SKY STAKES

Flying taxi, truck, and ambulance: a Chennai academic's holy trinity in the fight against Uber, Indigo

By Seema Singh

With Maruti Suzuki's board giving the automaker the go-ahead to enter advanced air mobility last week, the race to rule the skies is heating up

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Hide Summary

- Private jet trips are skyrocketing for the wealthy, but startups like The ePlane Company are racing to offer ride-hailing for the average Indian, at about 1.8X the Uber fare
- The first Indian company to be certified for up to 19-seater aircraft, ePlane is charting the regulatory path for an air service as early as 2027
- Well-funded electric vertical take-off and landing aircraft makers like Archer, Boeing-backed Winds Aero, and Uber-Joby Aviation are flapping their rotors at the DGCA's doors, too
- To invent, build, indigenise, and scale-up in a risk capital-starved country like India is not for the faint-hearted. Ask Satya Chakravarthy!

"If aerospace is expensive, it's because it has been developed on the wrong side of the planet. That's what it is; we just got to call it out."

That's Satya Chakravarthy, founder and CEO of The ePlane Company, India's first private entity to have a design-certified electric plane nearing prototype, at a fraction of the cost of any aerospace venture. At the prototype facility in Chennai, specialists are layering composites on the front wing of an aircraft. Next would be the rear wing and parts of the fuselage. In about two months, the electric vertical take-off and landing (eVTOL) aircraft prototype will be ready for further certifications.

On a late July afternoon, the ePlane shopfloor is noiseless—it's electric flying machines, after all—and the ground staff look minimal and busy. The frugal setup hides the grand ambition behind trying to be the "ubiquitous" ride-hailing service in the sky. (The registered name of the company is Ubifly Technologies.)

An aerospace engineering professor at IIT Madras, Chakravarthy is the rare academic who's building pretty much every part of aerospace activity—plane, satellite, rocket, engines, working with various startups. At ePlane, he's also in the pilot's seat—a chunkier challenge. As his colleagues say, he wants to "democratise" flying for average Uber-riding or ambulance-seeking Indians in traffic-choked cities.

Flying is facing a blastoff. Between 2020 and 2024, the number of private jets registered in India grew by a quarter to 168, tripling the monthly private flights to 2,400, the highest in the Asian region.

For civil aviation though, a Wright Brothers' moment is imminent. At least 1,100 eVTOL designs are registered globally. From airlines to aircraft manufacturers like Boeing and Airbus to automotive giants, all are zipping off to build short-haul electric planes that can ferry people and cargo.

Last week, Maruti-Suzuki's board approved a plan to enter the air-mobility space, earlier formalised in Japan by its parent Suzuki Corporation and eVTOL company Skydrive for manufacturing electric planes.

Indigo Airlines' parent Interglobe Enterprises has partnered with Archer Aviation, America's most-funded eVTOL company backed by United Airlines, to launch an air service in India. In July, Archer flew its first aircraft, surprisingly not in its home country but in Abu Dhabi, UAE.

The official air-taxi provider for the 2028 Olympics, Archer, flapping its rotors at the tail of ePlane is both competition and catalyst for the Indian electric plane maker, provided the regulator plays its cards right.

Regardless, Chakravarthy is tracking his well-heeled rival. "They are spending $80 million on PR, and I have raised [only] $21 million to go to my first prototype."

Liftoff galore

eVTOL companies globally are racing to launch commercial passenger and cargo services

Founded	Company	Funds raised ($ mn)	Strategic partners

Liftoff galore

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2009	Joby Aviation, US	NYSE, 250	Toyota Motors
2011	Volocopter GmbH, Germany	726	Jetex, SITA, NEOM, Sumitomo Corp
2014	EHang Holdings, China	Nasdaq, 100	JAC Motors, Guoxian Holdings, Minth Group, Shenzhen East General Aviation
2016	Vertical Aerospace, UK	NYSE, 90	Aciturri Aerostructures, Honeywell, Marubeni Corporation
2018	Archer Aviation, US	NYSE, 2,000	United Airlines, Palantir, Stellantis, Jetex
2019	Wisk Aero, US	450	Boeing, Sonaca
2020	XPeng Aeroht, China	250	Shenzhen Honsan Group, Autoliv, Harbin Dongan Auto Engine, CALB Battery

THE KEN

Graphic by Sakshi M, 08 Aug '25

Source: The Ken research

Whither market, customer, or infra?

"The cheapest air ambulance costs about Rs 1 lakh for an hour. So, there's no way insurance is ever going to cover its cost," proclaimed Vishnu Ramakrishnan. "Except, we are able to bring the cost of the air ambulance down."

Working with the founder's office at ePlane, Ramakrishnan is sewing up initial customer and infrastructure pieces before the plane, e200X, is ready for commercial use in early 2027. Internally popular as the "unit-economics guy", Ramakrishnan believes that for a 30km trip in the city, ePlane can be offered at the price of a regular ambulance, today available for Rs 8,000–12,000.

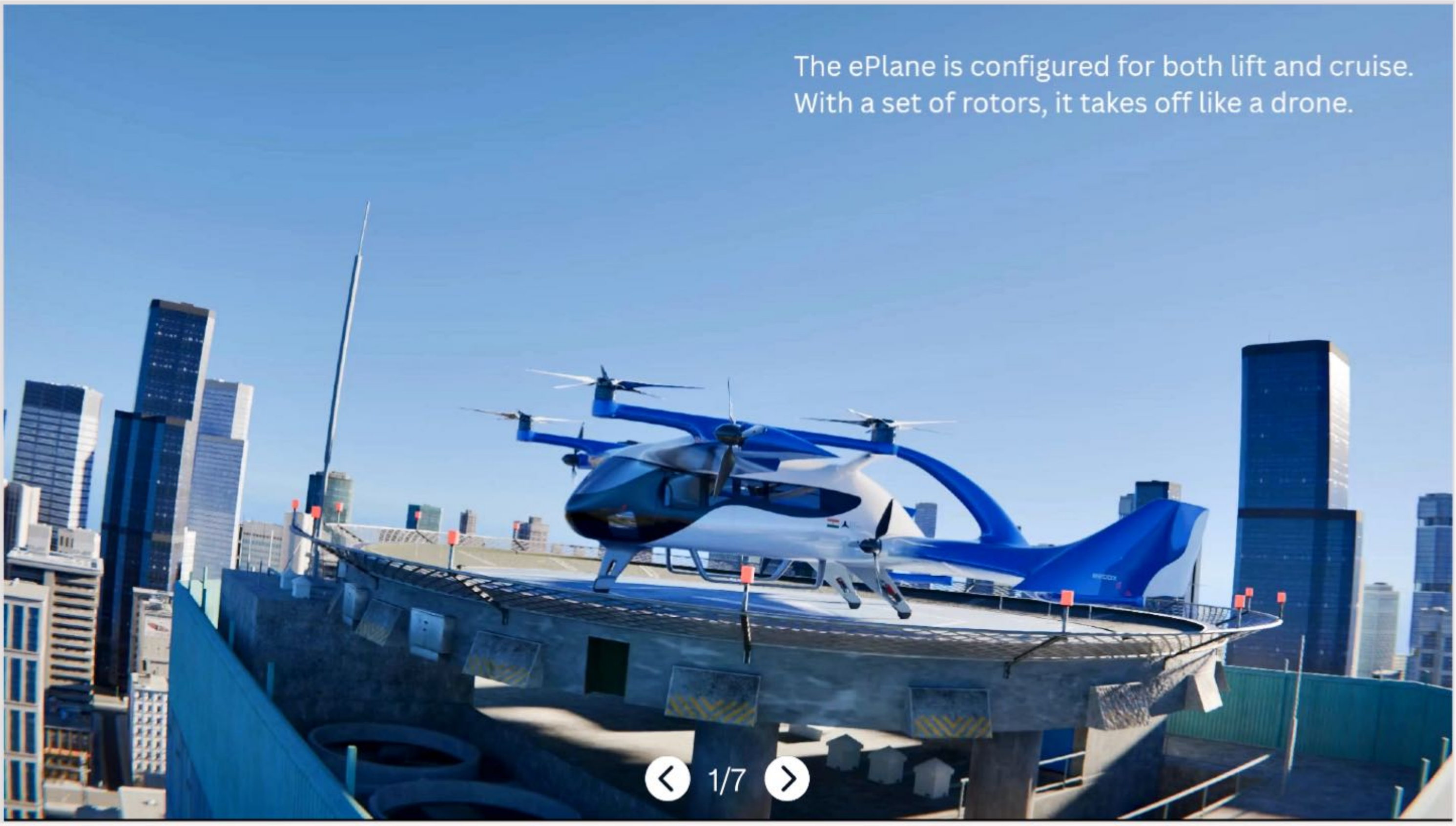
In February, the startup sealed a nearly $1 billion deal with the specialised air-ambulance service International Critical-care Air Transfer Team (ICATT) to supply its planes for the latter's air ambulance network. Founded by two Indian doctors with critical care experience in the UK health service, ICATT aims to deploy a plane in each of the 788 districts in India.

Chakravarthy believes since "75% of road-accident victims don't have a chance because they can't reach the hospital in time", air ambulance as the first service will find many takers. There are many moving parts in this customer segment but if executed right, adoption shouldn't be an issue because some state governments are already on board.

Nonetheless, it's an industry secret that mid-mile cargo movement is what eVTOL makers have been building towards. India's clogged road infrastructure is driving up logistics costs, which stand at 14% of GDP. Road freight accounts for nearly 70% of the total freight volume but is responsible for 90% of the industry's carbon emissions. Still, logistics companies are in no hurry to shift to a new mode of transport when a light commercial vehicle like, say, Tata Ace, can do the job in a few hours.

Air cargo is likely to be limited between airports. But Ramakrishnan is ensuring all existing helipads in big cities—over 80 in Bengaluru itself—are certified to function as landing sites for eVTOLs. Since it'll bring additional revenue to the buildings, he believes getting this ready will be a path of least resistance.


The ePlane is configured for both lift and cruise. With a set of rotors, it takes off like a drone.



The ePlane is configured for both lift and cruise. With a set of rotors, it takes off like a drone.

Is it a cargo plane? Is it an air ambulance? Is it an air taxi?

"It's the same aircraft. Why would I want to kill myself doing three things at the same time?" said Chakravarthy.

Since it's a human-rated aircraft, ePlane will always have a human pilot. The interiors are such that even a regular hospital stretcher, which otherwise doesn't fit into current air ambulances, will fit into the ePlane. "The exterior will look exactly the same, the paint scheme may be different for different services," said Chakravarthy.

It will take two-to-three years to proliferate vertiports across cities, using existing (but often non-operational) helipads to get the service off the ground quickly. Besides testing the waters and the skies, this go-to-market strategy is also about maximising returns. "The value will be much higher for the initial offering. If you look at Tesla or Apple or any such company, the first offerings they get to the market is what makes them a lot of money."

ePlane may be the pioneer in India but the competition is closing in. Sarla Aviation, a two-year-old startup which recently raised $10 million from Accel, was angel funded by founders of companies such as Swiggy, Urban Company, Udaan, Flipkart, and Zerodha. It's aiming to start its six-seater short-haul service by early 2028. The chief executive Adrian Schmidt, a former executive of the German eVTOL company Lilium GmbH which shut down this year, has been furiously evangelising about eVTOLs. LAT Aerospace, the Deepinder Goyal-backed aerospace startup focused on low-cost, short take-off and landing (STOL) aircraft, also raised initial funding in March.

Uber and its partner Joby Aviation as well as Boeing's Wisk Aero have announced plans to enter India. ePlane may be charting the regulatory path with the regulator, Directorate General of Civil Aviation (DGCA), but its own manufacturing flight path is anything but well defined.

India has never built a civilian aircraft. (National Aerospace Laboratory or NAL attempted one with 14-seater Saras but discontinued it in 2016.) State-owned Hindustan Aeronautics Limited (HAL) has built hundreds of helicopters for the armed forces but their safety levels are a few orders of magnitude lower than civilian aircraft.

Civil-aviation regulations require the critical components to have only "one failure in one billion cycles of operation, but for most military-grade manufacturing, it's one failure in 10 million cycles," said Ramakrishnan.

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> *How much safety is okay? The answer is so long as you can afford it. If I can afford seven levels of safety, why not. This is basically an engineering way of thinking—Satya Chakravarthy, founder and CEO of The ePlane Company*

SATYA CHAKRAVARTHY, FOUNDER AND CEO OF THE EPLANE COMPANY

Modern commercial aircraft avionics and control systems are designed with at least three levels of redundancy for key components, with some systems having even more redundancy for enhanced safety and reliability. Chakravarthy has designed ePlane with seven levels of redundancy. “We actually go through all the way to a scenario where we might end up crashing and still be safe,” he said.

The first prototype is built with three levels of safety, the second will have all seven.

It may seem like ePlane is going overboard, but what is playing on Chakravarthy’s mind is the world’s reaction to the first electric plane coming out of India and whether its quality will be up to scratch. “We want to show the rest of the world that we are brainy enough to pull this off.”

> *We don't even have to add this phrase ‘international standards’ because that's a given. We just don't have a choice. There's nothing other than international standards for us—Satya Chakravarthy, founder and CEO, The ePlane Company*
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> SATYA CHAKRAVARTHY, FOUNDER AND CEO, THE EPLANE COMPANY

How do you invent, productise, indigenise, scale-up—all at once?

In 2019, when ePlane was founded, the team had to prove to itself that it could design an airframe that would take off like a helicopter and transition into a fixed-wing plane. There was no historical data on such a transition. Today, all the technology demonstrators put together have 10,000 hours of flying data.

The frugal-engineering story is real.

It has derisked some technology blocks by building drones and smaller aircraft. “This has also helped us reduce the capex for the aircraft. We all know how Lilium burnt through $100 million developing its aircraft. When you sell the product, that cost has to be absorbed; it also means your breakeven period lengthens,” said Ramakrishnan.

The nature of aerospace is such that extreme specialisation and tight-knit supply chains are the norm. Everything must be “aero grade”. For instance, globally, there are companies that make only propellers, or landing gears, or gearboxes. “Here we have to make everything ourselves,” said Chakravarthy. “We are not outsourcing these things because we also want to learn along the way.”

What is working as a tailwind is the auto industry shifting gears. For instance, many are adopting a lot more composites and some of them are pre-qualified for aero grade because they are also suppliers to HAL. One such partnership is with Sona Comstar, the automotive-components manufacturer, to make reduction gearboxes, short-range radar sensors, and eVTOL motors.

“As a company, we’ve rapidly evolved from traditional automotive products to products for hybrids and electric vehicles. So, developing products for eVTOLs, drones, autonomous mobile robots, and humanoids are a natural progression for us,” said Praveen Rao, the group chief technology officer at Sona Comstar. “These spaces are still evolving but, in the coming years, will become significant growth markets.” He believes working with ePlane, “a pioneer, innovator, that doesn’t do things linearly,” will help Sona Comstar “accelerate” its technology development and “launch products faster”.

“The products we are jointly developing with them are not off-the-shelf solutions, so there’s a learning curve for both sides. But once these products mature, they can become part of our portfolio,” Rao said.

Chakravarthy is hoping such indigenisation and scale-up will happen across the supply chain. But it must happen fast.

> *We have extreme experimentation. None of us are stopped from doing things because it's not within our pay grade... You either succeed or learn*

VISHNU RAMAKRISHNAN, FOUNDER'S OFFICE, THE EPLANE COMPANY

Chakravarthy believes the company will be able to achieve economies of scale only when it moves from making one or two prototypes at a time to manufacturing planes in large numbers at speed. "The supply chain is not scaled up. We have to work at two levels—to indigenise the supply chain and then scale that up. But prior to that, we have to scale up whatever components we are importing. And right now, we are not importing at scale. So, it's super expensive to build the aircraft."

He expects to reach the indigenised scaled-up steady state by 2027–29. That's when the cost will come down to around $1 million per aircraft, nearly a third of what it costs today, and the company will be able to put out a large number of planes as air taxis.

Sona Comstar's Rao believes the "experience and depth of knowledge" in automotives will provide leverage. "Tier-one companies already have good setups to validate and test products. So, the lead time to develop products for the eVTOLs and their supply chain will be faster."

Even the DGCA has released several regulatory frameworks for a commercial rollout. It probably sees an opportunity to regulate advanced air mobility without leaning too much on regulators like the US Federal Aviation Administration or the European Union Aviation Safety Agency. Cognisant of the need for speed, the Indian regulator has set up a small aircraft certification office in Chennai to be close to ePlane.

> *Whenever there's a conflict-of-interest callout, we step back; whenever there's an encouragement calling it confluence, we step forward*

SATYA CHAKRAVARTHY, FOUNDER AND CEO, THE EPLANE COMPANY

Are you a product company or a services company?

“Boeing was the first airline in the world. Simply because when they made the planes, they didn’t have anybody to fly them,” said Chakravarthy.

When you start something new, he added, you’ll have to walk the whole nine yards until you are able to deliver it to the customer. “We are the best ones to figure out how our planes work. Others may be tentative.”

Many eVTOL companies such as Joby, Archer, Xpeng, and Sarla want to do the same.

The recurring revenue from running services is what will make these businesses viable, because the product itself will get commoditised in some time. Moreover, intra-city flying is estimated to be a high-volume business.

In 2023–24, when ePlane conducted market research with consulting firm Frost & Sullivan, it found considerable interest among operators. “We found the total addressable market to be $105 billion by 2040, with 198 million trips a month,” said Subashree Krishnan, executive vice president for investor relations and strategic initiatives at ePlane.

For now, through its wholly-owned subsidiary, Amber Wings, ePlane is selling its drones as a product as well as a service. Agri-spraying has emerged as the first use case. But such services can only be a trickle, not a cash flow that can fund manufacturing needs.

The professor doesn't want to box himself into conventional capex structures. "If the asset cost is not too high, if I can get debt for working capital and I am able to show return on investment for every aircraft within two to three years, the cash flow can be managed more easily," said Chakravarthy. However, this system doesn't exist in aviation anywhere in the world, where leasing aircraft is the accepted route as the capex requirement is at least 3–4X more.

This is first principles thinking but it may not convince traditional VCs. The startup is on the road to raise $50–60 million, and Chakravarthy admits there's no appetite among traditional investors. "We have to look at non-traditional VCs."

The responsibility to "feed 150 mouths" keeps him up at night but he knows "that these problems are not new to him and will get sorted out. "What keeps me up longer is how the skies will look 10 years from now. We are shaping the future, nobody has done this before."

It's impossible to square the circles unless one is prepared to fundamentally rethink. Chakravarthy is rethinking every facet of "ubiquitous" flying in India.