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INNOVATION



Are **drone deliveries** the way of the future?

BY LARISSA HAM

Once the stuff of sci-fi, drone deliveries are no longer light-years away; rather, in some parts of Australia, some are happening right in your driveway.

The buzz around drone delivery may not yet be at the level of places such as the United States or China; however, Australian companies and universities are quietly working away on innovative drone technology that's set to not only be a game changer for delivery, but also potentially save lives, too.

In Melbourne, delivery app DoorDash and drone delivery company Wing – which began in the labs of Google in 2012 – got the tick of approval to expand last year.

They can now potentially deliver to more than 250,000 eastern suburbs residents, with a single pilot able to oversee up to 50 drones in the air at any given time.

Wing's drone deliveries also regularly take flight from Logan and Springfield in Queensland, and Gungahlin and Canberra in the Australian Capital Territory, according to the Civil Aviation Safety Authority.

By 2040, Deloitte predicts that Australians' demand for food deliveries by drone could hit up to 65 million trips.

Chris Smallhorn, Chairperson of Australian company AMSL Aero, says that many players are competing for a slice of the worldwide drone market. And it goes far deeper than a drone delivering your morning caffeine hit.

'Already, in places like Africa, there are thousands of flights happening a year, moving goods across small mountain lines to entirely inaccessible regions,' says Smallhorn.

The company, which began in 2017 and now has around 70 employees, has designed a small aerodynamic drone called the Astiia, which the Australian Defence Force will use for surveillance reconnaissance.

The aerodynamic design could also potentially be adapted to suit different purposes, such as small medicine deliveries, in the future; however, Smallhorn says that the company's small drones are secondary to its main game – building a long-range, hydrogen-electric aircraft called the Vertiia.

Taking off and landing vertically like a helicopter, the aircraft will carry around four passengers and a pilot, but will also be able to fly autonomously for military use, such as evacuating a soldier or moving urgent medical equipment to the front line.

It can travel up to 1000 kilometres at a cruise speed of 300 kilometres per hour.

Smallhorn says that the small aircraft, which is much cheaper to operate than a helicopter and operates with zero emissions, could not only be used as an air ambulance, but could also revolutionise passenger and cargo transit in regional areas.

The company has raised about \$60 million so far to design and build the Vertiia, and will soon embark on a Series C fundraising round.

The company also has its eye on the air taxi market.

Smallhorn estimates that there are hundreds of similar aircraft in development globally – though very few with the same range and endurance. None are on the market yet.

'It's going to be a little bit of a race – a combination between the last person standing and the one who makes it to market first,' Smallhorn says.

As for smaller drones, Smallhorn believes that, eventually, central drone delivery points will be established within 500 metres of most people's houses.

However, he expects some community pushback when it comes to deliveries in residential driveways.



Australian futurist
Nikki Greenberg

'I just feel we need to have confidence in this equipment and this technology before it's just going to be given that carte blanche access to everybody's address.'

Australian futurist Nikki Greenberg says that along with driveway delivery, perhaps guided by a QR code, there are other options, such as companies using zip-lines tethered to a drone, which then lower goods into people's yards.

In the United States, for instance, company Zipline, which initially used its drones to deliver blood and medical products in Rwanda, has since expanded to food, retail, agriculture and animal health products.

Greenberg predicts a central, vertical postbox-style of delivery will also be popular in the future.

She says it's interesting to visualise how our skies might look when passenger drones or cargo drones become mainstream.

Greenberg imagines it may resemble a three-layered highway.

'The bottom level might be, say, delivery drones, the middle level might be passenger drones going north, and then the top level might be passenger drones going south.'

However, she doesn't imagine drone deliveries will be taking off in New York City, where she's based, any time soon.

'Because it's a city, it's very hard to navigate,' she says. 'And also, because of 9/11, they're very, very strict about having any kind of flights over the city, so drone deliveries in New York City might actually be one of the last ones to happen.'



AMSL Aero's Vertiia, a long-range, hydrogen-electric aircraft