

T ransforming manufacturing with drones

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The article explains how drones can help the manufacturing landscape perform in a better way

One of the newest ‘wonder- kids’ or a cynosure, in the domain of emerging technologies is ‘drones’. Let us get one thing out of the way, these amazing machines can not only fly but also walk and swim. Thanks to their wide-ranging potential, they are rapidly evolving into flying machines that provide not just a different view of the landscape in front of us but also a different approach to the problems it poses.

Although drones have literally democratised ‘access to the sky’, there are a variety of domains in which they can cause positive disruption. Manufacturing is one such domain. Known as an indicator of a nation’s growth trajectory, the arrival of Industry 4.0 and the IIoT has already initiated its overhaul.

Becoming efficient and productive

The manufacturing industry has always been at the forefront of reinventing its methods in pursuit of efficiency and productivity, and the next major ‘reinvention’ can be anticipated if one looks at the current





major challenges such as net zero, supply chain disruption, safety, increasing labour costs, a shortage of talent, and higher costs of adoption of technologies. Let us look at how drones can be of help. Drones can step up to the challenge and address some of these issues to make life easier for management. When it comes to setting up realistic ‘Net zero’ objectives, one can employ the first two elements of the famous 5S methodology, ‘Seiri’ and ‘Seiton’. They refer to cleaning and uncluttering the workspace, which essentially means being more aware of the scope of the problem and gaining more insights into its spread.

Lack of sensitisation on one’s emission footprint is critical to why there is so much discussion about emission reduction but not proportionate action. It is still a topic confined to the upper echelons of industry leaders and remains elusive to the masses when it comes to adopting countermeasures. When prodded further into the causes, it is observed that there are no easy tools available for a small industry to know its direct emission footprint. Drones can, without doubt, be that tool, which, when enabled with appropriate sensors and software, can bring that clarity to the decision-makers, and that is half the problem solved. It will go a long way towards turning it into a movement and achieving India’s netzero targets by 2070.

Developing drone solutions

Disruptions in supply chain operations are an issue that need to be dealt with due sensitivity and a better understanding of pain points. Shutting down of factories due to COVID-19 apart, simply the inability to keep logistics operational due to bottlenecks at key ports across the world, left everyone feeling helpless. Additionally, there are aspects of inventory management, movement within facilities, and inspections that are necessary

but not value-added. This is a great opportunity for the use of drones to reduce outside dependence on these services and expedite operations with optimised resources. It is also a challenge and an opportunity for drone manufacturers to develop drone solutions for heavy-duty industrial applications that are reliable and easy to adopt. Understanding the precise nature of requirements across industry segments and their standardisation will surely be a worthy proposition. Many initiatives and experiments are being carried out on this front, and we should see the results sooner rather than later.

The safety of the workforce during core operations and service operations such as maintenance and inspection is non-negotiable across all heavy engineering industries involving complex production and machining processes. Unfortunately, until now, brave hearts have had to take those risks and perform tasks that they would rather not, given a choice. Volar Alta is committed to making all these inspection operations 100% safe for human beings using its drone services and helping the management have one less thing to worry about. We are focused on catalysing inspection processes for industrial equipment such as boilers, chimneys, various cooling towers, scrubbing towers in chemical companies, and every other such piece of equipment that needs a human being to enter it for inspection.

Maintenance and safety measures

Although innocuous, these inspections at various stages of maintenance take a lot of time and cause the assets to remain idle. Additionally, the process of inspections involves some serious safety measures, as the conditions aren’t always safe to work in.

For example, an inspection of chimneys or windmill hubs would be appropriate. With the use of drones equipped with advanced thermal and 3D mapping sensors, we have already earned our clients’ trust by ensuring 100% safety, reducing their downtime by at least 90%, and saving inspection costs by at least 85%. Add to it the fact that the quality and reliability of the data