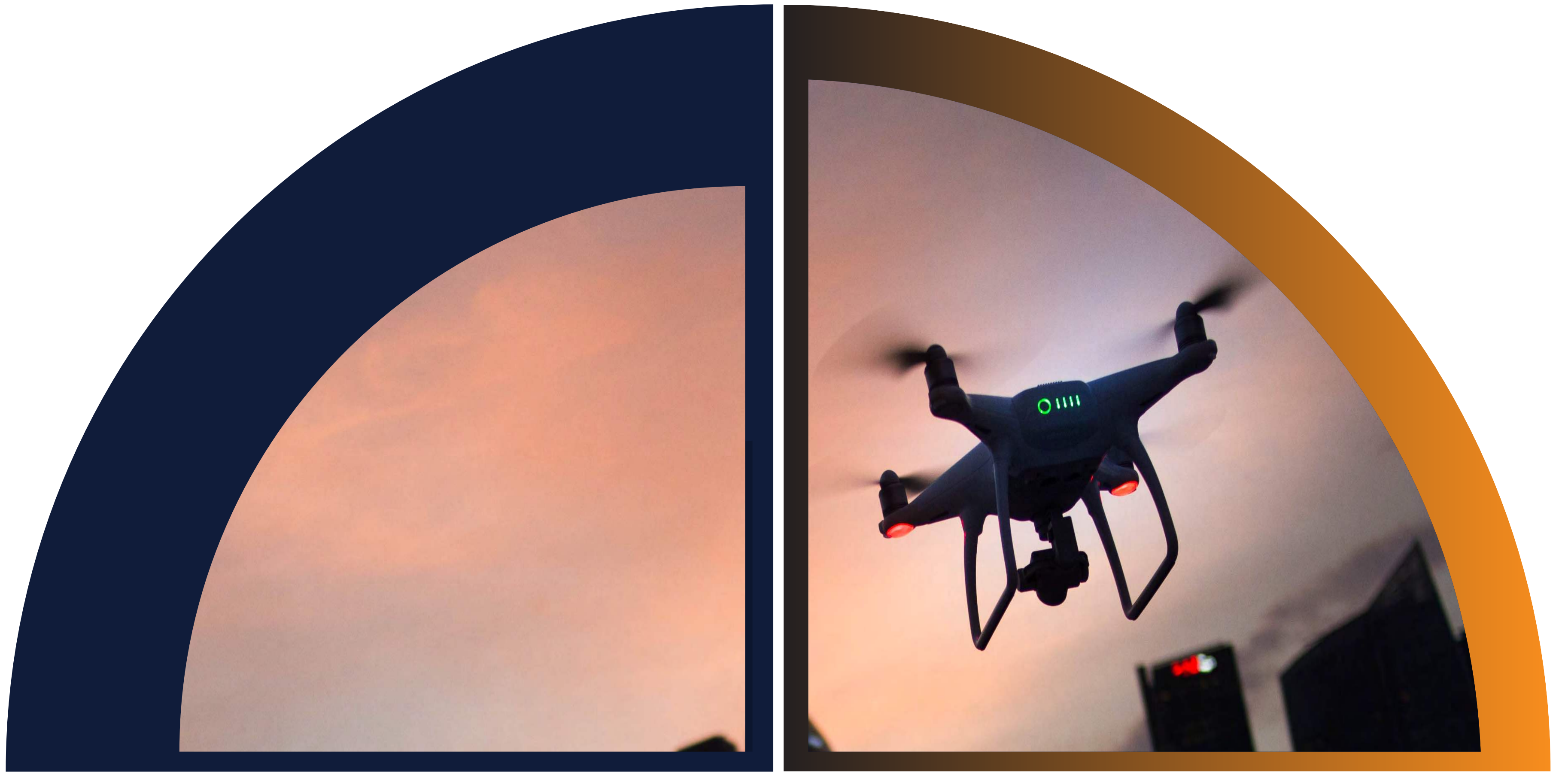


How Drones Are Shaping The Future Of The Oil And Gas Industry



Introduction



Before they were called drones, they were known as Unmanned Aerial Devices (UAD) and Remotely Piloted Aerial Systems (RPAS) by the institution that developed the technology - the military.

The U.S. military has greatly benefited from drone technology. Its applications cover surveillance, battlefield assessment and reconnaissance, fire support, and in some cases, aerial refueling.

Similarly, other industries have benefited from drone technology:

- Agricultural
- Retail
- Insurance
- Construction
- Utilities
- Logistics
- Real Estate

Given the successful application of drone technology in these industries and others, there are many reasons to believe that the **Oil and Gas industry** will reap the same benefits.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



The **Oil and Gas industry** has been slow to embrace the advances of digital technology compared to other industries. Investments in technology are hindered by uncertainties in demand and the unstable global prices of petroleum products.

Adapting drone technology may overcome these hindrances and generate 4 benefits that could shape the future of the **Oil and Gas industry**.



The 4 Benefits Of Drone Technology For The Oil And Gas Industry



1 Faster Gathering and Transmission of Data

Drilling sites, oil pipelines, and flare stack heads are locations that present challenges when getting data in a timely manner.

The use of **drone technology** in combination with data analysis software programs will make it easier and faster to collect data from the site and transmit the necessary information to operations.

For example, drones can be used to monitor the progress of offshore rigs during the drilling process by regularly capturing and transmitting images.

Drones can be pre-programmed to run the same inspection routes and therefore, provide more accurate and consistent data gathering results compared to those procured by helicopter pilots.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



2

Improved Safety

A key reason why the U.S. military deployed drones for surveillance is to keep its personnel safe from threats of attack and the dangers of hazardous terrain.

Surveying areas with the use of drones offers the same safety benefits for personnel of the oil company.

Drilling operations may take place in locations where social and political unrest can pose safety risks to employees. Drones will require less human participation during surveys and inspections.

Drones can run inspections on the roads used by delivery trucks during their routes in times of inclement weather. The drones could send images if there are potholes, obstructions such as fallen trees, or if the roads appear slippery.

Likewise, the area of interest may be contaminated by toxic materials. For example, when an earthquake damaged the nuclear reactors in Fukushima, Japan in 2016, drones were deployed to assess the level of contamination.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



3 Provide More Cost-Efficient Solutions

Typically, using helicopters to run aerial inspections on pipelines will cost the oil company US \$3,000 per hour. The use of drones will significantly **reduce** the cost of aerial inspections while providing more accurate gathering of information.

Instead of delegating maintenance, surveillance, and data analysis tasks to people, you can rely on drones that have been outfitted with state-of-the-art sensors to handle these functions with lower risks of mistakes and inaccuracies.

Oil and gas companies regularly conduct inspections on different areas of operations. These areas should be monitored continuously because if anything goes wrong, the company's response time can be critical.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



3

**Provide More
Cost-Efficient Solutions**

continued..

What are these key areas of operation?

- Flare stack heads
- Oil pipelines
- Offshore Oil and Gas Platforms
- Offshore operations
- Incidents of oil spillage
- Monitoring of gas emissions

A delay in the response time and the implementation of corrective action will have massive financial consequences for the company.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



4

Increase Productivity

For businesses in the Oil and Gas industry, keeping the refineries and oil rigs running smoothly means ensuring the continuous production of petroleum products.

Having access to data in real-time helps businesses identify potential pain points before a situation arises that can hinder production.

With the use of drones, you free up your personnel of time-consuming tasks and ease up their workload. You can save on labor costs or simply repurpose labor hours and designate personnel to manage other tasks and thereby, increase productivity.

Companies can **maximize the productivity benefits** of drones when they are used in combination with other forms of technologies such as data analytics software, artificial intelligence (AI), the Internet of Things, machine learning tools, and cloud-based systems.

The 4 Benefits Of Drone Technology For The Oil And Gas Industry



4

Increase Productivity

continued..

For example, drones that are backed with data analytics software programs can analyze the captured data images through modeling and mapping algorithms and convert these into real-time information.

The information can be transmitted in real time and acted upon immediately by the company.

Data collected from oil rigs can be transmitted to cloud-based platforms that can be accessed by engineers from wherever they are.

Are There Risks To Using Drones?



Like other innovations of technology, drones are not perfect

They can be damaged physically and because the drones are outfitted with software that transmit data via the Internet, there is always the threat of cyber-attacks.

Risk factors can be mitigated through close collaboration with the drone manufacturers and coordination with the people assigned onsite.

Similar to software programs and the operating system running in your computer, the programs and systems uploaded on the drone must be regularly updated including its cybersecurity protocol.

While unmanned, the drones could use some assistance from a person designated onsite who can advise if weather conditions or the ongoing situation can render drone activity useless.

Conclusion



For the drone solution to be effective, Oil and Gas companies should work together with the manufacturers or service providers and provide the necessary information that will allow them to design drones with customized features to get the job done properly.

Drone manufacturers need specific information about the required data to be gathered; how are they analyzed and if there are parameters or conditions that should be inputted into the algorithm.

Overall, the use of drones offer Oil and Gas companies long-term and sustainable solutions that can help businesses reduce costs, increase productivity, and improve efficiency.