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Delivering More With Drones

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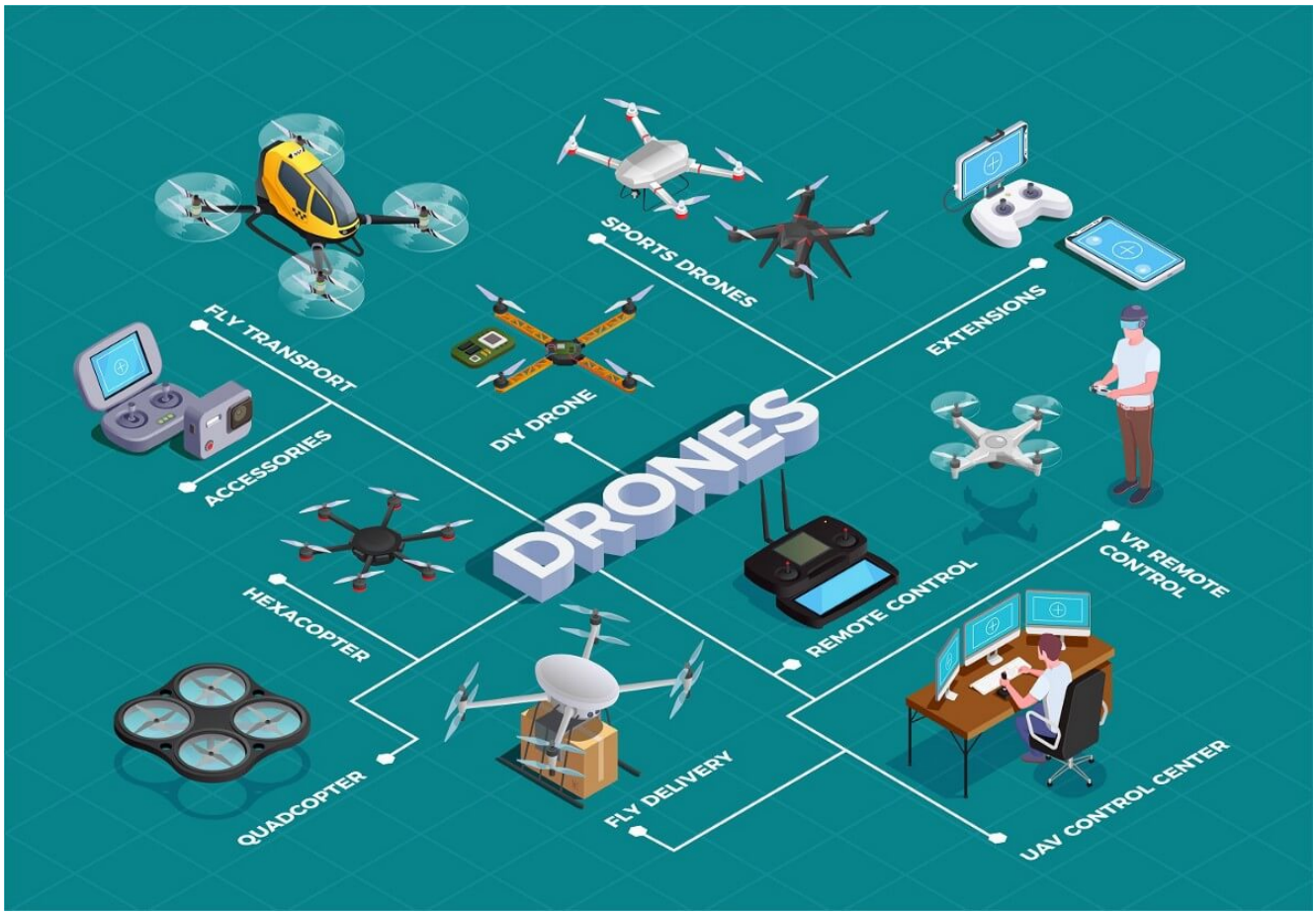


These days, you crane your neck up quite often to sight drones. You can spot them hovering over farmland, surveying a mining zone or even pressed into service for events and ceremonies with social congregations such as weddings. Indeed, these **Unmanned Aerial Vehicles** (UAVs), colloquially called drones, have come a long haul in flight. Designed exclusively for military operations in the beginning, drones now have umpteen applications- aerial photography for journalism & film, express shipping & delivery, gathering information or supplying essentials for disaster management, building safety inspections, precision crop monitoring, unmanned cargo transport, law enforcement & border control surveillance and forecasting natural calamities. *From military surveillance to purveyors of commercial operations, the possibilities for drone applications are widening.*

More Drones in Air as Governments Relax Norms

Enabling policies by governments are widening frontiers for large scale commercial use of drones. In the US, the industrial applications of UAV drones have grown manifold ever since the Federal Aviation Administration (FAA) in 2016 released rules on commercial drone usage, clarifying the legal landscape for drone usage for work and business. The new regulations streamline the process to legally operate a drone for commercial purposes. In India, The Ministry of Civil Aviation has cleared the commercial use of drones or UAVs for certain sectors from December 1, 2018.

How the Commercial Market Drives Drone Technology

With minimal human intervention, drones can cut time and save costs. They can also enhance data analytics, which allow companies to better comprehend and predict operating performance. In some industries, drones even enable new business models and opportunities. As per the estimates of PwC, commercial applications of drones have a total addressable market of $127 billion worldwide. Another consulting firm BCG estimates the industrial drone fleet in Europe and the US will be $50 billion by 2050 and more than 1 million units, with most of the value linked to drone services and data collection. Global business titans are already deploying drones. Amazon has started the same day delivery service, called Prime Air, which uses drones for deliveries. Facebook purchased Ascenta, a UK based aerospace company engaged in manufacturing of solar powered drones. Google has acquired Titan aerospace, a solar powered drone manufacturing company.

Drones for Smart Mapping of Mining Operations

Globally, major mining companies and junior exploration companies have been quick to use drones for conducting airborne geophysical surveys, mapping as well as monitoring open pit operations at quarry and metal mines. Surveying and mapping is an expensive and time devouring process even with handheld GPS.

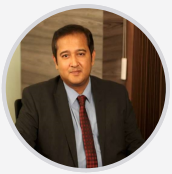
However, by employing drones instead of a piloted plane, a mine can save around 90 per cent of the cost per hour and collect unlimited aerial data. Drones are also used for underground mines as mine workers face challenges like rock falls, extremely humid conditions, gas leaks, dust explosions and floods.

Drones will be an integral part of mining exploration and operations owing to reasons like affordability, unmatched data accuracy, convenience, portability and time optimization. An **automated drone based surveillance system** has a lot more to offer:-

- Drones can access mining zones where human intervention is difficult. High resolution videos captured by drones eases the task of mine lease boundary monitoring and check if there is an encroachment.
- UAVs or drones can make an accurate estimate of the volume of material removed from pits
- The use of drones provides a landscape view of mining operations, reflecting the changes in land use and thus, enabling the authorities to take timely and prudent decisions.
- Monitoring tailings dams with a drone can provide the mining company with the ability to maintain the dam's structural integrity, design expansion and pinpoint any problems that could lead to dam failure
- The value proposition of modern day drones for managing mining operations goes up substantially with their capability to work with a multitude of payloads, sensors and technologies for backend processing of data. High precision photogrammetric assessments (technique to collect data for topographic mapping) for surveys, volumetric estimation are fast becoming staple for the industry.

Emerging Tech for Smarter Drones

The ambit of drone ecosystem will expand with the emergence of emerging technologies like **Artificial Intelligence (AI)**, Internet of Things (IoT), Robotic Process Automation (RPA) and Augmented Reality (AR). When used in concert with these technologies, drones will be more versatile, safer and bankable. The next generation of drones or Generation 7 possess full commercial fitment, compliant with safety and regulatory standards, have platform and payload fungibility as well as capabilities for auto take-off, landing and mission execution. With the scale of transformation sweeping UAV technology, don't be surprised to see a drone fertilizing crops or delivering your coveted pizza in the not-so-far future!



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