

Amazon drones: Why drones in India should take wing soon

From agriculture to e-commerce, the applications of unmanned aerial vehicles are immense—if only the DGCA could permit its commercial use in India



Photo: Reuters

Are you thinking of buying an unmanned aerial vehicle, better known as a drone? If yes, there's a "Quadcopter Drone, 3D LED Light Show, Ultra Durable Nylon Body—Free Gift Wrapping—Free Surprise Gift!! 100% Genuine" for sale on online marketplace ebay.in.

The drone, from a seller in Jalandhar, is priced at Rs3,999 and there's an assurance of free delivery anywhere within India. You can pay by card or cash on delivery. But the ad clearly says: "No Returns Accepted".

If you are unable to shake the feeling of the ad being too good to be true, there are other options like the "Parrot AR.Drone 2.0 Elite Edition Quadricopter SAND" that is priced at Rs34,490 on amazon.in. You can remotely control the Parrot drone using an Apple or Android smartphone or tablet, and the drone can stream high-definition live video onto your smartphone or tablet. You also have the option of buying the drone in equated monthly instalments, or EMIs.

It's best to scout sites like Flipkart.com and Snapdeal.com as well for drone options, or ask friends who may have bought one for recommendations.

There's, however, one big hurdle here. You cannot legally fly a drone in India. At least not till the Director General of Civil Aviation, or DGCA, permits it.

On October 7, the DGCA acknowledged in a public notice that a UAV or unmanned aircraft systems (UAS) "has potential for large number of civil applications" but added it has "safety" issues and poses a "security threat", and can cause air collisions and accidents. It added that "DGCA is in the process of formulating the regulations (and globally harmonize those) for certification and operation for use of UAS in the Indian civil airspace. Till such regulations are issued, no non-government agency, organization, or an individual will launch a UAS in Indian civil airspace for any purpose whatsoever".

In short, you will need government permission to fly a drone unless, of course, you're the police and you use it for surveillance or to disperse mobs with pepper spray as the Lucknow police is planning to use the drones, according to a 3 April *Press Trust of India* report.

Many of you would have sighted a group of youngsters remotely flying their drones over beaches and from rooftops to entertain themselves. But there have been cases of more serious users like Francesco's Pizzeria delivering a pizza using a four-rotor drone to a customer whose flat was located 1.5km away from its office in Central Mumbai on 11 May. Unfortunately, when a video of the experiment went viral, the Mumbai police filed a complaint on the "illegal" delivery, according to a 24 May report in *The Hindu*.

On 1 September, *Mint* too reported that property listings start-ups like Housing.com, Commonfloor.com and IndiaProperty.com have begun investing in and using technologies such as drones to gain an edge when competing against bigger realty companies. These drones, imported from the US and Europe, could cost anywhere between Rs25,000 and Rs2 lakh depending on the height of the building, the area to be shot, duration of the shooting, and quality of the camera and footage. Drones are imported from the US and Europe. This report, of course, was published before the DGCA public notice.

So, when the DGCA does permit its guidelines for commercial use of drones in the country, which is hopefully soon if one goes by what the minister of state for civil aviation Mahesh Sharma told the Lok Sabha during question hour on 15 March, it will surely be a step in the right direction.

It's a move that will not only allow e-commerce companies in the country to work on delivering packages with the help of drones that can circumvent traffic snarls, but it will also allow start-ups that are making hardware and software for drones to flourish and also get funds from venture capitalists as a legal business.

And, of course, it will give the Make in India and Digital India movements a push.

UAVs are getting cheaper and better. According to the 2015 edition of Deloitte's predictions for the technology, media and telecommunications (TMT) sectors, they are being deployed in a widening range of situations. Farmers, for instance, can survey crops without visiting their fields. Livestock owners can undertake aerial searches for lost animals or even herd them. Police forces and rescue units can use them to complement search and rescue missions, especially by using infrared cameras. Geologists can use them to map uncharted territories, or to survey for oil.

An archaeologist Chad Hill, for instance, is using a custom-built "septocopter" drone to monitor looting of an ancient cemetery in Jordan, according to a 4 April report by tech website Mashable.com.

Other than Amazon, other big technology companies are also betting on drones.

On 27 March 2014, Facebook Inc. chief executive Mark Zuckerberg said that his company's Connectivity Lab is working on drones, satellites and lasers to deliver the Internet to everyone.

At this year's Mobile World Congress on 2 March, Sundar Pichai, a senior vice-president at Google Inc., said that Titan—the drone company

that Google acquired last April—would be conducting its first test flight later this year.

On 11 April, *The Economist* reported that China-based Da-Jiang Innovations (DJI) launched its Phantom 3 range of drones on 8 March at press events in New York, London and Munich. “Even the basic model has a built-in camera that takes 12 megapixel stills and video at the “1080p” high-definition standard. The firm...has filed hundreds of patents, and is launching lawsuits against rivals it suspects of infringing its intellectual property,” the report said.

The good news is that globally, regulators are cautiously allowing drones to take off the ground.

For instance, the Federal Aviation Administration (FAA) once again granted Amazon Inc. permission to test drones for commercial use, according to a 11 April *Reuters* report.

Moreover, venture capitalists are willing to back drone start-ups.

According to an 18 March report by PitchBook Data Inc., “Venture capital from investors like Andreessen Horowitz, Kleiner Perkins Caufield & Byers and Google Ventures are helping start-ups get creative with how to bring drones into the everyday world.”

The report cited examples of 3D Robotics that raised a \$50 million third round, or the so-called Series C, financing in February, generating a valuation of \$303 million and bringing its total funding to more than \$92 million. “Its valuation has grown by more than 8x since its initial Series A (first) round in late 2012,” the report said.

Clear Flight Solutions, with its remotely-controlled robotic bird called Robird—a drone designed to simulate an eagle or peregrine falcon that scares away flocks of birds near airports, construction sites and other areas, received a €1.6 million investment from The Cottonwood Euro Technology Fund in March, according to the PitchBook Data report.

In India, Bangalore-based Edall Systems has been designing and building drones since 2008 in collaboration with the National Aerospace Laboratories (NAL). Garuda Robotics, a Singapore-based company, builds software to drive and manage vast drone fleets.

Idea Forge Technology Pvt. Ltd’s Netra UAVs are a collaborative effort with the Defence Research and Development Organisation (DRDO). They have been using drones to monitor processions during the Ganesh immersions in Mumbai in 2012 and also to rescue people during the devastating Uttarakhand floods in June 2013.

These carbon fibre Netra quadcopters are priced at Rs20 lakh upwards.

On 7 October, Techcircle.in reported that Idea Forge, which was founded by five IIT-Bombay graduates in 2008, received \$100,000 from a set of angel investors during their incubation stage at the IIT-Bombay, and was “in the process of closing Rs24 crore from a set of investors led by an (unnamed) ex-Infosysian”.

According to the above cited Deloitte report, the active base of non-military drones costing \$200 or more should exceed one million units for

the first time. Deloitte expects sales of non-military drones (UAVs), to be about 300,000 units in 2015.

But drones can crash due to strong gusts of wind and can land on populated areas. If used by lumpen elements or perverts, drones could invade privacy. Also, one has to consider the cost of delivery, given that drones could get damaged, lost or stolen in transit.

Drone delivery, according to the Deloitte report, is unlikely ever to be viable for anything aside from high-value, lightweight and compact packages, as the cost of per delivery of up to 10km would be between \$8 and \$12. "These costs are unlikely to decline markedly over the next five years, as there are few forecast technology advances in the medium term that would enable prices to fall significantly," the report added.

Deloitte analysts concluded that "A future in which fully-automated UAVs deliver packages to our homes is a compelling one; however it is not at all likely in 2015. This is not to say that drones are not useful or compelling."