Clearing the way for air taxis: India needs second-generation drone reforms

BS business-standard.com/opinion/columns/clearing-the-way-for-air-taxis-india-needs-second-generation-drone-reforms-124121201387_1.html

December 12, 2024

Representational Image

Prime Minister Narendra Modi's recent declaration that air taxis will soon become a reality in India signals the advent of second-generation reforms in the drone ecosystem. Just three years ago, developing and operating drones in India seemed unthinkable. However, the country has since undergone a dramatic transformation, rapidly evolving into a vibrant hub of drone technology and innovation, and it is now poised for the next phase of progress in the sector.

The Drone Rules of August 2021 marked the first-generation reform in India's drone industry. However, this milestone came with its share of challenges and an intriguing backstory. After years of deliberation and growing demand to open the drone sector, the Ministry of Civil Aviation introduced drone regulations in March 2021. While these rules aimed to encourage private enterprise, they imposed excessive restrictions, threatening to stifle industry growth.

The turning point came when Mr Modi intervened, holding several meetings that brought together ministries, security agencies, and other key stakeholders to ensure alignment on a more progressive approach. The August 2021 rules replaced the March 2021 rules, and the rest, as they say, is history.

Over 90 per cent of Indian airspace was declared green zones for drone operations, and the Unmanned Aircraft System Traffic Management (UTM) framework was approved. To energise and encourage entrepreneurs, the Bharat Drone Mahotsav 2022 was organised, fostering innovation and leadership within the drone ecosystem. The government complemented the opening of the drone sector with transformative initiatives aimed at mainstreaming drone usage. The Svamitva scheme, for instance, has used drones to survey and map over 290,000 villages, providing property ownership certificates to millions who previously lacked formal documentation. Similarly, in November 2021, drone-based surveys were mandated for large mines, enhancing efficiency and accountability. In agriculture, over 3,000 drones are deployed for aerial spraying in 3000,000 acres — and the number is expected to grow further. The Drone Didi initiative has empowered rural women by training over 1,000 female drone pilots, bringing drone technology into practical use in rural areas.

To support the growth of the domestic industry, the government banned the import of foreign drones; introduced a production-linked incentive scheme, and liberalised exports. Initiatives like iDEX Challenges have spurred startups to develop drones for national defence, enabling exports to other nations. Consequently, India's drone market has grown from near nonexistence in 2021 to $654 million by 2024, and is projected to reach $1.43 billion by 2029 at a compound annual growth rate exceeding 17 per cent. The number of operational drones is expected to rise from 10,803 in 2024 to 61,393 by 2029, signalling a robust and innovation-driven future for India's drone ecosystem.

With drone technology breaking new ground, air taxis are poised to revolutionise urban mobility, offering a promising solution to the crippling traffic congestion that plagues many cities. In India's metros, commuters spend an average of two hours — or nearly 7 per cent of their day — travelling to work, one of the highest rates globally. Drone taxis offer a chance to reduce commute times. Similarly, drone ambulances could drastically enhance emergency response times, potentially saving countless lives. Beyond medical use, air taxis have applications in law enforcement and disaster evacuation, particularly in scenarios where traditional transportation methods prove impractical. Several nations, including the US, Israel, China, and the UAE, are already advancing drone taxi programmes. China, in particular, set a landmark in October 2023 by granting type certification to a two-passenger drone taxi. Dubai is also moving forward, with vertiports under construction to support future operations.

Building on first-generation reforms, India has emerged as a competitive force in the global drone industry. Many startups are advancing indigenous drone taxi designs. However, to unlock the sector's full potential, next-generation policy reforms are essential. Drone taxis, designed for vertical take-off and landing (VTOL) in congested urban areas, require dedicated vertiports akin to airports or bus terminals. Recognising this need, the Directorate General of Civil Aviation (DGCA) issued an advisory circular on September 5, under Rule 78 of the Aircraft Rules, 1937. This comprehensive circular establishes infrastructure standards for vertiports, including passenger terminals, charging stations,

air traffic control systems, visual aids for landing, battery charging protocols, and emergency response systems. This timely and forward-looking notification is an important first step towards second-generation drone reforms in the country.

Further, the DGCA issued airworthiness certification guidelines for VTOL aircraft on September 11. These guidelines apply to aircraft with a maximum take-off weight of up to 5,700 kg, effectively covering air taxis capable of carrying 40–50 passengers. The regulations remove existing restrictions and permit flights beyond visual line of sight and above 400 feet, essential for drone taxi operations.

For India to become drone-taxi ready, a key policy framework—an automated Unmanned Traffic Management (UTM) system—is essential. Such a framework is crucial for ensuring seamless operations of both manned and unmanned aircraft without mutual interference. While the DigiSky platform was envisioned to regulate and automate drone operations following the August 2021 rules, its development remains delayed. In contrast, countries like the US have implemented systems such as the Low Altitude Authorisation and Notification Capability (Laanc), operational since 2021. Laanc provides near-instant access to controlled airspace by automating approval processes through a digital interface with Federal Aviation Administration-approved Drone Service Suppliers. India must also mandate statutory-backed drone insurance and liability coverage for air cargo and passenger taxi operations. This would align with global standards, such as the Montreal Convention of 1999, which governs insurance and liability protocols in air travel.

As the drone industry ascends to new heights, second-generation reforms can position India as a global Drone Shakti. The recent policy push by the government signals its readiness to meet the challenges ahead.

The author is distinguished visiting professor, IIT Kanpur, and a former defence secretary
Disclaimer: These are personal views of the writer. They do not necessarily reflect the opinion of www.business-standard.com or the Business Standard newspaper

Also Read