

The impact of COVID-19 on the eVTOL industry

The impact of the COVID-19 pandemic has been unprecedented on a global scale. The consequences have been wide reaching, particularly for aviation. Globally, the aviation industry is expected to lose more than US\$84 billion in 2020. Arguably, the challenge for eVTOL companies is even harder. The industry is still in its formative stages. It will rely on a shared flight model to make the economics work and for some the value proposition partly depends on cutting travel time on otherwise congested routes.

Pre-COVID-19 the eVTOL industry had experienced an impressive growth trajectory. In the first few months of 2020 alone, over US\$1 billion was invested in the sector with Toyota leading a US\$590 million investment in Joby and EHang's US\$650 million IPO valuation. UAM investment is expected to exceed US\$318 billion by 2040. Earlier this year, the Federal Aviation Administration (FAA) in the US announced that it is currently engaged with manufacturers of more than 15 eVTOL aircraft. Uber Air, EHang, Volocopter, Joby, and Lilium are among those who have signalled their intent to launch commercial passenger operations within the next three to five years.

Since COVID-19, there have been some observable signs of slowing down. Engineering by nature is a collaborative endeavour, where co-location has been one of the key drivers of innovation. Uber Air disclosed that remote working has impacted the ability of their vehicle partners to conduct research and development activities. Labour and supply

chain disruption were noted by EHang as hampering to overseas market development. Moreover, the pandemic may impact opportunities for relationship building and face to face conversations, which are key to building trust and alignment to get the first pilots and commercial services off the ground. With initiatives such as NASA's Advanced Air Mobility Ecosystem Working Groups and the US Air Force's Agility Prime launch event held virtually. The most notable casualty has been Voom, an Airbus backed app-based helicopter booking platform. Voom ceased operations in April this year, citing the impact of COVID-19. Although Airbus has reasserted its commitment to its CityAirbus eVTOL program.

There are signals that suggest the impact could be temporary, with some organisations and certain jurisdictions forging ahead. Wisk resumed testing in mid-June after a three-month delay and EHang received a special flight operations certificate from Transport Canada Civil Aviation in July that will allow for routine trial flights in Quebec province. US aerospace manufacturer Bell has also stated that it is on track for its Nexus eVTOL program and its timeline has not been impacted by the pandemic.

Ultimately, however, the severity and duration of COVID-19 is near impossible to predict. As is the willingness of consumers to travel in confined spaces, and whether governments will allow them to do so. Outcomes are also likely to vary by region.

Regardless, COVID-19 will not impact all organisations equally. Companies' financial

stability and access to capital will be key. Those who were able to secure capital pre-COVID, such as Joby, which secured US\$590 million in January, Volocopter US\$110 million in February, and Lilium US\$240 million in March, are potentially at an advantage. As well as companies with long-term strategic investors. It is also possible we may see rationalisation in the industry. With over 250 companies working on eVTOL applications within the sector - not all of them are likely to succeed. This could be accelerated by the combination of workforce interaction limitations and scarcer capital driven by COVID-19.

Being agile is important. For example, during the three-month delay to Cora's trials, Wisk redeployed its employees to focus on documentation work to provide time savings during the latter stage of the certification process. Joby, another frontrunner in the eVTOL sector, also used the opportunity to focus on their certification and safety processes.

The movement of freight could become increasingly attractive for the eVTOL sector. During the pandemic, EHang's eVTOLs transported medical supplies to a local hospital in the Guangxi province. In Australia, online shopping registered a 95 per cent year-on-year growth in April, and Australia Post was delivering 1.8 million parcels per day that same month. Global logistic companies such as Amazon, UPS and DHL are advancing development programs for urban delivery drones while Boeing and Airbus are also testing large cargo-carrying drones.

The full impact of the pandemic on the eVTOL industry is yet to be confirmed. Some clear winners and losers will emerge but one thing is clear - the pandemic has highlighted that the continued ability to innovate and adapt to shifting situations is critical in the race to advance the urban air mobility industry. 🚁

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