



Integrating Drones Inspections in Your Field Service Management Process [Key Benefits]

Drones have become a vital part of **Field Service Management** over the past several years. The use of drones to conduct inspections made it possible for companies to cover more area, access dangerous locations, and have quicker insights. Drones not only help the **frontline workers**, but also save businesses money through multiple benefits.

What is Drone Technology?

A drone is defined as an unmanned aircraft or an unmanned aerial vehicle (**UAV**). In simpler terms, drones are remote controlled flying robots, or fly

through software-controlled plans that work with the devices' built-in GPS and sensors.

Previously, they were most often thought of as being used for the military or for recreational purposes. But the commercialization of UAVs, has brought them into multiple markets not only for personal enjoyment, but for **helping several industries**. The flexibility of having cameras on flying equipment means that people can do **photography, videography** and **monitor surroundings**. Drones can even carry items, making it possible for them to be used as delivery vehicles.

Common Elements of a Successful Drone Inspection

Because of the ability to travel easily, as well as broadcast video and images, drones are a perfect fit for supporting Field Service **inspections**. The visual data that drones can collect, reduces the need to have humans in dangerous situations or settings, such as extreme heights, uneven landscapes, or possibly dangerous atmosphere (gas leaks).

Successful drone inspections can include:

- Visual data collection
- Spatial mapping
- Thermal mapping



Typical FSM Use Cases of Drone Technology for Remote Assets Inspections

Drones assist field technicians with the **reviewing and observing of assets** to determine if any repairs, or changes are needed. UAVs are able to be deployed quickly and cover a great distance or height to collect **visual data** about an assets condition. For example, a UAV can quickly scale a cell phone tower and telecast back videos or images for the technician to determine any issues, and next steps. If the cell tower has elements that need repair, the technician will ultimately have to scale the tower, but now they will know what tools and materials to bring for the repairs, saving them time and risks of two climbs. While drones can be used in many different use cases, it can be helpful to look at some clear examples from Energy, Utilities, Infrastructure, and Oil & Gas.

Energy

The energy industry has many different assets, such as boilers and chimneys, power plants, transformers, each of them requiring regular inspection. Thanks to drones, power plant inspections are finding a significant benefit of **reducing the number times an inspector is in harm's way**, as well as a money savings due to not needing to utilize scaffolding, or machinery to support the first round of inspections.

Utilities

Utilities have found many uses for drones whether inspecting towers, turbines, large generators, or even swaths of land after a natural disaster. Now crews can have a better idea of what equipment is required before arriving to a site, so they can have a **first-time fix**, rather than needing to make a second trip to get other tools or materials.

Infrastructure

Bridges, roads, and railways are all a part of infrastructure that require inspections to determine if repairs are needed. When inspecting a bridge without a drone, there is a time consuming and safety concerning need to have an inspector be lowered down or rappel into a position where they can see all elements of the bridge. This time-consuming activity requires a coordination of resources. By using a drone, the data and visuals can now be collected for a bridge in a much shorter amount of time, **reducing cost and time spent**.

Oil & Gas

Much like the other industries mentioned, Oil & Gas requires inspections on equipment. This industry also has safety as a major concern for both the workers and the community, and so inspections must be thorough. Drones assist Oil & Gas technicians when inspecting large containers or storage tanks, reducing the need to have a worker climb up or inside one.

Additionally, the pipes that distribute either oil or gas, need regular inspections. These may have risks of temperature, pressure and vapors. Drones provide a first check, thus limiting the need to have a human in tough environments.

Benefits of Integrating Drones in Field Service Management

The clear and most important benefit for workers is improved safety. But a benefit that makes a large impact to the companies is the significant savings in multiple areas.

Typically, only a small percentage of inspections find an issue on assets that require repairs. This means the rest of the time drones can be the complete process for an inspection, limiting the need for their human colleagues to be placed in hazardous situations.

This change in maintenance processes due to drones has very clear benefits.

- **Improve safety:** each time an inspector climbs, rappels or scales machinery and equipment there is a risk. By using drones for preliminary inspections, on-field resources are limited in their need to be in dangerous situations. Furthermore, drones are making inspections happen more regularly **identifying risks in infrastructure and equipment quicker**, improving safety for all who are around it.
- **Increase savings:** savings can be found in multiple areas such as **time, costs, and expenses**. The amount of time needed to perform inspections is significantly reduced, saving as well costs of scaffolding, machinery and manpower. Additionally, the **reduction in accidents** means companies save money on liability insurance and expenses covering workers who are injured.
- **Enhance knowledge management:** through the use of drones, data collection can be optimized through photos, videos, sensors, and geospatial mapping. The centralization of this data in a **knowledge management repository** through software, ensures that technicians can pull information from previous inspections to refer to or be guided by. This **real-time information**, in an accessible digital format, can be a game changer for technicians.

Conclusion

Overall, drones are extremely useful when it comes to supporting Field Service Management inspections. They not only make **workers jobs safer**, but are able to **carry out tasks quicker**, while **covering more distance**. This saved time results in **significant savings from both downtime** of assets as well as **liability insurance**. Drones also **enhance the visual information collected** to be used for future **knowledge management** within FSM teams.